ARIN VI Public Policy Meeting - Herndon, Virginia - 2-3 October 2000

Table of Contents

Day 1

Day 2

Minutes of Public Policy Meeting Day 1 -- October 2

At 9:00 a.m. EDT (GMT -5:00) John Curran, ARIN Chairman of the Board, called the meeting to order and offered a special thanks to Wayport for hosting the meeting. John welcomed all those in attendance and made several introductory remarks.

After reviewing the day's agenda, he introduced Ray Plzak, ARIN's new president, who began his tenure on September 28. Ray is replacing Kim Hubbard who stepped down as ARIN's original president after having been instrumental in ARIN's success to date.

RSG Update

For an update of the Registration Services Group, Richard Jimmerson, ARIN's director of operations, described the staff and provided an overview of the group's daily activities.

Registrations and other activities such as the submission of SWIP templates have been increasing dramatically. This is especially true of IPv4 and AS Number registrations, which could possibly double from 1999 to 2000. Richard explained that each reserved block set aside with an allocation is released after 1 year and used in making other allocations.

ARIN has made eight IPv6 allocations to date, and there are 746 objects in ARIN's routing registry. ARIN currently has

1,193 members.

Engineering Update

Cathy Murphy, acting engineering manager, followed with an overview of engineering department activities. Among the group's completed projects since the last biannual meeting are: enhancement of routing registry mirroring; functionality that allows multiple database changes (bulk updates) by submitting only one request; additional billing automation; and performance enhancement of ARIN's website.

ARIN will be increasing its bandwidth to a full T1 and making internal changes to increase production capabilities. ARIN is moving close to the signing of a vendor services contract for providing in-addr DNS services. An upgrade is planned to the SWIP templates to decrease processing time for delete SWIPs. ARIN is developing a work request/bug tracking management system and will be providing additional tools to support registration tasks. The transfer of legacy networks to their proper RIR regions is under review.

Cathy continued with additional statistics. WHOIS queries have increased to a current average of 35 M queries per month, with an average number of queries per second increasing to 15. ARIN received 49,000 routing registry queries during that time frame. To a question raised regarding how many companies actually use ARIN's routing registry to configure their routing policies, Cathy said that the actual number is unknown, but that the number of maintainer objects, currently 216, offers an indication.

ICANN Update

John introduced Ken Fockler, the ICANN Board member from ARIN's region. Ken characterized the ICANN's role as the internationalization of policy functions for DNS and IP address systems, and for private sector management. ICANN does not regulate or govern, but coordinates administration of the Internet.

Ken continued with a brief history of the ICANN leading up to the three transition agreements with the Department of Commerce that were recently extended to September 30, 2001. ICANN has set as its goal to consummate the RIR agreements by that time.

Other topics included ICANN accomplishments such as creation of the Supporting Organizations (SOs), development of nomination/election processes, organizing a membership task force, and electing five At-Large Directors to the Board. When ICANN began registering its At-Large Membership, 158,000 applications were received. Of those, 76,502 became active members.

ICANN has a total of 12 geographically and culturally diverse staff members, 10 being full-time employees. The March 2001 meeting will be held in Melbourne, Australia and other meetings will be geographically diverse as well.

Ken described the At Large Director elections and gave a run down of the Cairo and Yokohama meetings held earlier in the year. Topics such as the recognition of new top-level domains, ICANN budget, an independent review policy, the structuring of bylaws for membership and meeting minutes, and the appointment of auditors were highlighted.

Future activities will include working on finalizing agreements with the RIRs, moving forward on the funding/budget process, assigning new TLDs (6 to 10), completing root server operator agreements, making root server enhancements, and consideration of IPv6. An independent review panel will be established to provide a check on the

powers and actions of the ICANN Board.

ASO AC Update

Raimundo Beca, ASO AC member, outlined the activities of the ASO since the Calgary meeting, including the election of Sang Hyun Kyong to the ICANN Board, development of an AC procedure flowchart, use of an E-voting election

process, holding monthly teleconference meetings, and alignment of AC member terms -- an amendment was issued to begin all terms on the same date. The AC held its first General Assembly meeting on May 19, 2000 in Budapest, Hungary, and decided that emerging RIRs will be invited to participate in AC meetings and teleconferences.

Open activities of the AC include the review of several documents such as the proposal to recognizing emerging RIRs and the RIRs' document on global policy. Also under consideration are the IAB/IESG recommendation on IPv6 address delegation, request for a public listening facility for AC meetings, and nomination of two candidates to serve on the Independent Review Panel Nomination Committee.

Raimundo indicated that the AC is looking at opening the monthly AC meetings and posting agreements online. The mechanism within the AC's process to get public input is posted on the ASO AC website.

ASO AC Election Process

Richard Jimmerson briefly described the ASO and ARIN's procedures for electing AC members. Candidates Raimundo Beca and Barbara Roseman gave short speeches, and John Curran read the bio of Patricio Latini who was not in attendance.

Kim Hubbard, former ARIN President, requested that the ASO AC report to the RIRs when AC members do not regularly attend meetings or are not performing their duties. A process, including a published attendance record, should be established to address nonperforming members. An overwhelming majority was in favor of this. John Curran requested to have a current AC member draft a plan to be discussed tomorrow. John stated that if an AC member hails from an emerging region that becomes recognized as a new RIR, that person would step down leaving the seat vacant for an interim period of time since there is no requirement to hold an ad hoc election.

ARIN's Transfer Policy

Richard Jimmerson led the discussion of this topic, which was prompted by comments made on ARIN's policy mailing list. Is ARIN's transfer policy too restrictive? Should it be modified? The discussion yielded various comments:

- Companies with low utilization that decline to trade for a smaller space should not be given additional space later
- ARIN's database should be updated even when a company does not comply with utilization standards
- Allow a time frame (such as 6 months) for a company to provide transfer information
- Promote the use of SWIP to keep the database up to date
- Make it easier for subscribers who are in good standing with ARIN to provide legal documentation to complete the transfer, then utilization could be reviewed at a later date
- ARIN tells the company that their information has been updated and the transfer is pending (with a flag placed in WHOIS to signify the pending status), then completes the transfer
- Put an audit process in place to ensure that IP space is adequately being utilized, including the use of time stamps
- Establish a timeframe for completing a transfer, otherwise an audit would ensure that the company will not be allocated any additional addresses
- Make the requirements more strict, to "raise the bar."

With a show of hands, approximately half of the attendees displayed support for making sure the database is accurate, while also flagging for pending status. Richard indicated that registration services personnel maintain a file for pending transfers.

Dennis Molloy, ARIN counsel, stated that ARIN has everything it needs for a legal defense to simply use the legal documentation provided to make a transfer.

Kim reminded the group that ARIN will be charging a minimum maintenance fee for legacy space, and that organizations will update their records at that time.

A question was raised: If ARIN were to retrieve space and reallocate it, what would keep the space from being routed twice: once by the former holder, and again by the current user. It was noted that ARIN would provide adequate notification and the discussion was deferred to a later date after an auditing plan is drafted.

Additional comments were voiced:

- Announce a policy change for the year 2002, for example, and recommend a policy change in the interim such as relaxing the requirements knowing that auditing will be addressed later.
- In ARIN's transfer guideline document, spell out what the utilization requirements are.
- Cathy Wittbrodt noted that SWIP and utilization are separate, that we should distinguish between the two.
- Define general utilization questions to ask initially without having to provide actual utilization until later. Richard indicated that less than 50% of transfer requests are completed, the others do not complete the transfer.

Richard answered a question about ARIN's average time to complete a transfer by indicating that it varies widely, the minimum timeframe being between 1 and 2 weeks. Also, ARIN expects to be providing training and improving the process in the future.

The attendees were asked whether they would treat records differently if they were flagged? Many said no. When put to a vote, the following results were revealed. How many believe that:

1. ARIN's transfer policy should be changed? 32
2. There should be no change? 18
3. The process should be more streamlined, for example, dropping utilization 33
4. The requirements should be more restrictive? 2
5. The policy should be changed to make WHOIS more accurate? Overwhelming majority.

John wrapped up the discussion by indicating that in general ARIN will be more vigorous in promoting all suggested policy change discussions by making announcements on the policy mailing lists and other lists as appropriate, as well as on the website.

Name-based Webhosting Policy

Alec Peterson, AC Chair, read the current webhosting policy and described the activities leading to its adoption. After consideration by the AC, the policy was presented at ARIN V in Calgary last April where a consensus was formed to promote the use of name-based virtual webhosting. The emphasis was not placed on identifying specific requirements because at that time more information was needed about technical aspects of name-based hosting. The general intent of the policy was geared toward webhosting providers that don't provide SSL or other security services.

Thomas Palmieri of Quadrix Solutions provided a perspective from this relatively small hoster. He explained that webhosters use small amounts of IPv4 space causing little impact on conserving addresses when compared to large, fast-growing ISPs. He maintained that exceptions in the policy are poorly defined, leaving the upstream provider rigidly in control of the smaller downstream customers and causing a hardship on small webhosters.

Topics that were discussed included protocols that are not supported such as FTP, search engine incompatibility, conversion process for Microsoft FrontPage server extensions, secure services, filtering and bandwidth implementation, and vulnerability to site attacks. Thomas suggested possible alternatives such as the use of IPv6 with

near- and long-term plans, protocol changes using HTTP 1.1, reclaiming IPv4 space, use of NAT by ISPs, and use of DNS extensions.

It was suggested that ARIN: list and clearly define exceptions; apply policy hierarchically to service providers of various kinds, from high-level to downstream providers; should not make policy that impacts any particular business models, especially those without broadband; and should set aside a year for a change in policy.

Cathy Wittbrodt asserted that this topic is too large for the ASO AC to adequately address. A strawman document should be developed, with input provided by the community.

Jeremy Porter, ARIN AC, illustrated that Texas has a law against blocking software, and that any policy adopted should not involve blocking software specifically. Another suggestion indicated that we should develop policy to allow for flexibility to accommodate future technologies.

Alec asked the group: to whom should we address the policy? One reply intimated that enforcing the policy with downstream providers would be difficult, that ARIN should a) scrap the policy and clearly define a particular segment at a time, b) write a position paper, and c) state that ARIN will not accept number-based hosting simply based on (a specific criteria). John commented that ISPs should pass policy information and requirements to their downstream customers.

One recommendation was to change the protocol and not provide exceptions for companies to use as loopholes. John suggested that an exception list can help educate companies and that increased liaison with protocol-making bodies would be beneficial.

ARIN could also: hold BOFs and discussions at NANOG and other technical organizations, write papers and press releases, and solicit papers from the community. It was suggested that the policy be suspended until the specifics are clearly identified.

The policy could stand as is, and it would be up to the maintainer to demonstrate what a legitimate exception for that organization would be. Robert Malally, from Interland, suggested forming a working group from the hosting community to make recommendations. John Brown, iHighway.net, said that specific policies help to keep larger providers from abusing space and having a competitive advantage over smaller providers that follow the rules closely.

Barbara Roseman, Global Crossing, added that ARIN should keep the policy and ask for changes, or put on hold for further discussion and bring it up at the next meeting. A poll was taken: Does ARIN need a team/WG/task force to look at whether to keep the policy now and what the long-term effects will be? Approximately 57 voted yes. Six voted no.

In other votes, John asked whether to a) keep some form of policy, b) enforce policy only when a company can meet its requirements, or c) rescind the policy. Votes in favor of a) totaled 49; b) got no response; and 19 voted for c).

When asked whether to a) keep policy as is, b) clarify exceptions, with exceptions to be listed by maintainers, or c) make the policy a recommended practice, a) received no votes, b) received 32 votes, and c) received 38 votes.

John wrapped up the discussion to say that the matter will be referred to the Board and AC, and additional input from the community will be solicited.

AS Number Registrations

Michael O'Neill, ARIN systems engineer, indicated that if the current trend continues, ARIN is on track to double the number of AS number registrations in 2000. Most AS number approvals are for multi-homed sites. Michael described the criteria used in reviewing requests, and showed the number delegations from IANA. Should ARIN change its

policy due to the increase in AS number assignments?

AS Number Depletion Rate

Scott Marcus, ARIN Board, explained the AS number depletion by using exponential vs quadratic charts and, using Tony Bates' data, that it is growing more than linearly. Scott showed that by using the exponential model, exhaustion

of AS numbers under current practices should occur by end of 2005. Further IETF protocol development is needed while conservation/reclamation and deploying hacks such as AS NAT should be considered. Another consideration is moving from 16 to 32 bits for AS numbers, which is possible within the protocol.

CLEW

Bill Darte, ARIN AC, described the Community Learning and Education Working Group (CLEW) as a vehicle for people with a common interest to help each other. Members are ISPs, vendors, government, individuals, among others. It's purpose is to educate its participants and those in the greater community.

Bill listed some examples of good tools to promote education such as: mail list servers, Usenet newsgroups, ARIN's website, and technology and business publications. It was suggested that ARIN provide CLEW information on its website, and a call rang out for people to get involved and write materials for the CLEW. He outlined some suggested topics appropriate for CLEW discussion.

It was discussed whether people are apt to participate in discussion working groups. A suggestion was made to form a working group at this meeting to set up a structure and deadlines, etc. When asked whether ARIN should generally go back to working groups, many were in agreement to the affirmative.

Minutes of Public Policy Meeting Day 2 -- October 3

John Curran opened the meeting at 9:00 a.m. and announced the winner of the ASO AC election. Congratulations to Barbara Roseman who will serve on the ASO AC for a 3-year term beginning January 1, 2001. After a review of the agenda, the meeting moved on to the first topic of the day.

Recommendations in IPv6 Address Allocation

Brian Carpenter, from IBM, presented the recommendations of the IAB/IESG on the allocation of IPv6. He described the steps leading up to approval by the IAB/IESG of the IPv6 Directorate's recommendation to use a /48 fixed boundary for all subscribers. The IPng working group recommended three exceptions: very large subscribers would receive multiple /48s, transient nodes (including cell phones) would receive a /64, and providers not subnetting or routing would receive a /64.

The recommendation allows easy restructuring of subnets and renumbering, provides room for network growth, is compatible with IPv6 multi-homing, eliminates justification reducing RIRs' workload, and makes reverse DNS easier.

Brian discussed the advantages of /48: it keeps open the possibility of GSE (8+8) proposal for separating locators and identifiers, and maintains 1 to 1 mapping of subnet with site-local prefix and with 6to4 proposal. He characterized the recommendation as one that does not repeat the conservation problem of IPv4. He showed that by using assignments only from aggregatable global unicast format prefix (001), only 15% (1/8) of IPv6 space will be used, leaving 85% available. If these analyses prove wrong, our successors would have the option of placing restrictions on the remaining 85% of the space.

Brian explained that IPv6 multi-homing is in progress and that IPv4 techniques can be used. The IPng is looking at other approaches such as scaling backbone routing, the use of prefixes, and tunneling. Brian encouraged all in the community to join the IPv6 discussions and provide input. He summarized his presentation by stating that although

careful stewardship is still important, he believes that the size of IPv6 space is adequate to support /48 allocations.

Apprehension was expressed over households receiving several /48s in order to operate multiple functions such as cell phones and automobile LANs. Brian indicated that /48 allocations are simple and easy for all to use, and that /56 allocations were considered as an option.

When asked what the community is doing to move IPv6 forward beyond an educational exercise, it was mentioned that phase I [guideline completion and start of issuing initial allocations] has been completed and that Europe will begin using it soon.

Cathy Wittbrodt suggested that making assignments simply because it is easy should not be the adopted approach, while the question was asked: Is it worth the extra effort of adjudication to give out longer prefixes than /48?

Jim Baskin asked if there would be pockets of inefficiency, such that due to separations by area codes, or other means, sparsely populated states will be given more space than they can use while populace states might run out of IP space. Brian answered yes, but due to the H factor used in estimating, subdivisions will block off large enough blocks to account for these (see RFC1715).

John Curran, speaking as an individual, commented on the IETF/IAB/IESG's plan to no longer require organizations to provide justification and asked whether this is the responsible thing to do. How does this correlate with IPv4 in the mid-90's when CIDR superceded classful addressing? He expressed concern that a similar need for change in the future might occur and intimated that the advantages of the current scheme do not outweigh the disadvantages. Cathy Wittbrodt agreed that this classful approach is a step backwards and suggested that we creatively provide solutions instead of repeating our past mistakes.

Scott Marcus, speaking on his own behalf, asked about the use of left boundary space in the future. It was suggested that exponential growth will flatten out at some point. Lee Howard, from UUNET, indicated that not everyone will get a /48, only a few, and that the predictions present the worst case. It was also pointed out that 8 bits of a /56 would be adequate for the vast majority.

The question was thus asked: do we want uniformity or conservation? Is the escape clause of the 85% mentioned earlier enough? After using the /64? How then would the other /48 be structured? Exactly how to renumber in the future after switching to the 85% is a subject not yet addressed.

In review, the IETF proposal for IPv6 reassignment size was not accepted by the attendees through any form of consensus. It was decided that further discussions about this issue are needed.

John announced that the CLEW working group will meet at 5:00 for a short period.

IP Addressing Guidelines for GPRS Network Infrastructure

Jarnail Malra, from BT Cellnet UK, on behalf of GSM Association IREG GPRSWP, began his presentation by stating that General Packet Radio Service (GPRS), a name-based service, will soon be deployed.

GSM is in the process of gaining a consensus among the RIRs for a network infrastructure guideline document for IPv4 and AS numbers, to be used by GPRS mobile network operators, not mobile terminals.

After a description of the GPRS network infrastructure, Jarnail characterized GPRS roaming as allowing a subscriber to access GPRS services when roaming in another Foreign Network Operator's (FNO's) network. He indicated that there is expected to be 400 nodes within the next year, and possibly 400 potential operators today.

GPRS provides Internet access via visited network, provides some DNS service, and establishes GPRS tunnel. The number of addressable items per operator is variable depending on the size of the network and the system supplier (some may use more or less address space). The GSM is seeking acceptance/approval of the document by the RIRs so that they will accept requests from GPRS operators. Richard indicated that ARIN will post this document to the website and mailing lists. The document, which was accepted at RIPE NCC, does not address cell phones or mobile phone numbers, which will be addressed later.

Scott Bradner asked whether the GSM expects the requirement for large blocks of portable space, to which Jarnail answered no, and that each one would have to justify their own case. Reference was made to ARIN's policy on cable

address space.

A vote was taken to ascertain whether ARIN considers use of public space for GPRS valid, and can be treated as an administrative issue. Eight hands were raised in favor. Approximately ½ of the attendees raised their hands in favor of waiting for mailing list discussions, and then seeking a consensus. No one expressed a desire to drop the issue.

Legacy Network Transfer

Cathy Murphy began with a description of the RIRs' combined effort to transfer legacy network database information from ARIN's region to the proper RIR respective of geographic location. This project currently involves only network records, but will later include AS numbers.

Identification of the netblocks is being worked out with the other RIRs. Bill Manning, ARIN AC, stated that dynamic updates (one of the mechanisms planned for updating shared zones), is not proven yet and probably will not work. Cathy said that ARIN is working closely with the other RIRs to test extensively, which might involve writing other mechanisms.

Cathy explained that for zones with mixed/shared data, ARIN is looking at the secondary level. Mark Kosters, Network Solutions, asserted that dynamic updates are very risky, and that political concerns need to be considered. Cathy responded: If it is found that a dynamic update approach doesn't work, ARIN will seek community input for other approaches. The legacy transfer document will be posted for public review.

With a show of hands, 10 attendees indicated that they are interested in reviewing the test plan for this project. A suggestion was made that the test results be presented at ARIN's next biannual meeting in April. John Curran commented that there will be a public review of the document first. Comments should be sent to Cathy Murphy at cathym@arin.net (mailto:cathym@arin.net).

Exporting ARIN's database

Cathy introduced the question of whether ARIN should make its database available to the public in bulk form. The increased number of queries ARIN has received has raised this concern (the ICANN is not providing direction on this issue). One suggestion offered from the audience was to stop the top 10 ISPs from mining the database, and that ARIN should research who the miners are to find out why they need the data. John Brown suggested that ARIN make it available only to members who sign an agreement not to use it for anything other than networking.

John Crain, RIPE NCC, commented that RIPE NCC has very restrictive requirements in their agreement. Kim Hubbard suggested that we cut out some of the private data such as POC information. RIPE NCC, however, provides POC data -- if someone starts mining, they are filtered out. Cathy pointed out that we are talking about only the network information, not all the information in the database. Bruce Campbell, APNIC, added that APNIC doesn't provide the POC, address, phone number, and email address in their downloadable database.

The question was raised regarding how ARIN should determine who can have access, especially when some organizations might misrepresent their need for the information. Will ARIN start blocking usage, and, if so, how? Cathy retorted that ARIN would do so only when mining causes a slowdown of the WHOIS database. It is imperative that the data be kept running. Richard added that, to date, ARIN has not provided database information to requesting research organizations.

John Brown suggested that ARIN charge a nominal fee to provide the data and add a yellow canary to it to be able to identify them in case of misuse. John Crain suggested that we should write a good acceptable use policy (AUP). Kim said that we should not charge for access, and that POC and other private information doesn't need to be included. This would eliminate the desire for mining. John Brown offered his help to support ARIN's efforts on this issue.

The group was asked whether they would be in favor of cooperating with research institutions that request the

database if there were an AUP in place. There were 50 affirmative votes. Two were not in favor. To the question: should we provide bulk data without POC information and without an AUP, 9 said yes. To the same question with an AUP, 37 said yes. No one was in favor of not supplying the database at all.

Approximately 15 voted in favor of providing the database with some filters, and being more restrictive in the number of queries allowed. One was opposed. Two showed their preference to relax the number of queries allowed, but not to condone frequent and repeated queries.

APNIC Update

Anne Lord, APNIC's manager of member services, came forward to provide an update on the RIR's activities. She indicated that they have 540 first-tier members, with a total member count of 1000, showing a sharp increase in membership from 1999. She provided other statistics including APNIC's assignment of 16 IPv6 allocations out of a total of 20 requests submitted.

RIPE NCC Status Report

Axel Pawlik, Managing Director, RIPE NCC, presented highlights of RIPE NCC activities, including charts showing a steady increase in IPv4 and AS number assignments each year from 1997, and that 21 IPv6 sub-TLAs have been allocated to date. Their membership stands at approximately 2500, and 843 LIRs are projected by the end of year 2000.

LACNIC

German Valdez, LACNIC interim Board member, discussed the formation of the Latin America NIC and said that it is being formed in accordance with the document for recognizing emerging RIRs that was developed by the ASO AC. Their draft policies document and bylaws have been finalized, and an activities plan is under development. German indicated that /20 will serve as their minimum allocation. LACNIC has support for its formation from many countries, companies, and individuals. When asked about Caribbean countries, German indicated that they have support from three countries from the Caribbean.

Follow-up Questions

Reflecting back to the earlier discussion regarding ARIN's name-based webhosting policy, John Curran announced that with the AC's recommendation, the Board has suspended the policy while the AC gathers additional input. Information on this issue will be made available several months before the next meeting.

In response to an earlier request, an ASO AC chart was shown displaying the attendance/participation record of each individual ASO AC member.

From the floor the question was raised: if a subscriber received allocations under the name-based webhosting policy, what will happen when they return for more space? The response indicated that this should not be a problem - each one will be addressed on a case-by-case basis.

The meeting adjourned with a reminder about the evening's activities.

Meeting Minutes Note

Various comments were voiced by many of the attendees, however, not everyone's name will appear in the minutes due to the large number of participants that provided input. ARIN wishes to thank everyone who attended, especially those who provided questions and comments -- they were all very valuable. Some of the participants not already mentioned and who graciously approached the microphone include: Pete Bowden, Sharon Burns, Bruce Campbell

mentioned and who graciously approached the microphone include: Pete Bowden, Sharon Burns, Bruce Campbell, Barb Dijker, Derrick Gassen, Patrick Grosso, Tanya Hinman, Lee Howard, Gene Jakominich, Clay Lambert, Andrew McLaughlin, Dawn Martin, Ron Muir, and Charles Smith.