Mission Statement

Applying the principles of stewardship, ARIN, a nonprofit corporation, allocates Internet Protocol resources; develops consensus-based policies; and facilitates the advancement of the Internet through information and educational outreach

today @ARIN

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JUNE 2002

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Report from ARIN IX

ARIN IX Meeting Highlights

Over 130 attendees, representing 24 states and 9 countries, enjoyed the hospitality of meeting sponsor Cox Communications during the ARIN Public Policy and Members Meetings. Full meeting minutes and presentations from the April 7-10 Las Vegas meeting are available at:

http://www.arin.net/library/minutes/ARIN_IX/PPM.html

Below is a list of the prominent meeting discussions, actions and announcements.

Policy Discussions:

Proposal 2002-1: Lame Delegations- Although there was consensus for ARIN to implement a policy to monitor and remove lame delegations from the zone files, no agreement was reached on the details of an implementation plan. A call was made for renewed discussion on the Database Working Group mailing list (dbwg@arin.net).

Proposal 2001-3: Micro-allocation policy- Revised language was presented which, through a show of hands, was accepted by the attendees. Key changes were the

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Database and Template Conversion

Conversion coming August 9th!

ARIN's new database and templates were released for beta testing on June 28, 2002. Beta testing will continue for five weeks, concluding on August 2, 2002. The new database and templates are scheduled to be released into production on Friday, August 9, 2002.

ARIN is providing the new templates in advance of the conversion, and is encouraging those ISPs that have auto-generated SWIPs to revise those scripts, and submit templates as beta tests.

ARIN is soliciting beta testers from the community for the new database and templates. Participation is open to all interested parties, and those interested can send an e-mail to jumpstart@arin.net to receive more information. For more Database and Template Conversion news, flip to page 7 through 9!

First Conversion Training Class a Success!

On June 25th, ARIN held the first "On The Road" Database and Template Conversion Training Session. Held in the Washington, D.C. area, this session was just the first in a series of classes that will be held throughout the ARIN region. Locations for subsequent sessions have yet to be finalized, so check back at http://www.arin.net/library/training/ for more information as it becomes available.

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Internet Community Calendar

IETF 54, July 14-19, Yokohama, Japan

APNIC 14, September 3-6, Kita-kyushu City, Fukuoka, Japan

RIPE 43, September 9-13, Rhodes, Greece

ICANN, October 27-31, Shanghai, China

NANOG 26, October 27-29, Eugene, Oregon, USA

ARIN X, October 30- November 1, Eugene, Oregon, USA

LACNIC III, November 12- 13, Mexico City, Mexico

IETF 55, November 17-22, Atlanta, Georgia, USA

Internet Community Meeting Reports

RIPE 42
April 29-May 3, Amsterdam, the Netherlands

RIPE 42 covered a wide-variety of issues. The increased queue time for RIPE-NCC Registration Services was discussed, and increased staffing was announced as the method by which the problem was being addressed.

Ray Plzak, President and CEO of ARIN, presented information about ARIN, including organizational news and an announcement about the joint meetings of NANOG and ARIN at the end of October. In addition, Ray presented information about the progress of AfriNIC and LACNIC, the two emerging RIRs.

Other issues discussed at the meeting were secure services for the LIRs, a report from Stuart Lynn on detailing the ICANN reform proposal, and the results of a survey of IPv6 allocation and use in the RIPE-NCC region.

The Thursday session ended with a presentation about the 10th anniversary of RIPE NCC, and Friday's session dealt with the reports of the different working groups.

Further details can be found at:

http://www.ripe.net/ripe/meetings/archive/ripe-42/index.html.

ITU-T Tutorial Workshop on IPv6
May 6, Geneva. Switzerland

A tutorial workshop on IPv6 was conducted by the Telecommunication Standardization Sector of the International Telecommunication Union (ITU-T) at the ITU headquarters in Geneva, Switzerland. The purpose of the tutorial workshop was to provide information to facilitate discussion on the requirements for the successful global implementation of the Internet Protocol, version 6 (IPv6). The workshop discussed the reasons for migrating to IPv6, the costs and benefits involved, the issues associated with the migration, and provided ideas for solution to those issues. ARIN's Director of Operations, Richard Jimmerson, was part of a joint RIR presentation team that provided information concerning the RIR policy process and the current IPv6 address allocation policy. The team also participated in a panel discussion that concluded the workshop.

Details of the workshop can be found at

http://www.itu.int/ITU-T/worksem/ipv6/index.html.

AfNOG / AfriNIC
May 5-14, Lome, Togo

The AFNOG/AfriNIC joint meetings were held at the Resinter Hotel in Lome, Togo. The AFNOG meeting (12-13 May 2002) focused on operator issues with emphasis being given to IPv6 deployment. The AfriNIC meeting focused on the efforts to establish AfriNIC as an RIR. ARIN's President, Ray Plzak presented a letter of support that stated ARIN's intention to provide support where appropriate to help in these efforts. The letter was presented in English, French, and Arabic. The AfriNIC Board used the AFNOG meeting as an opportunity to reach out to the African operator community.

NANOG 25
June 9-11, Toronto, Canada

The spring 2002 NANOG meeting was held June 9-11 at the Sheraton Parkway Toronto North in Richmond Hill, Ontario, Canada (just outside Toronto).

Tutorial sessions began on Sunday afternoon, and included presentations on RPSL, BGP, and IP Traffic Management.

The General Session's first day dealt with topics such as IGP scaling and stability, ISP interior routing, the impact of BGP policies on IP traffic. Ginny Listman, ARIN's Director of Engineering delivered a presentation on the new WHOIS software, and announced that a beta version was now available for testing. The BOFs Monday night consisted of one about Peering and one offering NANOG members a chance to deliver feedback about NANOG activities, meetings and the mailing list.

The second day of the General Session focused again on BGP, and in addition the discussion of Smart Routing technologies, an overview of the market and technology of Gigabit Ethernet, and a presentation on Industry/Government Infrastructure Vulnerability Assessment: Background and Recommendations.

Details of the meeting can be found at:

http://www.nanog.org/mtg-0206/.

GSM-NA
June 17, Atlanta, Georgia

ARIN attended GSM-NA's Data Working Group meeting and was invited to give a presentation on ARIN's Internet resource policy evaluation process and the current state of IPv6 address policy. The working group is considering future deployment of services using IPv6. Also discussed during the meeting was the establishment of the Open Mobile Alliance (OMA). This new alliance was described as a standards coordination body for wireless operators.

INET 2002 - ISOC
June 18 -21, Washington, D.C.

The 12th annual INET conference was held in Arlington, VA from June 18-21, 2002. This conference featured a gathering of technology experts, policy makers, and business leaders brought together to discuss and debate the technologies and policies that will define the future of the Internet. This event, sponsored by the Internet Society, is a major event held for the Internet community that provides an international forum for advancing the development and implementation of Internet networks, technologies, applications and policies.

In addition to the regular program, an IPv6 Technology Deployment Summit was held in conjunction with this year's INET conference, and a full day of the conference was devoted to a wide selection of full and half day tutorials covering technical, legal and policy issues.

At the IPv6 Forum's IPv6 Technology Deployment Summit, industry leaders reported on applications and international initiatives for large-scale deployment of Internet Protocol version 6 (IPv6). IPv6 the Next Generation Internet, is a technology that preserves everything that is good about today's Internet - and adds much more: enormous increases in addresses, mobile user support and automated management, mandatory security and optional service levels.

ICANN
June 24 - 28, Bucharest, Romania

The latest meeting of the International Corporation for Assigned Names and Numbers (ICANN) was held at the Marriott Grand Hotel in Bucharest, Romania. The main focus of the meeting was the evolution and reform of ICANN. Barbara Roseman, Chair of the Address Supporting Organization (ASO) Address Council (AC) presented a report of ASO activities since the last ICANN meeting and presented the ASO AC position on the evolution and reform of ICANN. During the President's Report, M. Stuart Lynn reported on the progress of the formation of LACNIC and noted that the close coordination that is evident between the staffs of ARIN and LACNIC is contributing to the success of this effort. The ICANN Board of Directors passed unanimously a resolution that accepted the report of the Evolution and Reform Committee and further directed the committee to proceed with the reform effort. The Board also approved the 2002-2003 budget. The Board acted on several other resolutions. Details of the meeting can be found at http://www.icann.org/meetings.

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http://www.icann.org/meetings.

ARIN IX Meeting Highlights

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inclusion of a separate allocation block for exchange points and no mention of the routability of the exchange point block. Mark Kosters was directed to refine this language and present it to the Advisory Council as stipulated in the Internet Resource Policy Evaluation Process.

Working Group Actions:

IPv6: Attendees were led through each key component of the proposed IPv6 policy and in each instance consensus was expressed in favor of the policy. It was agreed that the IPv6 policy document should be used as a basis for ARIN IPv6 policies and that this document would be revised to take into account the discussions and conclusions that were reached during this session.

Database Working Group:

Consensus was expressed to add sequence numbers to all POC and network handles during a discussion of ARIN's new mechanism for generating database handles

Consensus was expressed for ARIN to be proactive in the cleanup of stale POC data

Concern was expressed during a review of WHOIS display enhancements that ARIN should not display the administrative contact in any organization record because of privacy considerations. There was a call for discussion of this issue on the mailing list (dbwg@arin.net)

RTMA: Two presentations were given, one providing an in-depth look at the IPv6 routing table and the other including updates on Internet routing growth, allocation and assignment statistics, the definition and analysis of dark space, and squatted space.

CLEW: It was suggested that the group disband due to recent inactivity. However, with no clear direction given by attendees, it was determined that the group would go forward and await initiatives.

RFC 2050: Input was requested on the order in which a new series of documents should be written. Attendees were encouraged to participate in the efforts to revise RFC 2050.

Other discussion items:

During the Members meeting a discussion on waiver of transfer fees took place. Consensus was expressed to have the Board of Trustees look into waiving the transfer fee until the end of the year to encourage database cleanup efforts

The Advisory Council reported the creation of a task force to work on a draft mission statement and action list for CLEW

Meeting Announcements:

Ray Plzak announced that ARIN, APNIC, and RIPE NCC were each going to release 50% of the funds being held in escrow for ICANN support.

Joint NANOG / ARIN Meetings

This fall, for the first time, the North American Network Operators' Group (NANOG) and the American Registry for Internet Numbers (ARIN) will be holding back-to-back meetings in Eugene, Oregon. The University of Oregon and Sprint are generously sponsoring the network and terminal room needs throughout both meetings.

The **NANOG 26** meeting will be held Sunday Oct. 27 through Tuesday, Oct. 29 and the **ARIN X** meeting will be held Wednesday, Oct. 30 through Friday, Nov. 1.

In addition to easing the travel burden on people who regularly attend both meetings, network operators are encouraged to stay over and participate in the Public Policy discussions held the first two days of the ARIN meeting.

Your participation is important. Several policy discussions are taking place on the public policy or arin-announce mailing lists. If you are not subscribed to these, please see the mailing list archives for details at

http://www.arin.net/policy/proposal_archive.html.

Look for agenda and registration information on both the NANOG and ARIN websites later this summer.

In addition, you can highlight your commitment to ARIN and the Internet community through sponsorship of an event at the meeting.

New sponsorship opportunities are currently available, starting at just $1,300. This year's social event will be held at the Wild Duck Brewery on Halloween night, and sponsorship is still available!

For more information about the meeting and how to become an ARIN sponsor, contact Bernadette Mimna, ARIN Event Coordinator, at (703) 227-9878 or consult our website at http://www.arin.net/membership/meetings/index.html.

Board of Trustees Seat Vacated

J. Scott Marcus resigned from the ARIN Board of Trustees effective Friday, May 10, 2002. Scott was a member of the Board since January 2000. He will be greatly missed. As an active participant in the Internet community and as a member of the Board, he has contributed to the success of ARIN. We wish him all the best.

As his term would have expired at the end of this year, an interim appointment will not be made. Instead, this open slot on the Board will be filled through the normal election process at the next ARIN meeting.

Network Abuse Information

In an effort to avoid confusion on the issue of network abuse, we have compiled a list of answers to frequently asked questions. We hope that all of your questions pertaining to network abuse as it relates to ARIN are answered here. However, if you still have questions, please visit the relevant links to other sites that are included below.

Why is ARIN trying to hack my system?

While it may appear in some Internet tools that ARIN is a source of network abuse directed at you or your networks, this is not the case. Many current software programs designed to detect network abuse are configured to query one of the three RIR WHOIS databases for identification purposes. If the software is unable to find a matching record in the ARIN database, it may return results indicating ARIN is the authoritative server. However, this usually means that the software has simply failed to query the other WHOIS databases outside of ARIN's.

In these events, you may wish to query the ARIN WHOIS database directly for further information.

The ARIN WHOIS database contains detailed information for IP address ranges registered within ARIN's region. The ARIN WHOIS database also contains records for address ranges associated with other RIRs, including RIPE NCC (Europe, Middle East, North Africa and parts of ASIA, and APNIC (Asia Pacific Region).

Another possibility is that the source of the network abuse may be spoofing an IP address. The links below have some excellent advice on identifying legitimate IP information.

What can ARIN do to help me locate hackers/spammers?

ARIN maintains the WHOIS database as a public service to the global Internet community. This database may be used by

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any individual in an attempt to identify the user of an IP address. ARIN does not have the legal jurisdiction to investigate or prosecute claims of hacking or mail abuse.

Generally, the first step is to report fraudulent activity to the abuser's ISP. Most ISPs are responsive to concerns about hackers and spammers on their networks. If you are unsuccessful in resolving this situation with the ISP, you may wish to contact local law enforcement in your area or the area where the network is located.

Can ARIN pursue hackers/spammers that invade my system?

ARIN does not have the legal authority to pursue spammers or hackers.

What is hacking?

Hacking is when someone attempts to gain access to your system. Hackers may be looking for passwords or credit card information, or may be trying to do harm to your system.

Where can I find more information about preventing hackers?

You may wish to review the information on the sites linked to below for more information on how to prevent and detect hackers.

What is "network abuse"?

Network abuse can come in many forms. For example, "spam" is any unsolicited e-mail, but network abuse can include advertisements, viruses, get-rich-quick schemes, hacking attempts and the spoofing of IP addresses or identities. For more detailed information on network abuse, the links below have more detailed information.

What if I'm unable to find the IP address I'm looking for in the ARIN WHOIS database?

It is possible that this address range has not been assigned by a Regional Internet Registry yet. Before ruling out this possibility, you may wish to review the WHOIS databases for the other two regional registries: RIPE WHOIS; APNIC WHOIS.

Other Network Abuse Information Sources

Network Abuse Clearinghouse

"Fight Spam on the Internet"

alt.spam FAQ

DoShelp.com

Billing Help Desk Now Online

ARIN's Billing Department has now established a Billing Help Desk. The Help Desk is open from 9 a.m. to 5 p.m., Eastern Time to assist you.

Phone Number: (703) 227-9886

Fax Number: (703)227-0671

The Billing Help Desk and the e-mail address billing@arin.net both can be used for questions regarding:

- **Invoices**
- **Payment**
- **Billing POC**
- **Fee schedule**

Conversion Tips

All current Maintainer IDs will become Org IDs in the new database.

ARIN has established a role account entitled jumpstart@arin.net to address conversion issues and accept POC and Org ID Templates.

You can request an Org Report from ARIN by sending your Org ID (Maintainer ID) to jumpstart@arin.net. This report provides a detailed list of all network resources associated with your organization.

ARIN will be providing training to assist the community with the conversion project. Interested?? For more information: http://www.arin.net/template_conversion/index.html

ARIN will be expanding the types of POC records to include: Administrative, Technical, NOC and Abuse. For more information: http://www.arin.net/library/training/2002_templates/index.html

Prior to conversion you can submit the new POC template to jumpstar@arin.net so your POCs may later be associated with your Org ID and resource records.

ARIN will create an Org ID for those organizations with their own POC records and/or in-addrs that do not have a maintainer ID.

Each Org ID is required to have a single Administrative POC, which is the only POC that has the authority to return resources to ARIN.

If you have registered POC handles in ARIN's database, you can use the Org-Simple template to create an Org ID.

If you don't have a registered POC handle in the ARIN database, you can use the Org-Detailed template to create a POC handle along with your Org ID.

You will be able to associate multiple Technical, Abuse and NOC POCs to any resource or organization record in ARIN's database.

All of the new templates fall into one or two of the following categories:

Establish: *Org-Detailed, Org-Simple and POC templates*

Request: *Net-End-User, Net-ISP and ASN-Request templates*

Sub-delegate: *Reallocate, Reassign-Detailed and Reassign-Simple*

Maintain: *Org-Detailed, Org-Simple, POC, Net-Mod, ASN-Mod, Net-Name-Change, and Transfer templates*

ARIN will no longer register the IP addresses associated with in-addr name servers.

You can change the Network Name of an existing record with the Net-Name-Change template.

There are now two separate templates for AS Numbers. One is used to request an AS Number, and the other is used to modify an existing AS record.

AS Names and Network Names are no longer required to be unique.

The SWIP template has been separated into 4 new templates to streamline the sub-delegation process and easily distinguish allocations from assignments. These templates are available for review at: ftp://ftp.arin.net/pub/new-templates/

The Reassign-Simple template has a maximum of 10 fields, compared to 22 fields on the existing SWIP template.

The Net-Mod template can be used to modify attributes for direct and sub-delegated networks.

You can use the Net-Mod template to remove sub-delegations.

Before completing a transfer, the new organization will need to establish an Org ID.

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The Transfer template now contains an option to remove all sub-delegations on network blocks associated with an approved transfer.

It is not necessary to include the embedded instructions (which begin with the characters ##) when submitting templates.

The header and footer must be included on all templates, including multiple template submissions in a single e-mail.

The new templates will allow the use of the word "NONE" to remove information from the database that is not required by ARIN.

A Public Comments field is available on most templates for adding comments to display in WHOIS.

WHOIS Beta Update

WHOIS beta-testing has begun. If you are interested in testing, direct queries to beta.arin.net on port 4344. However, not all changes defined by the Database Implementation Working Group (**http://www.arin.net/mailing_lists/dbwg/0232.htm**) have been incorporated into this release.

The schedule of implementation of the database conversion is available below.

The various features of the updated ARIN WHOIS, and the date on which it will be available for testing can be found on our web site

Timeline for Database and Template Conversion	
Monday, June 10	WHOIS Beta Testing Opens
Friday, June 28	Registration Beta Testing Opens
Friday, August 2	All Beta Testing Closes
Thursday, August 8	Last Day to Submit Current Templates
Friday, August 9	New Templates Accepted. Current Templates No Longer Accepted.
Friday, August 9 through Sunday, August 11	All mail is queued for hostmaster and reassign role accounts Phone service will be available 7 AM - 7 PM Friday All other email accounts will remain in service No updates to WHOIS or in-addr.arpa will take place
Monday, August 12	New WHOIS Format Released

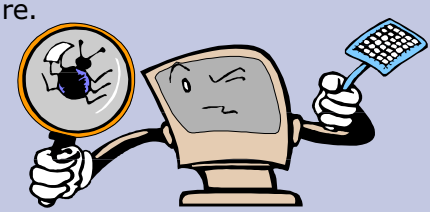
Bug Reports

ARIN is keeping track of the bug reports we receive. To see a list of the problems that have been reported, visit our website at:

http://www.arin.net/tools/whois_update.html.

If you discover a new bug in the WHOIS Beta, please report the bug to ARIN using the link on the page at the URL above.

Please note that the data in the database used with the WHOIS Beta is not current, and is used only to test the underlying WHOIS software.



Database and Template Conversion Training

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The Conversion Training class' goal is to train the ARIN community at large to:

- Identify and describe features of the new database and learn to maximize their benefits
- Describe new object and new object types (POC and Org)
- Describe POCs and describe their area of authority
- Define all newly designed templates
- Identify the new ways to provide utilization information

The training is led by ARIN Training Program Developer, Andrea Caro, and focuses on the new terms and concepts involved in the upcoming conversion. In addition, the session offers important information about how organizations can ease the transition to the new database schema by taking steps beforehand to correct and consolidate information already in the database. Questions can be sent to training@arin.net.

Important Conversion Links

New templates:
ftp://ftp.arin.net/pub/new-templates

DBWG Mailing List discussions about the new database and templates:
http://www.arin.net/mailing_lists/dbwg/index.html

Initial ARIN announcement on the Public Policy Mailing List and ARIN Announce Mailing List about the new database and templates:

http://www.arin.net/mailing_lists/ppml/0452.html

http://www.arin.net/mailing_lists/arin-announce/0157.html

An announcement on the Public Policy Mailing List discussing the training to be provided on the new database and templates at the upcoming ARIN meeting, and a second submission of the initial announcement:

http://www.arin.net/mailing_lists/ppml/0480.html

Interactive web-based training on the new 2002 templates and new POC authority structure:

New Templates and POC definitions

Tutorial on the new 2002 templates:

2002 Templates

Tutorial on how to read the report generated by a new organization ID and how to get started on updating organization information in ARIN's database:

Getting a Jump Start on Your Org ID

DNS Delegations Gone Bad

By Ed Lewis, ARIN Staff

The Domain Name System (DNS) is a service that is commonly seen as what turns a computer's name into a network address. For example, www.arin.net is known to folks as a place to get information on ARIN, but to a computer, the number 192.149.252.16 is needed. DNS is one of the services operated by ARIN. Besides running it so our members and the public can find our web site, DNS is also run to provide "reverse mapping" services, that is, one can look up a network address and find out what computer is there. Recently, ARIN and the other Regional Internet Registries have begun studying the portions of the DNS we operate to help improve the overall health of the Internet.

The strength of DNS is built upon the distributed management of the database. By distributing the administration of the database, the DNS can hold more data and be updated more quickly than if everything is administered by just one person or organization. The distribution of management is accomplished through creating zones and the use of delegations. For example, arin.net is a zone of the DNS that is administered and served by ARIN. That zone is delegated from the organization that administers and serves the .net ("dot-net") zone. Because DNS delegations follow a strict hierarchy, the terms parent and child are used to describe the two organizations involved. ARIN's arin.net is a child of .net, which is a parent.

The trouble with distributed management of a database is that it requires cooperation by many different folks and organizations to keep the system functioning properly. When it comes to the delegations that underlie the distribution of DNS administration, one particularly troubling situation is called a lame delegation.

To represent a delegation in DNS, the parent zone, e.g., .net, holds records that indicate that the arin.net zone is maintained elsewhere. These records reference the name servers that serve the child zone. So, when looking up www.arin.net, asking a name server serving .net will result in a referral to a server for arin.net. Asking an arin.net server, the address is returned. A lame delegation is a situation in which a parent zone's records indicate that a particular server will serve data for the child, but when the supposed child name server is consulted, there is neither a DNS server running there nor a server answering for the child.

Lame delegations have a harmful impact on the Internet. Although care is taken to develop client software that handles problems in an efficient manner, this doesn't always happen. There is a large set of client software that does not successfully handle lame delegations and resorts to retransmitting queries trying to get an answer from the DNS. This retransmission puts an undue strain on name servers, including at time those at the top of the DNS, the root servers. Why not just fix the software causing the problem? Well, there's a lot of it out there, and lame delegations really are a DNS problem.

> Why is ARIN, along with other Regional Internet Registries, now studying lame delegations?

Why is ARIN, along with the other Regional Internet Registries, now studying lame delegations? ARIN runs about 80 zones under the in-addr.arpa zone. From these zones, approximately 230,000 zones (on approximately 25,000 servers) are delegated to registrants that requested to run their own reverse map zones. Membership has asked ARIN to investigate lameness and what can or should be done about it.

Looking more closely at lame delegations, there are many parts to the problem. Beginning with the referral record in the parent, the first step in contacting the child server is to get the IP address for that server. Already testing has shown that roughly 10% of the names in the parent zones do not have address records and therefore cannot

be tested. (Some name servers have multiple addresses.) If an address is found for a child server, it is possible that the server is not reachable or there is not a DNS server running. It is also possible that a DNS server is running but is not serving the child zone. And, of course, it is possible that the name server is running correctly as advertised.

Deciding whether a reference is lame is not an exact science. A server may appear to be lame because it returns a bad answer or does not answer at all. A bad answer is definitive proof that the reference is lame, but when no answer arrives, the result is not so clear. Testing from Chantilly, VA may find a record delegating a zone to a name server, but that the server, although up and running correctly, is not reachable from our offices. DNS strives to present information to the entire Internet consistently, but does not guarantee that the information is useful everywhere. To try to prevent unreachable but working servers from being marked as lame, the Regional Internet Registries will work jointly to run each other's tools from our different locations.

After examining servers to see if each is serving every zone that it is supposed to serve, the results can be studied two different ways. One is whether a zone can be reached at all. If all of the parent's references to the child servers are incorrect, then the child zone is unreachable. Another way to look at the data is to decide what to do if only some of the references are incorrect, while some are correct. If a zone's data can be reached, clients will be able to eventually get the reverse mapping data they seek, but if there were lame delegation records, this still causes some unnecessary load on the Internet.

It remains to be seen what goal should be set for cleaning up lame delegations. Would it be better to eliminate all bad references to child zone servers, so that all listed servers are working (non-lame), than just making sure there is at least one working server for a zone? We also need to determine the right amount of testing needed to determine whether a reference is to a nonworking server, to a temporarily down server, to a name and address that are not on the Internet, or to a server that can't be reached from the tester.

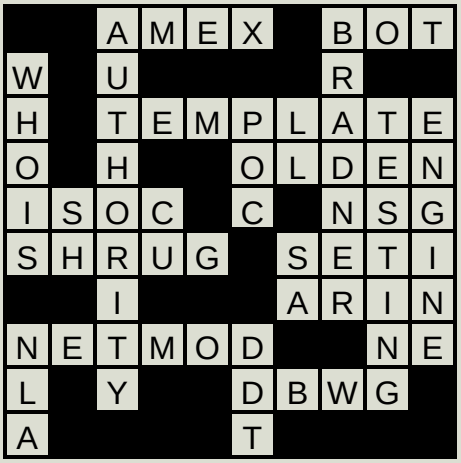
In performing the testing of the servers, there is an opportunity to test other aspects of DNS operation. It hasn't been decided whether or not other aspects are worth testing however. For example, the IETF has published a document (RFC 2182) that describes a "best common practice" for the selection of name servers. Conformance to this document is suggested, but it is not enforced. For the time being, testing these other aspects of DNS operation is not in the plans and goals of the lame delegation tests.

What is to be done with the results of the lame delegation testing results? Being that lame delegations is a DNS protocol issue, should lame delegation data be pulled immediately upon detection of a problem? Should it be reinstated upon detection that the delegation is good again? Or should lame delegations first be reported to administrators (if available) and/or marked in the WHOIS data? In deciding these questions, it is important to note that if a delegation is removed from the DNS, this does not impact an allocation or assignment, but it would be helpful to know how much work is involved in restoring the DNS records.

It remains to be seen what goal should be set for cleaning up lame delegations.

Last Issue's Puzzle

Answers from last issue's crossword puzzle:



Brain Teasers

Breaking in the new guy

To prove he could respond quickly in a crisis, the fresh-faced young network tech challenged the grizzled network engineer to a race in opposite directions around their circular office building that was 100 yards in diameter. They started at the same spot, but the network tech did not move until the engineer had a start of one eighth of the distance (that is, the circumference of the circle). The tech thought so little of the other's racing ability that he sauntered along, sharing office gossip until he met the network engineer. At this point the network tech had gone one sixth of the distance.

How many times faster than he went before must the network tech now run in order to win the race?

Running it up the flagpole

A weightless and perfectly flexible rope is hung over a weightless, frictionless pulley attached to the roof of a building. At one end is a weight which exactly counterbalances a marketing executive at the other end.

If the marketing executive begins to climb, what will happen to the weight - will it remain stationary, will it rise or will it fall?

Short Takes

1) What do the following words have in common?

CHILDHOOD HAND
NATURE WIND FIDDLE

2) Take the letters **ERGRO**. Put three letters in front of it, and the same three letters behind to form a common English word.

3) A hand of cards consists of one Queen, two Diamonds, three Aces, and four Spades. What is the minimum number of cards the hand could contain?

Solutions provided in the next issue

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ARIN Today, a quarterly newsletter, is produced for the ARIN membership and the Internet community. Articles and contributions dealing with IP-address issues and technology are welcome from all sources.

Each issue is filled with news highlights, descriptions of what happened at various meetings, updates on policy, and information about training and other services ARIN provides its members. Technology news and interesting applications are also covered.

So if you have an idea about an article you'd like to submit, or something you'd like to see, please contact the editor at arintoday@arin.net.

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