Policy Evaluation and Experience Report

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Purpose

- **Review** existing policies
  - Ambiguous text/Inconsistencies/Gaps/Effectiveness

- **Identify** areas where new or modified policy may be needed
  - Operational experience
  - Customer feedback

- **Provide** feedback to community

- **Make** recommendations

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Policies Reviewed

- Maintaining IN-ADDRS (NRPM 7.1)

- Lame Delegations in IN-ADDR.arpa (NRPM 7.2)

- 16 bit and 32 bit AS Numbers (NRPM 5.1)

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Maintaining IN-ADDRS (NRPM 7.1)

"All ISPs receiving one or more distinct /16 CIDR blocks of IP addresses from ARIN will be responsible for maintaining all IN-ADDR.ARPA domain records for their respective customers. For blocks smaller than /16, and for the segment of larger blocks which start or end with a CIDR prefix longer than /16, ARIN can maintain IN-ADDRs through the use of the SWIP (Reallocate and Reassign) templates or the Netmod template for /24 and shorter prefixes. "

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Problems Observed

- Per Suggestion 2007.29, ARIN will change the way registrants manage reverse delegations

  – Currently managed at network registration level via template

  – Soon will be managed at the zone level via online web management

- Includes operational details that aren't policy and will soon be obsolete

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Problems Observed (cont'd)

- Currently restricted to IPv4 addresses
  - Title and text should be generalized to include IPv6 address space

Recommendation

- Change policy text to read

7.1 Maintaining Reverse

"ARIN shall provide registrants the ability to manage reverse DNS for address blocks administered by ARIN. Registrants will be responsible for properly maintaining any delegations for the corresponding reverse zones."

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Lame Delegations in IN-ADDR.arpa (NRPM 7.2)

"ARIN will actively identify lame DNS name server(s) for reverse address delegations associated with address blocks allocated, assigned or administered by ARIN. Upon identification of a lame delegation, ARIN shall attempt to contact the POC for that resource and resolve the issue. If, following due diligence, ARIN is unable to resolve the lame delegation, ARIN will update the WHOIS database records resulting in the removal of lame servers".

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Lame Delegation Process

- Delegations tested daily until test good or removed

- If still lame after 30 consecutive days of testing, POCs notified

- If still lame 30 days after initial notification, POCs notified again

- If still lame 30 days after second notification, delegation analyzed manually; name servers stripped if delegation determined to be inoperative

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- ## How is "Lame" defined?

  - No A record for name server
  - The name server is unresponsive to queries (times out)
  - Name server doesn't think it's authoritative for the reverse zone (the "aa" bit isn't set)
  - No SOA record for reverse zone

- ## When is a Name Server stripped?

  - No A record for name server
  - The name server is unresponsive to queries (times out)
  - The name server doesn't know reverse zone exists (thus can't have individual PTR records)
  - Only testing on /24 zones

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Lame Delegation Stats

As of Oct 8, 2008	
Total lame delegations	24,736
Tested for 30 consecutive days	19,517
Tested for 60 consecutive days	612
30 and 60 day notifications sent	5,319
Name Servers waiting to be stripped	547
Name Servers stripped	95

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Problems Observed

- No clear way of detecting a Lame Delegation

- Potential legal liability

- Operationally significant number of man hours spent on development, notification, and follow up

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Questions for the Community

- Is this effort worth the substantial costs involved?

- Should ARIN expose itself to potential increased legal liabilities?

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16 bit and 32 bit AS Numbers (NRPM 5.1)

"Commencing 1 January 2009, ARIN will process applications that specifically request 16-bit only AS Numbers and assign such AS Numbers as requested by the applicant. In the absence of any specific request for a 16-bit only AS Number, a 32-bit only AS Number will be assigned."

"Commencing 1 January 2010, ARIN will cease to make any distinction between 16-bit only AS Numbers and 32-bit only AS Numbers, and will operate AS number assignments from an undifferentiated 32-bit AS Number pool."

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Current Practice

- Customer chooses 32 bit or 16 bit ASN

- Ensure customer really wants 32 bit ASN before issuing

- Exchange 32 bit ASN when asked

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Problems Observed

- Most 32 bit ASNs issued are exchanged for 16 bit ASNs

    – Reason: "No vendor or service provider support"

2007 and 2008 (thru Aug 31)	
32 bit ASN requests	150
32 bit ASNs issued	20
32 bit ASNs exchanged	14
Total 32 bit ASNs issued to date	6

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Recommendations

- Consider policy change so that in January 2009, 32 bit ASNs must be requested (current policy) vs issued by default (policy in effect in January 2009)

  – Rationale: gives vendors more time to implement needed updates

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