ARIN 41

MIAMI, FLORIDA | 15-18 APRIL 2018

Draft Policy 2018-1
Allow Inter-regional ASN Transfers

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ARIN 2018-1 Problem Statement

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- There are circumstances for the necessity of RIR transfers of ASNs with RIRs with an equivalent transfer policy. These needs include Regional RIRs that are no longer issuing 16-bit ASNs, leading to the need to purchase on the transfer market if an organization requires one; customers that transfer their IP address space to a reciprocal RIR without the ability to transfer their ASN, and technical limitations on 32-bit ASN's.

ARIN 2018-1 Changes to current text

Change the first sentence in section 8.4 from:

- "Inter-regional transfers may take place only via RIRs who agree to the transfer and share reciprocal, compatible, needs-based policies."

To:

- "Inter-regional transfers of IPv4 number resources and ASNs may take place only via RIRs who agree to the transfer and share reciprocal, compatible needs-based policies."

Points of Discussion

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- Mergers and Acquisitions
- 2 Byte vs 4 Byte ASN's
- RPKI and ARIN Implications
- APNIC and RIPE
- IANA ASN Registry Issue

Mergers and Acquisitions

Real World Possibilities…

A company relocates their HQ to Europe, transferring all of their IP addresses space to the RIPE region. Today this company is required to maintain an ARIN account to house their one remaining ASN. They do not want a different ASN, and they do not want to remain ARIN customers but today they do not have the option to transfer the ASN to RIPE.

2 Byte vs 4 Byte

Since the publication of RFC1997 in the 1996, network engineers have utilized an extension of BGP called the BGP communities attribute to engineer traffic (to "shape traffic") in a desirable way.

RFC1997 only supports the use of 2-byte ASNs. As the free pool of 2-byte ASNs began to shrink, a solution was needed to enable networks labeled with 4-byte ASNs to utilize BGP community attributes.

In February 2017, RFC8092 was published, and Large BGP Communities became the protocol standard for defining 4-byte AS numbers within the BGP community attribute.

2 Byte vs 4 Byte

Working code exists for some equipment and software, is planned for other equipment and software, but RFC8092-compliant code is not yet prevalent in the DFZ. This is important because it means a network operator who wants to shape their traffic properly with BGP communities still needs a 2-byte ASN or it may not work.

This proposal addresses the problem by allowing registrants of an unused or unwanted 2-byte ASN to transfer the registration to a network operator who needs one, all within the existing and community agreed-upon framework of Inter-RIR transfers.

2 byte ASN

Would the community prefer to limit this policy to incorporate only 2 byte ASN's?

2 byte ASN's were assigned to RIR's in non-contiguous blocks.

RPKI Implications

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In the previous assessment of Draft Policy ARIN-2014-15 Allow Inter-RIR ASN Transfers, it was noted that minimal work was necessary with the exception of the RPKI. Today, the RPKI Trust Anchor contains all AS numbers (a change to the RPKI commonly referred to as 0/0), making RPKI a non-issue with regard to inter-RIR transfers. However, inter-RIR transfers of AS numbers would greatly complicate any future implementation of an RPKI Global Trust Anchor (GTA) if that were ever to occur.

ARIN Implications

During the previous assessment transfers were not fully automated within ARIN's registry system. ARIN's systems now conduct transfers via ARIN Online, a facility giving ARIN proper audit trails and the generation of publicly available transfer log (used by third parties to monitor ARIN's transfer activity). These automated processes will need to be modified to accommodate Inter-RIR transfers, with an estimated effort of between 1 and 2 months

APNIC and RIPE NCC

Both APNIC and RIPE have approved Inter-RIR ASN transfers, however zero transfers have taken place.

APNIC Policy - APNIC will recognize inter-RIR IPv4 address and ASN transfers only when the counterpart RIR has an inter-RIR transfer policy that permits the transfer of those resources between APNIC and its own region.

RIPE Policy - Organizations in the RIPE NCC service region can transfer Internet number resources with organizations in other RIR service regions. These so-called "inter-RIR" transfers are possible between RIRs with compatible policies. Currently, ARIN and APNIC are the only RIRs that can perform inter-RIR transfers with the RIPE NCC:

- IPv4 addresses can be transferred to/from the ARIN service region
- IPv4 addresses and AS Numbers can be transferred to/from the APNIC service region

IANA

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- The RIRs and IANA are discussing how the top-level ASN registry should be updated and cleaned up so that future RIR ASN transfers are referred to the appropriate RIR, and that additional redirects are done as needed.

- The NRO EC is working with IANA/PTI to ensure that a single ASN that has moved from one RIR's administration to another should not have to be reflected at the IANA/PTI.

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Questions?