Autonomous System (AS) Number Assignment Policies and Procedures

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Abstract

This document provides a description of Autonomous System Numbers (ASNs), the assignment procedure of AS Numbers and guidelines on how to obtain AS Numbers in the RIPE NCC service region.

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1.0 AS Number Assignment Policies and Procedures

An Autonomous System (AS) is a group of IP networks run by one or more network operators that has a single and clearly defined routing policy.

Every AS has a unique number associated with it that is used as an identifier for the AS in the exchange of exterior routing information. Exterior routing protocols such as BGP, described in RFC 1771 "A Border Gateway Protocol 4 (BGP-4)", are used to exchange routing information between ASs. More information on RFC 1771 can be found at:

ftp://ftp.ripe.net/rfc/rfc1771.txt

An AS will normally use some interior gateway protocol to exchange routing information on its internal networks.

In order to help decrease global routing complexity, a new AS number should be created only

if a new external routing policy is required. Sharing an AS number among a set of networks that do not fall under the same organisational umbrella is possible but will sometimes require extra co-ordination among the various network administrators. (In some cases, some level of network re-engineering may be needed.) This may be the only way to implement the desired routing policy. For more information please see RFC 1930 "Guidelines for creation, selection, and registration of an Autonomous System (AS)" found at:

ftp://ftp.ripe.net/rfc/rfc1930.txt

Current assignment guidelines require a network to be multihomed for an AS number to be assigned. When a registry applies for an ASN, it needs to submit the routing policy of the Autonomous System that requires an AS number. The policy is defined in the following attributes as part of the **aut-num** object: multiple fields of "import:" (description of accepted routing information from neighbouring ASs.); multiple fields of "export:" (description of generated routing information sent to other AS peers); one or more fields of "default:" (indication of how default routing is done).

1.1. Requesting an AS Number

The RIPE NCC assigns AS numbers for Autonomous Systems that are located in the RIPE NCC service region. As for IP address requests, the RIPE NCC only accepts requests for AS numbers from Local Internet Registries (LIRs) that are members of the RIPE NCC.

To obtain an AS number, the RIPE NCC provides a form containing contact information and three database templates:

- **aut-num** (autonomous system number) template,
- **mntner** (maintainer) template,
- one or more **person** templates.

All of the information requested in the form is required. The RIPE NCC may also ask for additional information in order to understand the planned routing policy and to decide if an AS number is needed. The information provided in the templates will be entered into the RIPE Whois Database and is publicly accessible. For more information on Database templates, please refer to:

http://www.ripe.net/perl/whois -t **aut-num**
-t **mntner**
-t **person** (or **role**)

A completed form should be sent to the RIPE NCC Hostmaster mailbox: <hostmaster@ripe.net>. After evaluating the requests, the RIPE NCC will enter all relevant information in the RIPE Database and will notify the LIR of the assignment.

The form for requesting AS Numbers is available from the RIPE Document Store at:

http://www.ripe.net/ripe/docs/asnrequestform.html

Supporting notes for the AS Number Request Form is available from the RIPE Document Store at:

http://www.ripe.net/ripe/docs/asnsupport.html

1.2. Returning an AS Number

If an organisation has an AS number that is no longer in use, it can be returned to the public pool of AS numbers by sending a message to <hostmaster@ripe.net>. It can then be reassigned to another Autonomous System by the RIPE NCC.