Autonomous System (AS) Number Assignment Policies and Procedures

Mirjam Kühne
Nurani Nimpuno
Sabrina Wilmot

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Description

This document provides a description of Autonomous System Numbers, their assignment procedures and guidelines on how to obtain them in 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 with a single, clearly defined routing policy. When exchanging exterior routing information each AS is identified by a unique number. Exterior routing protocols such as BGP, described in RFC 1771, "A Border Gateway Protocol 4 (BGP-4)", are used to exchange routing information between Autonomous Systems.
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 used 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 guidelines require a network to be multi-homed for an AS Number to be assigned. Requests must show the routing policy of the Autonomous System. The policy is defined in the following attributes as part of the **aut-num** object: multiple fields of "import:" (describing accepted routing information from neighbouring ASs.); multiple fields of "export:" (describing generated routing information sent to peers); one or more (optional) fields of "default:" (indicating how default routing is done).

1.1 Assignments for Internetworking Experiments

Organisations often require deployment tests for new Internet services and technologies. These require numbering resources for the duration of the test.

The policy goal of resource conservation is of reduced importance when resources are issued on a temporary basis.

1.2 Defining the Experiment

An organisation receiving numbering resources must document the experiment. This may be in the form of a current IETF Experimental RFC (see RFC 2026, Sec. 4.2.1) or an "experiment proposal" detailing the resources required and the activities to be carried out.

A single AS Number will be assigned. Where the experiment requires a variation to this rule it should be noted in the resource request forms sent to the RIPE NCC.

1.3 Publication

The experiment proposal must be made public (e.g. published on web site), upon registration of the resources by the RIPE NCC. Following the conclusion of the experiment the results must be published free of charge and free from disclosure constraints.

1.4 Non-commercial Basis

Resources issued for an experiment must not be used for commercial purposes.

1.5 Period of the Temporary Resource Registration

The resources will be issued on a temporary basis for a period of one year. Renewal of the resource's registration is possible on receipt of a new request that details any continuation of the experiment during the extended period.

The resources issued cannot be used for a commercial service following the conclusion of the experiment.

1.6 Registration

The RIPE NCC will register the resources issued in the RIPE Whois Database.

1.7. Requesting an AS Number

The RIPE NCC assigns AS Numbers for Autonomous Systems located in the RIPE NCC service region and only accepts requests for AS Numbers from LIRs. LIRs may request AS Numbers on behalf of other organisations.

The request must be made by a Local Internet Registry (LIR) using the appropriate request form. To obtain an AS Number, the RIPE NCC provides a form containing two database templates:

- **aut-num** (autonomous system number) template,
- **mntner** (maintainer) template.

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?-v+aut-num
http://www.ripe.net/perl/whois?-v+mntner

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 AS Number request form and supporting notes can be found at:

http://www.ripe.net/ripe/docs/internet-registries.html#request

1.8. 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.