Chapter 6
Definitions

autonomoussystem

Name

autonomoussystem - sets the autonomous system (AS) number of this router

Syntax

autonomoussystem *autonomous_system* **[loops** *number* **] ;**

Parameters

autonomous_system - the AS number of this router

loops *number* - is only for protocols supporting AS paths, such as BGP. **loops** controls the number of times this autonomous system may appear in an AS path. *number* is an integer in the range 1 to 10, inclusive. **loops** should not be used in normal operations.

Description

autonomoussystem sets the autonomous system number of this router to be *autonomous_system*. **autonomoussystem** is required if BGP is in use. The AS number is assigned by the Regional Internet Registries (RIRs). When using the BGP confederation option, the AS number is the internal sub-AS number and should be allocated out of the reserved private AS space, 64512-65534. See RFC 3065, "BGP Confederations", and RFC 1930, "Guidelines for Creation, Selection and Registration of an Autonomous System", for details.

Defaults

There is no default for *autonomous_system*.

loops 1;

Context

global definition statement

Examples

```
autonomoussystem 7476 loops 2;
```

See Also

"Chapter 8 Definition Statements" on page 29 of *Configuring GateD*

confed-id on page 89

interfaces AS on page 19

confed-id

Name

confed-id - the BGP confederation ID for this router

Syntax

confed-id *confederation_number*

Parameters

confederation_number - the autonomous system (AS) number that this router will present to peers outside of this BGP confederation

Description

A BGP router can be configured to be a member of a BGP confederation where the autonomous system is subdivided into several confederation ASs. When configured as a confederation member using the **confed** keyword in BGP **group** and **peer** statements, this router will represent itself as the configured **autonomoussystem** number to confederation peers and as the configured **confed-id** to non-confederation peers.

The AS number of the *confederation_number* should be selected out of the reserved private AS space, 64512-65534, as specified in RFC 1930, "Guidelines for Creation, Selection and Registration of an Autonomous System". Non-private ASs, however, can also be selected.

Defaults

none

Context

global definition statement

Examples

```
confed-id 65412;
```

See Also

autonomoussystem on page 87

"Chapter 8 Definition Statements" on page 29 of *Configuring GateD*

martians

Name

martians - allows additions to the list of martian addresses

Syntax

```
martians {
    host [ inet6 ] host [ allow ] ;
    network [ ( mask mask ) | ( masklen number ) ]
        [ exact | refines | ( between lower and upper ) ]
        [ allow ] ;
    [ inet | inet6 ] default [ allow ] ;
} ;
```

Parameters

allow - The **allow** parameter can be specified to explicitly allow a subset of a range that was disallowed.

[inet | inet6] default - default is equivalent to 0.0.0.0/0 if preceded by **inet**, or ::/0 if preceded by **inet6**. If neither **inet** nor **inet6** is specified, it specifies both 0.0.0.0/0 and ::/0.

host - specifies a host number or address that is to be non-routable or routable (if **allow** is set)

mask - a mask specifying a subnet (for example, ffff::)

network **-** the network address of the subnet

number - the number of bits in the **mask** *mask*. For example, /32 is equivalent to 255.255.255.255 for an IPv4 address or ffff:ffff:: for an IPv6 address.

exact - specifies that the prefix address and mask must match exactly.

refines - specifies that the prefix address must match up to masklen and prefix mask must be longer than configured mask

between *lower* **and** *upper* **-** specifies that the prefix address must match up to masklen and prefix masklen must be greater than or equal to *lower* and less than or equal to *upper*.

Description

Martians are networks that are considered illegal to be routed on the Internet. **martians** allows additions to the list of martian addresses. See Chapter 26, “Route Filtering,” on page 129 of *Configuring GateD* for more information on specifying ranges. The **allow** parameter may also be specified to explicitly allow a subset of a range that was disallowed. **martians** can also be used for route filtering.

RFC 1918 specifies these networks as part of the private Internet space:

- 10.0.0.0 - 10.255.255.255 (10/8 prefix)
- 172.16 - 172.31.255.255 (172.16/12 prefix)
- 192.168.0.0 - 192.168.255.255 (192.168/16 prefix)

The prefixes are considered unroutable between autonomous systems. However, these prefixes can be routed within autonomous systems. GateD does not treat these as martian addresses, but the **martian** syntax will allow you to treat private address space as illegal for routing within an autonomous system. RFC 1700 specifies common usage for IP numbers.

The default list of martians is:

127/8 (127.0.0.0 netmask 255.0.0.0) - 127.x.x.x is specified by RFC 1700 to loop back addresses. RFC 1700 (page 4, item g) states "these addresses should never appear outside a host". Address 127.0.0.1 is normally used as a loopback address.

240.0.0.0/4 (240.0.0.0 netmask 240.0.0.0) - 240.x.x.x are the multicast addresses.

::1/128 - IPv6 loopback address

fe80::/10 - IPv6 link local addresses

ff00::/8 - IPv6 multicast addresses

::0000: 127.0.0.0/104 and ::ffff: 127.0.0.0/104 - IPv6 embedded IPv4 loopback addresses

::0000: 240.0.0.0/100 and ::ffff 240.0.0.0/100 - IPv6 embedded IPv4 multicast addresses

Defaults

```
martians {
    127.0.0.0      mask 255.0.0.0 ;
    240.0.0.0      mask 240.0.0.0 ;
    ::1/128 ;
    fe80::/10 ;
    ff00::/8 ;
    ::0000:127.0.0.0/104 ;
    ::ffff::127.0.0.0/104 ;
    ::0000:240.0.0.0/100 ;
    ::ffff:240.0.0.0/100 ;
};
```

Context

global definition statement

Examples

```
martians {
    host 192.168.14.15 allow ;
    3ffd:ffff:ffff:1::/64
} ;
```

See Also

"Chapter 8 Definition Statements" on page 29 of *Configuring GateD*

"Chapter 28 Route Filtering" on page 129 of *Configuring GateD*

routerid

Name

routerid - sets the router identifier for use by the BGP and OSPF protocols

Syntax

routerid *host* **;**

Parameters

host - specifies an interface address to be used as the router's router ID. The address must be present as a local address on an interface.

Description

routerid sets the router identifier for use by the BGP and OSPF protocols.

Defaults

routerid sets the router identifier for use by the BGP and OSPF protocols. **routerid** must be explicitly configured when using BGP. The default is selected by going through the list of interfaces and using the local address of the most preferred interface. The most preferred interface is selected as follows: the address of a non-point-to-point interface is preferred over the local address of a point-to-point interface, and an address on a loopback interface that is not the loopback address (127.0.0.1) is most preferred.

Context

global definition statement

Examples

```
routerid 32.56.34.89;
```

See Also

"Chapter 8 Definition Statements" on page 29 of *Configuring GateD*

interfaces statement on page 30