

Chapter 28 Route Filtering

28.1 Route Filtering Overview

Routes are filtered by specifying configuration language that will match a certain set of routes by destination, or by destination and mask. Among other places, route filters are used in `martians`, and in `import` and `export` statements.

The action taken when no match is found is dependent on the context. For instance, `import` and `export` route filters assume an `all restrict`; at the end of a list. (See “Chapter 31 Route Importation” on page 137 and “Chapter 32 Route Exportation” on page 145 for more information about `import` and `export`.)

A route will match the most specific filter that applies. Specifying more than one filter with the same destination, mask and modifiers will generate an error.

28.2 Route Filtering Syntax

Examples of all the possible formats for a route filter follow.

```
network [ ( mask mask ) | ( masklen number ) ]
        [ exact | refines | ( between lower and upper ) ]
[ inet6 | inet ] all [ exact | refines | ( between lower and upper ) ]
[ inet6 | inet ] default
host [ inet6 | inet ] host
```

More detailed descriptions of these commands can be found on page 571 in the *GateD Command Reference Guide*.

Not all of these formats are available in all places. For instance, the `host` and `default` formats are not valid for `martians`.

Certain filter contexts (such as within the BGP `import` and `export` statements) allow filters for both IPv4 (`inet`) and IPv6 (`inet6`) addresses to be defined. The keywords `inet` and `inet6` are used with the `all`, `default`, and `host` filter types to specify the address type intended. In a context that allows both address families, not specifying `inet` or `inet6` with `all` or `default` causes a filter for each address family to be defined.

28.3 Route Filtering Defaults

The default action for filter matching when no filters are present is context sensitive.

If a network filter is specified without a modifier (`exact`, `refines`, or `between`), the effective default is `exact` and `restrict`. All matching addresses with mask length greater than or equal to the configured mask are matched.

28.4 Route Filtering Examples

Example 1

The following example shows how to set up a route filter for BGP-import that allows all networks with a masklen less than 19 to pass.

```
import proto bgp autonomoussystem 12345 {  
    0.0.0.0 between 0 and 18;  
};
```

Example 2

If MPBGP is configured, the following imports all IPv4 and IPv6 routes from **as** 42:

```
import proto bgp as 42 {  
    all ;  
};
```