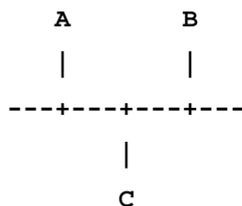


## Chapter 17

# Redirect Processing

### 17.1 Redirect Overview

ICMP redirects are messages sent by a router to an originator of data, indicating that a different hop should be used to reach the destination. A router sends a redirect when a routing table lookup for a received datagram results in transmission of the datagram out the same interface on which it was received. An example is:



Node A is a host, while nodes B and C are routers. A sends a packet to some network N and uses C as a next hop. After looking up the next hop for N, if C discovers that its next hop for N is router B, C can send a redirect to A, indicating that it should use B as a next hop directly instead of C.

### 17.2 Why GateD Monitors Redirects

Redirects have traditionally been intended for hosts. It is expected that routers have more accurate information about the network than hosts, which are not participating in a routing protocol. Since GateD operates as a router, ICMP redirects are accepted only under certain circumstances.

Many operating systems do not allow the administrator to ignore redirects. To ignore the effects of redirects, GateD must process each one and actively monitor and change the state of the routing table.

GateD monitors ICMP redirects through a raw ICMP socket, and, where supported, a kernel routing socket. On systems without a routing socket, it may not be possible to discern the action taken by the kernel upon receipt of a redirect.

### 17.3 Redirect Processing

Redirects are ignored if:

- The source is not on the same network as the receiving interface.
- The source is not a router currently in use, e.g., by a route installed in the FIB.
- The source is one of our own interfaces.
- The destination being redirected matches an interface route.

- `noredirects` is configured on the receiving interface (see `redirect interface policy`).
- The source does not match `trustedgateways` policy (see `redirect gateway policy`).
- The source is not directly reachable (by an interface).

According to the IETF Router Requirements document, all ICMP redirects are processed as host redirects. If a net redirect is received, GateD attempts to update the FIB by changing the route to a host route.

If a redirect is received on the routing socket, the kernel can indicate that the redirect was installed. This allows GateD to install a “mirror” route in its own RIB. These routes are deleted after three minutes if the state is not refreshed. This allows the transient presence of a redirect route. It is expected that the IGP will provide a better route, which will override the redirect within that time period.

## 17.4 Configuration

Policy for receipt of redirects may be based on both the receiving interface (the `interface` option) and source gateway (the `trustedgateways` option). The preference of installed routes is given with the `preference` option.

## 17.5 Redirect Syntax

```
redirect on | off
[ {
    preference preference ;
    interface interface_list [ noredirects ] [ redirects ] ;
    trustedgateways gateway_list ;
    traceoptions trace_options ;
} ] ;
```

More detailed descriptions of these commands can be found on page 313 of the *Command Reference Guide*. See “Chapter 31 Route Importation” on page 137 for information about importing and redirects.

## 17.6 Configuration Defaults

The default configuration values are:

```
redirect on {
    preference 30;
    interface all redirects;
};
```

## 17.7 Redirect Sample Configurations

### Example 1

This configuration disables processing of redirects on all interfaces and traces reception to the file `/tmp/redirlog`.

```
redirect on {  
    traceoptions "/tmp/redirlog" all;  
    interface all noredirects;  
};
```

## Example 2

This configuration enables processing of redirects on interface 'le0', only if they were originated by the router with interface address 192.168.10.2. Any routes created by redirect processing are given a GateD preference of 200.

```
redirect on {  
    preference 200;  
    interface le0 redirects;  
    trustedgateways 192.168.10.2;  
};
```

