Chapter 9
Interacting with GateD

9.1 Overview

Certain actions performed by the system administrator while GateD is running can affect its operation. The kernel notifies applications of some state changes via the routing socket or **`ioctl()`** interfaces, depending on the operating system. The actions that can affect GateD include:

- Interface configuration (for example, **`ifconfig`**)
- Bringing interfaces up or down
- Adding or deleting interface aliases
- Routing table configuration (for example, **`route`**)
- Adding or deleting routes
- Kernel parameter configuration (for example, **`ndd`** or **`sysctl`**)
- Changing kernel parameter values (for example, IP-forwarding)

This document illustrates the way in which GateD will function in the presence of these types of changes. If configured to do so, GateD will write notifications to the global log file as it becomes aware of these types of changes.

The interface to the kernel (for example, **`ioctl()`** or a routing socket) affects the time delay between the time an event occurs and when GateD learns of it. The various kernel interfaces are discussed in “Forwarding Tables and Routing Tables” on page 96 in *Configuring GateD*.

9.2 Interface Configuration Changes

When an interface is changed to the 'down' state while GateD is running, all addresses on that interface are considered unusable. The GateD preference for the interface route is changed to the 'down' preference, which can be specified in the configuration file; see “Chapter 7 Interface Statement” on page 23 in *Configuring GateD* for more information. The default 'down' preference is 120.

When an interface is changed to the 'up' state while GateD is running, all addresses on that interface are considered usable. The interface route is changed to the 'direct' preference, which is very favorable (10) by default. This may also be changed in the **`interface`** statement in the configuration file.

When new aliases are added to an interface, a new logical address structure is allocated for the address and the protocols are notified. The address may be marked as a 'primary' address; see “Chapter 7 Interface Statement” on page 23 in *Configuring GateD* for more information on aliases.

The protocols are notified of these changes almost immediately after GateD learns this information from the kernel. Each configured protocol is notified separately of any changed interface state, including the netmask, aliases, and metric.

Unfortunately, most operating systems do not provide a way for GateD to learn of 'disconnected' interfaces, for example, when a cable is removed from a network adaptor.

9.3 Routing Table Changes

The system administrator should not change the state of the routing table while GateD is running. Some operating systems do not notify GateD of these types of changes, and the table may be left in an undesired state.

To add permanent routes to the table, use the **`static`** configuration option. (See “Chapter 19 Static Routes” on page 101 in *Configuring GateD* for more information.)

At startup, GateD reads the routing table and schedules non-interface routes for deletion as kernel remnants. The time delay for this action can be configured using the **`remnantholdtime`** option. (See “Chapter 18 Kernel Interface” on page 95 in *Configuring GateD*, for more information.)

9.4 Kernel Parameter Changes

At startup, GateD reads the values of some kernel configuration options. It should be noted that when these values have been changed, GateD is not notified by the kernel. It will be necessary to restart the daemon to learn of the new option values.

Also at startup, GateD attempts to find the maximum send and receive buffer sizes for each of its sockets via trial and error. The maximum sizes for some of these sockets can be set via a kernel configuration option. GateD is not notified by the kernel when these sizes have changed; changing them while the daemon is running may lead to undesirable results.