Chapter 11
Routing CHAOSnet

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This chapter describes Cisco Systems' implementation of the CHAOSnet routing protocol.

Cisco's Implementation of CHAOSnet

CHAOSnet is a local-area network protocol developed at the Massachusetts Institute of Technology in the mid-1970s. Several Artificial Intelligence workstation manufacturers use the CHAOSnet protocol in their networking software products. The Cisco Systems router supports full CHAOSnet routing and a small subset of CHAOSnet host functions, including the status, uptime, and dump-routing-table services. The router can route CHAOSnet packets over Ethernets and synchronous serial lines.

CHAOSnet Addresses

CHAOSnet addresses are 16-bit quantities written as octal numbers. The higher-order eight bits of the address are the CHAOSnet network number, and the lower-order eight bits are the host number. Following is an example of a CHAOSnet address:

```
315.124
```

The Cisco Systems CHAOSnet implementation assumes that the CHAOSnet network corresponds one-to-one with a subnetted Internet network. For example, CHAOSnet subnet 1 must correspond to Internet subnet 1, and CHAOSnet host 360 (octal) must correspond to Internet host 240 (decimal). Because a CHAOSnet internetwork built with Cisco Systems routers uses network addresses from a single underlying Internet network, the router does not route CHAOSnet packets from one Internet network to another.

To form a CHAOSnet address, the router combines the lower eight or fewer bits of the Internet subnet field with the lower eight or fewer bits of the Internet host field. This approach does not assume any particular class of Internet address or subnetting scheme. However, Cisco Systems recommends that at least eight bits of subnet identifier and eight bits of host identifier be used.

Configuring CHAOSnet Routing

To start the CHAOSnet router process, use the **router chaos** global configuration command. The command syntax follows:

router chaos
no router chaos

The **router** process routes CHAOSnet packets and sends CHAOSnet routing updates. The **no router chaos** command disables CHAOSnet routing. See the "The IP Routing Protocols" chapter for more information about the **router** command.

Example:

The following commands start CHAOSnet routing on network 128.88.0.0:

```
router chaos
network 128.88.0.0
```

CHAOSnet routing does not replace Internet routing; an Internet routing protocol, such as RIP, must run concurrently with CHAOSnet routing on the router. To ensure routing table consistency, the Internet routing protocol must have a greater administrative distance than the CHAOSnet routing protocol. In addition, you must configure the CHAOSnet routing process to re-advertise subnet routes derived from the Internet routing protocol.

Continuing the previous example, suppose RIP is the routing protocol running concurrently with CHAOSnet. The following router subcommand advertises RIP-derived routes to the CHAOSnet hosts on the network:

```
redistribute rip
```

See the section "Redistributing Routing Information" in the "The IP Routing Protocols" chapter for more information on protocol-independent routing issues such as administrative distance and redistribution.

Monitoring CHAOSnet

Use the EXEC commands described in this section to monitor activity on the CHAOSnet.

show chaos-arp

The command **show chaos-arp** displays CHAOSnet-specific ARP entries as 16-bit octal addresses.

show ip route

The command **show ip route** displays routing entries obtained from the CHAOSnet routing protocol. In the command output, CHAOSnet entries are marked by X in the first column.

show ip traffic

The command **show ip traffic** displays statistics on CHAOSnet protocol operation.

Debugging CHAOSnet

Use these EXEC commands described in this section to display reports of problems and activity on the CHAOSnet.

debug chaos-routing

The command **debug chaos-routing** enables logging of CHAOSnet routing activity, including service requests.

debug chaos-packet

The command **debug chaos-packet** enables logging of CHAOSnet packet transactions.