

5. Adding a secondary server – Will it be available after a primary server failure?

Another common design practice in today's high availability networks is redundant servers – DNS servers, IP Multicast Rendezvous Points (RPs), redundant backup and disaster recovery centers, etc. to name a few. Route Explorer can be a great help in verifying the reachability of such redundant servers and tuning the network for load sharing between the redundant servers. Here is an example.

Figure 24 shows a network with two “anycast” DNS servers – servers with the same IP address.

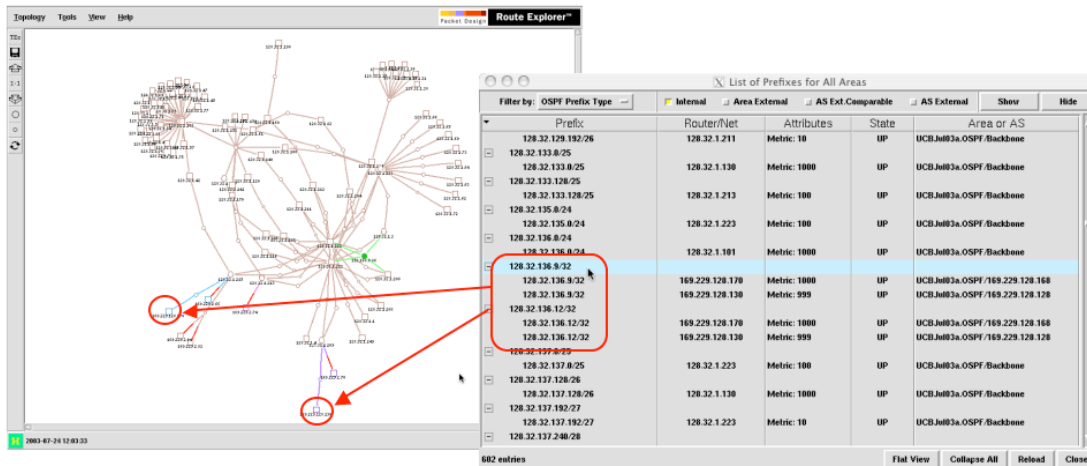


Figure 24

Please note that the two servers are at prefixes 128.32.136.9/32 and 128.32.136.12/32 and both of the routers 169.229.128.170 and 169.229.128.130 are advertising both. However, router 169.229.128.130 is advertising both prefixes at a slightly lower cost (999 vs 1000). Route Explorer can show the preferred DNS server from all parts of your network using the Tools -> Highlight Exit Router command. Figure 25 shows the result for the server 128.32.136.9. All “red” marked routers are using the DNS server off the router 169.229.128.130. All “green” routers use 169.229.128.170.

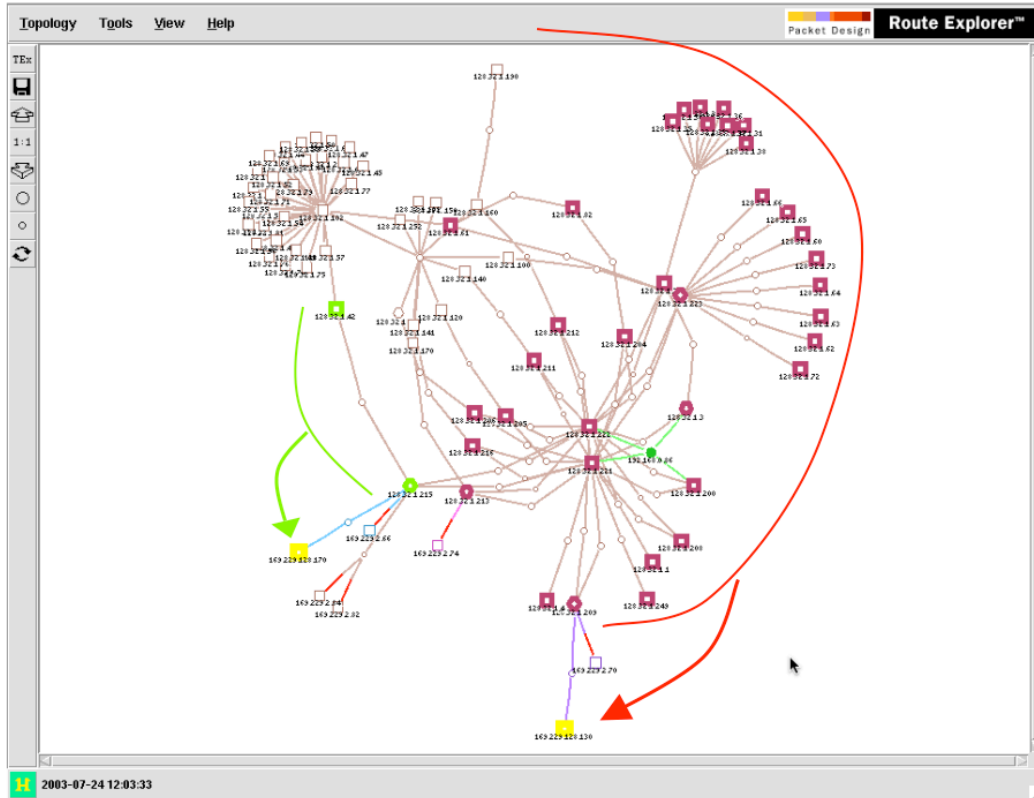


Figure 25

Route Explorer's "what-if" capability can now show you the effect of an outage on this accessibility map. Figure 26 shows the result of simulating a key router outage in the path to one of the DNS servers via router 169.229.128.130. Note that nearly all routers in the network are now using the "green" server. The same "what-if" analysis can be done with different link metrics to see how they affect the network-wide reachability.

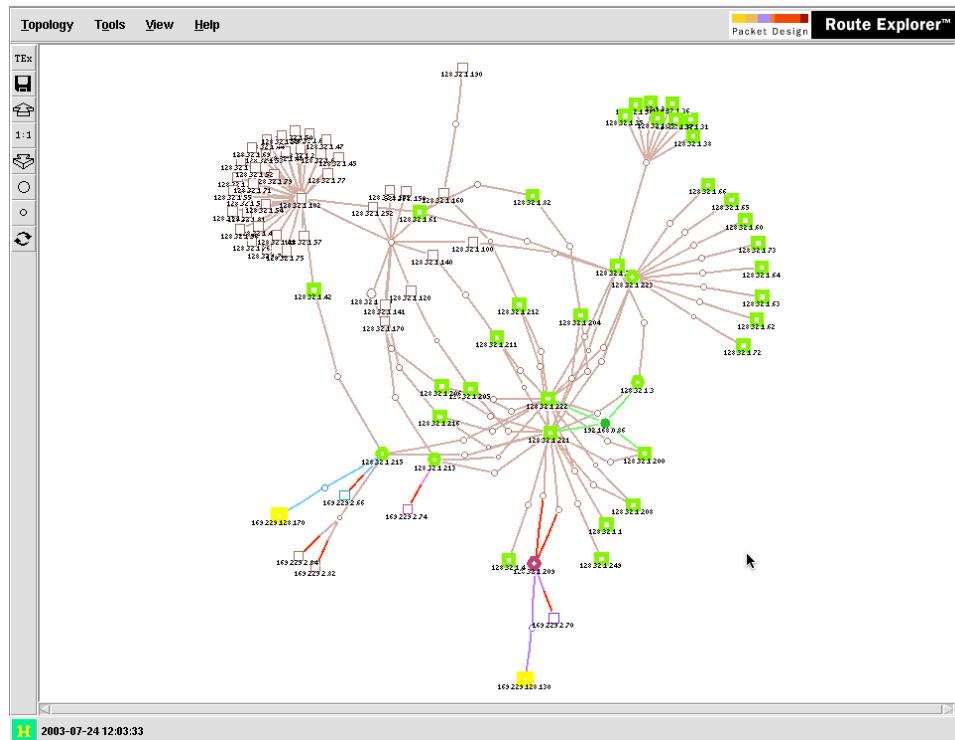


Figure 26

This is another example of Route Explorer's unique network planning capabilities to help optimize the routing performance of the IP network.

HOW TO:

1. Open an X Windows or VNC session to the Route Explorer. See Route Explorer User Guide Chapter xx.
2. Click on File->Open Topology
3. Select the topology domain "UCBJul03a" from menu and click Open.
4. Show "Exit" Routers to "anycast" servers:
 - a. Select Tools->Highlight By Exit Rtr...
 - b. Enter the IP address (as a /32 prefix) and click "OK"
5. Down a router:
 - a. Right-click on a router
 - b. Click "Down" in node pop-up
6. Show all link/router simulated changes: Select Tools->List Router/Link Edits
7. Restore edits:
 - a. Click on "Restore All" in list of edits
 - b. Up the individual nodes via pop-up menu (right-click on item)