

## 10. Highlight the IP route between two points in your network for scenario planning

Seeing the IP paths taken by traffic from a source router to a destination router in your multi-domain network is very useful for network planning. There may be paths of high importance in your network such as a VoIP service path between an IP PBX and a PSTN media gateway that would not tolerate significantly increased delay resulting from a possible rerouting due to link or router failures.

Route Explorer can quickly show you the path resolved between two points in your network currently or at any point in recorded topology history. The path will be highlighted in yellow. Each segment of the route may be listed, along with the link metric and the prefix by which each next hop was resolved. See Figure 19.

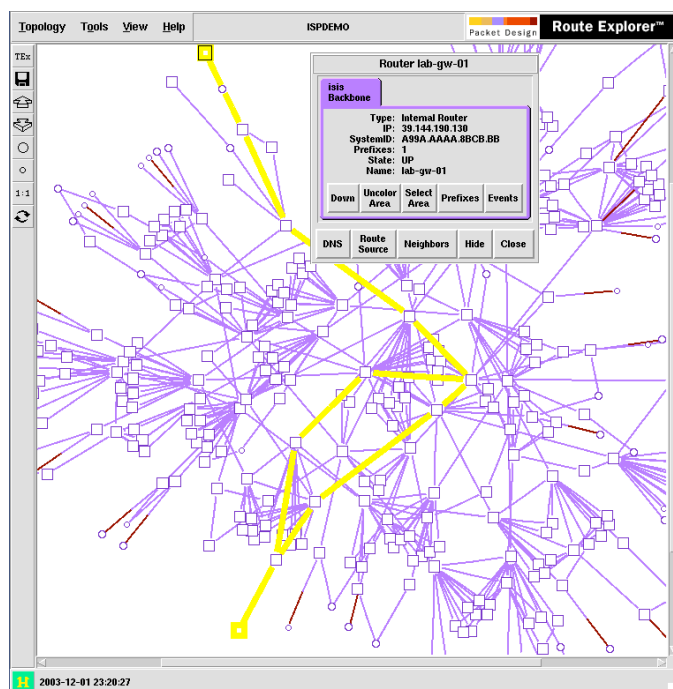


Figure 19

Having thus highlighted a route, you may then wish to see the effects of link failures or metric changes to this route. Route Explorer can easily recalculate new routes and display them. To simulate a link failure simply right click on a link and click on “Down”. Figure 20 shows the effect of two simulated link outages on the path above. Note that the down links are shown in red. A list of simulated changes (“edits”) to links can be displayed.

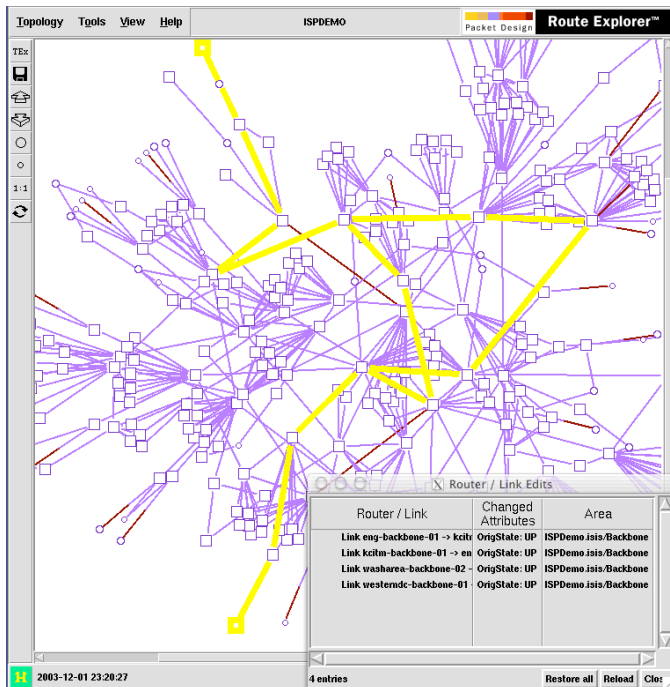


Figure 20

Link metric changes can also be simulated to see the effects of traffic engineering changes to particular paths. Figure 21 shows the effect of a link metric change on our path.

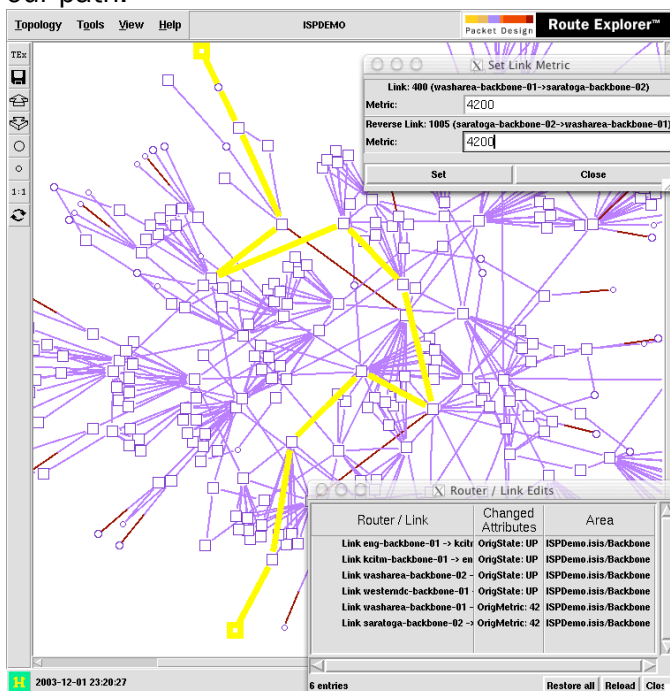


Figure 21

What would happen if one or two core routers went down in a cascade failure? Route Explorer can show you how the path would be rerouted in that case. See Figure 22.

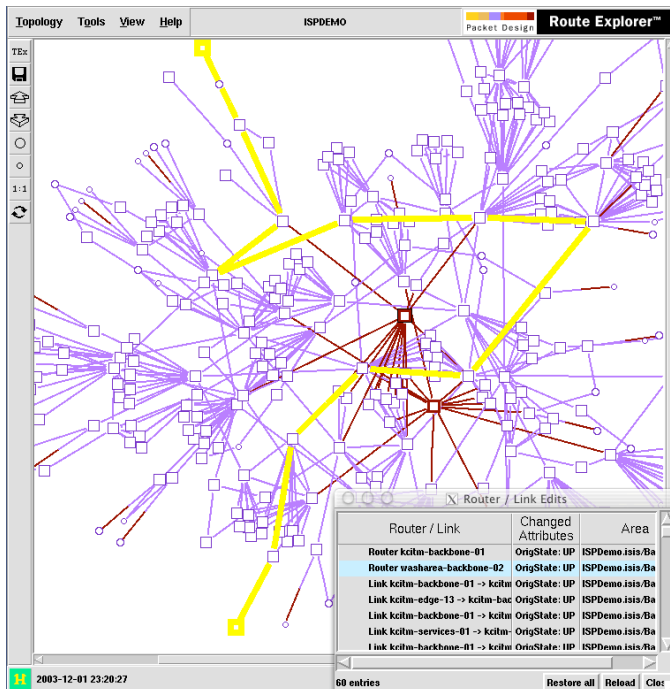


Figure 22

**HOW TO:**

1. Open the "DemoTier1ISPJun02" topology
2. Highlight a route:
  - a. Right-click on source router
  - b. Click "Route Source" in node pop-up menu
  - c. Right-click on destination router
  - d. Click "Route Destination" in pop-up
3. Down a link:
  - a. Right-click on link
  - b. Click "Down" in link pop-up menu
4. Change metric:
  - a. Right-click on link
  - b. Click "Set Metric" in link pop-up menu
  - c. Enter metrics in resulting dialog and click on "set"
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 links or nodes via pop-up menu (right-click on item)