

2. Where and when did the routing change?

If the routing between a user and the server is broken, route explorer can tell you exactly when and where the break occurred. In Route Explorer's topology map, highlight the prefix route as shown in the previous example. You may see no route, an incomplete route or a routing loop. In a previous example we showed how the list of highlighted paths could localize the break. To find out when and how the route was broken, run the Route Explorer's history monitor backwards to time when the route was last complete and prefix reachable.

Figure 7 shows the history monitor. The cursor marks the time of display in the topology map. Note the VCR-like controls at the bottom left.

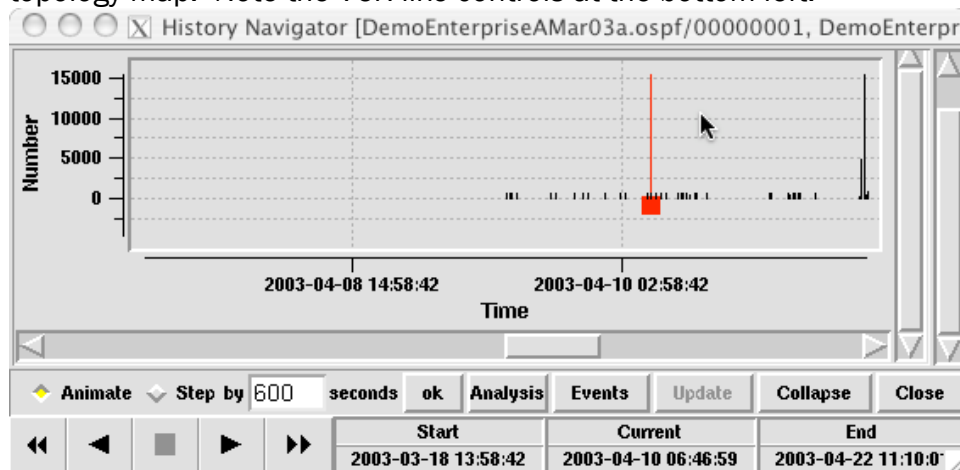


Figure 7

To replay the event history of the network, including any highlighted paths, select the "Animate" mode and click on the rewind button (left pointing single arrow). The network map will be updated at each step including the highlighted paths. When you see the path whole again, click the stop button (center). The map will show the complete route at that time. The "current" time will be shown in the lower left of the history monitor.

If you continue to playback the animated replay of the network, you may see more information pertaining to the problem, such as a flapping link in the highlighted path (or the prefix itself flapping). At any point in this playback diagnosis, you may stop and look at the complete picture of the network at that time, including the list of links, routers and prefixes. Route Explorer can also show a summary of events just prior to the outage.

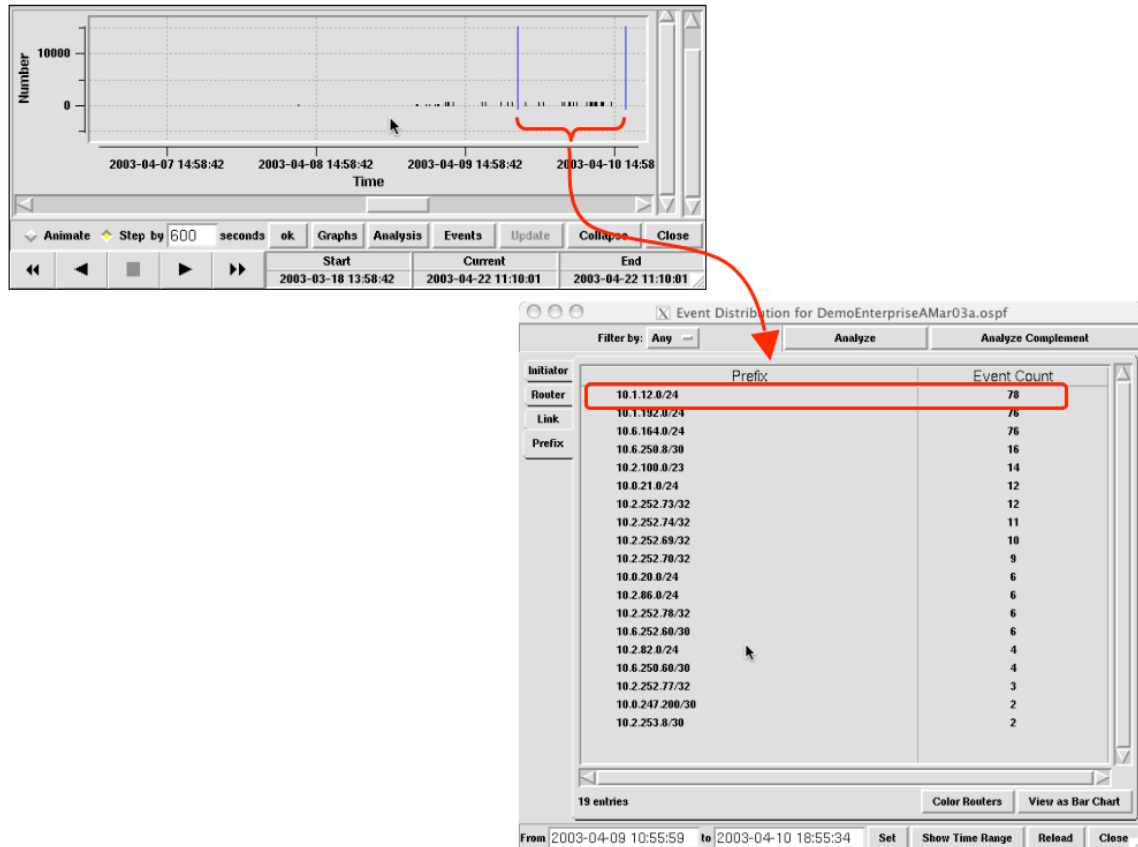


Figure 8

Figure 8 shows the event summary from history navigator's event analysis menu. Note that our prefix has actually seen a significant number of events before the outage. This may be a flapping route caused by failing hardware in the server network.

Having thus localized the outage from Route Explorer's history playback, in the next section we show how to drill-down and see the exact routing events that took place before the outage.

HOW TO:

1. Open an X Windows or VNC session to the Route Explorer.
2. Open the topology of interest (see above)
3. Highlight the prefix path of interest (see above)
4. Open History Navigator:
 - Click on Tools->History Navigator
 - Select the protocol of interest by clicking its tab at the top. See Figure 9.
5. Animate history:
 - Click on the Animate radio button in the lower-left. (see Figure 9)

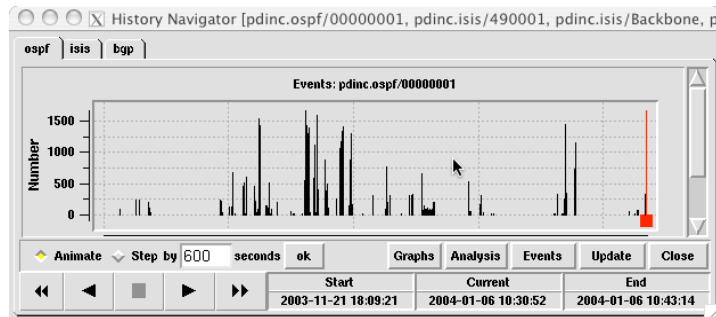


Figure 9

- Select the step size (default is 10 minutes)
 - Click the Left Arrow to start playback (Figure 9)
 - To see the changes to path during history playback, make sure the topology map is also visible
 - To stop playback, click on the stop button
6. Events Analysis:
- In the History navigator window click Analysis->Event Analysis
 - Select the time period start and end in the timeline.
 - Event summary window will be displayed.