

4. Adding a new router or replacing an existing router – how to make sure there will be no disruption to reachability after cutover?

A common problem when adding new routers or replacing an existing router in a running network is how to see the interaction of the new router(s) with existing network, before they are placed in service. Route Explorer can help.

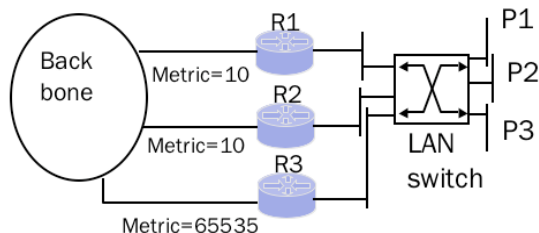


Figure 20

Figure 20 illustrates an OSPF network where two routers (R1, R2) are serving three networks (P1, P2, P3). Let us say R2 needs to be replaced by a new router R3. R3 is connected and brought online, but with very high link cost metric, to keep traffic from flowing through it. Route Explorer will discover and display all three routers in its topology map. Route Explorer's List of Prefixes will confirm that all three prefixes are reachable through all three of the routers. Highlighting prefix routes to P1, P2, and P3 will confirm that the routes flow over R1, and R2 due to their lower cost (10 vs. 65,535).

Next, in Route Explorer's "what-if" mode, the network engineer may simulate the commissioning of R3 and decommissioning of R2 by setting the link metric of R3 to be 10 and marking R2 "down" in Route Explorer's database. Route Explorer will redraw the new highlighted prefix paths over R3. Route Explorer's prefix list will verify availability of P1-P3 via R1 and R3 but not R2. At this point the router R2 may be decommissioned and R3 brought into service by setting its metric to be 10.

Here is an example. Figure 21 shows a multi-area enterprise network monitored by Route Explorer. One of the core routers, IP address 10.0.251.5, is scheduled to be replaced. To monitor a prefix advertised by that router, 172.22.1.0/24, we have highlighted a path to that prefix from an edge router.

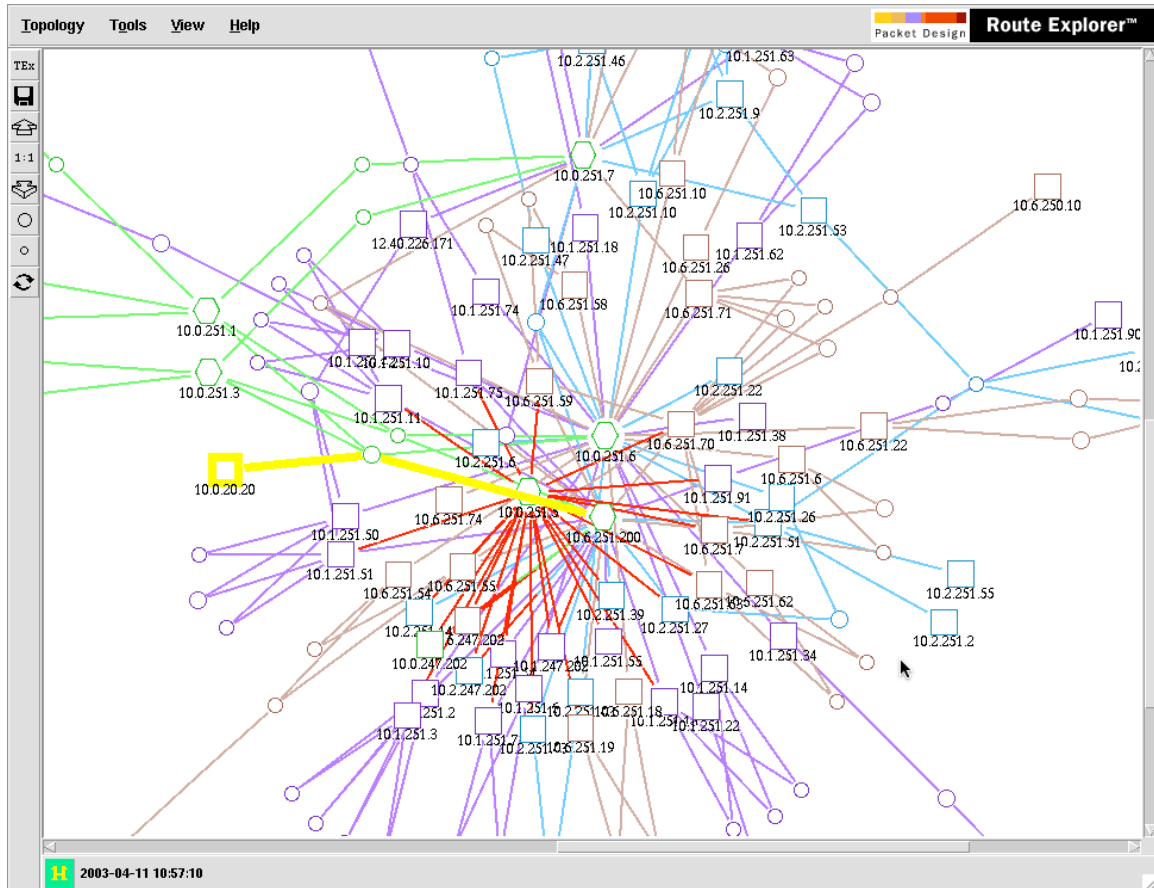


Figure 22

Prefixes for Router 10.0.251.5

Filter by: OSPF Prefix Type

Internal Area External AS Ext. Comparable AS External

Show Hide

Prefix	Router/Net	Attributes	State	Area
172.22.1.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/Backbone
172.22.1.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/Backbone
172.22.1.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area6
172.22.1.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area6
172.22.1.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area3
172.22.1.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area3
172.22.1.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area2
172.22.1.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area2
172.22.1.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area1
172.22.1.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area1
172.22.2.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/Backbone
172.22.2.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/Backbone
172.22.2.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area6
172.22.2.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area6
172.22.2.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area3
172.22.2.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area3
172.22.2.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area2
172.22.2.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area2
172.22.2.0/24	10.0.251.5	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area1
172.22.2.0/24	10.6.251.200	Metric: 20 (AS External)	UP	DemoEnterpriseAMar03a.OSPF/area1

8 entries

Flat View Collapse All Reload Close

Figure 23

This example has shown how Route Explorer can help in the validation of new network components installed during maintenance to ensure smooth operation and minimum down time.

HOW TO:

1. Open an X Windows or VNC session to the Route Explorer. See Route Explorer User Guide.
2. Click on File->Open Topology
3. Select the topology domain "DemoEnterpriseAMar03a" from menu.
4. Click Open.
5. List Prefixes for a router:
 - a. Right-Click on the router of interest
 - b. Click on Prefixes in the resulting popup window
6. Highlight a route by prefix
 - a. Click Tools->Find Prefix Path...
 - b. Enter source router IP address
 - c. Enter destination prefix