

4. Monitoring service availability by monitoring prefixes

Many important routing based services in your network appear as multiple origin prefixes. These include:

- Multi-link routing adjacencies. These are typically multiple low speed (T1 or ISDN) links connected in parallel between two routers to increase bandwidth by reusing existing interface cards or to provide for graceful degradation in connectivity. Typically they appear as multiple /30 prefixes between the same routers.
- Networks that are connected to multiple redundant routers typically appear as /24 prefixes advertised from two routers.
- Redundant DNS servers are often assigned the same /32 prefix and advertised at different places in the network. Any particular DNS request will find the nearest /32 by IGP distance, providing for the fastest performance with built-in backup if the nearest DNS server should be down.
- IP Multicast Rendezvous Points (RP) are often used in “anycast” mode, very much like the redundant DNS servers described above.
- Load balancers are often assigned /32 prefix and multiply advertised.

Route Explorer’s IGP report “Prefix Origination from Multiple Sources” can help you easily monitor these services. Running this report once a day may give you all the warning you need when redundancy is compromised. The following examples illustrate this facility.

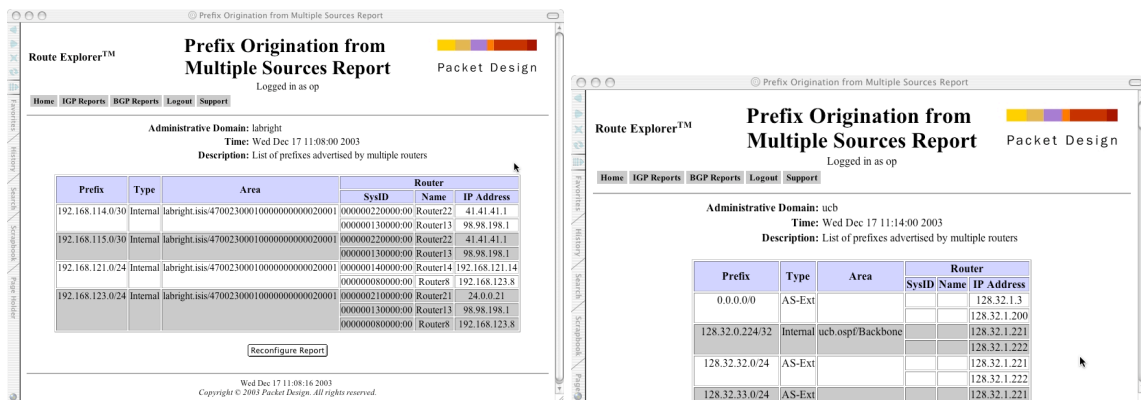


Figure 9

The first two row entries in Figure 9 at left show a multi-link adjacency. The prefixes are both of length /30 – typically assigned to point-to-point links or LANs. In this case both /30 prefixes are between the same two routers. The second two /24s may be HSRP connected. The second row entry in Figure 9 at right shows a /32 prefix that may be an Anycast RP or a DNS server.

Route Explorer’s IGP reports are web based and can be run from remote sites to monitor redundant prefixes or else can be used to communicate status and availability of the prefix based services to customers or internal users.

HOW TO:

1. To see the Prefix Origination From Multiple Source report, go to the Route Explorer's reports web page. See the appendix to this chapter or the Route Explorer User's Guide.
2. Select the Prefix Origination From Multiple Source report from the drop down menu and click "Configure Report"
3. Configure the report by selecting the administrative domain of your online and recording network topology
4. The current time should be displayed, if not enter the current time and press Create Report
5. If your IGP is OSPF, the report will show all IGP prefixes of the type Internal, AS External, and AS External Type 2.
6. If you have "anycast" servers, look for /32 prefixes corresponding to them and verify that they are advertised as expected.
7. If you have HSRP in your network, Look for /24 (or similar) prefixes that are dual advertised.
8. Multi-link adjacencies will be seen as multiple /30 prefixes shared by two routers