

2. See which routers are advertising default routes in your multi-domain network

Advertisement of default routes in your network can be very useful. But misconfigured defaults can cause unreachable destinations or dropped packets.

By advertising default routes from one or more BGP border routers you can avoid configuring default gateways throughout the network. Additionally, multiple advertisements of default from different gateways can be beneficial for redundancy and as a means of load balancing and traffic engineering between ASes. But misconfigured default routes can disrupt reachability and change the traffic balance at peering points. In even a modest size network, verifying which routers are advertising default route in the IGP and BGP can be difficult.

Route Explorer always knows where default routes are advertised throughout your network and can show them instantly. Figure 3 illustrates how Route Explorer can show a complete prefix list for all your network domains from its Tools menu (at left). At right, the example shows that this network has two routers advertising default with different IGP metrics and type. The first router (with lower metric) is preferred. But the secondary is also present and available, should the primary router go down.

Prefix	Router/Net	Attributes	Area	State
0.0.0.0/0	192.16.170.200	Metric: 10 (AS Ext.Comparable)	DemoNShowApr03.espf/Backbone	UP
0.0.0.0/0	192.16.170.201	Metric: 0 (AS External)	DemoNShowApr03.espf/Backbone	UP
0.0.0.0/0	192.16.170.201	Metric: 0 (AS External)	DemoNShowApr03.espf/00000001	UP
0.0.0.0/0	192.16.170.200	Metric: 10 (AS Ext.Comparable)	DemoNShowApr03.espf/00000001	UP
45.0.0.0/9	45.125.0.92	Metric: 65 (Area External)	DemoNShowApr03.espf/00000001	UP
45.0.0.0/9	45.125.0.90	Metric: 65 (Area External)	DemoNShowApr03.espf/00000001	UP
45.0.0.0/16				

Figure 3

In the next example (Figure 4), the prefix list shows both IGP and BGP default routes. Again, two IGP core routers are advertising default for redundancy, but with equal cost. Also for redundancy, two border routers are advertising BGP default, again with equal cost in terms of Local-Pref and MED attributes. To locate each router advertising default in the topology map, simply click on the prefix entry in the list and the corresponding source router(s) will be highlighted in flashing yellow (see Figure 4 at right).

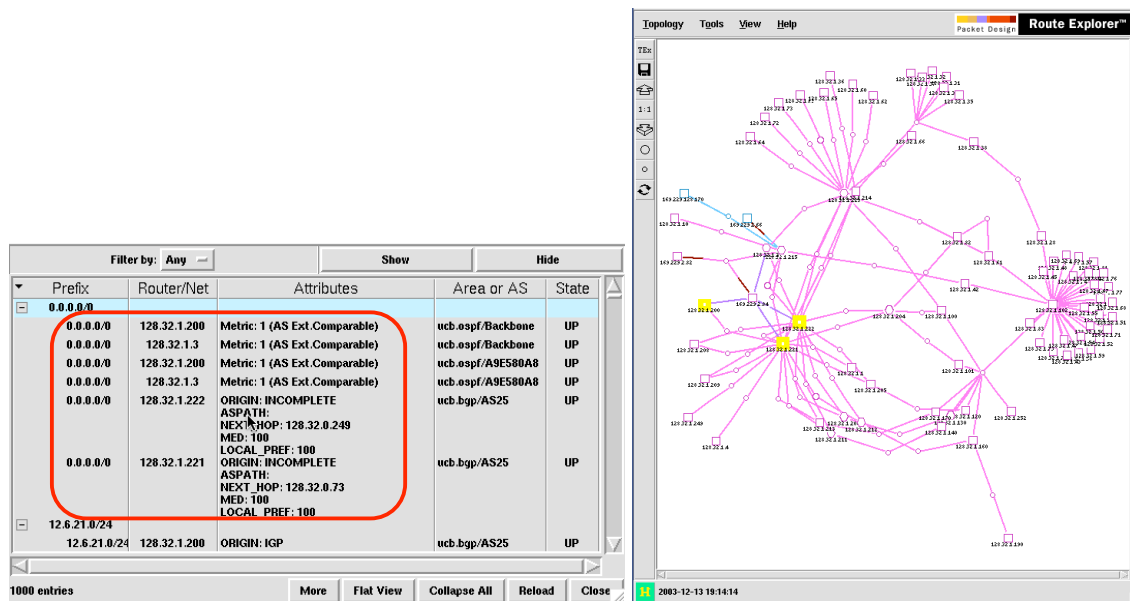


Figure 4

HOW TO:

1. Open the Route Explorer UI
2. Open an online and recording network topology
3. Click on Tools->List Prefixes. The prefix list will appear. The list should be sorted in ascending order by prefix. If not, simply click on the "Prefix" heading of the first column
4. The default prefix (0.0.0.0/0) should appear at the top. If none, your network does not advertise default.
5. To highlight the routers advertising the defaults in the topology map, simply click on the row in the list.
6. To show all routers advertising defaults everywhere in your network, click on the top most row of the default prefixes.
7. If you have a multi-protocol network, defaults in all monitored protocols should appear.
8. To see only defaults in a particular protocol e.g. BGP, click on the "Filter By" drop down at the top of the window.
9. Select the protocol item.
10. Click on the protocol desired. And click "Show"
11. To show all prefixes again, use the "Filter By" menu and select "Any". Click "Show".