

4. Get a complete up-to-the-minute inventory of your routed network

A large enterprise or service provider network may have hundreds of routers with thousands of prefixes advertised. Summarization across area boundaries helps reduce the amount of information carried across the network but also makes it difficult to quickly get to the cause of a service outage. Design diagrams of networks are static and get out-of-date very quickly. Configuration based inventory tools place a traffic burden on the network and still don't have up-to-the-minute information on the state of such vital indicators as prefixes and link metrics. A network-wide inventory of routers, prefixes and routing adjacencies, automatically discovered and maintained in real-time can be invaluable in maintaining a large network.

From its Tools menu, Route Explorer can show you complete, up-to-date list of prefixes advertised, routing adjacencies, and routers in each IGP area and AS of your network. These lists can be sorted and filtered by prefix, prefix type, etc. (Figure 8). Each entry of any list can be traced back to its associated router(s) in the topology map with a single click.

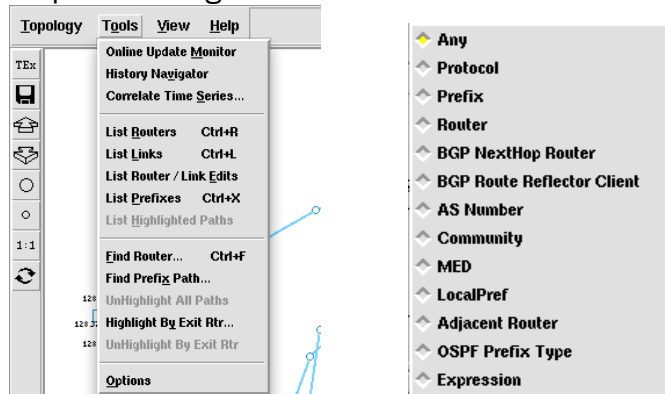


Figure 8

Using Route Explorer's prefix list, you can easily do the following tasks:

- See which routers in your network are advertising default routes
- See if a prefix is currently advertised or not and by which routers
- See what metric is advertised with each prefix
- Verify that area border routers are properly readvertising prefixes
- Show BGP prefixes advertised and the list of attributes associated with each

Figure 9 is an example of the IGP prefixes advertised in a multi-area OSPF network of prefix types Internal and AS-External.

Prefix	Router/Net	Attributes	Area or AS	State
0.0.0.0/0	128.32.1.200	Metric: 1 (AS Ext.Comparable)	ucb.ospf/A9E580A8	UP
0.0.0.0/0	128.32.1.3	Metric: 1 (AS Ext.Comparable)	ucb.ospf/A9E580A8	UP
0.0.0.0/0	128.32.1.200	Metric: 1 (AS Ext.Comparable)	ucb.ospf/Backbone	UP
0.0.0.0/0	128.32.1.3	Metric: 1 (AS Ext.Comparable)	ucb.ospf/Backbone	UP
66.28.22.85/32	128.32.1.4	Metric: 1	ucb.ospf/Backbone	UP
66.28.22.231/32	128.32.1.4	Metric: 1	ucb.ospf/Backbone	UP
66.28.250.120/29	128.32.1.4	Metric: 1	ucb.ospf/Backbone	UP
66.28.250.4.72/30	128.32.1.4	Metric: 1	ucb.ospf/Backbone	UP
128.32.0.0/27	128.32.1.4	Metric: 1	ucb.ospf/Backbone	UP

1095 entries

Figure 9

Using Router Explorer's router list (see Figure 10), you can do the following:

- Verify if a particular router is currently up and running
- Verify that a router appears in the IGP area or AS it is supposed to
- Verify that a router is configured as you expect:
 - has the correct IP address associated with it
 - has the correct name (IS-IS)
- Show the hardware type and IOS revision of each router (EIGRP only)
- See how many total routers there are currently in your network

Router	IP Address	Name	Type	State	Area or AS
128.32.1.1	128.32.1.1	--	ASBR	UP	ucb.ospf/Backbone
128.32.1.3	128.32.1.3	--	IBGP Peer	UP	ucb.bgp25/AS25
128.32.1.3	128.32.1.3	--	AreaBR,ASBR	UP	ucb.ospf/Backbone
128.32.1.4	128.32.1.4	--	ASBR	UP	ucb.ospf/Backbone
128.32.1.10	128.32.1.10	--	ASBR	UP	ucb.ospf/Backbone

85 entries

Figure 10

With Route Explorer's list of Links (not shown here) you can see the number and current state (up/down) of all routing adjacencies in your network, along with their link metrics and the router interface addresses.

HOW TO:

1. Open "DemoEnterpriseAMar03" topology
2. Click Tools->List Routers to get a router list
3. Tools->List Prefixes to get a prefix list
4. Tools->List Links to get a list of links
5. Filter each list by clicking on the "Filter By" drop down menu and selecting the appropriate options