

## 5. Receive alerts when servicereachability changes – Place important routing prefixes on a watch list

In the last example we showed how Route Explorer lets you monitor or instantly see the current state of important prefix-based services in your multi-domain network. Route Explorer can do more. It can monitor important prefixes continuously in the background and proactively send an alert when changes occur.

Route Explorer supports a number of alerts on prefixes. These include:

- IGP Prefix Origination Change watch list and alert – sent when a prefix is dropped or added
- IGP Prefix Flap watch list and alert – sent when a prefix makes a transition from up to down or down to up, a selectable number of times in a selectable time period.
- IGP Prefix Change watch list and alert – sent when a metric changes on a prefix.

As noted above, each of these prefix alerts supports a watch list for specific prefixes. This allows the network engineer to place only the most important prefixes on Route Explorer's watch list. We illustrate the use of one of these alerts below.

Figure 10 shows Route Explorer configured to look for two up/down cycles (4 transitions) in two minutes on two prefixes and send an alert if detected.

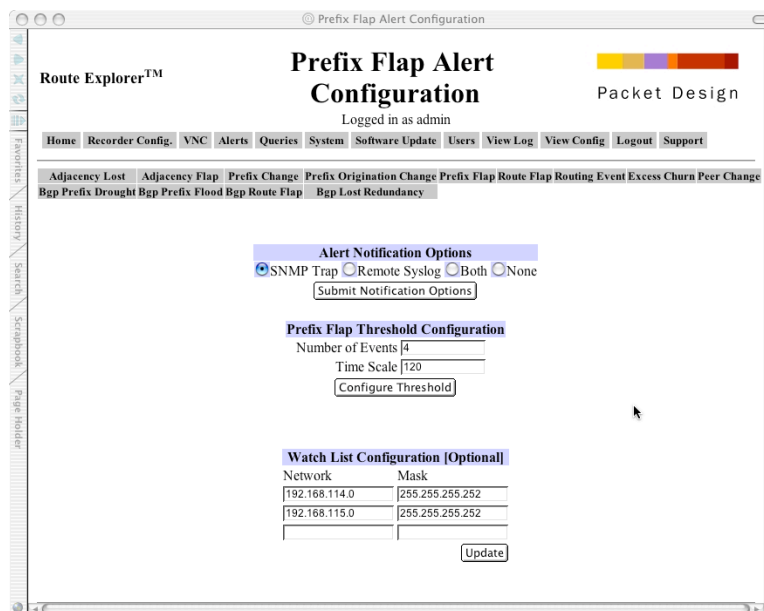


Figure 10

The HP OpenView alarm monitor in Figure 11 shows examples of the traps generated.

Ack	Cor	Severity	Date/Time	Source	Message
		Minor	Wed Dec 17 16:09:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252 (#4)
		Normal	Wed Dec 17 16:09:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Minor	Wed Dec 17 16:09:06	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:09:06	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Minor	Wed Dec 17 16:09:06	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252 (#2)
		Normal	Wed Dec 17 16:09:06	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Normal	Wed Dec 17 16:18:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.115.0/255.255.255.255
		Minor	Wed Dec 17 16:19:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252
		Normal	Wed Dec 17 16:19:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Minor	Wed Dec 17 16:19:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252 (#2)
		Normal	Wed Dec 17 16:19:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252
		Minor	Wed Dec 17 16:19:05	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Flap 192.168.114.0/255.255.255.252 (#3)
		Normal	Wed Dec 17 16:19:06	dhcp-168-0-98.packetdesign.com	Route Explorer Prefix Origination Change 192.168.114.0/255.255.255.252

3540 Alarms - Critical:0 Major:34 Minor:23 Warning:196 Normal:3287

Figure 11

Monitoring prefixes gives the earliest warning of potential performance problems or service outages in an IP network. This is because routing protocols notice changes well before SNMP polled or application monitoring systems, and in many cases before the users do. Route Explorer automates the monitoring of prefixes and presents focused alerts to the network engineer.

#### HOW TO:

1. To enable alerts, go to the Route Explorer's Admin web page. See the appendix to this chapter, and the Route Explorer User's Guide.
2. In Route Explorer's Admin web page, select Alerts page.
3. Select the appropriate alert receiving host (SNMP manager or Syslog server). If SNMP, enter the proper community string.
4. To see the alert, select Prefix Origination Change
  - a. Select the alert notification options (SNMP and/or Syslog)
  - b. If you wish to be alerted on ANY prefix origination change (announce/withdraw) in your network, leave the watch list empty.
  - c. If you wish to watch a particular prefix such as an anycast /32, enter it into the watchlist.
5. To see the alert from Route Explorer, you must also enable it in your SNMP manager. See appendix to this chapter to see and an example of how to enable Route Explorer alerts in HP OpenView.
6. If you selected Syslog only, ensure that the Syslog server you selected is reachable from Route Explorer. To see the alert login to the Syslog server and view the Syslog messages file
7. To see the Prefix Flap alert, select it in the Alerts page of the Route Explorer Admin page
  - a. Select the alert notification options (SNMP and/or Syslog)
  - b. Enter the flap frequency
  - c. If you wish to be alerted on ANY prefix flap in your network, leave the watch list empty
  - d. If you wish to watch a particular prefix for flaps, enter it into the watchlist.

- e. To see the alert from Route Explorer, you must also enable it in your SNMP manager, or view it on your Syslog server