

8. Drill down into the actual routing events in your network for diagnosis or forensics

Many routing instabilities are caused by interactions between multiple routers and are very difficult to isolate because routers do not keep an event history. Diagnosis of the outage may require logging in to multiple routers and executing multiple “show ip bgp...” commands – a very tedious and time consuming task.

In the previous section we saw a routing instability. Route Explorer’s RIB analysis alerted us to the possibility of a MED oscillation and Route Explorer’s Event Analysis identified the exact prefix and the peers involved in the oscillation. Let us now look at how you can confirm the exact cause by looking at the event list. Figure 16 shows all events associated with the selected prefix during the selected time period.

Time	Router	Operation	Neighbor/Prefix	Attributes	Area or AS
06/26 - 19:52:15.419992	50.84.255.75	Announce	117.166.0.0/16	Aggregator: AS54900 46.97.191.6 (Atomic) Local-Pref: 100 MED: 50 AS Path: 54900 (IGP) Communities: 65326:65326 65326:44274 Next Hop: 50.84.217.213 Originator ID: 50.84.252.165 Cluster List: 255.255.172.234	ISPDemo.bgp/AS1234
06/26 - 19:52:15.420095	50.84.255.75	Withdraw	117.166.0.0/16	Aggregator: AS54900 46.97.191.6 (Atomic) Local-Pref: 100 MED: 50 AS Path: 54900 (IGP) Communities: 65326:65326 65326:44274 Next Hop: 50.84.217.213 Originator ID: 50.84.252.165 Cluster List: 255.255.172.234	ISPDemo.bgp/AS1234
06/26 - 19:52:15.427714	50.84.255.233	Announce	117.166.0.0/16	Aggregator: AS54900 46.97.191.6 (Atomic) Local-Pref: 100 MED: 100 AS Path: 54900 (IGP) Communities: 65326:65326 65326:55799 Next Hop: 46.97.191.5 Originator ID: 50.84.252.200 Cluster List: 50.84.238.255	ISPDemo.bgp/AS1234
06/26 - 19:52:15.427900	50.84.255.233	Announce	117.166.0.0/16	Aggregator: AS54900 46.97.191.5 (Atomic) Local-Pref: 100 MED: 25 AS Path: 59054 (IGP) Communities: 65326:65326 65326:55799 Next Hop: 192.110.47.137 Originator ID: 50.84.252.183 Cluster List: 50.84.238.255	ISPDemo.bgp/AS1234
06/26 - 19:52:15.428073	50.84.255.233	Announce	117.166.0.0/16	Aggregator: AS59054 104.57.255.6 (Atomic) Local-Pref: 100 MED: 100 AS Path: 54900 (IGP) Communities: 65326:65326 65326:55799 Next Hop: 46.97.191.5 Originator ID: 50.84.252.200 Cluster List: 50.84.238.255	ISPDemo.bgp/AS1234
06/26 - 19:52:15.428246	50.84.255.233	Announce	117.166.0.0/16	Aggregator: AS54900 46.97.191.5 (Atomic) Local-Pref: 100 MED: 25 AS Path: 59054 (IGP) Communities: 65326:65326 65326:55799 Next Hop: 192.110.47.137 Originator ID: 50.84.252.183 Cluster List: 50.84.238.255	ISPDemo.bgp/AS1234
06/26 - 19:52:15.434527	50.84.255.77	Announce	117.166.0.0/16	Aggregator: AS59054 104.57.255.6 (Atomic) Local-Pref: 100 MED: 50 AS Path: 54900 (IGP) Communities: 65326:65326 65326:44274 Next Hop: 50.84.217.213 Originator ID: 50.84.252.165 Cluster List: 255.255.172.234	ISPDemo.bgp/AS1234
06/26 - 19:52:15.434658	50.84.255.77	Withdraw	117.166.0.0/16	Aggregator: AS54900 46.97.191.6 (Atomic) Local-Pref: 100 MED: 50 AS Path: 54900 (IGP) Communities: 65326:65326 65326:44274 Next Hop: 50.84.217.213 Originator ID: 50.84.252.165	ISPDemo.bgp/AS1234

Figure 16

Note the following:

- The MED values are oscillating between 25, 50, and 100, confirming earlier summary analysis using Route Explorer’s Event Analysis (see above).
- The event types are oscillating between announcements and withdrawals.
- The routers generating the events are three of the BGP peers we suspected earlier to be involved in this MED oscillation.

- The timestamps of the events shows a very rapid succession of events. This high frequency of route updates may be creating a high CPU load on all the BGP routers in this network.

HOW TO:

1. Select the “DemoTier1ISPJun02” topology and open History Navigator (see above)
2. Perform “Event Analysis” on desired time period (see above)
3. Perform the drill down analysis to isolate the prefix oscillating (as described above).
4. To see all events associated with the selected table entry: Right-Click on the entry to show the “Would you like to see details?” popup.
5. Select “Show Details” to list all events associated with the selection.