

SNMP Trap to Monitor EIGRP Adjacency Change in Nexus 7000

Contents

[Introduction](#)

[Example](#)

Introduction

This document describes the Simple Network Management Protocol (SNMP) trap to monitor Enhanced Interior Gateway Routing Protocol (EIGRP) adjacency change in Nexus 7000. The Nexus only supports two traps for EIGRP-MIB, cEigrpAuthFailureEvent and cEigrpRouteStuckInActive, but no SNMP traps for EIGRP neighbors up/down (cEigrpNbrDownEvent).

A viable workaround to generate SNMP traps to monitor EIGRP adjacency changes would be to configure two EEM scripts - one for Neighbor Up and one for Neighbor Down - triggered based on the syslog pattern.

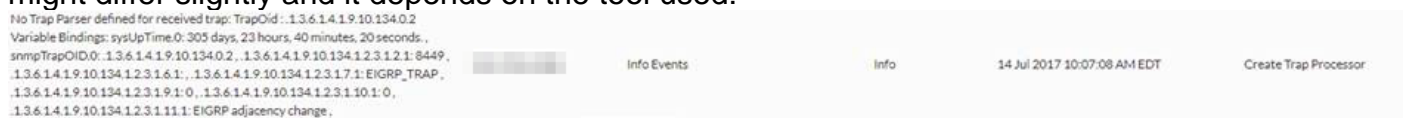
Example

```
event manager applet EIGRP_TRAP_nbr_dwn
  event syslog pattern "EIGRP-5-NBRCHANGE_DUAL.*down"
  action 1.1 snmp-trap strdata "EIGRP Neighbor Down"
event manager applet EIGRP_TRAP_nbr_up
  event syslog pattern "EIGRP-5-NBRCHANGE_DUAL.*up"
  action 1.1 snmp-trap strdata "EIGRP Neighbor Up"
```

You can then test by flapping a Layer 3 interface (you can create a test Switch Virtual Interface (SVI) to verify as to not disrupt connectivity):

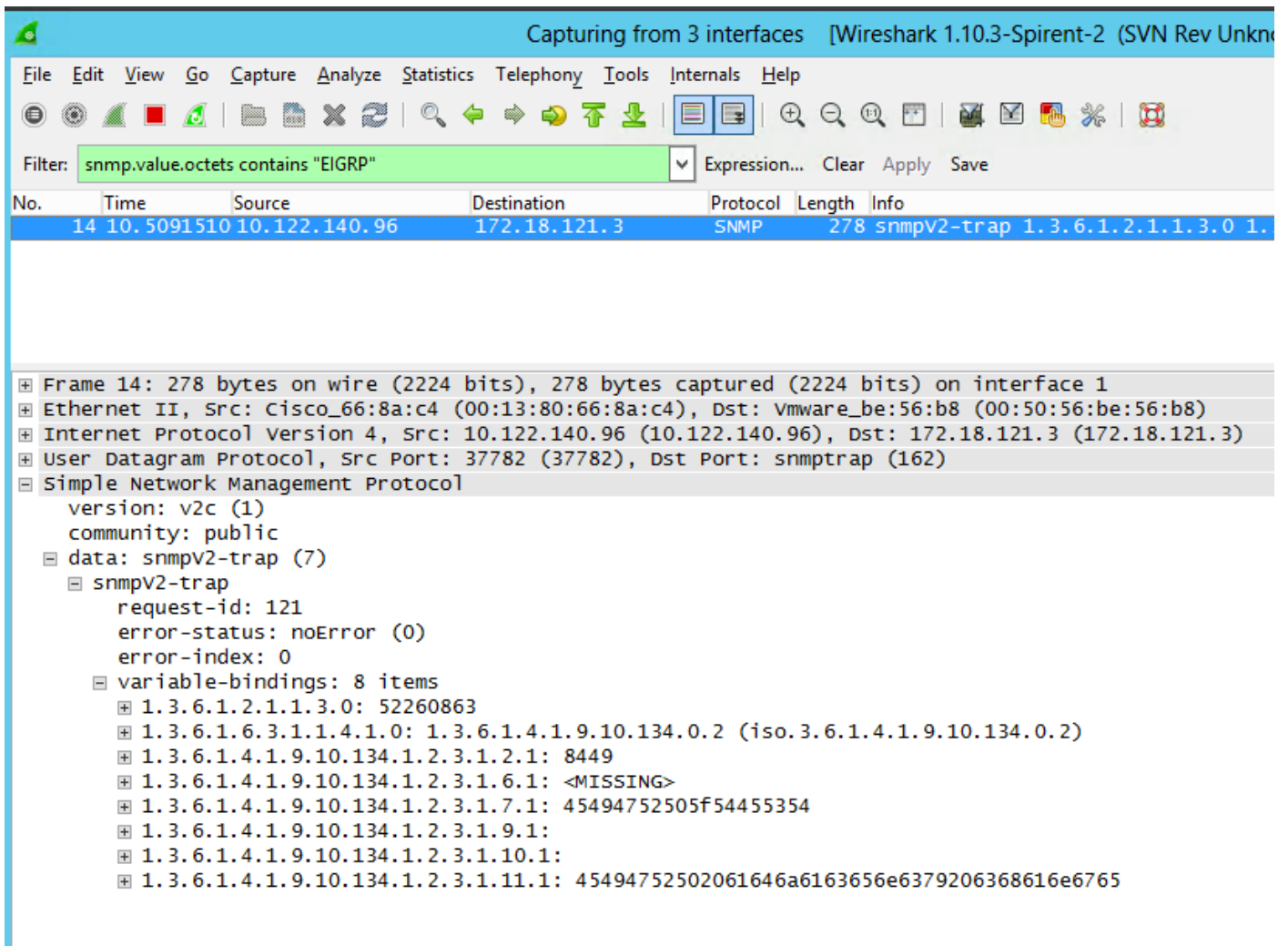
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event manager applet EIGRP_TRAP_nbr_dwn
  event syslog pattern "EIGRP-5-NBRCHANGE_DUAL.*down"
  action 1.1 snmp-trap strdata "EIGRP Neighbor Down"
event manager applet EIGRP_TRAP_nbr_up
  event syslog pattern "EIGRP-5-NBRCHANGE_DUAL.*up"
  action 1.1 snmp-trap strdata "EIGRP Neighbor Up"
```

Confirm that the Nexus sends these out correctly and check your SNMP monitoring tool - output might differ slightly and it depends on the tool used:



You can also review these SNMP traps via a Wireshark capture:

Note: It depends on the version of Wireshark, the string will not be in human readable text but can be filtered via "snmp.value.octets contains "EIGRP".



You can also verify that the Nexus sends these upon the Embedded Event Manager (EEM) triggering with Ethanalyzer. See the example:

```
N7K-A-Admin# ethalyzer local interface mgmt display-filter snmp limit-c 0
```

```
Capturing on mgmt0
```

```
2017-07-12 15:43:37.431067 10.122.140.96 -> 172.18.121.3 SNMP 278 snmpv2-trap 1.3.6.1.2.1.1.3.0
1.3.6.1.6.3.1.1.4.1.0 1.3.6.1.4.1.9.10.134.1.2.3.1.2.1 1.3.6.1.4.1.9.10.134.1.2.3.1.6.1
1.3.6.1.4.1.
9.10.134.1.2.3.1.7.1 1.3.6.1.4.1.9.10.134.1.2.3.1.9.1 1.3.6.1.4.1.9.10.134.1.2.3.1.10.1
1.3.6.1.4.1.9.10.134.1.2.3.1.11.1
```

Note: Pre NX-OS 7.x does not give us the option to configure **snmp-server enable traps syslog** which will in turn allow you to monitor the entire logging log itself then filter for the EIGRP messages. This feature was added in releases, 7.x and later.