EEM 4 X 40 BW Update

V0.1

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Modification History

Rev	Date	Originator	Comments
0.1	10/24/12	Scott Search	Initial Draft

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1 Executive Summary

The EEM 4 X FortyGigE Bandwidth Update script currently has two EEM scripts. Each script is triggered by the syslog UPDOWN generated message. The main purpose for these two EEM scripts is to re-carve the total bandwidth the 4x40G LC utilizes within the CRS 140G per slot chassis. The re-carve is completed by either administrated shutdown or no shutdown of the TE dummy interface. The script requires a mapping file where each chassis FortyGigE interface is mapped to a TE dummy interface. Both EEM scripts will parse the mapping file and if a FortyGigE interface mapping is not found the tool will not perform a shutdown/no-shutdown.

The Down_40G_bw_update.tcl EEM script is triggered when the following syslog event is generated:

PKT_INFRA-LINK-3-UPDOWN : Interface FortyGigE5/3/0/0, changed state to Down

Once the EEM script is triggered the script parses the syslog message and extracts the FortyGigE interface. Next the script determines the mapped TE dummy interface to the FortyGigE interface. As long as there is a match the script configures the routers TE dummy interface to 'no shut'. All captured data and extracted data is logged to a log file within the routers EEM environment variable location.

The Up_40G_bw_update.tcl (UP) EEM script is identical to the above Down_40G_bw_update.tcl script. Although the UP script is triggered when the syslog event for a FortyGigE interface changes state to Up. The UP script will instead perform a 'shutdown' of the mapped TE dummy interface.

Additionally both EEM scripts before performing the shutdown/no-shutdown will review the recent log history for a counter syslog message. Furthermore, if the Down_40G_bw_update.tcl is triggered and the script determines a syslog message for Line protocol Up for the same FortyGigE interface the script will stop without performing the TE dummy interface shutdown.

2 Script Requirements

The EEM scripts require 3 EEM environment variables to be configured:

_storage_location	Location where all script logs files are stored, along with the location where the mapping file should be located.
_up_40G_output_log	Log output for the Up_40G EEM script will write all output. This log file will have a date and timestamp as a suffix extension.
_down_40G_output_log	Same as above for the Down_40G script
_40G_mappings	FortyGigE to TE dummy interface mapping data

3 Router Configuration

Below is the recommended router configuration:

```
event manager environment _up_40G_output_log  Up_40G_bw_update
event manager environment _down_40G_output_log  Down_40G_bw_update
event manager environment _storage_location disk0:/eem
event manager environment _40G_mappings 40G_mappings
!
event manager directory user policy disk0:/eem
event manager policy Up_40G_bw_update.tcl username eem-user type user
event manager policy Down_40G_bw_update.tcl username eem-user type user
!
username eem-user
 group root-system
 group cisco-support
 password 7 02050D480809
!
aaa authorization exec eem-user local
aaa authorization commands eem-user none
aaa authorization eventmanager default local
aaa authorization eventmanager eem-user local
aaa authentication login eem-user local
!
line template EEM
 authorization exec eem-user
 authorization commands eem-user
!
vty-pool eem 100 105 line-template EEM
```

4 40G Mapping File

Below is am example 40G mapping file format:

```
FortyGigE0/0/0/0   tunnel-te1000
FortyGigE 0/0/0/1   tunnel-te1001
FortyGigE 0/0/0/2   tunnel-te1002
FortyGigE 0/0/0/3   tunnel-te1003
```

One thing to note is that the FortyGigE interface syntax has to match the exact syntax as seen in the routers 'show ipv4 interface brief' output. The router will generate a syslog message with this given interface name and both EEM scripts will only match on the same syntax and case sensitivity.