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**EEM 4 X 40 BW Update**

**V0.1**

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Modification History

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| --- | --- | --- | --- |
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| 0.1 | 10/24/12 | Scott Search | Initial Draft |
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# 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.

# 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 |

# 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**

# 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.