ControlPlaneFail EEM Script

ATM LC Control Plane Failure Detection / Recovery

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1 ATM ControlPlaneFail Overview

EEM script to detect a possible ATM Linecard Control Plane Failure. The EEM script is triggered off a single OSPF neighbor adjacency failure syslog message:

%ROUTING-OSPF-5-ADJCHG : Process 50, Nbr 165.87.242.176 on ATM0/12/0/0.210 in area 0.0.0.54 from FULL to DOWN, Neighbor Down: interface down or detached,vrf default vrfid 0x60000000

The above syslog message must be generated 3 times within a 3 second interval.

Once the EEM script is triggered the script parses the syslog history within the last 10 seconds from the original syslog trigger was generated. If the EEM script finds further layer 3 failures, such as: PIM, LDP, OSPF The script continues on with further captures.

2 ControlPlaneFail Execution

Once the EEM script is triggered and the EEM script finds further layer 3 failures within the syslog history the script opens a VTY connection to the router.

1. VTY connection to router opened.
2. Script runs the following command:

   show qsm trace location <LC location>

   Then parses the output for the following: "qsm_critical" and "qsm_node_is_down" The script also determines the RP locations.

3. The script captures the active RP location
4. Script runs the following command:

   show qsm trace location <Active RP location>

   The script parses the trace output for the following message "received_dbdump_request_message. received from node"

5. Next the script runs the command:

   show arm trace location <Active RP location>

The script parses this output for the following messages: “Close producer” and “ipv4_ma” If the script finds these messages and the LC location is present the script continues.

6. If all the above steps yield a possible ATM LC control plane failure the EEM script performs the following recovery step:

   process restart qsm location <LC location>

7. Lastly, the EEM script will generate a locally stored file on the router with all the outputs. Generates a customer EEM syslog message. If the router has the EEM environment variables for email generation the EEM script will send an email.

3 ControlPlaneFail Required Environment Variables

The _ControlPlaneFail_storage_location EEM environment variable is necessary to configure the routers location to store the output log file.

Example:

event manager environment _ControlPlaneFail_storage_location disk0:/eem

4 ControlPlaneFail Email

The ControlPlaneFail EEM script supports generating an email message. If the following EEM environment variables are configured the EEM script generates an email warning the recipients of the possible ATM LC failure:

__email_server
__email_from
__email_to
__domainname

Example:

event manager environment _email_to user1@att.com user2@att.com
event manager environment _domainname att.com
event manager environment _email_from alert@att.com
event manager environment _email_server 1.2.3.4

By default the EEM script will use the following email subject line:

> ***Node $node - EEM ControlPlaneFail POLICY DETECTED A POSSIBLE ENGINE 3 ATM LC FAILURE*

This can be changed by setting the following EEM environment variable:

> *event manager environment _ControlPlaneFail_email_subject <custom email subject>*

5 Authentication/Authorization EEM User Configurations

Below are the required AAA and configuration lines required for the EEM script to function correctly:

5.1 Authentication and Authorization

```
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
```

5.2 EEM-User

```
username eem-user
 group root-system
 group cisco-support
```

5.3 Line template and Vty-pool

```
line template eem-user
 authorization exec eem-user
 authorization commands eem-user
!
vty-pool fm 100 110 line-template eem-user
```

6 Configure and Register EEM Policy ControlPlaneFail

Below are the commands to configure and register the EEM script ControlPlaneFail:

event manager environment _*ControlPlaneFail*_storage_location disk0:/eem
event manager directory user policy disk0:/eem

event manager policy ControlPlaneFail.tcl username eem-user type user

7 Optional EEM Environment Variables

Below are the optional EEM environmental variables:

Environment Variable	**Description**
_*ControlPlaneFail*_email_subject	Override the default email subject with this environment variable subject