EEM s2FailDetect Script

Scott Search (ssearch@cisco.com)

s2FailDetect Overview

- EEM script to detect S2/Fabric problems within a CRS system.
- Script triggered from the following syslog message:

  fabricq_mgr.*FABRIC-FABRICQ-3-RESET : Reseting Fabricq ASIC Device
- The above syslog message must be received 3 times within a 10 second period.
- Customizable variables configurable at the configuration command line.

  –No need to modify EEM script
- Custom syslog message generation
- Configurable email generation
- CRS node Cost Out **Currently disabled within script

s2FailDetect Script Details

- Syslog pattern:

  fabricq_mgr.*FABRIC-FABRICQ-3-RESET : Reseting Fabricq ASIC Device

  –Must be received 3 times within a 10 second period

- Script opens an output log file for all logging details for later review.
- Verifies previously received syslog messages for the same pattern within the $_s2FailDetect_second_diff time period
- If the same syslog pattern is received and $_s2FailDetect_unique_locations is met the script will Cost Out the CRS if the $_s2FailDetect_ospf_id is set above 0. **COST-OUT Currently disabled within script

Required EEM Environment Variables

- Syntax:

  event manager envionment <var name> <value>

- _s2FailDetect_ospf_id <0 or value> (**Optional**)
- _s2FailDetect_second_diff <##>
- _s2FailDetect_unique_locations <##>
- _s2FailDetect_output_log <s2FailDetect.log or value>
- _s2FailDetect_storage_location <harddisk:/eem or value>

Environment Var _s2FailDetect_ospf_id

- **Optional EEM environment variable
- Two options:
  - –0: Router will not be Costed Out, syslog and email generation will be performed.
  - –1 or above: Router will be Costed Out as long as the other requirements are all met.
- Examples:

  event manager environment _s2FailDetect_ospf_id 0

  event manager environment _s2FailDetect_ospf_id 50

- **COST-OUT Currently disabled within script

Environment Var _s2FailDetect_second_diff

- Required EEM environment variable
- This is the time period (in seconds) the syslog pattern must have been received within the syslog archive.
- Recommended period 30 seconds
- Examples:

  event manager environment _s2FailDetect_second_diff 30

  event manager environment _s2FailDetect_second_diff 15

Environment Var _s2FailDetect_unique_locations

- Required EEM environment variable
- During the script processing the script will parse the syslog archives for the syslog pattern.
- Next the script will parse out the syslog pattern locations where the syslog message was generated.
- The script verifies the number of unique locations the syslog pattern was generated from.
- If the unique locations are above the number of _s2FailDetect_unique_locations the script will continue
- If the unique locations are below the number of _s2FailDetect_unique_locations the script will not Cost Out router
- Recommended value: 3
- Examples:

  event manager environment _s2FailDetect_unique_locations 3

  event manager environment _s2FailDetect_unique_locations 5

Environment Vars

- _s2FailDetect_output_log:
  - –Required EEM environment variable
  - –This is the output logging file the EEM script will write all output to for later processing if needed.

- _s2FailDetect_storage_location
  - –Required EEM environment variable.
  - –This is the directory location where the output log file _s2FailDetect_output_log is stored.
  - –Normally the same as the:

    event manager directory user policy <directory location>

Syslog Generate Repeat

- By default the s2FailDetect EEM script will generate syslog messages one time.
- This can be modified by setting the following EEM environment variable:

  _s2FailDetect_msg_repeat

- A user may configure the _s2FailDetect_msg_repeat to 1 or above and the s2FailDetect script will send x number of syslog messages.
- Examples:

  event manager environment s2FailDetect_msg_repeat 2

  event manager environment s2FailDetect_msg_repeat 4

Custom Syslog Generation

- The s2FailDetect syslog generation can be modified with the following 3 EEM environment variables:
  - _s2FailDetect_msg_CostOut
  - _s2FailDetect_msg_NoCostOut
  - _s2FailDetect_msg_NoCostOut_NotMet

Syslog Generation _s2FailDetect_msg_CostOut

- In the event the router is Costed Out the s2FailDetect script will check for the presence of the EEM environment variable _s2FailDetect_msg_CostOut.
- If the _s2FailDetect_msg_CostOut variable is set the router will generate a syslog message with this message.
- Along with an email message with this message within the email body. The email generation must be enabled.
- Example:

  event manager environment s2FailDetect_msg_CostOut Router has received an S2 Fabric problem and will be Costed Out

- **COST-OUT Currently disabled within script

Syslog Generation _s2FailDetect_msg_NoCostOut

- In the event the router needs to be Costed Out yet the _s2FailDetect_ospf_id is set to 0 the s2FailDetect script will check for the presence of the EEM environment variable _s2FailDetect_msg_NoCostOut.
- If the _s2FailDetect_msg_NoCostOut variable is set the router will generate a syslog message with this message.
- Along with an email message with this message within the email body. The email generation must be enabled.
- Example:

  event manager environment s2FailDetect_msg_NoCostOut Router has received an S2 Fabric problem, however, the _s2FailDetect_ospf_id is set to 0 – No Cost Out performed

Syslog Generation _s2FailDetect_msg_NoCostOut_NotMet

- In the event the router generates the correct number of syslog patterns within the 10 second time period, yet the unique locations and second_diff is not met.
- The s2FailDetect script will check for the presence of the EEM environment variable _s2FailDetect_msg_NoCostOut_NotMet
- If the _s2FailDetect_msg_NoCostOut_NotMet variable is set the router will generate a syslog message with this message.
- Along with an email message with this message within the email body. The email generation must be enabled.
- Example:

  event manager environment s2FailDetect_msg_NoCostOut_NotMet Router has received an S2 Fabric problem, however, not all requirements were met for Cost Out

Email Generation

- To activate the email option the following EEM environment variables must be set:
  - _email_server
  - _email_from
  - _email_to
  - _domainname
  - _s2FailDetect_email_subject

Email EEM Environment Vars

- _email_server
  - –IP address to a host to relay SMTP
  - –Syntax: event manager environment _email_server <x.x.x.x>
  - –Example:

    event manager environment _email_server 9.3.3.249

- _domainname
  - –Email domain name
  - –Syntax: event manager environment _domainname <xxxxx>
  - –Example:

    event manager environment _domainname att.com

Email EEM Environment Vars

- _email_from
  - –Who the email is from
  - –Syntax: event manager environment _email_from <xxxx>
  - –Example:

    event manager environment _email_from crs@att.com

- _email_to
  - –Who the email is sent to
  - –Syntax: event manager environment _email_to <xxxx>
  - –Example:

    event manager environment _email_to noc@att.com

Email EEM Environment Vars

- _s2FailDetect_email_subject
  - –When the email message is generated and sent the script will check for the existence of this EEM environment variable. If the variable exists then the email subject will include:
    - •“<node name> $_s2FailDetect_email_subject
  - –Syntax: event manager environment _email_subject <xxxx>
  - –Example:

    event manager environment _email_subject CRS s2 Failure

AT&T Required EEM Configuration

- Required EEM configuration for router:

```
event manager environment _s2FailDetect_ospf_id 50  (**Optional**)
event manager environment _s2FailDetect_second_diff  30
event manager environment  _s2FailDetect_unique_locations  3
event manager environment  _s2FailDetect_output_log  s2FailDetect.log
event manager environment  _s2FailDetect_storage_location  harddisk:/eem
event manager directory user policy harddisk:/eem
event manager policy s2FailDetect.tcl username eem-user type user
!
domain name cisco.com
!
username eem-user
 group root-system
 group cisco-support
```

AT&T Required EEM Configuration Cont.

- Required EEM configuration for router continued:

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

How To Test

- You can test this EEM script by running the following command on the router:

  Run echo “fabricq_mgr[136]: %FABRIC-FABRICQ-3-RESET : Reseting Fabricq ASIC Device 0. Reason: UC_PSN_WRAP” > /dev/syslog

- This command will need to be run minimum 3 times within the 10 second period.

- Since the location attribute will be that of the RP you will need to set the following EEM environment variable to 0:

  event manager environment _s2FailDetect_unique_locations 0