

# EEM Subsystem in Order to Monitor CPU Traffic

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## Introduction

This document describes how to use the Cisco IOS Embedded Event Manager (EEM) subsystem in order to monitor CPU traffic.

## How to configure EEM script to monitor CPU utilization when it crosses a threshold value and falls below a limit

### Solution

The **ip access-list log-update threshold** logs all the Access Control List (ACL) logs but at the same time it utilizes more CPU.

Steps to configure the EEM:

1. When the configured higher threshold limit of CPU exceeds, disable the **#ip access-list log-update threshold 1** command thereby stopping the process of logging all the ACL.
2. When the configured lower limit of CPU drops below, then enable this **#ip access-list log-update threshold 1** command thereby starting the process of logging all the ACL.

For instance, you need to trigger an EEM when the CPU exceeds 60% and drops below 20%:

1. When the CPU exceeds 60% utilization for  $\geq 5$ sec, a rising threshold syslog notification is issued.
2. When CPU drops below 20% utilization for  $\geq 5$ sec, a falling syslog threshold notification is issued.

## Rising Threshold

A rising CPU utilization threshold specifies the percentage of CPU resources that, when exceeded for a configured period of time, triggers a CPU threshold notification.

## Falling Threshold

A falling CPU utilization threshold specifies the percentage of CPU resources that, when CPU usage falls below this level for a configured period of time, triggers a CPU threshold notification.

The event manager applet (which matches the syslog messages) then ignores the rising threshold syslog message. It only matches for the falling syslog threshold --> "SYS-1-CPUFALLINGTHRESHOLD" and then runs the actions. This will happen every time the syslog message is an issue:

- If the CPU goes above 60% and remains there only one syslog message will be generated.
- If the CPU drops below 20% and remains there only one syslog message will be generated.

### Verify

**(conf)#process cpu threshold type total rising 60 interval 5 falling 20 interval 5**

1. When CPU crosses a threshold of 60, it generates SYS-1-CPURISINGTHRESHOLD syslog pattern and hence disables the command:

```
event manager applet HIGH_CPU
event syslog pattern "SYS-1-CPURISINGTHRESHOLD"
action 1.0 cli command "enable"
action 2.0 cli command "config t"
action 3.0 cli command "no ip access-list log-update threshold 1"
```

```
*Oct 11 19:21:11.983: %SYS-1 -CPURISINGTHRESHOLD: Threshold: Total CPU Utilization (Total/Intr): 63%/19%
```

2. When CPU falls below a limit of 20, it generates SYS-1-CPUFALLINGTHRESHOLD syslog pattern and hence enables the command:

```
event manager applet LOW_CPU
event syslog pattern "SYS-1-CPUFALLINGTHRESHOLD"
action 1.0 cli command "enable"
action 2.0 cli command "config t"
action 3.0 cli command "ip access-list log-update threshold 1"
```

```
*Oct 11 19:21:31.983: %SYS-1-CPUFALLINGTHRESHOLD: Threshold: Total CPU Utilization (Total/Intr) 12%/0%.
```

