连结7000高CPU使用情况故障排除指南

目录

简介

本文描述普通的命令和进程监控CPU使用情况和排除故障高CPU在Cisco连结7000系列平台的使用情况问题。命令和示例EEM脚本根据连结7000版本6.1和更加早期并且是随时在将来版本的变化。

在连结的CPU使用情况7000平台

连结7000平台是有允许对CPU资源的公平的访问所有进程的一先发制人的调度器的一个基于linux的系统。不同于Cisco Catalyst 6500系列，没有分开的路由处理器(RP)和交换机处理器(SP)。管理引擎1有一个DUAL核心处理器， Supervisor引擎2有一个四元组核心处理器，并且Supervisor引擎2E有两个四元组核心处理器。

Cisco NX-OS操作系统利用先发制人的CPU多任务，进程能如此利用空闲CPU为了完成更加快速的任务。所以，历史记录选项可能报告不一定指示一问题的CPU峰值。然而，如果平均的CPU使用情况保持高与正常比较，特定网络的基准CPU使用情况，您也许需要调查高CPU使用情况。

默认硬件速率防幅器(HWRL)和默认控制平面策略(CoPP)启用帮助保护在连结的Supervisor带内接口7000平台。

命令和脚本监控进程和CPU

命令

确定Cisco CLI分析器(仅限注册用户)支持**显示**命令。请使用Cisco CLI分析器为了查看show命令输出分析。

show processes命令

请使用此命令为了显示关于活动进程的信息。

```
switch# show processes

PID State PC Start_cnt TTY Type Process
----- ----- -------- ----------- ---- ---- -------------
1 S 41520eb8 1 - O init
2 S 0 1 - O kthreadd
3 S 0 1 - O migration/0
4 S 0 1 - O ksoftirqd/0
5 S 0 1 - O watchdog/0
6 S 0 1 - O migration/1
7 S 0 1 - O ksoftirqd/1
8 S 0 1 - O watchdog/1
9 S 0 1 - O events/0
10 S 0 1 - O events/1
11 S 0 1 - O khelper
12 S 0 1 - O kblockd/0
```

字段	**说明**
PID	处理 ID
状态	进程状态
PC	在十六进制格式的现行程序程序计数器
Start_cnt	次数进程开始或重新启动
TTY	控制进程的终端。一个连字符(--)通常含义一守护程序不运行在所有特定的终端。
进程	进程的名称

进程状态	**说明**
D	不可中断的睡眠(通常I/O)
R	可追捕(在运行队列)
S	休眠
T	跟踪或终止

Z	停止的(僵死)进程
NR	不运行
ER	应该运行，但是当前不运行

show system资源命令

请使用此命令为了显示相关系统CPU和内存统计信息。

```
switch#show system resources
Load average: 1 minute: 0.36 5 minutes: 0.39 15 minutes: 0.44
Processes : 1068 total, 1 running
CPU states : 0.5% user, 5.5% kernel, 94.0% idle
Memory usage: 8245436K total, 3289920K used, 4955516K free
Current memory status: OK
```

字段	说明
负载	运行进程的编号。平均值反射系统负载在过去1， 5和15分钟期间。
进程	进程编号在系统的，并且多少进程实际上运行，当命令发出。
CPU状态	在用户模式、内核模式和空闲时间的CPU使用情况百分比在最后一秒钟内。对于DUAL核心Supe 。
内存使用	总内存、占用的内存、用于缓冲区的空闲存储器、用于缓存的内存和内存以千字节。缓冲区和缓

show processes cpu 命令

请使用此命令为了显示CPU使用情况在进程层面：

```
switch#show processes cpu | ex 0.0

PID Runtime(ms) Invoked uSecs 1Sec Process
----- ----------- -------- ----- ------ -----------
26 66399 269718 246 0.9% kide/1
2908 115550 11310 10216 2.9% platform
3223 7248 9208 787 0.9% R2D2_usd

CPU util : 1.0% user, 3.0% kernel, 96.0% idle Please note that only processes from the requested
vdc are shown above
```

字段	说明
Runtime(ms)	进程以毫秒使用了的CPU时间
调用	已调用进程的次数
uSecs	每个流程调用的平均的CPU时间以微秒
1sec	CPU使用情况百分比最后一秒钟的

要欲知属于特定进程ID的所有线索的CPU使用情况(PID)，请使用**show process CPU详细信息** *<pid>*命令，是可用的在NX-OS版本6.2x。

show processes cpu history命令

请使用此命令为了显示CPU使用情况最后60秒、60分钟和72个小时。请务必检查平均的CPU使用情况(#)和阻止(*)。

```
switch# show processes cpu history

1 131 12 1 1 1 1 2 1 1 1
19538893345657760739353537677586750729487765356435345614554 6
100
90
```

```
80
70
60
50
40 #
30 #
20 ## ## # # #
10 ####### ######## # ################# ######## # ### ## #
0....5....1....1....2....2....3....3....4....4....5....5....
0 5 0 5 0 5 0 5 0 5
CPU% per second (last 60 seconds)
# = average CPU%


222222224221222212222222222642222112221222222222222121221412
523210211239434396322261541608790993139620151432210949597392
100
90
80
70 *
60 *
50 *
40 * ** *
30 * * * * * ***** * * ** *
20 ************************************************************
10 ############################################################
0....5....1....1....2....2....3....3....4....4....5....5....
0 5 0 5 0 5 0 5 0 5

CPU% per minute (last 60 minutes)
* = maximum CPU% # = average CPU%


1
666765454544445544555669844465554466654464446069464554545555665544444474
459056619185613722269482096333506853055519639003005209696949867484693724
100 *
90 * * *
80 ** * *
70 **** *** * ** * ** *
60 ****** * ****** * * **** * **** * * ** **** *
50 ************* ** ********* *************** **** *************** ** **
40 ********************************************************************
30 ********************************************************************
20 ********************************************************************
10 ################################################################################
0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.
0 5 0 5 0 5 0 5 0 5 0 5 0

CPU% per hour (last 72 hours)
* = maximum CPU% # = average CPU%
```

show process CPU详细信息*<pid>*命令

此命令，在版本6.2被添加，显示属于特定PID的所有线索的CPU使用情况信息。

```
switch# show processes cpu sorted | grep cli
3965 23734 17872 1328 0.0% 0.1% 0.7% - clis
4024 3047 1256 2426 0.0% 0.0% 0.0% - diagclient
4094 787 258 3052 0.0% 0.0% 0.0% - cardclient
4728 227 209 1088 0.0% 0.0% 0.0% - port_client
4729 1351 499 2708 0.0% 0.0% 0.0% - statsclient
4730 2765 550 5028 0.0% 0.0% 0.0% - xbar_client
```

```
switch# show processes cpu sorted | grep clis
3965 23734 17872 1328 0.0% 0.1% 0.7% - clis
switch# show process cpu detailed 3965

CPU utilization for five seconds: 3%/3%; one minute: 0%; five minutes: 1%
PID Runtime(ms) Invoked uSecs 5Sec 1Min 5Min TTY Process
----- ----------- -------- ----- ------ ------ ------ --- -----------
3965 23734 17873 1327 0.0% 0.1% 0.6% - clis
4227 45 334 135 0.0% 0.0% 0.0% - clis:clis-cli-t
4228 24 153 162 0.0% 0.0% 0.0% - clis:clis-nvdb-
4760 75 224 335 0.0% 0.0% 0.0% - clis:clis-seria

switch# show processes cpu sorted | grep netstack
4133 353 892 395 0.0% 0.0% 0.0% - netstack
switch# show process cpu detailed 4133

CPU utilization for five seconds: 5%/5%; one minute: 1%; five minutes: 1%
PID Runtime(ms) Invoked uSecs 5Sec 1Min 5Min TTY Process
----- ----------- -------- ----- ------ ------ ------ --- -----------
4133 353 892 395 0.0% 0.0% 0.0% - netstack
4145 322 6492 49 0.0% 0.0% 0.0% - netstack:active
4151 239 247 971 0.0% 0.0% 0.0% - netstack:ip-sys
4153 0 3 162 0.0% 0.0% 0.0% - netstack:mplsda
4155 2 3 717 0.0% 0.0% 0.0% - netstack:mplsct
4163 0 2 240 0.0% 0.0% 0.0% - netstack:ipv6-d
4164 97 957 101 0.0% 0.0% 0.0% - netstack:netsta
4166 15 628 25 0.0% 0.0% 0.0% - netstack:ip-sys
4167 0 3 224 0.0% 0.0% 0.0% - netstack:ip-pm-
4170 1 12 154 0.0% 0.0% 0.0% - netstack:ip-uri
4171 9 30 323 0.0% 0.0% 0.0% - netstack:ip-ipc
4173 0 5 167 0.0% 0.0% 0.0% - netstack:ip-ipc
4175 0 2 305 0.0% 0.0% 0.0% - netstack:ip-ret
4176 12 7 1838 0.0% 0.0% 0.0% - netstack:ip-ppf
4178 4 15 289 0.0% 0.0% 0.0% - netstack:ipv6-c
4179 41 445 93 0.0% 0.0% 0.0% - netstack:disp
4180 0 6 98 0.0% 0.0% 0.0% - netstack:worker
4181 33 501 66 0.0% 0.0% 0.0% - netstack:worker
4182 0 2 232 0.0% 0.0% 0.0% - netstack:worker
4183 0 2 227 0.0% 0.0% 0.0% - netstack:worker
4184 0 3 152 0.0% 0.0% 0.0% - netstack:worker
4185 0 2 278 0.0% 0.0% 0.0% - netstack:worker
4186 0 2 254 0.0% 0.0% 0.0% - netstack:worker
4187 0 3 168 0.0% 0.0% 0.0% - netstack:worker
4188 0 2 266 0.0% 0.0% 0.0% - netstack:worker
4189 0 2 248 0.0% 0.0% 0.0% - netstack:worker
4190 0 2 254 0.0% 0.0% 0.0% - netstack:worker
4191 0 3 201 0.0% 0.0% 0.0% - netstack:worker
4192 0 2 258 0.0% 0.0% 0.0% - netstack:worker
4193 0 7 111 0.0% 0.0% 0.0% - netstack:worker
4194 0 8 78 0.0% 0.0% 0.0% - netstack:worker
4195 0 2 313 0.0% 0.0% 0.0% - netstack:worker
4196 15 632 23 0.0% 0.0% 0.0% - netstack:ptacti
4197 0 5 120 0.0% 0.0% 0.0% - netstack:tcp_ip
4198 4 11 390 0.0% 0.0% 0.0% - netstack:ipv6-m
4199 0 3 240 0.0% 0.0% 0.0% - netstack:ipv6-c
4200 0 1 561 0.0% 0.0% 0.0% - netstack:ipv6-c
4201 0 3 246 0.0% 0.0% 0.0% - netstack:icmpv6
4513 0 5 112 0.0% 0.0% 0.0% - netstack:ipv6-m
4514 0 2 291 0.0% 0.0% 0.0% - netstack:ipv6-m
```

注意：所有进程信息根据“proc”在NX-OS。在NX-OS，所有线索共享其他线索分配的内存，因此每线索信息显示是不可能的。

cpu命令show system的内部进程

此命令与**top命令**是等同的在Linux，在实时提供一持续的查看在处理器活动。

```
switch# show system internal processes cpu

top - 23:51:41 up 51 min, 3 users, load average: 0.56, 0.49, 0.46
Tasks: 433 total, 1 running, 431 sleeping, 0 stopped, 1 zombie
Cpu(s): 5.9%us, 7.8%sy, 0.0%ni, 81.9%id, 3.6%wa, 0.1%hi, 0.6%si, 0.0%st
Mem: 8245436k total, 3531776k used, 4713660k free, 5360k buffers
Swap: 0k total, 0k used, 0k free, 1458188k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
3589 svc-isan 25 5 112m 8864 4572 S 5.7 0.1 0:21.60 stats_client
10881 sjlan 20 0 3732 1648 1140 R 3.8 0.0 0:00.04 top
26 root 20 0 0 0 0 S 1.9 0.0 1:07.07 kide/1
3280 root -2 0 101m 6104 3680 S 1.9 0.1 0:32.57 octopus
3570 root 20 0 123m 19m 6456 S 1.9 0.2 0:06.07 diag_port_lb
5151 root 20 0 205m 45m 9.8m S 1.9 0.6 0:02.61 netstack
1 root 20 0 1988 604 524 S 0.0 0.0 0:03.75 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.00 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 0:00.61 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:00.06 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.00 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:04.80 ksoftirqd/1
```

字段	**说明**
PID	处理 ID
用户	拥有进程用户的名称
PRS	优先级分配到进程
倪	进程的和蔼可亲
VIRT	进程虚拟内存使用的相当数量
RES	进程使用的相当数量物理RAM (其常驻大小)以千字节
SHR	进程使用的共享内存量
S	进程的状况。可能的值包括： • D - Uninterruptibly休眠 • R -运行 • S -休眠 • T -跟踪或终止 • Z - Zombied
%CPU	进程使用的CPU时间百分比
%MEM	进程使用的可用的物理RAM百分比
TIME+	进程消耗了的总量CPU时间，自从开始
命令	被输入开始进程命令的名称

'{#seconds}|没有其他'选项不自动地允许命令是被执行的每#seconds，直到a **ctrl-c**被输入。这是输出示例：：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
```

```
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部17-May-01服务pid *<pid>*命令

请使用此命令为了由PID显示其他详细信息，例如重新启动时间、失败状态和当前状态，进程/服务的。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
```

```
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

示例EEM脚本

这是捕获断断续续高CPU使用情况的示例脚本。值使用的以及发出的命令可以根据需求被修改：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
```

```
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

> **注意**：定义'退出val是必要的'。当脚本收集数据，增加CPU利用率。退出val的一个值保证脚本在无限环路不运行。

进程或流量造成的高CPU使用情况

没有进程与中断CPU使用情况(和在Cisco IOS软件平台)，当CPU使用情况是受监视时。快速方式确定高CPU使用情况的原因将使用cpu命令show system的内部进程。主要可能，流量触发的高CPU使用情况将造成Netstack、以及其它特性和进程例如地址解析服务(ARP)和互联网组管理协议(IGMP)，运行高。

进程导致高CPU使用情况

根据导致高CPU使用情况的进程和问题，您可能需要获取特定命令。这些部分描述也许是有用的方法。

show system内部*<feature>* memstats/memstats|在全部命令

请使用此命令为了显示进程的存储器分配;请使用'在全部'选项监控全部总内存。内存泄漏能造成进程行为不端，能导致高CPU使用情况。

Ethanalyzer

请使用Ethanalyzer监控流量到CPU。

debug 命令

> **注意**：使用 **debug** 命令之前，请参阅有关 Debug 命令的重要信息。明智地请使用调试指令在生产型交换机避免服务中断。

请使用**调试日志文件**命令若情况许可处理输出到指定的文件和避免锁定会话填满Syslog。这是调试简单网络管理协议(SNMP)示例：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
```

```
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

请使用调试**过滤器**命令，当可能为了最小化在生产系统的输出。例如，包丢失导致单向链路检测协议空响应：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
```

```
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

流量导致高CPU使用情况

当流量导致高CPU使用情况时，请使用这些工具：

- **Ethanalyzer** -监控流量类型到/从CPU。
- **配置**-检查交换机/接口/功能配置
- **CoPP/硬件速率防幅器**-保证CoPP，并且HWRL适当地配置。有时，因为由CoPP和速率防幅器，保护CPU也许不运行高。检查CoPP和HWRL发现是否有某些流量/数据包的丢包。

注意：CoPP和HWRL从默认虚拟设备上下文(VDC)是仅可得到。他们由每单个输入输出模块强制执行。从多个模块的总流量能大量地仍然负担CPU。

高CPU使用情况根本原因分析

网络中断可以由用户干涉解决，或者能单独恢复。如果怀疑高CPU使用情况导致了一个网络中断，请使用这些指南为了调查原因。

症状

高CPU使用情况症状包括控制层面不稳定性，控制层面失败导致的数据层面连通性问题，协议拍动例如热备份路由协议(HSRP) /RP飘荡、UDLD错误禁用的，生成树协议失败和其他连通性问题。

CPU历史记录

show processes cpu history命令

如果交换机未重新加载也未交换，请运行**show processes cpu history命令**在中断的72个小时内为了发现高CPU使用情况是否在事件时发生。

CoPP和HWRL

如果高CPU使用情况是a的根本原因通过中断，并且，如果怀疑中断由网络流量触发，您能使用CoPP和HWRL (硬件速率防幅器)为了帮助识别流量类型。

show policy-map interface控制面板命令

这是从**show policy-map interface控制面板**命令的输出示例：：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
```

```
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show hardware *<x>命令速率防幅器的*mod

这早于NX-OS版本6.1是从**show hardware速率防幅器mod 1**命令的输出示例：：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
```

```
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

这是从**show hardware速率防幅器mod 1** in命令NX-OS版本6.1或以上的一输出示例：：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
```

```
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

寻找与已丢失计数增加的任何类。如果为超出配置的阈值的类是正常请发现。

带内驱动程序

带内show hardware内部的CPU MAC *[计数器|stats|事件]*命令

请使用此命令为了检查在CPU路径、XOFF流量控制、最大数量CPU接收和传输速率的下降，等等。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
```

```
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

在NX-OS版本5.X以后，‘事件’是提供时候的option命令，当最大数据包每秒(PPS)接收(RX)或transmit (TX) CPU速率达到。当CPU流量最后高峰遇到，此示例显示如何确定时候：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
```

```
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部pktmgr内部vdc带内*<int>*命令

请使用此命令识别流量来源被踢对CPU。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
```

```
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

Netstack/Pktmgr

Netstack是在用户空间实现的一完整IP协议栈连结7000。组件包括L2数据包管理器、ARP、邻接管理器、IPv4、互联网控制消息协议v4 (ICMPv4)， IPv6、ICMPv6、TCP/UDP和socket库。当对CPU的流量触发高CPU使用情况时，您经常看到Netstack和其各自进程是运行高。

show system带内排队status命令

此示例显示如何显示Netstack排队算法在使用中：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
```

```
top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system带内排队statistics命令

此示例显示在内核可加载的模块(KLM)和用户空间进程的计数器。

KLM是在默认VDC的运行和起作用带内和管理接口的单个实例。仅进来到图片在入口数据包期间处理为发送的KLM入口帧对处理的权利VDC的Netstack。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
```

```
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部pktmgr内部vdc全局统计命令

此命令类似于之前的**show system带内排队statistics命令**并且提供许多细节：

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
```

```
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部pktmgr以太网接口 *<int>*命令

请使用此命令为了查看数据包速率以及流量类型(单播或组播)从接口的CPU被踢的流量。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
```

```
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部pktmgr客户端*<uuid>*命令

用数据包管理器以及发送的数据包编号注册并且由那些应用程序接收的此命令显示应用程序例如STP或思科设备发现协议(CDP)。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
```

```
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```

show system内部pktmgr stats命令

请使用此命令为了检查数据包是否在入口路径到达数据包管理器，并且数据包是否由数据包管理器派出。此命令可也帮助您确定是否有与mbuffers的问题在接收或传送路径。

```
switch# show system internal processes cpu  5 | no-more
top - 17:31:12 up 4 days, 18:31, 3 users, load average: 0.52, 0.40, 0.32
Tasks: 449 total, 3 running, 446 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192740k used, 4052696k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.25 pfm
31487 sjlan 20 0 3732 1652 1140 R 5.6 0.0 0:00.05 top
3059 svc-isan 20 0 80288 7536 4440 S 3.8 0.1 65:44.59 diagmgr
3192 root 20 0 334m 47m 11m S 1.9 0.6 25:36.52 netstack
3578 svc-isan 20 0 118m 13m 6952 S 1.9 0.2 24:57.36 stp
5119 svc-isan 20 0 139m 14m 7028 S 1.9 0.2 3:48.60 urib
5151 root 20 0 209m 46m 11m S 1.9 0.6 38:53.39 netstack
5402 svc-isan 20 0 117m 15m 9140 S 1.9 0.2 36:07.13 stp
6175 svc-isan 20 0 118m 16m 9580 S 1.9 0.2 47:09.41 stp
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0

top - 17:31:18 up 4 days, 18:31, 3 users, load average: 0.48, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192592k used, 4052844k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
2908 root 20 0 112m 8516 5516 S 7.5 0.1 264:44.47 pfm
31490 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
```

```
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
11 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 khelper
top - 17:31:23 up 4 days, 18:31, 3 users, load average: 0.44, 0.39, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192584k used, 4052852k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919612k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
31493 sjlan 20 0 3732 1656 1140 R 3.8 0.0 0:00.04 top
5004 svc-isan 20 0 118m 13m 6852 S 1.9 0.2 41:35.81 stp
10337 svc-isan 20 0 133m 11m 7948 S 1.9 0.1 1:42.81 mcecm
1 root 20 0 1988 604 524 S 0.0 0.0 0:06.51 init
2 root 15 -5 0 0 0 S 0.0 0.0 0:00.00 kthreadd
3 root RT -5 0 0 0 S 0.0 0.0 0:00.08 migration/0
4 root 15 -5 0 0 0 S 0.0 0.0 1:07.77 ksoftirqd/0
5 root -2 -5 0 0 0 S 0.0 0.0 0:13.74 watchdog/0
6 root RT -5 0 0 0 S 0.0 0.0 0:00.10 migration/1
7 root 15 -5 0 0 0 S 0.0 0.0 0:54.47 ksoftirqd/1
8 root -2 -5 0 0 0 S 0.0 0.0 0:00.20 watchdog/1
9 root 15 -5 0 0 0 S 0.0 0.0 0:02.94 events/0
10 root 15 -5 0 0 0 S 0.0 0.0 0:02.58 events/1
top - 17:31:29 up 4 days, 18:31, 3 users, load average: 0.41, 0.38, 0.32
Tasks: 449 total, 1 running, 448 sleeping, 0 stopped, 0 zombie
Cpu(s): 3.5%us, 4.5%sy, 0.0%ni, 91.2%id, 0.1%wa, 0.1%hi, 0.5%si, 0.0%st
Mem: 8245436k total, 4192708k used, 4052728k free, 27644k buffers
Swap: 0k total, 0k used, 0k free, 1919616k cached
```