



Troubleshooting Service Failures

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Identifying Memory Allocations for Processes

You can identify the allocation, limit, memory allocation, and usage for each process in the memory. The following is a sample output from the **show processes memory** command. This output has been abbreviated to make the example more concise.

```
switch# show processes memory
PID MemAlloc MemLimit MemUsed StackBase/Ptr Process
-----
1 159744 0 2027520 ff808d30/ffffffff init
2 0 0 0 0/0 kthreadd
3 0 0 0 0/0 migration/0
4 0 0 0 0/0 ksoftirqd/0
5 0 0 0 0/0 watchdog/0
6 0 0 0 0/0 migration/1
7 0 0 0 0/0 ksoftirqd/1
8 0 0 0 0/0 watchdog/1
9 0 0 0 0/0 migration/2
10 0 0 0 0/0 ksoftirqd/2
11 0 0 0 0/0 watchdog/2
12 0 0 0 0/0 migration/3
13 0 0 0 0/0 ksoftirqd/3
14 0 0 0 0/0 watchdog/3
15 0 0 0 0/0 migration/4
16 0 0 0 0/0 ksoftirqd/4
17 0 0 0 0/0 watchdog/4
18 0 0 0 0/0 migration/5
19 0 0 0 0/0 ksoftirqd/5
20 0 0 0 0/0 watchdog/5
21 0 0 0 0/0 migration/6
22 0 0 0 0/0 ksoftirqd/6
23 0 0 0 0/0 watchdog/6
24 0 0 0 0/0 migration/7
25 0 0 0 0/0 ksoftirqd/7
26 0 0 0 0/0 watchdog/7
```

```

27          0 0          0          0/0 events/0
28          0 0          0          0/0 events/1
29          0 0          0          0/0 events/2
30          0 0          0          0/0 events/3
31          0 0          0          0/0 events/4
32          0 0          0          0/0 events/5
33          0 0          0          0/0 events/6
34          0 0          0          0/0 events/7
35          0 0          0          0/0 khelper
36          0 0          0          0/0 netns
37          0 0          0          0/0 kblockd/0
    
```

The **show processes memory** command includes the following keywords:

Keyword	Description
>	Redirects the output to a file.
>>	Adds the output to an existing file.
shared	Displays shared memory information.

Identifying CPU Utilization for Processes

You can identify the CPU utilization for running process in the memory. The following is a sample output from the **show processes cpu** command. This output has been abbreviated to make the example more concise.

```
switch# show processes cpu
```

```
CPU utilization for five seconds: 0%/0%; one minute: 1%; five minutes: 2%
```

```

PID      Runtime(ms) Invoked  uSecs  5Sec   1Min   5Min   TTY   Process
-----
1         28660    405831    70    0.00%  0.00%  0.00%  -    init
2          21      1185     18    0.00%  0.00%  0.00%  -    kthreadd
3          468     36439    12    0.00%  0.00%  0.00%  -    migration/0
4         79725    8804385   9     0.00%  0.00%  0.00%  -    ksoftirqd/0
5          0         4        65    0.00%  0.00%  0.00%  -    watchdog/0
6          472     35942    13    0.00%  0.00%  0.00%  -    migration/1
7         33967    953376    35    0.00%  0.00%  0.00%  -    ksoftirqd/1
8          0         11       3     0.00%  0.00%  0.00%  -    watchdog/1
9          424     35558    11    0.00%  0.00%  0.00%  -    migration/2
10        58084    7683251   7     0.00%  0.00%  0.00%  -    ksoftirqd/2
11         0         3         1     0.00%  0.00%  0.00%  -    watchdog/2
12         381     29760    12    0.00%  0.00%  0.00%  -    migration/3
13        17258    265884    64    0.00%  0.00%  0.00%  -    ksoftirqd/3
14         0         2         0     0.00%  0.00%  0.00%  -    watchdog/3
15        46558    1300598   35    0.00%  0.00%  0.00%  -    migration/4
16       1332913  4354439   306   0.00%  0.00%  0.00%  -    ksoftirqd/4
17         0         6         2     0.00%  0.00%  0.00%  -    watchdog/4
18        45808    1283581   35    0.00%  0.00%  0.00%  -    migration/5
19       981030    1973423  497   0.00%  0.00%  0.00%  -    ksoftirqd/5
20         0         16       3     0.00%  0.00%  0.00%  -    watchdog/5
21        48019    1334683   35    0.00%  0.00%  0.00%  -    migration/6
22       1084448  2520990   430   0.00%  0.00%  0.00%  -    ksoftirqd/6
23         0         31       3     0.00%  0.00%  0.00%  -    watchdog/6
24        46490    1306203   35    0.00%  0.00%  0.00%  -    migration/7
    
```

25	1187547	2867126	414	0.00%	0.00%	0.00%	-	ksoftirqd/7
26	0	16	3	0.00%	0.00%	0.00%	-	watchdog/7
27	21249	2024626	10	0.00%	0.00%	0.00%	-	events/0
28	8503	1990090	4	0.00%	0.00%	0.00%	-	events/1
29	11675	1993684	5	0.00%	0.00%	0.00%	-	events/2
30	9090	1973913	4	0.00%	0.00%	0.00%	-	events/3
31	74118	2956999	25	0.00%	0.00%	0.00%	-	events/4
32	76281	2837641	26	0.00%	0.00%	0.00%	-	events/5
33	129651	3874436	33	0.00%	0.00%	0.00%	-	events/6
34	8864	2077714	4	0.00%	0.00%	0.00%	-	events/7
35	0	8	23	0.00%	0.00%	0.00%	-	khelper
36	234	34	6884	0.00%	0.00%	0.00%	-	netns

The `show processes cpu` command includes the following keywords:

Keyword	Description
>	Redirects the output to a file.
>>	Adds the output to an existing file.
history	Displays information about the CPU utility.
sort	Sorts the list based on the memory usage.

Monitoring Process Core Files

You can monitor the process core files by using the `show cores` command.

```
switch# show cores
Module Instance Process-name PID Date (Year-Month-Day Time)
-----
28 1 bgp-64551 5179 2013-11-08 23:51:26
```

The output shows all cores that are presently available for upload from the active supervisor.

Processing the Crash Core Files

You can process the crash core files by using the `show processes log` command.

```
switch# show process log
Process PID Normal-exit Stack-trace Core Log-create-time
-----
ntp 919 N N N Jun 27 04:08
snsm 972 N Y N Jun 24 20:50
```

Clearing the Core

You can clear the core by using the `clear cores` command.

```
switch# clear cores
```

Enabling Auto-Copy for Core Files

You can enter the `system cores` command to enable the automatic copy of core files to a TFTP server, the flash drive, or a file.

```
switch(config)# system cores tftp://10.1.1.1/cores
```