

# Clarifying the Firepower Threat Defense LINA process CPU utilization

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## Introduction

Q: Why the lina process on Firepower Threat Defense consumes 100% (or more) CPU?

A: This is normal because the lina process is constantly polling the Network Interface Cards (NICs) for input traffic. In short, the lina process utilization can be safely ignored.

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## Analysis

Firepower Threat Defense is a unified operating system consisting of 2 engines (ASA and Snort).

The FTD CLI shows that 'lina' process (ASA engine) consumes a lot of CPU cycles. Here is an example from an FTD running on ASA5506-X appliance:

```
> system support utilization
top - 01:26:40 up 12 days, 16:00,  1 user,  load average: 22.08, 22.10, 22.10
Tasks: 161 total,  1 running, 159 sleeping,  0 stopped,  1 zombie
Cpu(s):  22.6%us,  4.1%sy,  0.0%ni,  73.2%id,  0.1%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:   3927684k total,  2793860k used,  120904k free,  181548k buffers
Swap:  3996668k total,  257632k used,  3739036k free,  831372k cached
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND	
23000	root		0	-20	1138m	513m	91m	S	99	13.4	18205:20	<b>lina</b> <--
2952	admin		20	0	15240	1156	848	R	2	0.0	0:00.02	top
22941	root		20	0	266m	2316	2108	S	2	0.1	47:16.70	ndmain.bin
1	root		20	0	4232	652	620	S	0	0.0	0:12.40	init

In the above output you should actually take into consideration the us (user) + sy (system) CPU utilization along with the id (idle - not used) value.

Here is from an FTD running on FPR-9300 appliance:

```
> system support utilization top - 04:30:22 up 40 days, 5:22, 0 users, load average: 26.12,
26.10, 26.13 Tasks: 568 total, 1 running, 566 sleeping, 0 stopped, 1 zombie Cpu(s): 22.1%us,
0.2%sy, 0.0%ni, 77.6%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st Mem: 264374828k total, 28976700k used,
234868048k free, 268k buffers Swap: 0k total, 0k used, 0k free, 529812k cached PID USER PR NI
VIRT RES SHR S %CPU %MEM TIME+ COMMAND 12772 root 0 -20 24.8g 541m 88m S 1593 0.2 927288:05 lina
<-- 12594 mysql 20 0 3063m 150m 9140 S 4 0.1 56:28.39 mysqld 12608 root 20 0 24696 2848 1192 S 2
0.0 422:45.07 pdts_proc 43145 admin 20 0 15648 1484 844 R 2 0.0 0:00.01 top 1 root 20 0 4232 632
552 S 0 0.0 0:15.43 init
```

## Recommendations

- In the 'system support utilization' ignore the 'lina' process utilization.
- To monitor the FTD CPU utilization check the 'us' + 'sys' + 'id' values
- Regarding the monitoring of the ASA engine you should check the following outputs:

### Output 1

```
> show cpu usage CPU utilization for 5 seconds = 0%; 1 minute: 0%; 5 minutes: 0%
```

### Output 2

```
> show processes cpu-usage sorted non-zero PC Thread 5Sec 1Min 5Min Process 0x00007f42428f1fd9
0x00007f42290b9ea0 0.2% 0.0% 0.0% ci/console
```