

OVERVIEW OF SOME CLI TOOLS

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# UNIX SYSTEM MONITORING

# PROCESS MONITORING

# PROCESS MONITORING

## TOP

### ► Pros

- It will be there...pretty much always
- Selectable and sortable reporting columns
- Can give a quick overview of a system

### ► Cons

- Man is it archaic. 2 whole color choices!
- The columns might not mean what you think they mean.
- Wasn't really designed for systems with multiple CPUs

### ► Notes

- The h key is your friend when it comes to understanding how to use top

```
top - 15:14:52 up 2 days, 21 min, 3 users, load average: 0.64, 0.47, 0.39
Tasks: 269 total, 1 running, 268 sleeping, 0 stopped, 0 zombie
%Cpu(s): 10.4 us, 2.7 sy, 0.0 ni, 86.1 id, 0.2 wa, 0.0 hi, 0.7 si, 0.0 st
KiB Mem : 16160000 total, 4824224 free, 4387944 used, 6947840 buff/cache
KiB Swap: 6291452 total, 6291452 free, 0 used, 10489368 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 33659 avahi     20   0   166328   20108   18428 S   6.6   0.1   0:36.93 postgres
 32829 avahi     20   0   166336   21720   19928 S   6.0   0.1   0:41.07 postgres
   5794 polkitd   20   0   3569564 457800   18852 S   3.3   2.8   91:49.84 java
   5538 polkitd   20   0   3563420 418448   18632 S   2.7   2.6   89:03.33 java
 35052 avahi     20   0   166264   18464   16688 S   2.3   0.1   0:23.98 postgres
   8513 root      20   0   617612   55380   23460 S   1.3   0.3   5:57.74 node
   6675 root      20   0   385076   74080   13004 S   1.0   0.5   44:04.00 cadvisor
   1170 root      20   0   1799796 228780   42776 S   0.7   1.4   38:32.67 dockerd
   2538 nagios    20   0   422884   38200    7540 S   0.7   0.2   3:52.87 ncpa_listener
 29552 root      20   0         0         0         0 S   0.7   0.0   0:05.10 kworker/0:0
 53113 1000      20   0   3789072 2.331g   18704 S   0.7  15.1   7:35.03 java
    7 root      20   0         0         0         0 S   0.3   0.0   2:06.31 rcu_sched
   797 root      20   0         0         0         0 S   0.3   0.0   0:31.22 jbd2/dm-3-8
   816 root      16  -4   57664    3672    3208 S   0.3   0.0   8:31.43 auditd
   835 root      12  -8   84500    1652    1488 S   0.3   0.0   6:43.69 audispd
   6575 polkitd   20   0   1261672 98644    21908 S   0.3   0.6   6:51.18 node
 32071 root      20   0         0         0         0 S   0.3   0.0   0:03.07 kworker/1:1
    1 root      20   0   125776    5588    3768 S   0.0   0.0   0:07.73 systemd
    2 root      20   0         0         0         0 S   0.0   0.0   0:00.04 kthreadd
    3 root      20   0         0         0         0 S   0.0   0.0   0:11.70 ksoftirqd/0
    5 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 kworker/0:0H
    8 root      20   0         0         0         0 S   0.0   0.0   0:00.00 rcu_bh
    9 root      20   0         0         0         0 S   0.0   0.0   3:07.16 rcuos/0
   10 root      20   0         0         0         0 S   0.0   0.0   0:00.00 rcuob/0
   11 root      rt   0         0         0         0 S   0.0   0.0   0:01.41 migration/0
   12 root      rt   0         0         0         0 S   0.0   0.0   0:00.62 watchdog/0
   13 root      rt   0         0         0         0 S   0.0   0.0   0:00.50 watchdog/1
   14 root      rt   0         0         0         0 S   0.0   0.0   0:01.51 migration/1
   15 root      20   0         0         0         0 S   0.0   0.0   0:11.37 ksoftirqd/1
   17 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 kworker/1:0H
   18 root      20   0         0         0         0 S   0.0   0.0   0:43.53 rcuos/1
   19 root      20   0         0         0         0 S   0.0   0.0   0:00.00 rcuob/1
   20 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 khelper
   21 root      20   0         0         0         0 S   0.0   0.0   0:00.00 kdevtmpfs
   22 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 netns
   23 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 perf
   24 root      20   0         0         0         0 S   0.0   0.0   0:00.17 khungtaskd
   25 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 writeback
   26 root      25   5         0         0         0 S   0.0   0.0   0:00.00 ksm
   27 root      39  19         0         0         0 S   0.0   0.0   0:01.71 khugepaged
   28 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 crypto
   29 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 kintegrityd
   30 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 bioset
   31 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 kblockd
   32 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 md
   33 root      0 -20         0         0         0 S   0.0   0.0   0:00.00 devfreq_wq
```

# IOTOP

- ▶ Pros
  - ▶ Like top but for monitoring disk usage
  - ▶ Great tool for finding what process is causing crazy I/O
- ▶ Cons
  - ▶ Also ugly to look at
  - ▶ WYSIWYG (What you see is what you get). No config options after its launched.
- ▶ Notes
  - ▶ --only is your friend. Allows you to see only processes with current I/O

Total DISK READ :		0.00 B/s	Total DISK WRITE :		7.46 K/s		
Actual DISK READ:		0.00 B/s	Actual DISK WRITE:		44.77 K/s		
TID	PRI0	USER	DISK READ	DISK WRITE	SWAPIN	IO>	COMMAND
797	be/3	root	0.00 B/s	0.00 B/s	0.00 %	0.17 %	[jbd2/dm-3-8]
834	be/3	root	0.00 B/s	0.00 B/s	0.00 %	0.06 %	auditd -n
816	be/3	root	0.00 B/s	7.46 K/s	0.00 %	0.04 %	auditd -n
1	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	systemd --switched-root --system --des
2	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kthreadd]
3	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/0]
5	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/0:0H]
6150	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	docker-containerd-shim f00cff8751eff64
7	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_sched]
8	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_bh]
9	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcuos/0]
10	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcuob/0]
11	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/0]
12	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/0]
13	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/1]
14	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/1]
15	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/1]
17	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/1:0H]
18	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcuos/1]
19	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcuob/1]
20	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[khelper]
21	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kdevtmpfs]
22	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[netns]
23	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[perf]
24	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[khungtaskd]
25	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[writeback]
26	be/5	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksmd]
27	be/7	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[khugepaged]
28	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[crypto]
29	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kintegrityd]
30	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[bioset]
31	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kblockd]
32	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[md]
33	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[devfreq_wq]
37	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kswapd0]
38	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[fsnotify_mark]
689	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kdmflush]
6151	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	docker-containerd-shim f00cff8751eff64
12332	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	node server
12333	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	node server
12334	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	node server
12335	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	node server
6152	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	docker-containerd-shim f00cff8751eff64
50	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kthrotld]
51	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[acpi_thermal_pm]
53	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kmpath_rdadcd]
54	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kpsmouse]
6153	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	docker-containerd-shim f00cff8751eff64
56	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[bcache]
57	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ipv6_addrconf]
53306	be/4	1000	0.00 B/s	0.00 B/s	0.00 %	0.00 %	java -Xms2g -Xmx2g -XX:+UseConcMarkSwe
6203	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	dockerd -g /docker --icc=false --disab
53308	be/4	1000	0.00 B/s	0.00 B/s	0.00 %	0.00 %	java -Xms2g -Xmx2g -XX:+UseConcMarkSwe
6154	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	docker-containerd-shim f00cff8751eff64
53310	be/4	1000	0.00 B/s	0.00 B/s	0.00 %	0.00 %	java -Xms2g -Xmx2g -XX:+UseConcMarkSwe

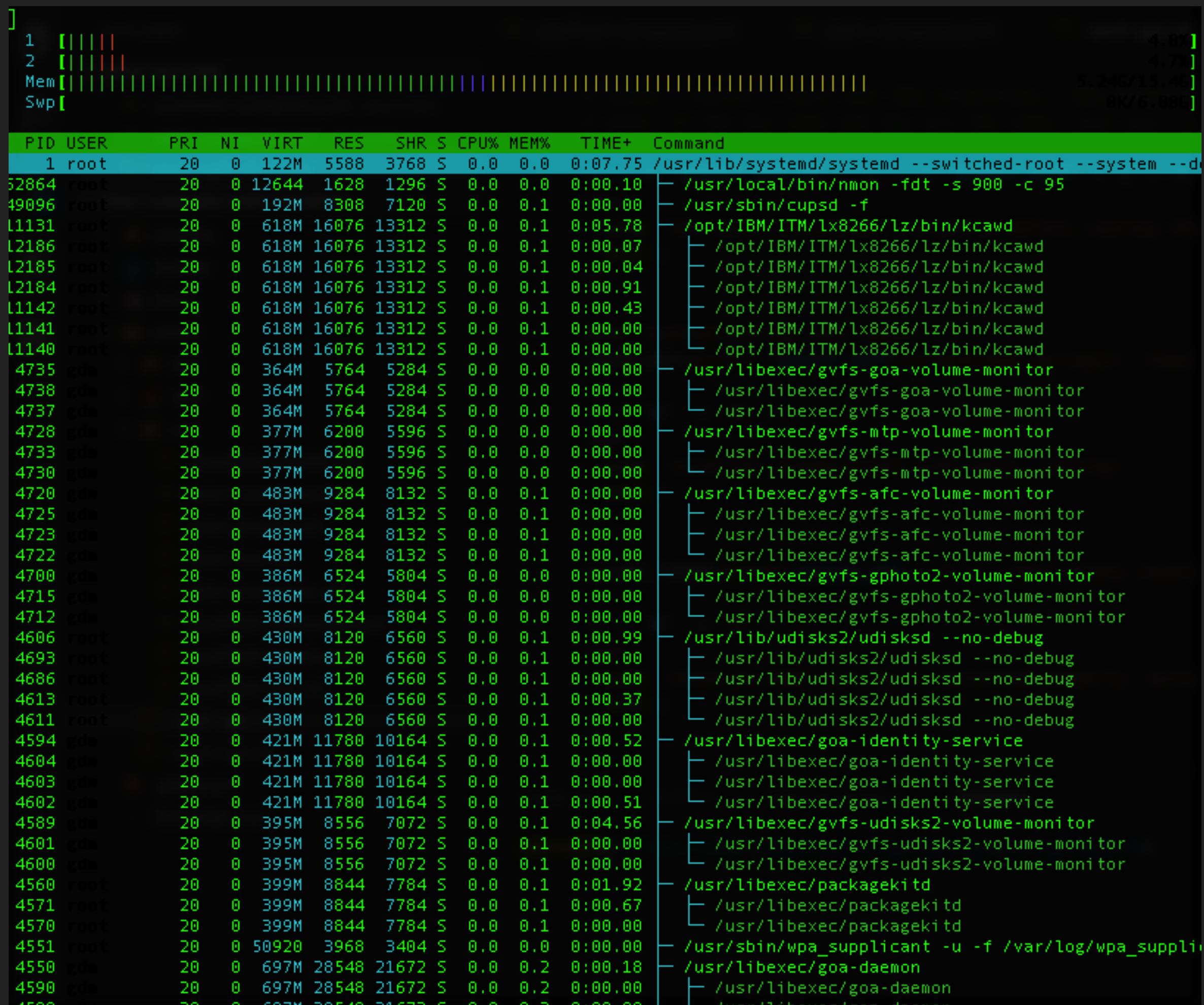
## HTOP

### ► Pros

- Like top but with colors and "charts"
- Actually provides on-screen instructions so you don't have to dig out a manpage
- UI is customizable (rearrange stuff, change colors, lots of options)
- Can display I/O information (requires running with sudo)

### ► Cons

- Pretty much none. It's all the good stuff about top and iotop





# SYSTEM MONITORING

# VMSTAT

- ▶ Snapshot in time view of some key metrics
- ▶ Pros
  - ▶ It does what you think it does
- ▶ Cons
  - ▶ Could be nicer (and we have nicer options)

```
[a0044698@stlspdm-dock01 ~]$ vmstat
procs  -----memory-----  ---swap--  -----io-----  -system--  -----cpu-----
 r  b    swpd   free   buff  cache   si   so    bi    bo    in    cs  us  sy  id  wa  st
 1  0        0 2599424 405264 6568348    0    0     9   188   87   35  6  2 93  0  0
```

# LSOF

- ▶ Provides a list of all open files
- ▶ Options to filter the results based on criteria like port, open user, and a lot more
- ▶ Some examples: <https://www.tecmint.com/10-lsof-command-examples-in-linux/>



# NETSTAT

- ▶ What's happening with the box's network interface
- ▶ Filter by connection type (UDP/TCP), protocol, etc
- ▶ Allows you to find what process is using what port

```
[a0044690@stispum00ck01 ~]$ sudo !!
sudo netstat -tln
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:56651           0.0.0.0:*               LISTEN      2737/klzagent
tcp        0      0 0.0.0.0:42380           0.0.0.0:*               LISTEN      2737/klzagent
tcp        0      0 0.0.0.0:can-ferret-ssl  0.0.0.0:*               LISTEN      2737/klzagent
tcp        0      0 0.0.0.0:sunrpc           0.0.0.0:*               LISTEN      1/systemd
tcp        0      0 0.0.0.0:bpcd              0.0.0.0:*               LISTEN      1423/bpcd
tcp        0      0 0.0.0.0:ssh                0.0.0.0:*               LISTEN      1186/sshd
tcp        0      0 localhost:ipp            0.0.0.0:*               LISTEN      49096/cupsd
tcp        0      0 0.0.0.0:49527               0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:35448              0.0.0.0:*               LISTEN      1219/rpc.statd
tcp        0      0 localhost:smtp           0.0.0.0:*               LISTEN      3184/sendmail: acce
tcp        0      0 0.0.0.0:vnetd              0.0.0.0:*               LISTEN      1245/vnetd
tcp        0      0 0.0.0.0:rbsystem              0.0.0.0:*               LISTEN      2538/ncpa_listener
tcp        0      0 0.0.0.0:6014                  0.0.0.0:*               LISTEN      2737/klzagent
tcp        0      0 0.0.0.0:can-ferret            0.0.0.0:*               LISTEN      2737/klzagent
tcp        0      0 localhost:52065          0.0.0.0:*               LISTEN      2737/klzagent
tcp6       0      0 :::2377                  :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::7946                   :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::42923                  :::*                   LISTEN      2737/klzagent
tcp6       0      0 :::can-ferret-ssl        :::*                   LISTEN      2737/klzagent
tcp6       0      0 :::sunrpc                 :::*                   LISTEN      1/systemd
tcp6       0      0 :::wap-wsp-wtp           :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::pago-services2        :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::58194                  :::*                   LISTEN      2737/klzagent
tcp6       0      0 :::30003                  :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::37555                  :::*                   LISTEN      -
tcp6       0      0 :::30005                  :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::ssh                    :::*                   LISTEN      1186/sshd
tcp6       0      0 localhost:ipp            :::*                   LISTEN      49096/cupsd
tcp6       0      0 :::7480                   :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::hbc1                   :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::47160                  :::*                   LISTEN      1219/rpc.statd
tcp6       0      0 :::origo-native          :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::https                  :::*                   LISTEN      1170/dockerd
tcp6       0      0 :::can-ferret             :::*                   LISTEN      2737/klzagent
tcp6       0      0 :::esmagent               :::*                   LISTEN      1170/dockerd
```

# SYSTEM MONITORING

## DSTAT

- ▶ Like VmStat but with automatic refreshing and colors for a better UX
- ▶ Highly customizable

[[a0044698@stlspdm-dock01 ~]\$ dstats																												
----total-cpu-usage----										-dsk/total-		---paging--		---load-avg---			-----memory-usage-----				-net/total-		--io/total-		----swap----		----system----	
usr	sys	idl	wai	hig	sig	read	writ	in	out	1m	5m	15m	used	buff	cach	free	recv	send	read	writ	used	free	time					
6	2	93				17	374			1.80	0.90	0.66	6485	397	6397	2502			8.50	14.1	6144		29-06 15:54:30					
81	16	1			3	6564				1.80	0.90	0.66	6512	397	6429	2443	7694	3158		632	6144		29-06 15:54:31					
81	17				3	2324				2.38	1.03	0.70	6539	397	6461	2384	7658	3784		548	6144		29-06 15:54:32					
78	17	2	1		3	3236				2.38	1.03	0.70	6563	397	6493	2328	8189	4176		794	6144		29-06 15:54:33					
81	16		1		3	18				2.38	1.03	0.70	6588	397	6518	2278	7508	3707		1235	6144		29-06 15:54:34					
74	18	3	2		4	4284				2.38	1.03	0.70	6610	397	6541	2232	8522	5436		1873	6144		29-06 15:54:35					
79	18				3	2228				2.38	1.03	0.70	6639	397	6564	2181	7714	3302		555	6144		29-06 15:54:36					
79	17	1	1		3	3784				2.67	1.12	0.73	6659	397	6596	2128	5951	2968		805	6144		29-06 15:54:37					
77	18	1	1		4	3836				2.67	1.12	0.73	6685	397	6613	2087	8101	5749		835	6144		29-06 15:54:38					
84	15				2	2152				2.67	1.12	0.73	6710	397	6646	2029	5424	3178		530	6144		29-06 15:54:39					
80	16		1		3	3732				2.67	1.12	0.73	6730	397	6677	1977	7765	3935		902	6144		29-06 15:54:40					
81	16		1		2	2420				2.67	1.12	0.73	6756	397	6710	1918	5502	3238		599	6144		29-06 15:54:41					
83	14				2	2324				2.93	1.20	0.76	6782	397	6742	1859	7883	3406		555	6144		29-06 15:54:42					
76	20	1	2		2	4228				2.93	1.20	0.76	6807	397	6757	1820	5672	3169		883	6144		29-06 15:54:43					
81	17				3	2216				2.93	1.20	0.76	6835	397	6788	1760	7293	2825		553	6144		29-06 15:54:44					
71	28				2	2100				2.93	1.20	0.76	6866	397	6806	1713	6629	3171		545	6144		29-06 15:54:45					
81	17				2	2200				2.93	1.20	0.76	6894	397	6830	1660	7339	3560		544	6144		29-06 15:54:46					
80	18				2	2264				3.34	1.31	0.80	6918	397	6862	1604	8670	3614		520	6144		29-06 15:54:47					
74	21				5	3040				3.34	1.31	0.80	6940	397	6755	1609	31	4589		590	6144		29-06 15:54:48					
76	13				10	2072				3.34	1.31	0.80	6953	397	6885	1547	130	3824		510	6144		29-06 15:54:49					
89	8				3	1732				3.34	1.31	0.80	6965	397	6909	1510	13	2668		408	6144		29-06 15:54:50					
83	15				2	1632				3.34	1.31	0.80	6987	397	6927	1471	5669	3096		366	6144		29-06 15:54:51					
78	20	1			2	2148				3.47	1.37	0.82	7011	397	6950	1423	7298	3257		525	6144		29-06 15:54:52					
71	20	2	4		3	5796				3.47	1.37	0.82	7038	397	6966	1300	5443	3665		1429	6144		29-06 15:54:53					
64	27	2	3		5	137				3.47	1.37	0.82	7234	397	6423	1727	8646	3800		1602	6144		29-06 15:54:54					
50	41		5		5	7396				3.47	1.37	0.82	7869	397	6423	1092	6730	6585		1847	6144		29-06 15:54:55					
53	37		6		5	9304				3.47	1.37	0.82	8649	397	6424	311	8208	3618		2324	6144		29-06 15:54:56					
36	51		9		4	17				3.36	1.30	0.83	8968	397	6178	239	6614	5650		2442	6144		29-06 15:54:57					
40	50		7		4	8388				3.36	1.30	0.83	9356	387	5802	237	7909	3394		1941	6144		29-06 15:54:58					
36	49	1	11		4	9372				3.36	1.30	0.83	9751	382	5410	230	6726	4474		2344	6144		29-06 15:54:59					
46	42		7		5	5428	9028			3.36	1.30	0.83	9540	362	5141	738	9095	4082	31.0	2231	6144		29-06 15:55:00					
52	40		5		3	7612				3.36	1.30	0.83	9.82	349	5208	169	7075	5255		1905	6144		29-06 15:55:01					
23	56	7	7		7	1936	67			4.61	1.67	0.93	9.83	342	5212	166	7167	3751	171	618	6144		29-06 15:55:02					
38	56	1	1		6	8784	168			4.61	1.67	0.93	9.83	335	5209	174	5802	3075	379	647	6144		29-06 15:55:03					
33	44	6	13		4	8888	174			4.61	1.67	0.93	6306	328	5255	3892	7987	2858	507	2268	6144		29-06 15:55:04					
58	24	8	5		5	816	9528			4.61	1.67	0.93	6306	328	5257	3891	10	4648	2.00	2369	6144		29-06 15:55:05					
52	24	13	6		5	640	14			4.61	1.67	0.93	6307	328	5259	3808	9800	5565	40.0	2552	6144		29-06 15:55:06					
56	20	14	6		5	10				4.48	1.70	0.94	6305	328	5260	3808	7476	3505		2542	6144		29-06 15:55:07					
49	24	18	7		3	11				4.48	1.70	0.94	6306	328	5262	3806	7979	2759		2619	6144		29-06 15:55:08					
47	27	11	10		5	16	361			4.48	1.70	0.94	6308	328	5262	3804	9123	3397	2.00	2212	6144		29-06 15:55:09					
34	46	5	11		4	2004	10			4.48	1.70	0.94	6305	329	5264	3804	7496	3051	278	2472	6144		29-06 15:55:10					
35	48	2	12		3	2840	9740			4.48	1.70	0.94	6320	330	5267	3865	5786	3358	311	2437	6144		29-06 15:55:11					
45	38	3	10		5	292	10			4.84	1.82	0.98	6316	330	5275	3861	8446	4940	67.0	2453	6144		29-06 15:55:12					
36	18	26	16		4	204	11			4.84	1.82	0.98	6315	330	5277	3859	8547	5590	10.0	2807	6144		29-06 15:55:13					
26	14	39	16		5	11				4.84	1.82	0.98	6316	330	5279	3857	9732	5544		2940	6144		29-06 15:55:14					
46	15	24	13		4	11				4.84	1.82	0.98	6316	330	5280	3855	6116	4066		2818	6144		29-06 15:55:15					
29	17	33	17		4	11				4.84	1.82	0.98	6316	330	5280	3854	8336	4211		2024	6144		29-06 15:55:16					
43	16	25	11		4	60	9408			4.69	1.84	0.99	6317	330	5283	3852	7790	5659	2.00	2271	6144		29-06 15:55:17					
41	19	22	12		5	9508				4.69	1.84	0.99	6317	330	5283	3851	8077	3055		2200	6144		29-06 15:55:18					
34	16	33	14		4	16	10			4.69	1.84	0.99	6317	330	5284	3850	6731	5708	1.00	2584	6144		29-06 15:55:19					
40	16	26	15		4	10				4.69	1.84	0.99	6316	330	5287	3848	9727	3850		2646	6144		29-06 15:55:20					
28	15	38	17		3	11				4.69	1.84	0.99	6317	330	5288	3847	6655	5520		2807	6144		29-06 15:55:21					
30	15	34	17		4	11				4.40	1.82	0.99	6317	330	5289	3845	9877	5943		2005	6144		29-06 15:55:22					
44	19	11	22		4	10	10			4.40	1.82	0.99	6328	331	5308	3814	6332	3717	1127	2457	611							

# DOCKER MONITORING

# DOCKER SERVICE

- ▶ Docker service ls
  - ▶ Show all running services
- ▶ Docker service inspect
  - ▶ Show the environment info for a docker service
- ▶ Docker service ps
  - ▶ Show the process information for a docker service (including which host its running on)
- ▶ Docker service scale
  - ▶ Change the number of instances a service should be running
- ▶ Docker service update
  - ▶ Allows you to change a lots of properties about a docker service. Use --help to see what you can do
- ▶ Docker service create
  - ▶ Creates a new service. We do all of this through a config file.
- ▶ Docker service rm

# DOCKER (LIMITED TO THE CURRENT MACHINE)

- ▶ Docker ps
  - ▶ Lists all running docker processes
  - ▶ Use -a to include exited processes that can be resumes
- ▶ Docker inspect
  - ▶ Similar to service inspect but provides info on the specific docker container
- ▶ Docker stats
  - ▶ Show system resource utilization per process