

Disk

mo

| | | | |
|-----------------------|----------|----------|--------------------------|
| Proxmox | monitor | resource | CPU , Load , Ram , Netw |
| 1 | monitor | Proxmox | read-write activity |
| Disk | access | vm | |
| (version 8) Proxmox | IO delay | % | monitor Disk |
| Activity | Disk | | |

1. iostat

| | | |
|---|------------|------|
| iostat | read-write | Disk |
| \$ ssh root@xxx.xxx.xxx.xxx (Proxmox) | | |
| # apt install sysstat () | | |
| # iostat | | |
| # watch -n 1 iostat (1) | | |
| # iostat -t () | | |
| # iostat -m (MB) | | |
| # iostat -p nvme0n1 (nvme0n1) | | |

```

root@:~# iostat
Linux 5.15.39-4-pve ( ) 04/08/2024 _x86_64_ (12 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           5.22    0.00    1.40    0.46    0.00   92.92

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
nvme0n1          124.19      134.80      3763.61      697.81    42129918    1176235864    218087024
nvme1n1          127.93      148.59      3763.61      697.82    46438366    1176235864    218088112
zd0              0.00        0.00        0.00        0.00        116         0         0
zd112            0.00        0.00        0.00        0.00        244         0         0
zd128            0.45        2.05        4.05        0.00     641585    1265916         0
zd144            0.32        0.84        2.08        0.00     262027     649492         0
zd16             0.55        1.77        4.30        0.00     551767    1343392         0
zd160            1.56        1.31       67.08        0.00     409887    20964213         0
zd176            0.00        0.03        0.00        0.00       9024         0         0
zd32             0.00        0.01        0.00        0.00       3763         0         0
zd48             60.18        1.90    1819.15        0.00     592723    568537600         0
zd64             3.09        2.49     16.02        0.00     779422     5007413         0
zd80             0.00        0.02        0.00        0.00       6282         0         0
zd96             3.49        5.97     19.92        0.00    1865906    6224656         0

```

2. atop

atop activity (read-write) Disk CPU , Mem , Swap , Disk , NIC

\$ ssh root@xxx.xxx.xxx.xxx (Proxmox)

apt install atop ()

atop

atop -x (color critical activity)

atop -x 1 (1)

| ATOP - | | | 2024/04/08 12:49:58 | | | | | | | | | | ----- | | | | | 10s elapsed | |
|-----------------------------|-----------|--------|---------------------|-------|---------|--------|--------|--------|--------|----------|--------|----------|---------|---------|---------|-------------|------|-------------|--|
| PRC | sys | 2.64s | user | 7.84s | #proc | 376 | #trun | 5 | #tslpi | 410 | #tslpu | 0 | #zombie | 0 | #exit | 676 | | | |
| CPU | sys | 20% | user | 74% | irq | 1% | idle | 1102% | wait | 2% | ipc | 0.62 | curf | 3.07GHz | curscal | 7% | | | |
| CPL | avg1 | 0.98 | avg5 | 1.07 | avg15 | 1.02 | | | csw | 252961 | intr | 122908 | | | numcpu | 12 | | | |
| MEM | tot | 31.3G | free | 3.1G | cache | 293.3M | buff | 0.7M | slab | 1.1G | vmbr | 0.0M | zfar | 15.6G | hptot | 0.0M | | | |
| SWP | tot | 0.0M | free | 0.0M | | | swcac | 0.0M | | | | | vmcom | 25.5G | vmlim | 15.6G | | | |
| PSI | cpusome | 0% | memsome | 0% | memfull | 0% | iosome | 0% | iofull | 0% | cs | 0/0/0 | ms | 0/0/0 | is | 0/0/0 | | | |
| DSK | nvme0n1 | busy | 6% | read | 200 | write | 962 | KiB/w | 44 | MB/s | 0.0 | MB/s | 4.2 | avio | 0.52 ms | | | | |
| DSK | nvme1n1 | busy | 4% | read | 196 | write | 1054 | KiB/w | 40 | MB/s | 0.0 | MB/s | 4.2 | avio | 0.34 ms | | | | |
| NET | transport | tcpi | 42 | tcpo | 103 | udpi | 4 | udpo | 4 | tcpao | 2 | tcpo | 0 | tcpr | 0 | | | | |
| NET | network | ipi | 8272 | ipo | 113 | ipfrw | 0 | deliv | 103 | | | icmpi | 24 | icmpo | 0 | | | | |
| NET | eth88tn | ---- | pcki | 3880 | pcko | 3121 | sp | 0 Mbps | si | 447 Kbps | so | 298 Kbps | erri | 0 | erro | 0 | | | |
| NET | tap102i | ---- | pcki | 2905 | pcko | 3659 | sp | 0 Mbps | si | 227 Kbps | so | 412 Kbps | erri | 0 | erro | 0 | | | |
| Window resized to 139x35... | | | | | | | | | | | | | | | | | | | |
| PID | SYSCPU | USRCPU | RDELAY | VGROW | RGROW | RDDSK | WRDSK | RUID | EUID | ST | EXC | THR | S | CPUNR | CPU | CMD | 1/42 | | |
| 4595 | 0.32s | 6.29s | 0.01s | 0K | 0K | 0K | 23016K | root | root | -- | - | 14 | S | 2 | 67% | kvm | | | |
| 91 | 1.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 3 | 11% | ksmd | | | |
| 4415 | 0.17s | 0.31s | 0.00s | 0K | 0K | 0K | 24K | root | root | -- | - | 10 | S | 8 | 5% | kvm | | | |
| 16646 | 0.18s | 0.26s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 14 | S | 8 | 4% | kvm | | | |
| 15834 | 0.16s | 0.25s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 14 | S | 9 | 4% | kvm | | | |
| 19241 | 0.07s | 0.25s | 0.00s | 0K | 0K | 0K | 372K | root | root | -- | - | 12 | S | 7 | 3% | kvm | | | |
| 38174 | 0.04s | 0.27s | 0.00s | 0K | 0K | 0K | 1402K | root | root | -- | - | 9 | S | 10 | 3% | kvm | | | |
| 23405 | 0.05s | 0.07s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 8 | S | 9 | 1% | kvm | | | |
| 4706 | 0.10s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 1 | 1% | vhost-4595 | | | |
| 4187 | 0.01s | 0.07s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 9 | S | 9 | 1% | corosync | | | |
| 4234 | 0.01s | 0.05s | 0.00s | 0K | 0K | 258K | 0K | root | root | -- | - | 1 | S | 11 | 1% | pvestatd | | | |
| 22333 | 0.05s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 7 | 1% | vhost-19241 | | | |
| 24016 | 0.05s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 1 | 1% | vhost-23405 | | | |
| 2449430 | 0.03s | 0.01s | 0.00s | 1512K | 1608K | 627K | 0K | root | root | -- | - | 1 | R | 3 | 0% | atop | | | |
| 39 | 0.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 4 | 0% | ksoftirqd/4 | | | |
| 4443 | 0.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 5 | 0% | vhost-4415 | | | |
| 15944 | 0.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 9 | 0% | vhost-15834 | | | |
| 16799 | 0.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 1 | 0% | vhost-16646 | | | |
| 38902 | 0.04s | 0.00s | 0.00s | 0K | 0K | 0K | 0K | root | root | -- | - | 1 | S | 9 | 0% | vhost-38174 | | | |
| 339 | 0.02s | 0.00s | 0.00s | 0K | 0K | 4K | 14394K | root | root | -- | - | 1 | S | 3 | 0% | zvol | | | |

3. iotop

iotop activity (read-write) Disk application (& service)

\$ ssh root@xxx.xxx.xxx.xxx (Proxmox)

apt install iotop ()

iotop

| Total DISK READ: | | 0.00 B/s | | Total DISK WRITE: | | 4.44 M/s | |
|--------------------|------|----------|-----------|---------------------|---------------|-------------------|------------------------------|
| Current DISK READ: | | 0.00 B/s | | Current DISK WRITE: | | 26.48 M/s | |
| TID | PRI | USER | DISK READ | DISK WRITE | SWAPIN | IO> | COMMAND |
| 339 | be/0 | root | 0.00 B/s | 1309.80 K/s | ?unavailable? | | [zvol] |
| 2433134 | be/4 | root | 0.00 B/s | 14.68 K/s | ?unavailable? | kvm -id 103 -name | type=pc+pve0 [iou-wrk-4415] |
| 2386293 | be/4 | root | 0.00 B/s | 818.17 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2401642 | be/4 | root | 0.00 B/s | 264.16 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2406726 | be/4 | root | 0.00 B/s | 132.08 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2408613 | be/4 | root | 0.00 B/s | 565.01 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2421074 | be/4 | root | 0.00 B/s | 249.49 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2431253 | be/4 | root | 0.00 B/s | 1185.06 K/s | ?unavailable? | kvm -id 102 -name | type=pc+pve0 [iou-wrk-4595] |
| 2435082 | be/4 | root | 0.00 B/s | 7.34 K/s | ?unavailable? | kvm -id 104 -name | type=pc+pve0 [iou-wrk-19241] |
| 1 | be/4 | root | 0.00 B/s | 0.00 B/s | ?unavailable? | init | |
| 2 | be/4 | root | 0.00 B/s | 0.00 B/s | ?unavailable? | [kthreadd] | |
| 3 | be/4 | root | 0.00 B/s | 0.00 B/s | ?unavailable? | [rcu_gp] | |
| 4 | be/4 | root | 0.00 B/s | 0.00 B/s | ?unavailable? | [rcu_par_gp] | |

4. dstat

dstat activity (read-write) Disk

\$ ssh root@xxx.xxx.xxx.xxx (Proxmox)

apt install dstat ()

dstat

dstat -c -d -g -l -m -n -r -s -t ()

```
root@limitrack-server1:~# dstat -c -d -g -l -m -n -r -s -t
```

| --total-cpu-usage-- | | | | --dsk/total-- | | --paging-- | | --load-avg-- | | | --memory-usage-- | | | | --net/total-- | | --io/total-- | | --swap-- | | --system-- | |
|---------------------|-----|-----|-----|---------------|-------|------------|----|--------------|------|------|------------------|-------|-------|------|---------------|------|--------------|------|----------|------|------------|-------------------|
| usr | sys | idl | wai | stl | read | writ | in | out | 1m | 5m | 15m | used | free | buff | cach | recv | send | read | writ | used | free | time |
| 5 | 1 | 93 | 0 | 0 | 578k | 17M | 0 | 0 | 1.20 | 1.10 | 1.09 | 27.9G | 3167M | 696k | 264M | 0 | 0 | 88.6 | 460 | 0 | 0 | 08-04 13:04:48 |
| 4 | 1 | 94 | 0 | 0 | 0 | 24M | 0 | 0 | 1.11 | 1.08 | 1.08 | 27.9G | 3166M | 696k | 264M | 319k | 409k | 88.0 | 296 | 0 | 0 | 08-04 13:04:49 |
| 5 | 2 | 93 | 0 | 0 | 0 | 8548k | 0 | 0 | 1.11 | 1.08 | 1.08 | 27.9G | 3180M | 696k | 264M | 211k | 252k | 76.0 | 175 | 0 | 0 | 08-04 13:04:50 |
| 4 | 2 | 94 | 0 | 0 | 0 | 8200k | 0 | 0 | 1.11 | 1.08 | 1.08 | 27.9G | 3177M | 696k | 264M | 345k | 457k | 68.0 | 161 | 0 | 0 | 08-04 13:04:51 |
| 4 | 2 | 94 | 1 | 0 | 0 | 43M | 0 | 0 | 1.11 | 1.08 | 1.08 | 27.9G | 3179M | 696k | 264M | 296k | 384k | 112 | 1604 | 0 | 0 | 08-04 13:04:52 |
| 4 | 1 | 95 | 0 | 0 | 0 | 7600k | 0 | 0 | 1.11 | 1.08 | 1.08 | 27.9G | 3179M | 696k | 264M | 248k | 317k | 88.0 | 180 | 0 | 0 | 08-04 13:04:53 |
| 5 | 1 | 94 | 0 | 0 | 0 | 9466k | 0 | 0 | 1.02 | 1.06 | 1.08 | 27.9G | 3182M | 696k | 264M | 291k | 380k | 76.0 | 185 | 0 | 0 | 08-04 13:04:54 |
| 4 | 1 | 95 | 0 | 0 | 0 | 10M | 0 | 0 | 1.02 | 1.06 | 1.08 | 27.9G | 3184M | 696k | 264M | 331k | 444k | 60.0 | 224 | 0 | 0 | 08-04 13:04:55 |
| 5 | 2 | 92 | 0 | 0 | 8192k | 9084k | 0 | 0 | 1.02 | 1.06 | 1.08 | 27.9G | 3188M | 696k | 264M | 921k | 1334k | 82.0 | 193 | 0 | 0 | 08-04 13:04:56 |
| 8 | 2 | 89 | 1 | 0 | 0 | 44M | 0 | 0 | 1.02 | 1.06 | 1.08 | 27.9G | 3190M | 696k | 264M | 868k | 1262k | 76.0 | 1633 | 0 | 0 | 08-04 13:04:57 |
| 12 | 1 | 86 | 0 | 0 | 0 | 10M | 0 | 0 | 1.02 | 1.06 | 1.08 | 27.9G | 3192M | 696k | 264M | 317k | 420k | 104 | 222 | 0 | 0 | 08-04 13:04:58 |
| 6 | 1 | 92 | 0 | 0 | 0 | 12M | 0 | 0 | 0.94 | 1.05 | 1.07 | 27.9G | 3192M | 696k | 264M | 293k | 387k | 96.0 | 226 | 0 | 0 | 08-04 13:04:59 |
| 9 | 2 | 89 | 0 | 0 | 0 | 8392k | 0 | 0 | 0.94 | 1.05 | 1.07 | 27.9G | 3190M | 696k | 264M | 364k | 454k | 72.0 | 163 | 0 | 0 | 08-04 13:05:00 |
| 6 | 3 | 90 | 0 | 0 | 0 | 11M | 0 | 0 | 0.94 | 1.05 | 1.07 | 27.9G | 3188M | 696k | 264M | 329k | 424k | 56.0 | 180 | 0 | 0 | 08-04 13:05:01 |
| 3 | 2 | 93 | 1 | 0 | 24k | 52M | 0 | 0 | 0.94 | 1.05 | 1.07 | 27.9G | 3176M | 696k | 264M | 353k | 457k | 100 | 1805 | 0 | 0 | 08-04 13:05:02 |
| 5 | 1 | 94 | 0 | 0 | 0 | 9640k | 0 | 0 | 0.94 | 1.05 | 1.07 | 27.9G | 3179M | 696k | 264M | 295k | 383k | 68.0 | 173 | 0 | 0 | 08-04 13:05:03 |
| 5 | 1 | 93 | 0 | 0 | 0 | 10M | 0 | 0 | 0.86 | 1.03 | 1.07 | 27.9G | 3193M | 696k | 264M | 300k | 390k | 72.0 | 183 | 0 | 0 | 08-04 13:05:04 |
| 3 | 1 | 95 | 0 | 0 | 0 | 4652k | 0 | 0 | 0.86 | 1.03 | 1.07 | 27.9G | 3193M | 696k | 264M | 246k | 311k | 72.0 | 163 | 0 | 0 | 08-04 13:05:05 |
| 4 | 1 | 94 | 0 | 0 | 0 | 14M | 0 | 0 | 0.86 | 1.03 | 1.07 | 27.9G | 3193M | 696k | 264M | 287k | 372k | 64.0 | 208 | 0 | 0 | 08-04 13:05:06 |
| 5 | 1 | 92 | 1 | 0 | 0 | 40M | 0 | 0 | 0.86 | 1.03 | 1.07 | 27.9G | 3182M | 696k | 264M | 356k | 478k | 96.0 | 1469 | 0 | 0 | 08-04 13:05:07 |
| 4 | 1 | 95 | 0 | 0 | 16k | 4149k | 0 | 0 | 0.86 | 1.03 | 1.07 | 27.9G | 3181M | 696k | 264M | 343k | 453k | 96.0 | 143 | 0 | 0 | 08-04 13:05:08 |
| 5 | 2 | 94 | 0 | 0 | 0 | 11M | 0 | 0 | 0.95 | 1.04 | 1.07 | 27.9G | 3196M | 696k | 264M | 318k | 429k | 64.0 | 171 | 0 | 0 | 08-04 13:05:09 |
| 7 | 2 | 91 | 0 | 0 | 0 | 7024k | 0 | 0 | 0.95 | 1.04 | 1.07 | 27.9G | 3182M | 696k | 265M | 380k | 494k | 64.0 | 139 | 0 | 0 | 08-04 13:05:10 |
| 4 | 2 | 94 | 0 | 0 | 0 | 5580k | 0 | 0 | 0.95 | 1.04 | 1.07 | 27.9G | 3180M | 696k | 265M | 400k | 527k | 76.0 | 139 | 0 | 0 | 08-04 13:05:11 |
| 6 | 2 | 91 | 1 | 0 | 0 | 50M | 0 | 0 | 0.95 | 1.04 | 1.07 | 27.9G | 3191M | 696k | 265M | 351k | 465k | 100 | 1433 | 0 | 0 | 08-04 13:05:12 ^C |

5. ioping

ioping Latency Disk (IO delay Proxmox)

\$ ssh root@xxx.xxx.xxx.xxx (Proxmox)

apt install ioping ()

ioping /dev/nvme0n1

```
root@ [REDACTED]:~# ioping /dev/nvme0n1
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=1 time=185.3 us (warmup)
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=2 time=304.7 us
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=3 time=122.8 us
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=4 time=246.2 us
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=5 time=244.0 us
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=6 time=196.2 us
4 KiB <<< /dev/nvme0n1 (block device 476.9 GiB): request=7 time=216.8 us
```

www.Limitrack.com

Revision #2

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