

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                      )

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	vmbal	0.0M	zfarc	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	MBr/s	0.0	MBw/s	4.2	avio	0.52 ms			
DSK	nvme1n1		busy	4%	read	196	write	1054	KiB/w	40	MBr/s	0.0	MBw/s	4.2	avio	0.34 ms			
NET	transport		tcpi	42	tcpo	103	udpi	4	udpo	4	tcpao	2	tcpoo	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
```

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