



esxtop & vscsiStats

v0.2

esxtop modes: Interactive view data realtime. Batch data piped to csv. Replay view batch output. csv files from batch mode can also be replayed in Windows perfmon. Only root can run esxtop.

resxtop: runs remotely on vMA or CLI installation. No replay mode.

Interactive screens: **C** CPU, **m** memory, **d** disk adapter, **u** disk device, **v** disk vm, **n** network, **i** interrupt. **Commands:** **h** help, **q** quit, **f** add fields, **d** refresh delay, **w** save to default, **V** only VMs

Display	Metric	Max	Explanation
CPU	%RDY	10 x vCPU	Too many vCPUs, excessive vSMP or limit set (see %MLMTD)
CPU	%CSTP	100	Excessive vSMP usage. Reduce vCPUs to up scheduling opportunity.
CPU	%MLMTD	0	World is being throttled. Possibly limit set on CPU.
CPU	%SWPWT	1	VM waiting on swapped pages from disk. Possibly mem overcommit.
Mem	MCTLSZ	i	> 0, host forcing VMs to inflate balloon driver, host overcommitted.
Mem	SWCUR	j	> 0, host previously swapped memory pages. Possibly overcommitted.
Mem	SWR/s	j	> 0, host actively reading swap(vswp). Possibly mem overcommitted.
Mem	SWW/s	j	> 0, host actively writing to swap(vswp). Possibly mem overcommit.
Network	%DRPTX	1	Dropped tx packets, HW overworked. Possibly network utilization.
Network	%DRPRX	1	Dropped rx packets, HW overworked. Possibly network utilization.
Disk	GAVG	h	25 Look at DAVG and KAVG as the sum of both is GAVG.
Disk	DAVG	h	25 Disk latency most likely caused by array.
Disk	KAVG	h	5 Disk latency caused by VMkernel, usually means queuing, see QUED

vReference.com by Forbes Guthrie  Thresholds by yellow-bricks.com

Display	Metric	Max	Explanation
Disk	QUED	f	1 Queue maxed out. Possibly queue depth too low, see vendor settings.
Disk	ABRTS/s	k	1 Storage not responding. Possibly failed paths or array not taking IO.
Disk	RESETS/s	k	1 Number of commands reset per second.

vscsiStats: monitors IO of VM's virtual SCSI controllers.

- 1) Change to appropriate directory: `cd /usr/lib/vmware/bin`
- 2) Reset the stats: `sudo ./vscsiStats -r`
- 3) List VMs (worldgroup) & disks (handle): `sudo ./vscsiStats -l`
- 4) Start stat collection: `sudo ./vscsiStats -s -w <worldgroup_id>`
- 5) View stats: `sudo ./vscsiStats -w worldgroup_id -p all`
- 6) Stop stat collection: `sudo ./vscsiStats -x`

Can specify disk instead of whole VM with **-i handle_id** after **-w** option.

Specifies the stats to use: **-p all**, **ioLength**, **seekDistance**, **outstandingIOs**, **latency**, **interarrival**.

Can export the stats using command 5) appended with **-c > /tmp/outputfile.csv**

Run vscsiStats in top mode - <http://communities.vmware.com/message/1437426>

Links: <http://communities.vmware.com/docs/DOC-9279> - Interpreting esxtop Statistics
<http://www.yellow-bricks.com/2010/01/05/esxtop-values/thresholds> - esxtop values/thresholds
<http://communities.vmware.com/docs/DOC-10095> - Using vscsiStats for Storage Performance
http://www.vmware.com/pdf/Perf_Best_Practices_vSphere4.0.pdf - Performance best practices
<http://communities.vmware.com/docs/DOC-10352> - Performance Troubleshooting vSphere/ESX4
http://www.vmware.com/pdf/vsphere4/r40_u1/vsp_40_u1_resource_mgmt.pdf - Resource Guide

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