Instrukcja do ćwiczeń

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1. Uruchamianie QEMU

qemu -hda obraz -m 800

sudo su

tuning

2. Benchmarki

man sysbench

sysbench --test=cpu --cpu-max-prime=20000 run

wiele wątków:

To run a 4 threaded Sysbench CPU test, use this command.

sysbench --test=cpu --cpu-max-prime=20000 --num-threads=4 run

Scheduler:

sysbench --test=threads --num-threads=128 --max-time=10s run

Dysk:

*sysbench --test=fileio --file-total-size=10G prepare

*sysbench --test=fileio --file-total-size=10G cleanup

Pamięć:

*sysbench --test=memory --memory-block-size=1M --memory-total-size=10G run

***hardifno - graficzny:**

benchmarks - CPU Blowfish

-------Grub timeout:

/etc/default/grub

trzeba znalezc GRUB_TIMEOUT i zmienic wartosc, lepiej nie dawac mniej niz 3 s bo grub moe przylagowac

sudo update-grub

***grub-customizer - graficzny**

---Wyłączneie skanowania dysku przy właczaniu

sudo gedit /etc/fstab

enter root password, and then open the documentt

look for the line that says this

UUID=2a782d1e-fc91-4bbb-b86d-c139bb2d3f46 / ext4 errors=remount-ro 0 1

you see that 1 at the end of it? change that to a 0

also do it for your swap or other partitions if there are 1's next to them also.

in the end it will look like this

UUID=2a782d1e-fc91-4bbb-b86d-c139bb2d3f46 / ext4 errors=remount-ro 0 0

save and exit, andn restart your computer,

see the difference?

------Bootowanie wykaz co spowalania kompa:

#udo apt-get install bootchart

/var/log/bootchart

------Preload:

sudo apt-get install preload

Preload is a daemon that runs in background and analyzes user behavior and frequently run applications.

----Swap:

The lower the value, the longer it takes before Ubuntu starts using the swap.

On a scale of 0-100, the default value is 60.

Which is much too high for normal desktop use, and only fit for servers.

Decreasing this value on a desktop computer has no negative side effects whatsoever.

desktop performance has very little to do with schedulers and real performance.

It has everything to do with disk caching and perceived performance.

It's not OK if the application freezes because it needs to execute code that was paged out to disk.

komendy:

sprawdzenie poziomu swappiness

cat /proc/sys/vm/swappiness

do sprwdzenia, ze po wykonaniu tego aplikacje zminimalizowane beda sie wieszac przez chwile

sync

#oproznia wszystkie cache

echo 3 > /proc/sys/vm/drop_caches

dd if=/dev/zero of=/tmp/testfile count=1 bs=900M

find / > /dev/null

cp /tmp/testfile /tmp/testfile2

wykonac to jesli nie chcemy trwałych zmian

sysctl -w vm.swappiness=1

lub to jelsi chcemy trwałe zmiany

gksudo leafpad /etc/sysctl.conf <- jesli to to treba na koncu pliku dopisac

 # Decrease swap usage to a more reasonable level

vm.swappiness=10 <- w tym przypadku nadpisujemy standardowe zmieniajac plik sysctl.conf

powtorzyc sprawdzenie

a pozniej

rm -f /tmp/testfile /tmp/testfile2 /tmp/testfile3

zwiekszenie swapa:

dd if=/dev/zero of=/media/fasthdd/swapfile.img bs=1024 count=1M

mkswap /media/fasthdd/swapfile.img

 # Add this line to /etc/fstab

/media/fasthdd/swapfile.img swap swap sw 0 0

swapon /media/fasthdd/swapfile.img

-----File system cache:

sync

echo 3 > /proc/sys/vm/drop_caches

dd if=/dev/zero of=/tmp/testfile count=1 bs=900M

sysctl -w vm.vfs_cache_pressure=100

find / > /dev/null

cp /tmp/testfile /tmp/testfile2

time find / > /dev/null

sysctl -w vm.vfs_cache_pressure=50

find / > /dev/null

cp /tmp/testfile2 /tmp/testfile3

time find / > /dev/null

rm -f /tmp/testfile /tmp/testfile2 /tmp/testfile3

-----Tmp do Ramu

sudo gedit /etc/fstab

 # Move /tmp to RAM

tmpfs /tmp tmpfs defaults,noexec,nosuid 0 0

-----optymalizacja TCP

/etc/sysctl.conf

ilosc potwierdzen ack:

na koncu dopisujemy :

net.ipv4.tcp_timestamps = 0

net.ipv4.tcp_sack = 1

The bottom line enables selective acknowledgements,

which means fewer checks are initiated on each packet so they are delivered quicker.

rozmiary paczek TCP:

net.ipv4.tcp_window_scaling = 1

net.ipv4.tcp_wmem = 10240 87380 16777216

net.ipv4.tcp_rmem = 10240 87380 16777216

net.ipv4.tcp_mem = 16777216 16777216 16777216

net.core.rmem_max = 16777216

net.core wmem_max = 16777216

zoptymalizowane dla 2mb/s wifi operator komorkowy

Dial-up users will see a speed boost with smaller packet sizes while

broadband users will see a speed boost with larger packet sizes.

-- **scheduler** --

http://manpages.ubuntu.com/manpages/gutsy/man8/schedtool.8.html

https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/6/pdf/Performance_Tuning_Guide/Red_Hat_Enterprise_Linux-6-Performance_Tuning_Guide-en-US.pdf

4.2.1. Realtime scheduling policies (strona 48)

sudo schedtool -N -e (benchmark)

sudo schedtool -F -p 99 -e (benchmark)

sudo schedtool -R -p 99 -e (benchmark)

-- **jednocześnie w dwóch terminalach (stworzyć skrypt)**

sudo gnome-terminal --title="1" -e "bash -c \"schedtool -F -p 1 -e sysbench --test=cpu --cpu-max-prime=20000 run; exec bash\"" &

sudo gnome-terminal --title="99" -e "bash -c \"schedtool -F -p 99 -e sysbench --test=cpu --cpu-max-prime=20000 run; exec bash\"" &

-- **jednocześnie w dwóch terminalach**

sudo gnome-terminal --title="1" -e "bash -c \"schedtool -R -p 1 -e sysbench --test=cpu --cpu-max-prime=20000 run; exec bash\"" &

sudo gnome-terminal --title="99" -e "bash -c \"schedtool -R -p 99 -e sysbench --test=cpu --cpu-max-prime=20000 run; exec bash\"" &

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sudo schedtool -B -e (benchmark)

sudo schedtool -D -e (benchmark)

schedtool -a 0,3 -e (command) // używa CPU0 i CPU3

-- sort –

./qs_test.sh

narysować wykres w gnuplocie ustawiając skalę x i y jako logarytymiczną (set logscale x 2)

wnioski?

sudo lscpu

perf stat ./qs 1000

perf stat -B -e cache-references,cache-misses ./qs 300