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Lab 6 Log

First I use
$ sort --version
to see the version of the sort command,
which was 8.22. Since I want the newest
version, I use:
$ export PATH=/usr/local/cs/bin:$PATH
which updates my commands to the latest
coreutils. I use
$ sort --version
again and see that now the version is 8.28.

Next, I want to create a file that has
10,000,000 numbers. I know to use the od
command so I use:
$man od
to see how to use it. I want to use the
-tf flag to specify the output type to be
floating point. I also want to use
-N80000000 flag to make sure I get
10,000,000 numbers. I use 80000000 because
each floating point is 8 bytes, so that will
generate the correct amount of nubmers that
I want. I get these 80,000,000
bytes from /dev/urandom. I want to put the
final output into a file called output.txt,
so I add > output.txt to the end of my command.
My final command looks like:
$ od -tf -N10000000 /dev/urandom > output.txt
But, I want to use sed and tr make sure that
each byte is on its own line with no empty
spaces, and to delete the addresses.

The addresses are the first 8 characters
of every line. I use sed to delete the
first 8 charcters:
| sed 's/......//'
so then my command looks like:
$ od -tf -N800000000 /dev/urandom | sed 's/......//' > output.txt

I use tr to replace spaces with new lines and
then delete spaces by piping in
 | tr -c '\n' ' '
So my command is:
$ od -tf -N800000000 /dev/urandom | sed 's/......//' | tr -s ' '
'\n' > output.txt

I check output.txt, and its formatted correctly.

I then want to time how long sorting this file takes
so I use:
$ time -p sort -g output.txt > /dev/null

This takes a while since their are so many numbers
to sort. Finally, it outputs:
real 208.94
user 1131.84
sys 3.28

Next, I want to run sort using the --parallel option.
I use it with 1, 2, 4, and 8 threads:

$ time -p sort -g --parallel=1 output.txt > /dev/null

real 1090.79
user 1088.41
sys 2.33

$ time -p sort -g --parallel=2 output.txt > /dev/null
real 575.06
user 1099.16
sys 2.15

$ time -p sort -g --parallel=4 output.txt > /dev/null
real 330.72
user 1125.96
sys 2.84

$ time -p sort -g --parallel=8 output.txt > /dev/null
real 214.67
user 1150.79
sys 3.22

The parallel command helps cut the real team,
but it's not that useful in cutting the
user time.