Matthew Koken

COEN146 Lab 1

In order to test the transfer time of a file, a file of a large size is needed. Once created, we can measure the time for transfers of different file sizes given the below script:

time cat test | head -c <file size> | ssh [mkoken@linux.scudc.scu.edu](mailto:mkoken@linux.scudc.scu.edu) “cd /home/mkoken && cat -> test1”

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| File Size (KB) | File size | Real Time (s) | User Time (s) | Sys Time (s) | Total CPU Time (s) |
| 1 | 1K | 0.012 | 0.005 | 0.007 | 0.01 |
| 10 | 10K | 0.175 | 0.014 | 0.018 | 0.03 |
| 100 | 100K | 0.164 | 0.017 | 0.016 | 0.03 |
| 1000 | 1M | 0.188 | 0.025 | 0.022 | 0.05 |
| 1024 | 1024K | 0.738 | 0.023 | 0.018 | 0.04 |
| 10000 | 10M | 0.360 | 0.052 | 0.040 | 0.09 |
| 100000 | 100M | 2.040 | 0.284 | 0.167 | 0.45 |
| 1000000 | 1G | 24.129 | 2.990 | 1.857 | 4.85 |
| 1024000 | 1024M | 21.290 | 2.947 | 1.643 | 4.59 |

In order to measure the effective bandwidth, we look at the total time the transfer script spent in the CPU. This includes both user and system time. There will be a baseline, or minimum time for any file transfer. The baseline time will be the time needed to establish the connection and any other overhead required to be able to transfer a file. This can be measured in the same manner as the other file transfers by providing a 0 file size. The effective bandwidth then will be the total amount of data able to be transferred per unit of time.

-should actually look linear (scale skews how it looks)

What is bandwidth?

Baseline test?

Each component of the graph