Link of the repo: <https://github.com/ArghyaB118/Project_Benchmarking>

**Files included and their functions**:

1. genUbuntu.sh

It is used to generate fresh sparse (.raw format) linux disk, of specified size, using qemu-img create.

## compare-large-file-throughput.sh

It is a script for sequential read of the sparse linux disk. For the purpose of experimentation, we measure the read time and speed for four setups to read the disk: cp --sparse=never, cp --sparse=always, dd sparse, dd non-sparse. We measure the time for two situations, one before dropping the cache, another after dropping the cache. By dropping caches, we mean we free up all the pagecache, dentries, inodes and we set zero to /proc/sys/vm/vfs\_cache\_pressure. Theoretically, we should be most interested in the sequential read time when we measure after dropping caches using the dd command with sparse setting.

1. aging.sh

We create a disk, we delete the root password, we copy the linux and Git-benchmark files by mounting the disk.

1. code\_qemu.sh

We run the git-benchmark.py 10000 times to age the system. (In our system we ran it 1000 times)

1. Post\_aging.sh

It does the sequential read on the aged disk the same way

**Results**:

With the experiments we have run, we are having the following result:

|  |  |  |
| --- | --- | --- |
| using 'dd' to copy |  |  |
| the unaged disk |  |  |
| before dropping cache | after dropping cache |  |
| 73.6003 | 120.186 |  |
| 43.5737 | 59.4059 |  |
| 43.3837 | 64.4075 |  |
| 69.3158 | 116.389 |  |
| 47.6264 | 57.8719 |  |
| 54.9064 | 64.6852 | 61.592625 |
| the aged disk |  |  |
| 12.9212 | 62.6756 |  |
| 46.047 | 68.2592 |  |
| 43.5201 | 67.7214 |  |
| 20.0182 | 58.8178 |  |
| 50.116 | 58.5685 | 62.93266667 |
| 54.1287 | 61.5535 |  |

**Future Work**:

1. We want to run the experiments on the actual machines, to see significantly separable results.
2. We want to add this system with cloning, so that we can add the measurement on cloned disk and the disk where we do aging on the cloned disk.