

Required Tools

This benchmark program needs CUDA compiler and GNU compiler, while “gcc” and “nvcc” are also needed.

Building

To compile the files, type the following command:

make all

To remove the binary files, type the following command:

make clean

Usage

Type ./start can run the script, which can automatically compile and run the tests of all the benchmarks.

Note that each of the tests can be run separately.

CPU:

Usage: ./cpu_bench -n [number of threads]

Example:

```
root@terry01:/home/CS553/cup# ./cpu_bench -n 8
Totally Thread: 8
Time taken: 7.268567
31.698133 GIOPS
Time taken: 15.011898
15.347826 GFLOPS
```

GPU:

Usage: ./gpu_bench -t [type of operation(I,F)]

Example:

```
[zguan4@jarvis GPU]$ ./gpu_bench -t F
Time taken: 0.047733
GFLOPS 1029.727861
```

Usage: ./gpu_mem_bench -r [(R)ead or (W)rite] -t [size type (B ,KB ,MB)]

Example:

```
[zguan4@jarvis GPU]$ ./gpu_mem_bench -r R -t KB
Operation:R      Message Size:1KB      Bandwidth: 0.111636 MB/S
```

Memory:

```
Please input right command format:
Usage: ./memory_bench
Access type: Ran(Random) or Seq(Sequential)
block_Sizes: 1B, 1KB or 1MB
Concurrency: 1, or 2 threads
Input memory space (MB)
```

Example:

```
./memory_bench Ran 1KB 2 1024
```

Disk:

```
Please input right command format:
Usage: ./disk_bench
Operation: Read or Write
Access type: Ran(Random) or Seq(Sequential)
block_Sizes: 1B, 1KB or 1MB
Concurrency: 1, 2 or 4 threads
Input file length (MB)
```

Example:

```
./disk_bench Write Seq 1KB 1 1024
```

Network benchmark:

The command for running network benchmark is:

```
./network_server [connection type] [number of threads]
```

Open another terminal,

```
./network_client [connection type] [buffer size] [number of threads]
```

Note that all the arguments are required.

Example:

```
./server tcp 2
```

```
losys@losys-VirtualBox:~/桌面/project1$ ./server tcp 2
Server is listening...
Server is listening...
```

Open another terminal.

```
./client tcp 1kb 2
```

```
losys@losys-VirtualBox:~/桌面/project1$ ./client tcp 1kb 2  
Running time 18132.893 ms, throughput is 3.309 MB/sec, latency is 0.037777 ms/bit  
losys@losys-VirtualBox:~/桌面/project1$
```