

USER MANUAL

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PROGRAMMING LANGUAGE : C
OPERATING SYSTEM : LINUX

STEPS FOR BENCHMARKING:

1) CPU

- Open the source code, cpu_benchmark.c
- Vary the NUM_THREADS value
- Open the terminal and compile using gcc -pthread cpu_benchmark.c
- Run the program using ./a.out

Sample Input :

NUM_THREADS 8

2) MEMORY

- Open the source code, memory_bench.c
- Vary the value of NUM_THREADS and NUM_BLOCKS
- Open the terminal and compile using gcc -pthread memory_bench.c
- Run the program using ./a.out

Sample input :

NUM_THREADS 4

NUM_BLOCKS 10485760

3) GPU

- Open the source code, gpu_proc_bench.cu
- Vary the value of NUM_CYCLES which determines the number of operations.
- Compile : nvcc gpu_proc_bench.cu
- ./a.out
- Open the source code, gpu_mem_bench.cu
- Vary the value of BLOCK_SIZE and NUM_BLOCKS
- Compile: nvcc gpu_mem_bench.cu
- ./a.out

4) DISK

- Open the source code, disk_bench.c
- Vary the value of NUM_BLOCKS ,BLOCK_SIZE and NUM_THREADS
- Open the terminal and compile using gcc -pthread disk_bench.c
- Run the program using ./a.out

Sample input :

NUM_BLOCKS 1000000000

BLOCK_SIZE 1048576

NUM_THREADS 4

5) NETWORK

STEPS TO BENCHMARK TCP

- Open the source code tcp_server.c
- Vary the values of NUM_BLOCKS, NUM_CLIENTS and BLOCK_SIZE
- Open the source code tcp_client.c
- Vary the values of NUM_BLOCKS, BLOCK_SIZE(1BYTE/1KB,64KB),NUM_CLIENTS
- Open 2 terminals – one to run the server program and other to run the client program
- Compile the server code using gcc -pthread tcp_server.c
- Run the server code using ./a.out
- In the other terminal, compile the client code using gcc -pthread tcp_client.c
- Run the client code using ./a.out 127.0.0.1 (loop-back address)

Sample Input :

```
NUM_BLOCKS 10000000  
BLOCK_SIZE 1024  
NUM_CLIENTS 8
```

STEPS TO BENCHMARK UDP

- Open the source code udp_server.c
- Vary the values of NUM_BLOCKS, NUM_CLIENTS and BLOCK_SIZE
- Open the source code udp_client.c
- Vary the values of NUM_BLOCKS, BLOCK_SIZE,NUM_CLIENTS
- A point to note here is , the maximum data size which can be sent through UDP is 65535-(20+8) = 65507 , so BLOCK_SIZE can be 1 byte/1KB/65507 bytes
- Open 2 terminals – one to run the server program and other to run the client program
- Compile the server code using gcc -pthread udp_server.c
- Run the server code using ./a.out
- In the other terminal, compile the client code using gcc -pthread udp_client.c
- Run the client code using ./a.out 127.0.0.1 (loop-back address)

Sample Input :

```
NUM_BLOCKS 10000000  
BLOCK_SIZE 1024  
NUM_CLIENTS 8
```