Saint Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University)

REPORT

about laboratory works

Assignment 19.

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Saint-Petersburg, 2021

ASSIGNMENT 19.

Task

To complete the task, you need to create and compile two programs: server and client. In one window of the SSH client, a server is launched for one process, which gives out the port name. An example of a command to start the server: mpiexec -n 1 ./serv.o
Then the client is launched in another window, specifying the port name separated by a space in single quotes (example command: mpiexec -n 1 ./client.o ‘port name’).
Understand the new functions in Assignment19_serv.c and Assignment19_client.c and explain programs execution.
Check the work by running the server and the client. Add the program and send an arbitrary message to each other.

Implementation

Source code and data gathered are available on

https://github.com/DmitryPogrebnoy/Parallel-algorithms-of-data-analysis-and-synthesis/tree/master/OmpiTasks/Task19

The description of the code is described in the comments.

OpenMPI is broken, so I used MPICH to compile and run the source code.

Run server:

```
Dmitry.Pogrebnoy@UNIT-1700:~/Desktop/Parallel-algorithms-of-data-analysis-and-synthesis/OmpiTasks/Task19$ mpicc.mpich
Assignment19_serv.c -o Assignment19_serv && mpiexec.hydra -n 1 /home/Dmitry.Pogrebnoy/Desktop/Parallel-algorithms-of-d
ata-analysis-and-synthesis/OmpiTasks/Task19/Assignment19_serv
Portname: tag#0$description#UNIT-1700$port#48267$ifname#127.0.1.1$
Waiting for the client...
Server connected
Server sent value: 25
Server got value: 42
```

Run client:

```
Dmitry.Pogrebnoy@UNIT-1700:~/Desktop/Parallel-algorithms-of-data-analysis-and-synthesis/OmpiTasks/Task19$ mpicc.mpich
Assignment19_client.c -o Assignment19_client && mpiexec.hydra -n 1 /home/Dmitry.Pogrebnoy/Desktop/Parallel-algorithms-
of-data-analysis-and-synthesis/OmpiTasks/Task19/Assignment19_client 'tag#0$description#UNIT-1700$port#48267$ifname#127
.0.1.1$'
Attemp to connect
Client connected
Client sent value: 42
Client got value: 25
```