Distributed Systems – TD4 : More on MPI

Bogdan.Pasca @ens-lyon.fr

15 October 2009

Exercise 1 (derived types)

Change the borders of a matrix with your neighbors from the grid.

```
------------------------------
|  |                     |  |
------------------------------
|  |                     |  |
|  |                     |  |
|  |                     |  |
|  |                     |  |
|  |                     |  |
------------------------------
|  |                     |  |
------------------------------
```

Exercise 2 (derived types, again)

Send a triangular matrix between processes.

Exercise 3 (global communications)

Perform the distribution of a matrix in gird of processors and then recover it. Make use of the `MPI_Scatter` and `MPI_Gather` routines.

Exercise 4 (communicator management)

Duplicate the communicator `MPI_COMM_WORLD` and divide it into several sub-communicators. Perform global communications within the new communicators.