

# HW 1

## Get MPI working on your computer

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### Installation

I am currently using Manjaro, a Linux distro based on Arch, on which MPI is already installed.

### Code

```
1  #include <iostream>
2  #include <mpi.h>
3
4  #define MCW MPI_COMM_WORLD
5
6  int main(int argc, char** argv)
7  {
8      int rank, size, data;
9
10     MPI_Init(&argc, &argv);
11     MPI_Comm_rank(MCW, &rank);
12     MPI_Comm_size(MCW, &size);
13
14     MPI_Send(&rank, 1, MPI_INT, (rank + 1) % size, 0, MCW);
15     MPI_Recv(&data, 1, MPI_INT, MPI_ANY_SOURCE, 0, MCW, MPI_STATUS_IGNORE
16             );
17     std::cout << "I am process " << rank << " of " << size
18               << " and received a message from process " << data
19               << std::endl;
20
21     MPI_Finalize();
22
23     return EXIT_SUCCESS;
24 }
```

## Output

```
# mpiexec -n 4 release
```

```
I am process 2 of 4 and received a message from process 1  
I am process 3 of 4 and received a message from process 2  
I am process 0 of 4 and received a message from process 3  
I am process 1 of 4 and received a message from process 0
```