

Installation of Message Passing Interface (MPI)

- 1) Download MPI tools and install them

<https://learn.microsoft.com/en-us/message-passing-interface/microsoft-mpi#ms-mpi-downloads>.

MS-MPI Downloads

The following are current downloads for MS-MPI:

- MS-MPI v10.1.3 [↗](#) (new!) - see [Release notes](#)
- Debugger for MS-MPI Applications with HPC Pack 2012 R2 [↗](#)

Earlier versions of MS-MPI are available from the [Microsoft Download Center](#) [↗](#).

- 2) In command line interpreter (**cmd**) install library of mpi for your python

```
CA. Командная строка
Microsoft Windows [Version 10.0.19045.2604]
(c) Корпорация Майкрософт (Microsoft Corporation). Все права защищены.
C:\Users\Admin>pip install mpi4py
```

- 3) Write “Hello World” program in python

```
mpi.py - C:/Users/Admin/Desktop/2023-2024/parprog/mpi.py (3.9.7)
File Edit Format Run Options Window Help
from mpi4py import MPI
comm = MPI.COMM_WORLD
rank = comm.Get_rank()
print ("hello world from process ", rank)
```

- 4) “Hello World” program works in python as serial program, to parallel it we have to run it in cmd. First move to the folder of our program in cmd

```
C:\Users\Admin>cd C:\Users\Admin\Desktop\2023-2024\parprog
```

then run your program using next command

```
C:\Users\Admin\Desktop\2023-2024\parprog>mpiexec -n 4 python mpi.py
hello world from process 3
hello world from process 0
hello world from process 1
hello world from process 2
```

Here we run our program in 4 processors, you can run this program according to your number of processors (mpiexec -n **Processor_Number** python mpi.py).

!!!For Mac OS please try this instruction:

<https://wiki.helsinki.fi/display/HUGG/Open+MPI+install+on+Mac+OS+X>

then try to do the same program “Hello World”.