Install OpenMPI

The following instructions will help you installing OpenMPI on your machine. It takes about 5-10min.

1. Create a temporary directory for compiling OpenMPI. You can do this in a terminal by typing

   ```
   mkdir $HOME/local/src
   ```

2. Download openmpi-1.4.4.tar.bz2 from `http://www.open-mpi.org`

3. Move the openmpi-1.4.4.tar.bz2 to the directory just created:

   ```
   mv $HOME/Downloads/openmpi-1.4.4.tar.bz2 $HOME/local/src/
   ```

4. Change to the directory and extract the package using

   ```
   cd $HOME/local/src
   tar -jxf openmpi-1.4.4.tar.bz2
   ```

5. Go into the source directory

   ```
   cd openmpi-1.4.4
   ```

6. Configure, compile and install by executing the following commands

   ```
   ./configure --prefix=$HOME/opt/openmpi
   make all
   make install
   ```

   This will install OpenMPI in your home directory in the sub-folder `opt/openmpi`. You can speed up the compilation by replacing the `make all` command with `make -j4 all` (this will compile using 4 cores).

7. Remove the temporary directories:

   ```
   cd
   rm $HOME/local/src/openmpi-1.4.4.tar.bz2
   rm -r $HOME/local/src/openmpi-1.4.4
   ```

To use MPI you will have to adapt your `PATH` and `LD_LIBRARY_PATH` environment variable:

```
echo "export PATH=\$PATH:\$HOME/opt/openmpi/bin" >> $HOME/.bashrc
echo "export LD_LIBRARY_PATH=\$LD_LIBRARY_PATH:\$HOME/opt/openmpi/lib" \
  >> $HOME/.bashrc
```

This appends the two lines to your `.bashrc` file which is executed when starting a terminal session.

To compile your MPI C++ programs you have to use `mpicxx` with the same arguments as you would use for `g++`. To run a program `PRG` with `N` MPI processes, you would then use `mpirun -np N PRG`.

To uninstall OpenMPI just delete the folder `opt/openmpi` in your home directory and remove the last two lines from the `.bashrc` file in your home directory.

You can find more information on `http://www.open-mpi.org`