

<SU2 Corn Parallel Build Instructions>

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01) Login to corn

02) Download the source code with wget

```
$ wget https://github.com/su2code/SU2/archive/v5.0.0.tar.gz
```

03) Extract the source codes

```
$ tar -xz v5.0.0.tar.gz
```

04) Navigate to the SU2 folder that you just extracted

```
$ cd SU2-5.0.0
```

05) Copy the path to SU2 folder

```
$ pwd
```

Copy the output after you type above command. For example, I got following

```
/afs/.ir.stanford.edu/users/j/h/jhchoi89/SU2-5.0.0
```

06) Configure

```
$ ./configure --prefix="COPYthePATHyouGETinSTEP05" CXXFLAGS="-O3"
```

```
--enable-mpi --with-cc=/usr/bin/mpicc --with-cxx=/usr/bin/mpicxx
```

For example,

```
$ ./configure --prefix="/afs/.ir.stanford.edu/users/j/h/jhchoi89/SU2-5.0.0" CXXFLAGS="-O3"
```

```
--enable-mpi --with-cc=/usr/bin/mpicc --with-cxx=/usr/bin/mpicxx
```

Caution) Above command must be typed in one line.

07) Copy the message from configure output

If you configured successfully, you can find following message at the end of terminal output.

"Based on the input to this configuration, add these lines to your .bashrc file:"

COPY the lines after the above message.

For example, I got following lines :

```
export SU2_RUN="/afs/.ir.stanford.edu/users/j/h/jhchoi89/SU2-5.0.0/bin"
```

```
export SU2_HOME="/afs/.ir/users/j/h/jhchoi89/SU2-5.0.0"
```

```
export PATH=$PATH:$SU2_RUN
```

```
export PYTHONPATH=$PYTHONPATH:$SU2_RUN
```

08) Update environment variables

```
$ nano ~/.bashrc
```

Add the lines that you copied in step 06) in your .bashrc file.

DO NOT FORGET TO SAVE THE .bashrc FILE.

09) Make and install

Find the number of processors by typing nproc

```
$ nproc
```

Let NP as the result after typing "nproc" (ex: 16)

Based on the number you get from above command, make and install with

```
$ make -j NP install
```

For example, I got 8 from corn28 when I typed nproc. Therefore,

```
$ make -j 8 install
```

10) Execute the bashrc file

```
$ exec bash
```

11) Check whether SU2_CFD works

Navigate to Quickstart folder

```
$ cd QuickStart
```

Run simulation by typing

```
$ SU2_CFD inv_NACA0012.cfg
```

If you installed successfully, the solver will run the simulation. (corn29 took about 80 seconds)

12) Check whether python script works

Type

```
$ parallel_computation.py -n 2 -f inv_NACA0012.cfg
```

13) Now you're all set!

<Trouble shooting>

- If you face some errors in configuration (step 05), try following command

```
$ ./configure --prefix="COPYthePATHyouGETinSTEP05" --enable-mpi
```

```
--with-cc=/usr/bin/mpicc --with-cxx=/usr/bin/mpicxx
```

- If you can't run the simulation in step 11 or step 12, it might be due to your environment variables. Double check steps 05~08)