Matlab for HPC

Because of license requirements; only NTNU employee and students can run Matlab on Vilje and Idun/Epic/Maur Cluster.

How to run Matlab on Vilje
How to run Matlab on Kongull
Matlab MPI (Vilje/Fram/Maur/Idun)
Distributed Matlab (Using MPI)
Distributed Matlab (Using Techila Distributed Computing Solution)

FAQ

A.1. Matlab Unix Group on Vilje

If you got this message: "To use matlab on vilje you must be a member of the matlab unix group …", then you have to send a email to support-ntnu@notur.no and ask for to be a member of the Matlab Unix Group.

A.2. Random numbers

On vilje/Kongull you will see that the "rand" command generates same numbers on every started compute node in a job.
To avoid this you have to use seed command "rng" with a unique number on each compute node, and an example of finding a unique number:

Use the internal clock as.
Matlab code:

```matlab
t=clock();
seed=t(6) * 1000;  % Seed with the second part of the clock array.
rng(seed);
...
c=rand;
A=rand(3,3);
...
```

A.3 MEX

How to compile c-code into Matlab.

Load modules

- Matlab R2014a
  module load gcc/4.7.4 and module load matlab/R2014a
- Matlab R2016b
  module load gcc/4.9.1 and module load matlab/R2016b

Compiling:

- Sequential code:
mex mycode.c

-Openmp code

mex CC=gcc CFLAGS="$CFLAGS -fopenmp" LDFLAGS="$LDFLAGS -fopenmp" mycode.c