

## Interactive parallel job using matlab's local configuration

This kind of session is mainly for developing and testing. For example; `parfor`, matlab parallel for, mainly used for SPMD or embarrassingly parallel programs.

```
function pcalc(N)

    A=zeros(N,1);
    tic;
    % embarrassingly parallel for
    parfor (i=1:N)
        A(i)=do_work();
    end
    toc;

end

function o=do_work()

o=max(abs(eig(rand(500)))));

end
```

The function `do_work` will be called N times and its value will be saved in each element of matrix A.

1. After logging into the linux cluster, open an interactive session on the ICE system:

```
%qssh -pe mpi_ice 8 xterm
```

It will take some minutes until you get a new xterm terminal. If all interactive sessions are open you wont be able to allocate a new session and you will read this message:

*Your "qssh" request could not be scheduled, try again later*

2. On the new terminal add the corresponding module:

```
%module add matlab/R2009b
```

if after typing you get the errors like *module: command not found*, add these lines to your `~/bash` file:

```
typeset -f module > /dev/null

if [ $? != 0 -a -r /etc/profile.d/modules.sh ] ; then
```

```
./etc/profile.d/modules.sh
```

```
fi
```

exit and reschedule your interactive job again (step 2).

Because of an incompatibility between newer versions of matlab than R2009b and the current libc, the parallel usage will not work properly, serial use of matlab might work though.

3. In the matlab command editor you can try running up to max.8 concurrent parallel sessions.

*MATLAB desktop keyboard shortcuts, such as Ctrl+S, are now customizable. In addition, many keyboard shortcuts have changed for improved consistency across the desktop.*

*To customize keyboard shortcuts, use Preferences. From there, you can also restore previous default settings by selecting "R2009a UNIX Default Set" from the "Active settings" drop-down list. For more information, see Help.*

*Click here if you do not want to see this message again.*

```
>> matlabpool open local 8  
>> pcalc(1024)  
>> matlabpool close
```

- It is always desirable to close your matlabpool before exiting matlab, this way you will not block licenses.
- If your scripts are not found, you can tell matlab where to look for your own scripts with:  

```
%export MATLABPATH=/where/my/.M/files/are:$MATLABPATH
```

before calling matlab itself.

- In order to decrease the response times you can start with no graphic support:  

```
%matlab -nodisplay
```