Getting started with DAS-5

For information about the DAS-5 supercomputer, please go to:
`http://www.cs.vu.nl/das5/`

For information about the node hardware in the DAS-5:
`https://www.cs.vu.nl/das5/clusters.shtml`

The host name of the clusters we are using are, in the order of preference:
`fs1.das5.liacs.nl`
`fs3.das5.tudelft.nl`
`fs0.das5.cs.vu.nl`

(the UVA machine is not accessible as it is busy with long running jobs from a research group)

Use `ssh` to connect to the cluster:
`ssh -Y username@fs1.das5.liacs.nl`
Introduce the password. If correct, you are now logged in.

If you are a MacOS or Linux user, ssh is already available to you in the terminal.
If you are a Windows user, you need to use a ssh client for Windows. The easiest option is to use putty:
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

The DAS is a distributed machine, with a master node (where all the administration happens) and a lot of worker machines (where all the programs are run). To allow running on the worker machines, we need a bit of configuration. Type the following line at the prompt:
`module load prun`
You need to do that every time after you log in.

Alternatively, add the same line to your `.bashrc` file, which is found in your home directory (doing so makes this change permanent and automatically loaded at the start of any ssh session; in other words, you don't need to type it every time). If you use the `.bashrc` option, log out (use exit in you ssh session) and log in again. If this step succeeded, you should be able to use `prun` and `preserve` now.
Type
`preserve -llist`

This should print the list of the users running on the machine at this time, looking like:

```
Tue Oct  9 09:52:25 2018
id       user    start        stop         state nhosts     hosts
2083144  ajwijs  10/08 20:00 10/09 10:00  R      1         node057
...
```

For running your application, we use `prun` with different parameters. `prun` instructs the system that a job is ready to run and hat are its parameters. We typically use this command:
`prun -v -np 1 <EXECUTABLE>`

To simplify this execution, we can create an alias (you need to create that every time you login). In your terminal, write:
`alias runjob="prun -v -np 1"`

Try, for instance:
`runjob <EXECUTABLE>`

If your job doesn't start immediately, it means the system is busy running other jobs. Thus, you can check the queue status with:
`preserve -llist`
Your job is probably listed there, waiting for its turn. You can cancel it and try again later, or let it wait for its turn.