



Using HPCFS

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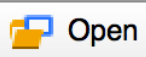


University of Ljubljana


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Setting up the NoMachine client version 5 available for installation at page <http://hpc.fs.uni-lj.si/access>


NOMACHINE


1. Select New  New  Open  Edit  Settings


2. Protocol SSH  Protocol

3. Host: prelog.fs.uni-lj.si Port: 22  Host

4. Use the NoMachine login  Use the NoMachine login
Use a server-specific RSA or DSA key or if you need to use advanced features

5. Continue without alternate key server  Use an alternate server key

6. Don't use proxy  Don't use a proxy
Choose this if you are connecting directly.

7. Done with Connection to prelog.fs.uni-lj.si  Name



Connecting to HPCFS

1. Select and Connect
2. Use **your** account credentials
3. Create **New KDE** desktop **once**
4. Use the KDE desktop
5. To **Disconnect** press Ctrl+Alt+T
6. To **Reconnect** select previous virtual desktop



Connection to prelog.fs.uni-lj.si SSH



Create a new KDE virtual desktop



Disconnect from the server

relog.fs.uni-lj.si

rname and password to login.

Username

Password

Save this password in the connection file



Connection to pre, campus79, KDE virtual desktop on :1141 0



Basic HPCFS cluster usage

- Setting GNOME or KDE desktop locale preferences for keyboard, LANG environment
- Using NX client (Disconnect, Terminate, Logout)
- Console commands in Linux
- Editors for programming (emacs, gedit, kate, eclipse, vi, pico, ...) on prelog only!

Modules

- module avail
- module help/info
- module display
- module load/unload
- module list
- module purge

Load Sharing Facility – LSF

Compiled-in OpenMPI support

- bsub
- bjobs
- bkill
- bpeek
- Aliases for interactive usage of nodes – node, single



Using Load Sharing Facility (LSF) and Message Passing Interface (MPI)

```
[campus79@prelog examples]$ node
Job <43452> is submitted to default queue <interactive>.
<<Waiting for dispatch ...>>
<<Starting on cn53>>
[campus79@cn53 examples]$ module avail openmpi
-----/opt/sw/modules/linux-centos7-x86_64 -----
openmpi/1.8.1/intel-18.0.2-2wnfzsd openmpi/1.8.8/intel-18.0.2-rxlbki5
openmpi/1.8.8/gcc-4.8.5-cor3omz
[campus79@cn53 examples]$ module load openmpi/1.8.8/intel-18.0.2-rxlbki5
[campus79@cn53 examples]$ mpicc -o mpi_hello mpi_hello.c
[campus79@cn53 examples]$ mpirun mpi_hello
cn53 is rank 0 of 12
cn53 is rank 2 of 12
...
[campus79@cn53 examples]$ bsub -n 48 -Is mpirun mpi_hello
...
```



OpenMP

```
[campus79@cn53 examples]$ mpicc -fopenmp pi-openmp.c -o pi-openmp
[campus79@cn53 examples]$ gcc -fopenmp pi-openmp.c -lm -o pi-openmp
[campus79@cn53 examples]$ ./pi-openmp
Area: 3.14159
[campus79@cn53 examples]$ OMP_NUM_THREADS=4 ./pi-openmp
Area: 3.14159
```



<http://hpc.fs.uni-lj.si>

THANK YOU FOR YOUR ATTENTION

www.prace-ri.eu