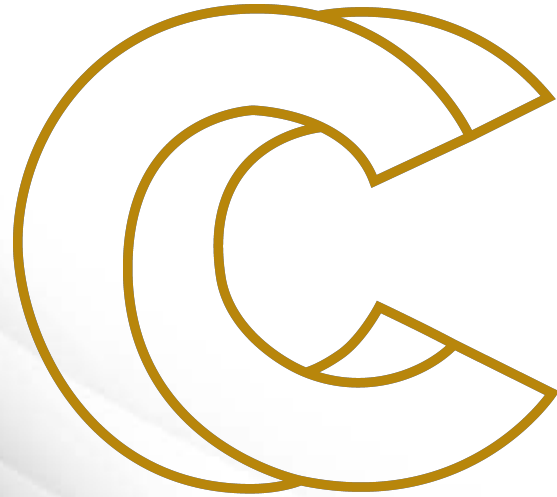


Using HPCFS

SLING



EURO

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Setting up the NoMachine client

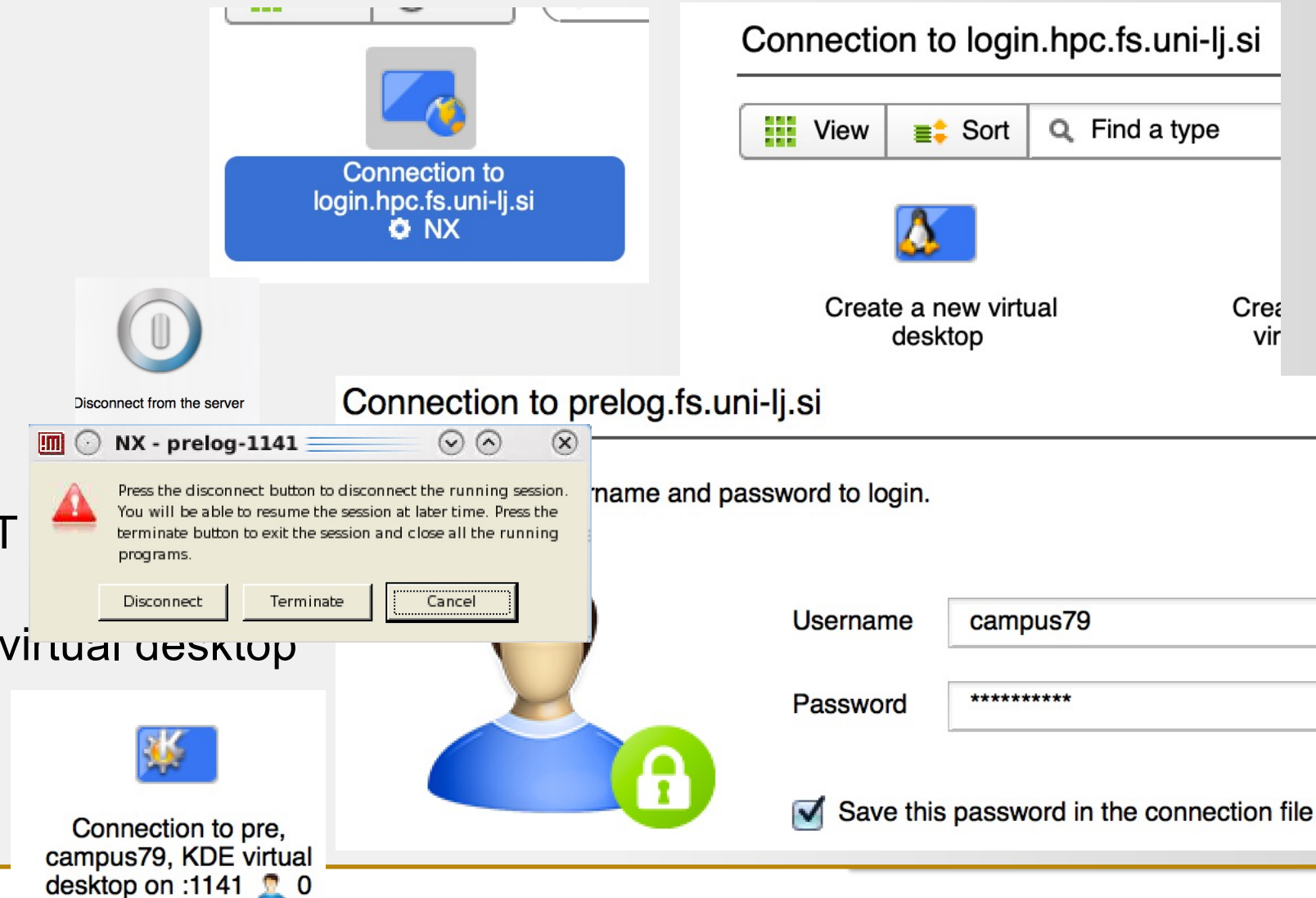
NoMachine client version 6 available for installation at page <https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client> or <https://bit.ly/1fal6ac>

1. Select New
2. Protocol NX
3. Host: login.hpc.fs.uni-lj.si Port: 4000
4. Use Password authentication
5. Don't use proxy
6. Done with Connection to login.hpc.fs.uni-lj.si

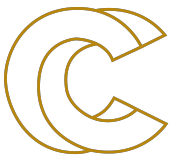


Connecting to HPCFS

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



The screenshot displays the SLING EURO interface for connecting to HPCFS. It shows a list of virtual desktops, including 'Connection to login.hpc.fs.uni-lj.si' and 'Connection to prelog.fs.uni-lj.si'. A dialog box titled 'NX - prelog-1141' is open, displaying a warning message: 'Press the disconnect button to disconnect the running session. You will be able to resume the session at later time. Press the terminate button to exit the session and close all the running programs.' The dialog box has three buttons: 'Disconnect', 'Terminate', and 'Cancel'. Below the dialog box, there is a section for 'Connection to pre, campus79, KDE virtual desktop on :1141'. To the right, there is a login form for 'Connection to login.hpc.fs.uni-lj.si' with fields for 'Username' (campus79) and 'Password' (masked with asterisks), and a checkbox for 'Save this password in the connection file'.



Tuning desktop with Kpersonalizer for remote speed (use less effects=slower processor)

Korak 1: Uvod
Trinity TDE
Welcome to Trinity R14.0.5
This Personalizer will help you configure Trinity desktop in five quick, easy steps...
Izberite vašo državo: Slovenija
Izberite vaš jezik: slovensko

Korak 2: Želim vse po svoje ...
System Behavior
Graphical User Interfaces behave differently in Operating Systems...
Izberite željeno obnašanje vašega sistema:
 TDE (TM) M... A...
 UNIX (R) A...
Opis:
Window activation: Focus on click
Titlebar double-click: Shade window
Mouse selection: Double click
Application startup notification:
Keyboard scheme: Trinity default

Korak 3: Cukrček-meter
Trinity TDE
Trinity offers many visually appealing effects...
If you have a fast, new processor, you can use all of them...
Počasen procesor (manj učinkov):
Prrikaži podrobnosti >>

Korak 4: Vsi imajo radi teme
Z izbiro ene od spodnjih postavk izberete slog računalnika.

| Slog | Opis |
|--------------|-------------------------|
| KDE Classic | Classic KDE style |
| Keramik | Prejšnji privzeti slog |
| Plastik | Privzeti slog TDE |
| Platina | Slog platine |
| Redmond | Slog s severozahoda ZDA |
| Sončni vzhod | Zelo pogosto namizje |

Ogled:
Zavihek 1 Zavihek 2
Skupina gumbov:
 Radijski gumb
 Radijski gumb
 Izbirno polje

Use Trinity Control Center to setup colors for Non TDE programs:
Uncheck "Enforce colors for Non-TDE programs"

Barve [spremenjena] - Nadzorno središče
Datoteka Vidz Nastavitve Pomoč

Iskanje:

- Internet in omrežje
- Komponente TDE
- Namizje
- Regionalnost in dostopnost
- Sistemsko upravljanje
- Strojni dodatki
- Varnost in zasebnost
- Videz in teme
 - Barve
 - Ikone
 - Ohranjevalnik zaslona
 - Okraski oken
 - Ozadje
 - Pisave
 - Povratna informacija z...
 - Slog
 - Upravitelj tem
 - Uvodni zaslon
 - Zvok in večpredstavnost

Barve

Navadno besedilo: povezava obiskana povezava
Izbrano besedilo: Potisni gumb

Barvna shema
TDE privzeta
Aqua Blue
Aqua Graphite
BeOS
Bleda sivina
Buča
CDE
Digitalni CDE
Domino

Barve gradnikov
Navadno ozadje

Osenči razvrščen stolpec v seznamih

Kontrast:
Šibek Močan

Uveljavi barve pri ne-TDE programih.

Pomoč Privzeto Uveljavi Ponastavi

- 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 login only!

Modules (LUA)

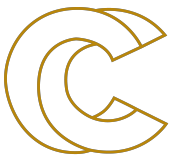
- module avail
- module help/info
- module show
- module load/unload
- module list
- module purge

SLURM batch scheduler

Compiled-in OpenMPI support

- `srun --nodes=N --ntasks=n cmd`
- `sbatch script.sh`
- `sinfo`
- `squeue`
- Alias for interactive usage of nodes:
`alias node='srun -N1 --time=1:00:00 --pty bash -i'`

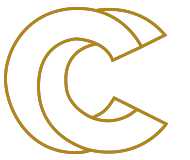
Using SLURM (interactively) and Message Passing Interface (MPI)



SLING EURO

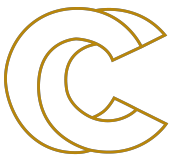
```
[leon@viz mpi]$ module purge && module load foss/2019a
[leon@viz mpi]$ cat hello.f90
program hello
  use mpi
  integer rank, size, ierror, strlen, status(MPI_STATUS_SIZE)
  character(len=MPI_MAX_PROCESSOR_NAME) :: hostname
  call MPI_INIT(ierror)
  call MPI_COMM_SIZE(MPI_COMM_WORLD, size, ierror)
  call MPI_COMM_RANK(MPI_COMM_WORLD, rank, ierror)
  call MPI_GET_PROCESSOR_NAME( hostname, strlen, ierror )
  print*, trim(hostname), rank, size
  call MPI_FINALIZE(ierror)
end
[leon@viz mpi]$ mpif90 hello.f90
[leon@viz mpi]$ LD_PRELOAD= srun -n 4 --tasks-per-node=2 --kill-on-bad-
exit --partition=haswell ./a.out
cn80          2          4
cn79          0          4
cn80          3          4
cn79          1          4
```


Using OpenMP



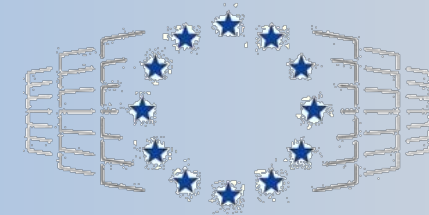
SLING EURO

```
#include <stdio.h>
#include <math.h>
#define N 1000000
int main()
{
    double area = 0.0;
    #pragma omp parallel for reduction(+:area)
    for(int i = 0; i < N; i++)
    {
        double x = (i+0.5)/N;
        area += sqrt(1.0 - x*x);
    }
    printf("Pi : %14lf\n", 4.0*area/N);
    return 0;
}
[leon@cn36 pi]$ module purge && module load foss/2019a
[leon@cn36 pi]$ gcc -fopenmp pi-openmp.c -lm -o pi-openmp
[leon@cn36 pi]$ OMP_NUM_THREADS=4 ./pi-openmp
```



SLING EURO

Thanks!



EuroHPC
Joint Undertaking

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