



SLING

Using HPCFS

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Setting up the NoMachine client



SLING

Available for installation at page <https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client>

1. Select New

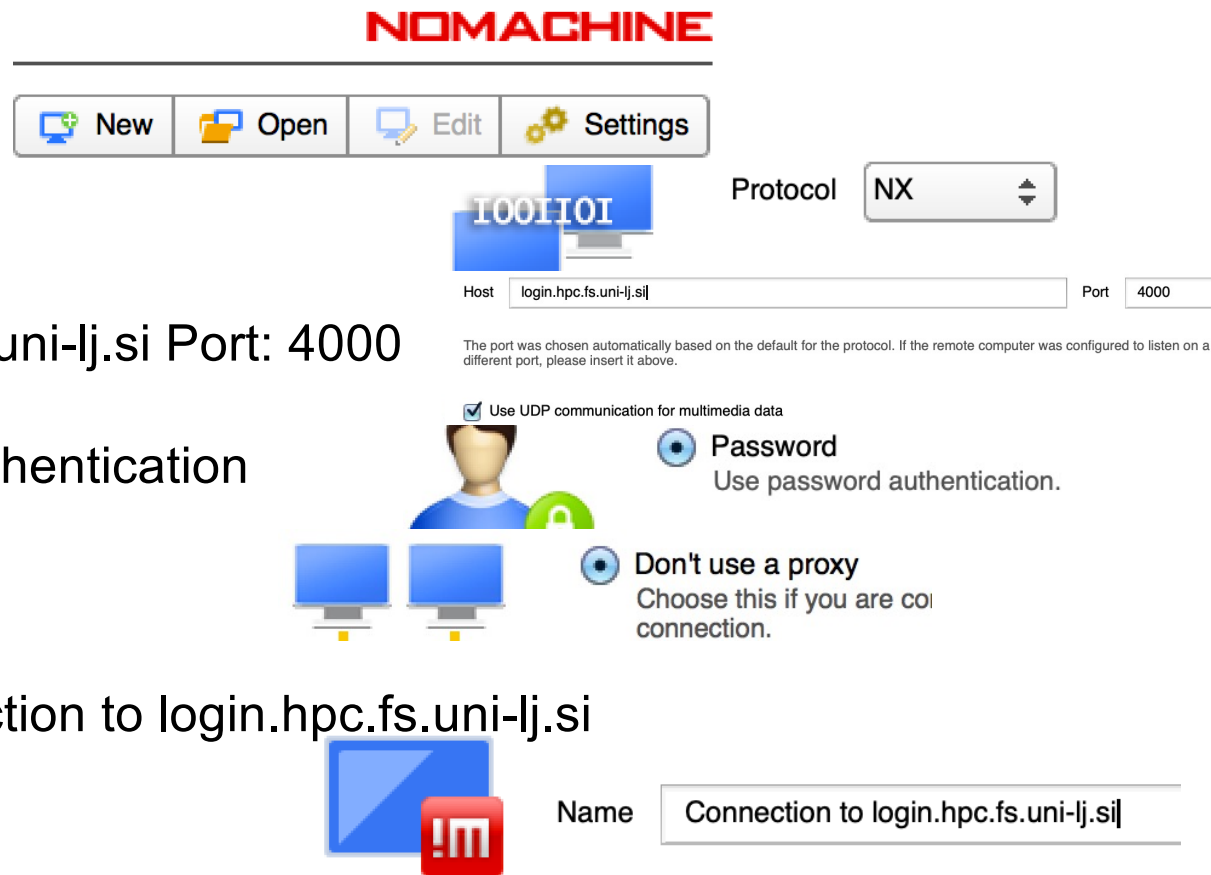
2. Protocol NX

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

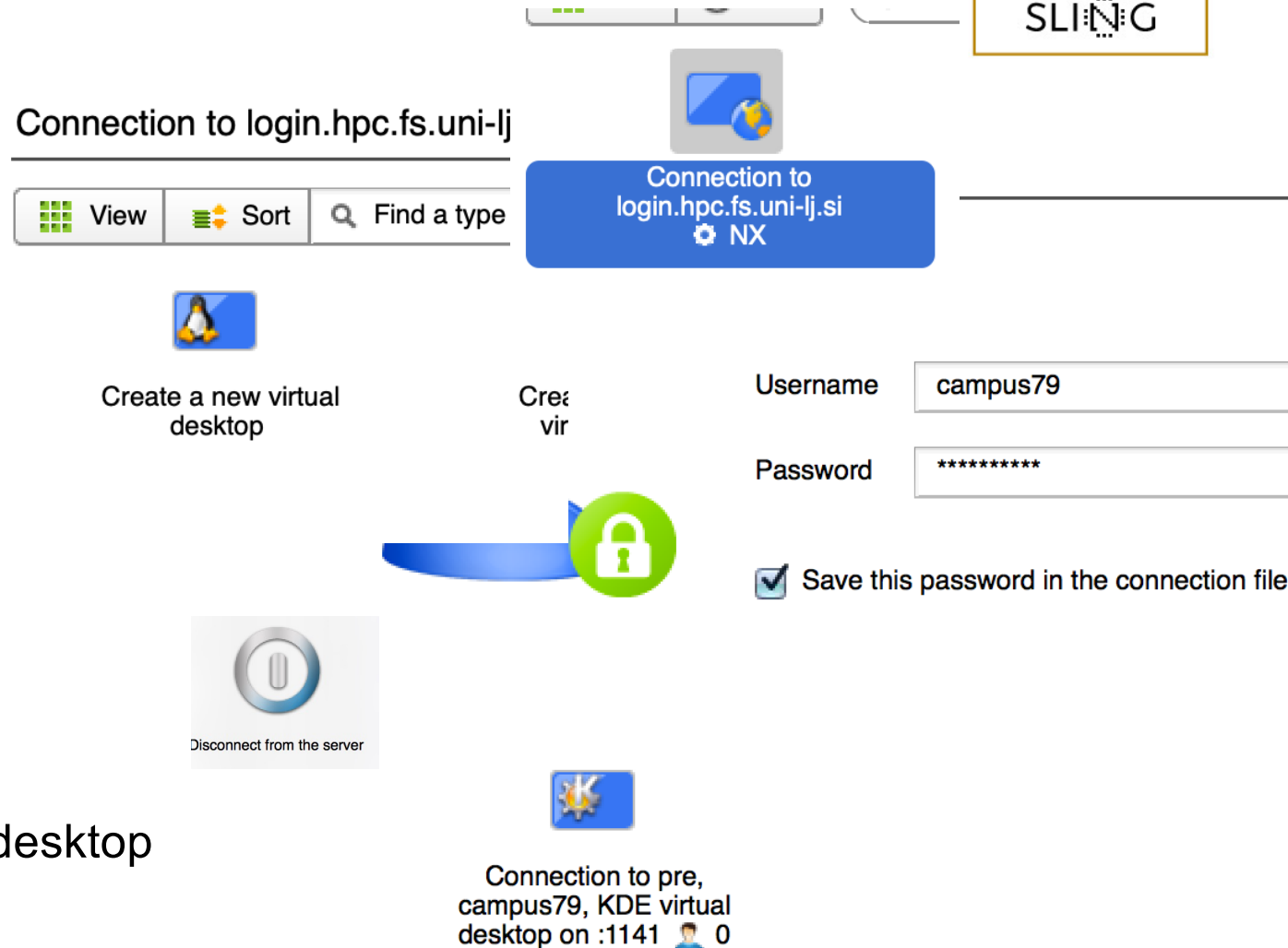


The image shows the NoMachine client setup window. At the top, the 'NOMACHINE' logo is displayed in red. Below it, there is a menu bar with four buttons: 'New' (with a plus icon), 'Open' (with a folder icon), 'Edit' (with a pencil icon), and 'Settings' (with a gear icon). The main area of the window is divided into several sections. On the left, there is a large blue button labeled '1001101'. To the right of this button, the 'Protocol' is set to 'NX' in a dropdown menu. Below the protocol, the 'Host' field contains 'login.hpc.fs.uni-lj.si' and the 'Port' field contains '4000'. A small text note below the port field states: 'The port was chosen automatically based on the default for the protocol. If the remote computer was configured to listen on a different port, please insert it above.' Below the host and port fields, there is a checkbox labeled 'Use UDP communication for multimedia data' which is checked. To the right of this checkbox, there are two radio buttons. The first is labeled 'Password' and is selected; its description is 'Use password authentication.' The second is labeled 'Don't use a proxy' and is not selected; its description is 'Choose this if you are co connection.' Below these options, there is a small icon of a person. At the bottom of the window, there is a large blue button with a red '!' icon and the text 'Name' followed by a text field containing 'Connection to login.hpc.fs.uni-lj.si'.

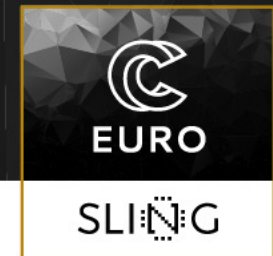
Connecting to HPCFS



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



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. You may choose to postpone personalization until later by clicking on the Skip Wizard button. Changes made so far, will then be reviewed and you will be encouraged to use this simple method.

You will be able to change all the settings of your Trinity desktop. If you already like your Trinity configuration, click **Skip Wizard**, then **Quit**.

Izberite vašo državo:

Slovenija

Izberite vaš jezik:

slovensko

Korak 2: Želim vse po svoje ...

Trinity TDE **System Behavior**

Graphical User Interfaces behave differently on different Operating Systems. Trinity allows you to choose the behavior according to your needs.

Izberite željeno obnašanje vašega sistema:

☒ IDE (TM) ☐ M ☐ U ☐ A

☐ UNIX (R) ☐ O

Opis:

Window activation: Focus on click
Titlebar double-click: Shade window
Mouse selection: Double click
Application startup notification: Keyframe
Keyboard scheme: Trinity default

For motion impaired users, Trinity provides a special keyboard settings. ☐ Omogoči kretanje s tipkovnico, povzeto

Korak 3: Cukrček-meter

Trinity TDE

Trinity offers many visually appealing features, such as smoothed fonts, previews in the file manager, and so on. All this beauty, however, comes at a cost. If you have a fast, new processor, you can afford all this, but for those of us with slower processors, less eye candy helps to keep your desktop running smoothly. Počasen procesor (manj učinkov)

Prikaži podrobnosti >>

Korak 4: Vsi imajo radi teme

Trinity TDE **Style**

Z izbiro ene od spodnjih postavk izberete temo 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

Barve

Datoteka Uredi

Novo Navadno besedilo poveza obiskana poveza

Odpri Izbrano besedilo Potisni gumb

Barvna shema

TDE privzeta

Aqua Blue Aqua Graphite BeOS Bleda sivina Buča CDE Digitalni CDE Domino

Shrani shemo ... Odstrani shemo Uvozi shemo ...

☐ Uveljavljaj barve pri ne-TDE programih.

Pomoč Privzeto Uveljavljaj Ponastavi

Barve gradnikov

Navadno ozadje

Osenči razvrščen stolpec v seznamih

Kontrast

Šibek Močan

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

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 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)



```
[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
```

OpenMP



```
#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
```



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

Thanks!



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