

General Linux Terminal Server + [LIACS Linux Terminal Server](#) (text below)

The University of Leiden provides a new ISSC service: The Linux Remote workspace solution, also called the Linux Terminal Server (LTS).

What is it?

The LTS is an Ubuntu based server that has almost identical functionality as the NUWD Linux desktop (<http://media.leidenuniv.nl/legacy/introductie-linux-werkplek.pdf>) has. You can login using your ULCN account. The LTS can be used to reach other servers, start software as Matlab or Latex, run X based software etc. The system has been scaled and optimized so multiple users can work simultaneously without being disturbed by or disturb other users.

How to use it?

From the University network, connect via ssh:

```
ssh remotelx.campus.leidenuniv.nl
```

Provide your ulcn credentials and you'll be given a terminal prompt where you can start your programs. Graphical programs can be started when X forwarding is enabled and you have an X-server running on your own workstation. From any graphical Linux environment, type:

```
ssh -Y remotelx.campus.leidenuniv.nl
```

This will connect you to one of the available servers (called huismusXX.vuw.leidenuniv.nl) using round robin DNS. We ask you to always use remotelx.campus.leidenuniv.nl, as this might be changed to a load balancer solution in the future.

If you are immediately logged of after logging in, your homier. is probably incorrectly setup. contact the Helpdesk

Accessing from the internet

If you want to reach the LTS from outside the university, you first have to connect to the ssh gateway, which acts as a barrier, and then login to the LTS. For instance:

```
ssh -Y sshgw.leidenuniv.nl
```

More information on the ssh gateway is available on the website of the University. <http://issc.leidenuniv.nl/ict-voor-studenten/handleidingen/sshgw.html>

Starting programs

Starting programs works as it does on the nuwd desktop. Graphical programs are to be started from the command-line using the name of the program. These programs can be run in the background using the & method. For instance:

```
ijskesfe@huismus02:~$ xclock &
```

Ending programs, closing the connection

You are advised to close all running programs normally before closing the connection. After all programs have been closed, you can terminate the ssh connection. Sometimes the connection seems to hang. This is either caused by a program that is still active, or it is a known bug within ssh. If you are sure you want to close the connection, press ctrl-c or terminate your ssh application.

Special considerations

This general solution is designed to give you access to the resources of the university, so you can read your email, or work on some document. It is not designed for long term use or calculations. For this reason connections and running programs will be terminated after 24 hours of continued login.

The LTS servers will be rebooted every Sunday at 03:00 CEST, for maintenance purposes.

General maintenance is scheduled for Monday's between 18:00 and 23:00. This general maintenance is done on systems that the LTS relies upon, such as the Active Directory or the NFS storage. Therefore use of the LTS might be impacted by the general maintenance.

If needed, local disk storage is available. This local storage is not managed, and can be accessed by anybody. It is generally only needed if calculations on data need to be done. Make sure you clean up your files after use. The directory for this local storage is: /scratch/

DO NOT RUN HEAVY CALCULATIONS ON DATA IN YOUR HOME DIRECTORY, as this will slow down all users.

Known Issues

Connecting to the LTS is done over ssh and uses Kerberos as authentication and authorization. This creates some unique situations that are different from Linux only systems. These will be described here.

- ssh-keys, when used from a non kerberos authenticated host, will not work. The connection needs to be Kerberos authenticated.
- Logging on from one Kerberos authenticated host to another might make the login password less, as the Kerberos authentication (the Kerberos ticket) is forwarded to the new server. But the ticket is not passed through to the session, and therefore you will not have access to the NFS based HOME directory. This can be solved by using the correct ssh parameters. For instance "-K" will pass the ticket to the session. `ssh -K -Y remotelx.campus.leidenuniv.nl`

LIACS Linux Terminal Server

The Liacs LTS is based on the general LTS, with the following exceptions:

- The service is only accessible by LIACS users (employees, students, guests) and ISSC support staf.
- Faster hardware for running long term calculations
- No 24 hour limitation. Jobs can be run for as long as is needed, until the reboot at Sunday 03:00 CEST
- No load balancing is done. Access is done by using the hostname, which is one of the following:

huisuil01.vuw.leidenuniv.nl

huisuil02.vuw.leidenuniv.nl

huisuil03.vuw.leidenuniv.nl

Using the LTS from Windows

In order to be able to use the LTS from a windows based workstation additional software is required. The minimum software needed is an ssh application. If graphical possibilities are also needed then at least an X-server package needs to be installed, and the ssh application must support X-forwarding.

For ssh, we recommend putty to be installed. See:

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

For X-server, we recommend X-ming. See: <http://sourceforge.net/projects/xming/files/Xming/6.9.0.31/>

Install both packages. Start X-ming, then start putty. In putty make sure you checked the "Enable X11 forwarding".

And start your session. For more detailed information, see:

<https://wiki.utdallas.edu/wiki/display/FAQ/X11+Forwarding+using+Xming+and+PuTTY>