Terminal Server

Introduction
Since the summer of 2014, Leiden University's ISSC department has been offering a new service: the virtual Linux workplace. We call this service the Linux Terminal Server or LTS.

What is it?
The LTS is a server system based on the Ubuntu Linux distribution. The LTS is largely organised as a standard ISSC Linux workplace. (http://media.leidenuniv.nl/legacy/introduction-linux-workplace.pdf) Every user with a ULCN account can log in to it. From this server, users can log in to other systems, or directly launch software. LTS has been scaled and optimised in such a way that a number of users can work on it without interfering with one another's work.

How can I access the LTS ?
From a university workplace, you can connect using SSH:
ssh <ULCN-username>@remotelx.campus.leidenuniv.nl

Enter your ULCN password and a terminal prompt will appear. You can now launch command line programmes.
Graphic applications can be launched once you have switched on X forwarding. This requires an X server to be running on the client. Every Linux workstation has an X server running as a default. If you are using a Windows workstation, you will need software such as X-Ming.

ssh –Y <ULCN-username>remotelx.campus.leidenuniv.nl

You can use one of the above commands to log in to the available servers. (The host name of these servers is huismusXX.vuw.leidenuniv.nl) Users who log in will be evenly distributed over the huismusXX servers via round robin DNS.

If you are automatically logged off as soon as you log in, there is something wrong with your Linux home directory. If that is the case, please contact the helpdesk.

What if I want to log in from outside the university?
It is not possible to log in directly. To this end we have set u a special hardened gateway: the sshgw.leidenuniv.nl. Via this server you can also use SSH to log in to the LTS.
For more information on the SSH gateway, see http://issc.leiden.edu/ict-staff/manuals/sshgw.html

Launching programmes
You can launch programmes in the same way as on a standard Linux workplace. If an X-server is running on the client, you can use the –Y switch of SSH to launch a graphic programme from the command line. By adding an ampersand to the command, you can launch the application in the background, so that the terminal remains available.
Here is an example:

ijskesfe@huismus02:~$ xclock &

Shutting down software and logging off

We advise you to shut down all programmes before you log off. Sometimes, it may seem as if the connection remains open. This may be the result of a programme that is still running or an SSH failure. To make sure that the connection has been shut down, please type in ctrl-c.

Considerations regarding use

This university service has been developed to provide you with an alternative way of accessing a Linux workplace. For example in order to read your e-mail or to access your home directory.

This service is not suitable for running intensive and lengthy calculations. Processor time will be distributed evenly across all logged-in users and the connection will be automatically terminated after 24 hours.

The LTS servers are restarted every Sunday at 03:00 CEST. In the course of the restart, the latest updates and new packages are installed.

Any required technical maintenance is implemented on Monday evening between 18:00 and 23:00. This does not always mean maintenance on the LTS, but it may involve maintenance on systems on which the LTS depends, such as the authentication servers or storage.

Local, fast storage is available on the LTS servers on /scratch/. However, this directory is not protected, so that anyone can read it and delete files. In addition, this directory is not included in the back-up and ISSC is not responsible for any loss of data.

Files and directories in /scratch/ will be deleted automatically when the atime (last access time) is 60 days ago or longer.

Do not run heavy calculations from your home directory. The home directory is located on separate storage which is mounted by the LTS over the network. Heavy calculations will cause overload on this central storage and on the network.

Some institutes such as the Institute of Mathematics and the LIACS have their own heavy systems for intensive calculations.

Known Issues

Connection to the LTS takes place over SSH and makes use of Kerberos for authentication and authorisation. As a result, situations may arise that do not occur on a stand-alone Linux system. A few remarks.

concerning this matter:
ssh-keys: These will not work if you log in from a non-Kerberos host. The connection must take place through Kerberos.

Password-less log in on a different Kerberos-enabled host is an option, because the Kerberos ticket will be forwarded to the relevant server. However, this ticket is not automatically forwarded to the session. As a result a user may be logged in on a host but nevertheless be unable to access the home directory. This can be resolved by using the –K switch in the SSH command.

Here is an example:**ssh -K –Y <ULCN-username>remotelx.campus.leidenuniv.nl**

LIACS Linux Terminal Server

In addition to access to the generic LTS, the LIACS also has its own custom LTS, with the following divergent properties:

- The service is only available to staff members and students of the LIACS.
- The hardware servers are faster and there are more of them.
- There is no 24 hour log-in limit. Jobs can run until the following reboot on Sunday night.
- There is no load balancing, so that users access the server directly on the host names:
  huisuil01.vuw.leidenuniv.nl
  huisuil02.vuw.leidenuniv.nl
  huisuil03.vuw.leidenuniv.nl

Using the LTS from Windows

To use the LTS from a Windows workstation requires additional software. The minimum is an SSH client. If you also want to use graphic applications, you will need an X server. In the latter case, X-forwarding should be switched on the SSH client.

As an SSH client, we advise you to use Putty:
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

As X-server, we advise you to use X-Ming:
http://sourceforge.net/projects/xming/files/Xming/6.9.0.31/

Install both packages. Launch X-Ming, and then Putty. Make sure that in the Putty session, 'Enable X11 forwarding' is switched on. A more extensive description can be found at:
https://wiki.utdallas.edu/wiki/display/FAQ/X11+Forwarding+using+Xming+and+PuTTY