**VNC Server on Login-Nodes**

If users like to work similarly as used to do with Remote Desktop (Windows) or comparable systems, this is also feasible on the LRZ Login Nodes. Please, be aware that there is not hardware acceleration available on these systems. Some software thus might not work. In those cases, please use the dedicated Remote Visualization Systems!

**Caution:**

Please, don't start several or many VNC servers unless this is really justified!
You share the login nodes with other users!
Please, kill manually those VNC servers you started once you've finished your work!
Every night, all running VNC servers are killed by the system - so safe your work in time!
Please, don't start elaborate processes (programs, simulations, ...) on the login nodes!
The compute clusters or the Remote Visualization are available for these cases!

**Getting started ...**

We describe here only the mode which uses a VNC client on the local site. Please, download one.

The general workflow is as follows:

- Login to a Login node
- Prepare the VNC session (needs to be done only once)
- Start the VNC server
- Setup an SSH tunnel
- Start the VNC viewer on local system (Laptop/PC)

And, once finished, kill the VNC server again.

**Example Session**

**Login to LRZ login node:**

```
local> ssh <LRZ Login-Node>
```

<LRZ Login Node> is the DNS name of the login node you had to choose.

**Prepare your VNC session (needs to be only once!):**

```
remote> vncpasswd
remote> echo -e '#!/bin/sh
[ -x /etc/vnc/xstartup ] && exec /etc/vnc/xstartup
&& /etc/vnc/xstartup
' > .vnc/xstartup && chmod u+x .vnc/xstartup
```

The first command is used to set a VNC session password. It should be one safe enough, different from the SSH password! Once you forgot your VNC password, you can create a new one via `vncpasswd`.

**Start VNC server:**

```
remote> vncserver
New 'remote:2 (<user>)' desktop is remote:2
Starting applications specified in ~/.vnc/xstartup
Log file is ~/.vnc/remote:2.log
```

There is twofold information.

1) The display is chosen to be :2. But it can be any other number. Keep this information in mind.

2) The VNC server tells you that `~/.vnc/xstartup` is executed. If you forgot to do the preparation steps, VNC server will create a default xstartup script for you. This will not work, however!

**Setup a SSH tunnel:**

In a new terminal, (or with the same terminal if you know how to use SSH escape characters) create a SSH tunnel.

```
local> ssh -L 12345:localhost:5902 <LRZ Login-Node>
```
It must be the SAME LRZ Login-Node as you started the VNC server on!
The local port 12345 is rather an arbitrary number. But you need to remember it when starting the VNC viewer.
The remote port 5902 is calculated as \( 5900 + \text{<VNC display number>} \); in the above example, the display number was 2. Therefore: 5902.

**Start the VNC Viewer:**

Again on your local system, start the VNC viewer

```
local> vncviewer localhost:12345
```

The port number is the same as that chosen for the SSH tunnel!

**Once finished ...**

Kill the VNC server and logout.

```
remote> vncserver -kill :2
```

For killing the VNC session, you need to specify the correct display number via which your session is identified. If you forgot it, use `vncserver -list` to see your running VNC sessions.
During night, all VNC sessions are killed by the system. But it’s good habit to kill it by oneself (after correctly saving the work and closing the open programs, ...)

**Advanced Business - The xstartup Script**

The `/etc/vnc/xstartup` has the following content:

```
#!/bin/sh +x
[ -r $HOME/.Xresources ] && xrdb $HOME/.Xresources
xsetroot -solid black
icewm-session &
```

The most important line is surely the last one, as here the icewm-session (window manager) is started. In principle, users can change this according to his/her own needs and to the available resources (whatever works!).