

Remote access to Linux (Unix) from Linux (macOS)

TigerVNC (Remote Desktop)

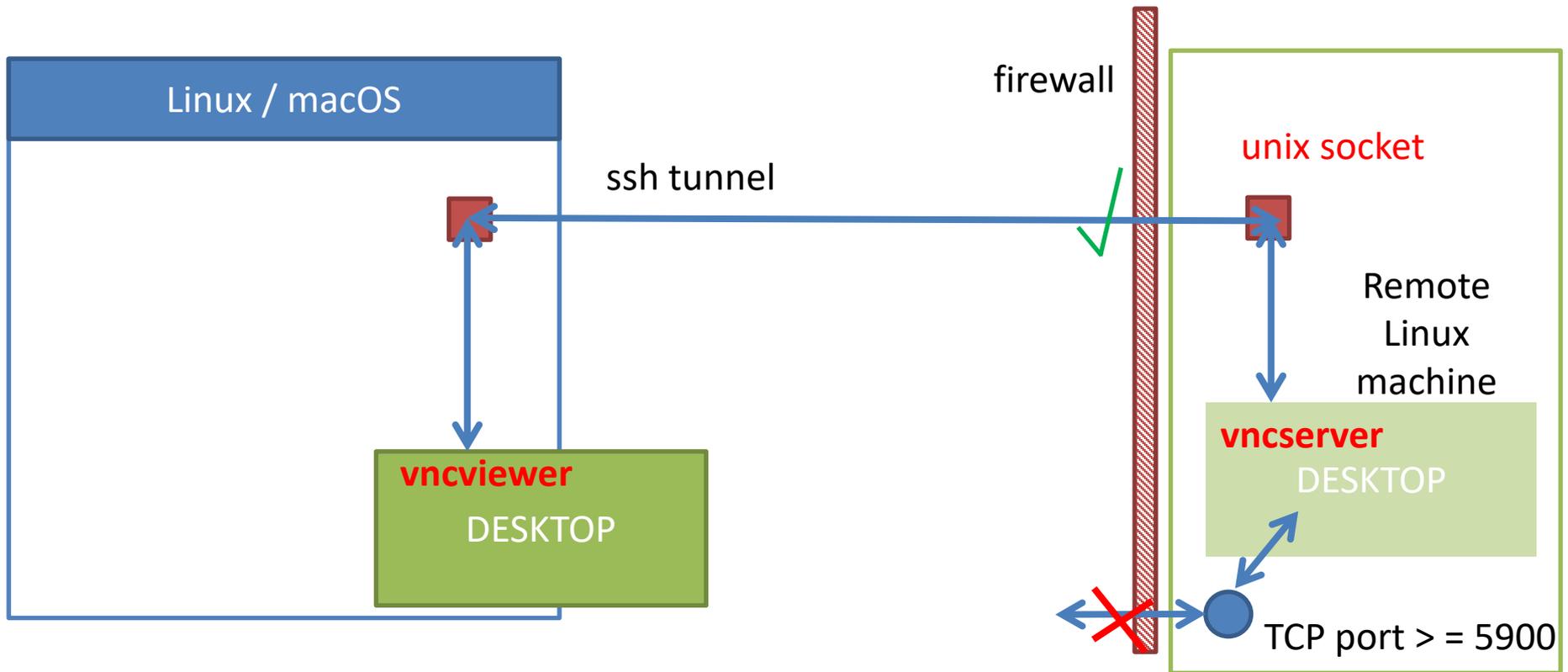
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VNC



VNC

1. VNC implements the equivalent of a remote desktop. Unlike export of display, the transmission is very fast and does not suffer as much latency.
2. To eliminate security risks, ports 5900 and higher, which VNC uses by default and which can be exploited for unauthorized access, are disabled on the WOLF cluster by the firewall. This measure greatly complicates the use of VNC if the user wants to solve it on his/her own.
3. Use of VNC is made significantly easier by customized programs `vncserver` and `vncviewer` for TigerVNC:
 1. `vncserver`
 1. starts a VNC server that listens on a Unix socket (TCP network connections on 5900 ports do not open)
 2. access to the Unix socket is restricted to the user running the VNC server only
 3. the default desktop is JWM (works on all remote machines), on some machines it is possible to run full Ubuntu GNOME environment
 2. `vncviewer`
 1. establishes an ssh connection to the remote machine and creates a tunnel to the Unix socket on the remote machine
 2. launches a VNC client that displays the remote desktop

Installing VNC Client

Ubuntu 18.04 / 20.04

installation is performed on your computer

0. This procedure assumes that you have an activated NCBR package repository (see previous presentations)
1. Package installation:

```
[myPC]$ sudo apt-get update
```

```
[myPC]$ sudo apt-get install ncbr-tigervnc
```

2. The vncviewer viewer is available as a standard command:

```
[myPC]$ vncviewer <VNCID>
```

Linux - General

installation is performed on your computer

1. Download the program installation package ncbt-tigervnc to home directory:

```
[myPC]$ scp username@wolf02.ncbr.muni.cz:~kulhanek/Documents/C2110/Software/ncbr-tigervnc-linux64.tgz .
```

2. Unpack the archive in your home directory:

```
[myPC]$ tar xvf ncbt-tigervnc-linux64.tgz
```

3. The vncviewer browser is available as:

```
[myPC]$ ~/ncbr-tigervnc-linux64/vncviewer <VNCID>
```

space, dot



If you want to install to a different directory:

```
>>> ERROR: TIGERVNC_PATH is not set!
```

1. open the file **vncviewer** and edit the line
2. export TIGERVNC_PATH = "\$HOME/ncbr-tigervnc-linux64"

enter the absolute path to the ncbt-tigervnc-linux64 directory

installation is performed on your computer

1. Download the program installation package ncbt-tigervnc to home directory:

```
[macOS]$ scp username@wolf02.ncbr.muni.cz:~kulhanek/Documents/C2110/Software/ncbr-tigervnc-linux64.tgz .
```

2. Unzip the archive in your home directory:

```
[macOS]$ tar xvf ncbt-tigervnc-macos.tgz
```

space, dot



3. The vncviewer browser is available as:

```
[macOS]$ ~/ncbr-tigervnc-macos/vncviewer <VNCID>
```

If you want to install to a different directory:

```
>>> ERROR: TIGERVNC_PATH is not set!
```

1. open the file **vncviewer** and edit the line
2. export TIGERVNC_PATH = "\$HOME/ncbr-tigervnc-macos"

enter the absolute path to the directory
ncbr-tigervnc-macos

Usage

Actual overview of all GUI sessions on a WOLF cluster can be obtained here:

<https://wolf.ncbr.muni.cz> » Internal part

To log in, use the e-INFRA account that you use to log in to the WOLF cluster.

first run vncserver on unoccupied machines (green) and then on machines running fewer instances of the GUI sessions.

Starting VNC Server

vncserver runs on a remote machine

0. Verify

- that you have valid krb5 tickets (klist)
- or renew them
 - command kinit **username@META**

1. Log in to the remote machine using ssh, e.g., to the node wolf02.ncbr.muni.cz

```
[myPC]$ ssh wolf02.ncbr.muni.cz
```

2. Activate the tigervnc module

```
[wolf02]$ module add tigervnc
```

3. Start a VNC server with full Ubuntu GNOME

```
[wolf02]$ vncserver --fullgui
```

or with a lightweight JWM desktop

```
[wolf02]$ vncserver
```

Start the VNC server

```
[kulhanek@wolf02 ~]$ vncserver
```

```
>>> TigerVNC server started successfully!
```

```
Logs: ~/.vnc/wolf02.ncbr.muni.cz.1.startlog ~/.vnc/wolf02:1.log
```

```
VNCID: kulhanek@wolf02.ncbr.muni.cz:1
```



VNC session identifier



to diagnose possible
problems

Comments:

- After starting the VNC server, it is possible to terminate the ssh connection to the remote machine.
- It is not appropriate to run multiple VNC servers.
- An overview of running servers can be obtained using:
 \$ vncserver -list
- The VNC server can be explicitly terminated (vncserver -kill <ID>, ID is printed by the -list option). ATTENTION! Any unsaved work will be lost.

Start VNC Viewer

vncviewer is running on your computer

0. Verify

- that you have valid krb5 tickets (klist)
- or renew them
 - command kinit **username**@META

1. Launch the VNC viewer (depending on the type of installation). Use the VNCID listed when starting the VNC server as an argument.

```
[ubuntu]$ vncviewer kulhanek@wolf02.ncbr.muni.cz: 1
```

```
[linux]$ ~/ncbr-tigervnc-linux64/vnCviewer kulhanek@wolf02.ncbr.muni.cz:1
```

```
[macOS]$ ~/ncbr-tigervnc-macos/vnCviewer kulhanek@wolf02.ncbr.muni.cz:1
```



alternatively use the path where you installed the VNC browser

Disconnect vs Exit

1. Disconnection from the VNC server occurs when
 - network connection is lost
 - VNC viewer window is closed
2. To re-establish the connection, you must restart the VNC viewer with the same VNCID of the server.
3. The VNC server terminates when
 - you log out from the desktop (Gnome: Logout; JWM: Exit)
 - server is explicitly killed (`vncserver -kill`)

