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Tutorial case: login "user4" and server "micro1.lx.it.pt".

ULP/SIA case: login "istxxxx" and server "fatima2.vps.tecnico.ulisboa.pt".

Client VNC and Linux server configuration

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• **Introduction**

- **This tutorial explains how to access a Linux workstation (server) from a windows PC or a Mac OS (client) with vnc protocol.**

- **It is assumed that the server has vncserver installed.**

- **The Windows client has a vnc client [1] and ssh client installed [2].**

- **The Mac client has a native vnc and ssh clients in macOS. It is also possible to use a different vnc client [1].**

- **This tutorial example presents "user4" connecting to "micro1.lx.it.pt" server.**

- **vnc has many advantages over ssh with X forwarding. One is the fact that it doesn't consumes too much internet bandwidth; the other is that if the internet connection server-client accidently closes, the restart is possible without losing anything because the server vncserver and applications are still running.**

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• SSH configuration (putty windows client)

Filling Putty configuration

Run putty client to make a ssh secure connection to the server. Fill the server DNS name on "host name" field. Port 22 is used by default. Fill a name to identify this connection configuration on "Saved Sessions" field, and press "save". Next time putty is opened the saved configuration can be loaded.

**Next step in to configure the port forwarding using "SSH/Tunnels" menu.**

The port forwarding is required because vncserver ports are closed by the server firewall.

Client putty GUI

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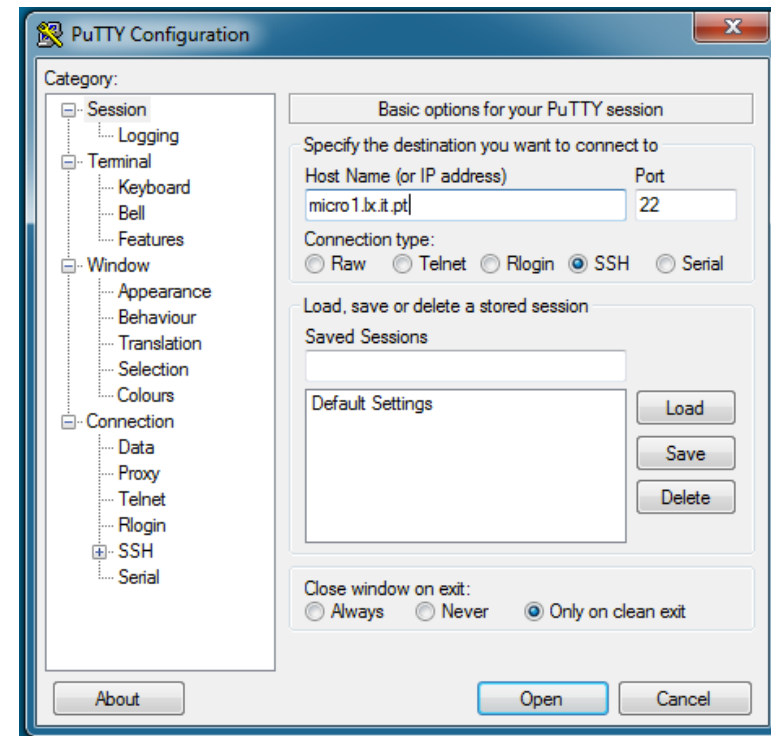
For that in putty SSH/tunnels menu, configure port forwarding. This example will assume display number 4 is used. So, to use display 4 vncserver will use server port number 5904 (the rule is port=5900+display_number). So, client local 5904 port must be forward to server port 5904.

step 1
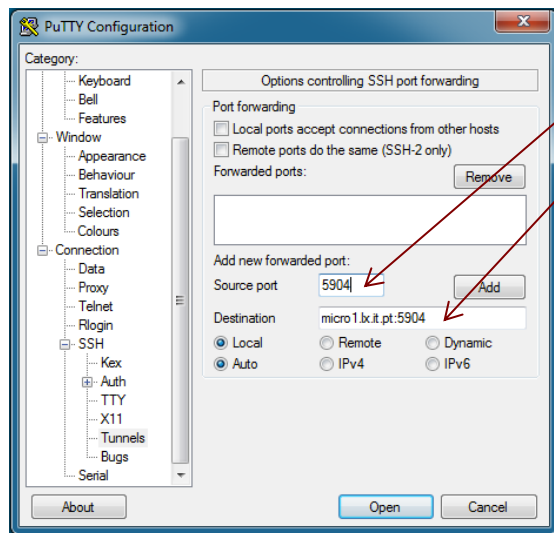
step 2

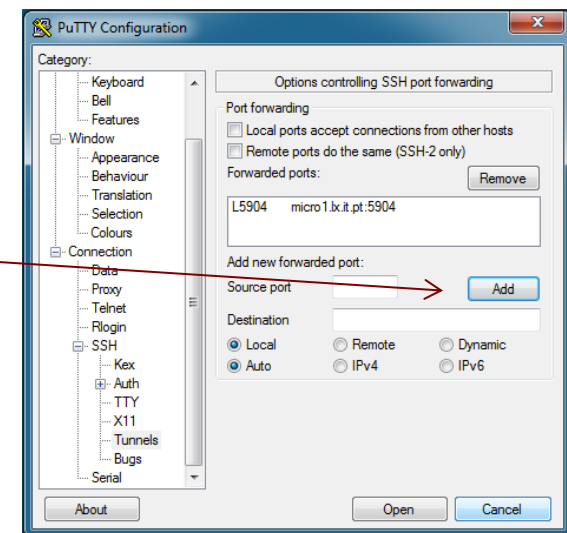**fill these fields**

press Add

ssh/tunels GUI

ssh/tunels GUI

Save the session once again, then make the login by pressing "Open". Authenticate with login and password.

A terminal window will open from Linux server. Do not close this terminal during the session.

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• **Remote access with port forwarding (Mac client)**

On macOS open a terminal window.

Once again for the same user, server and display number as before, give the following command.

$ ssh –L 5904:localhost:5904 user4@micro1.lx.it.pt

A terminal window in Linux server will open. Do not close this terminal windows during the session.

- **Starting vncserver (Linux server)**

Starting server "vncserver"

Login to your linux account. Open a terminal window.
Start vncserver with the command "vncserver :4 -depth 24 -geometry 1440x900"

Options:

-depth 24 defines the pixels depth in number of bits. For cadence 24 value is required.

-geometry defines the client display resolution. It depends on the client graphic card resolution.

When starting vncserver for the first time, the system ask for a password. This password in only for the vnc connection, it is not necessarily equal to the login one.

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vncserver log file is displayed and the chosen display number is in the log file name.

vncserver also creates ~/.vnc directory and stores there the logfile, pid file and passwd file.

Finally logout can be performed (*).

If necessary, to shutdown the vncserver, the command "vncserver –kill :4" should be used (note that in the command it was assumed that the display was number 4).

The command "vncserver –list" will list the displays you have running.

(*) If the server runs AFS authentication, after logout, vncserver still runs for 8 hours long. After that it must be started again.
If the server uses standard Linux authentication, vncserver continue running after logout for undetermined time (unless a reboot is performed).

• **Remote access with vnc viewer (windows client)**

Starting client vnc viewer

Run vnc viewer on client machine.
On VNC server field, write "localhost:5904" (or "localhost:4") instead.

Then enter vncserver password.

There were some reported problems where the connection to the server was refused.

For these cases, the problem was solved by filling the destination field in putty with "localhost:5904" instead of "micro1.lx.it.pt:5904".

Client vnc viewer GUI

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And finally the desired server desktop image appears in your Windows PC display. If you want, full screen mode can be used.
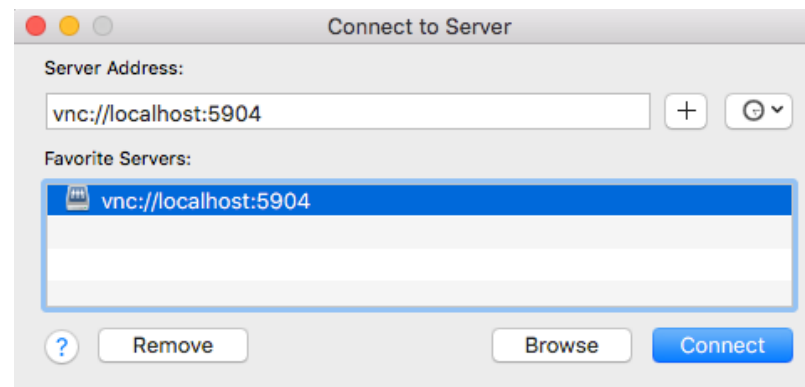

To end your work session, close the vncviewer and putty application.

Note: Don't make logout of your Linux session, otherwise you will get a blank screen. To solve this you will need to kill vncserver and start it again in the server side. But this closes your running server applications.

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- **Remote access with vnc viewer (Mac client)**

Starting macOS vnc viewer builtin client

On the Finder application, chose "Go/Connect to server".
The following window appears.

On "Server address" field write "localhost:4" (or "localhost:5904") instead.

Then press "connect" and enter vncserver password.

The session can be saved by pressing "+".

And finally the desired server desktop image appears in your Mac display. If you want, full screen mode can be used.

To end your work session, close the vncviewer and putty application.

Note: Don't make logout of your Linux session, otherwise you will get a blank screen. To solve this you will need to kill vncserver and start it again in the server side. But this closes your running server applications.

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• **Available server machines at IST**

Alameda campus: fatima2.vps.tecnico.ulisboa.pt
Tagus Park campus: fatima.vps.tecnico.ulisboa.pt

Because internal network is firewall protected, files transfer to/from outside should be done with sftp clients.

• **References**

[1] vncviewer (http://www.realvnc.com/) is a freeware software. Other equivalent software can be used.
[2] putty ssh (http://www.putty.org/) is a freeware software. Other equivalent software can be used.