

Remote access to ALBA beamline desktops using NoMachine NX



Document version: 1.5

Author: IT Systems – Computing Division

Contents

Remote access to ALBA beamline desktops using NoMachine NX.....	1
Requirements and recommendations	3
Remote access availability at the beamlines	3
Hardware requirements.....	3
Internet connection	3
Configuring the Nomachine Enterprise client in your PC	4
Install the NoMachine Enterprise Client in your PC.....	4
Summary of configuration parameters for Nomachine Enterprise Client.....	4
Step-by-step configuration of the NoMachine Enterprise Client	5
Configuring the connection to the beamline desktop PC.....	7
Establish a connection to the beamline desktop PC.....	7
Troubleshooting and frequently asked questions	13
I don't remember my username or password	13
I get the error " <i>No available sessions</i> " after entering my user and password	13
How do I access the NX settings (display, keyboard, etc...) menu?.....	14
I can only see one of the remote monitors in the beamline	14
I have multiple monitors at my PC, how can I use them all for the remote sessions?.....	16
I have multiple monitors at my Mac, but the NoMachine session can only use one of them.	17
When trying to connect I get the error " <i>Please upgrade your NoMachine installation to version 7 or later and retry</i> "	18



Requirements and recommendations

Remote access availability at the beamlines

Some of the ALBA beamlines offer the possibility to connect remotely to the beamline workstations in order to operate the control systems remotely.

As a first step, you should **ask your local contact at the beamline** if you wish to schedule a remote access session. He will inform you about the procedures to follow and any possible safety issues. In case of approval, your access will be enabled for the agreed date.

Hardware requirements

It is recommended you **use at least one high resolution monitor (1920x1200, 24" or bigger)**. Some beamline workstations use 2 monitors so ideally you would use 2 to minimize the amount of horizontal scrolling required for operating the different GUIs.

As for the PC, the NX software is designed to work on computers with minimal hardware resources. Any relatively modern PC (less than 10 years old) should be more than enough, the NX recommendation is at least an i3 with 2 GB of RAM.

Internet connection

Only a **residential Internet connection (ADSL/Fibre/Cable) with basic speed** is required. During our tests, we were able to successfully operate the beamline at good speed even while using the lowest speed ADSL connection available in Spain back in 2016 (Movistar ADSL Basico with 8 Mbps download and 300 Kbps upload.)

IMPORTANT: The **outgoing access to the port 8080** should be open so that the NX software can connect to ALBA. If your institution has a central firewall restricting outgoing connections, please check with the IT department that they allow outgoing connections to port 8080 of the host remotenx.cells.es.

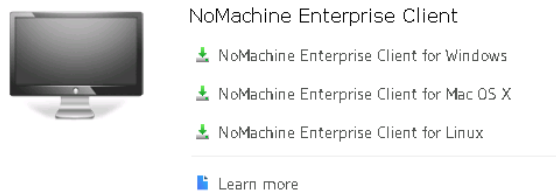
Configuring the NoMachine Enterprise client in your PC

Install the NoMachine Enterprise Client in your PC

Download the NoMachine Enterprise Client for your OS from the NoMachine website.

There are clients available for Windows, Mac OS X and Linux:

<https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client>



Installation of the software should be pretty straightforward, just follow their instructions.

Summary of configuration parameters for NoMachine Enterprise Client

Protocol: **NX**

Host: **remotex.cells.es**

Port: **8080**

Use UDP communication for multimedia data: **No, leave unchecked**

Authentication method: **Password**

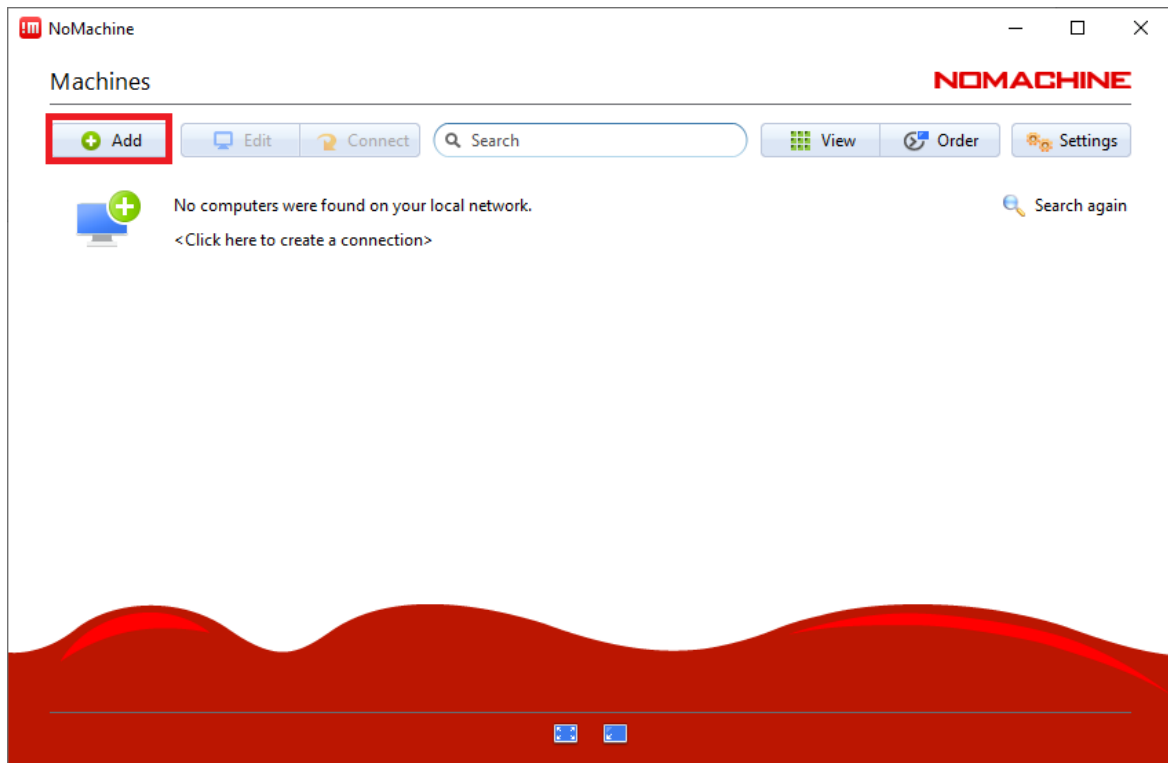
Use HTTP Proxy: **Don't use a proxy**

Connection name: **ALBA remote access**

The following pages explain how to configure the client step by step.

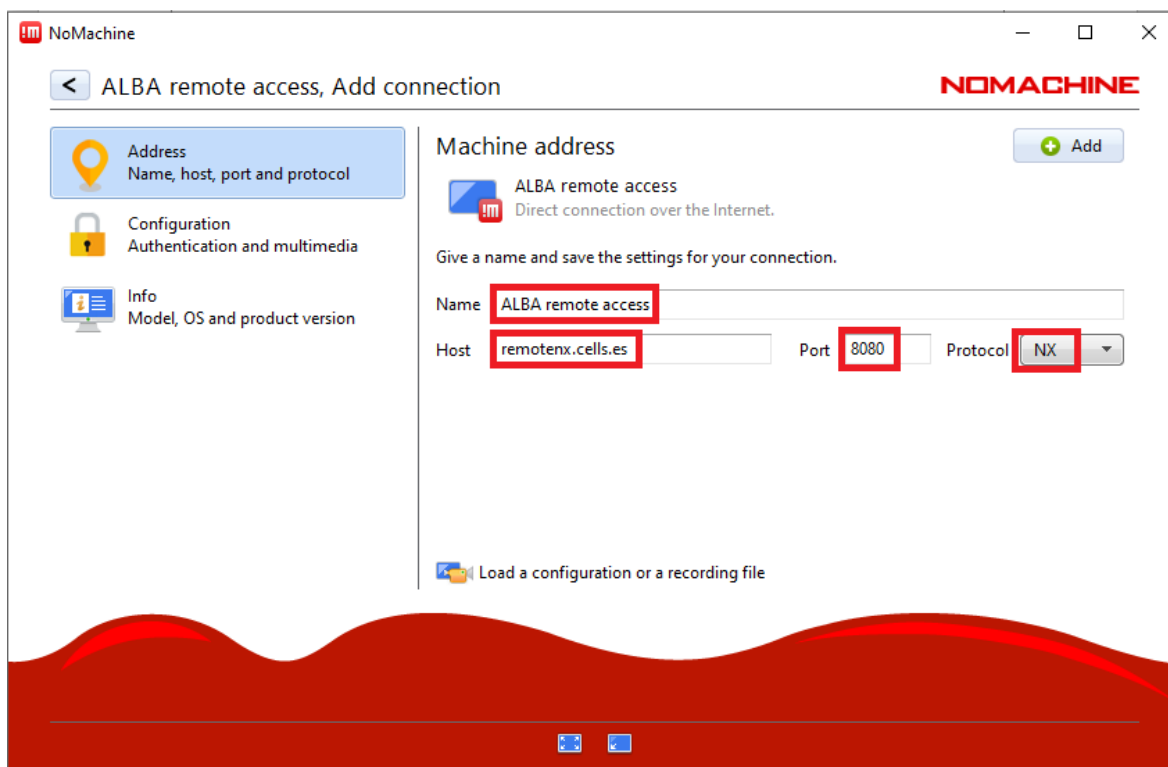
Step-by-step configuration of the NoMachine Enterprise Client

1. Start the software and add a new connection:



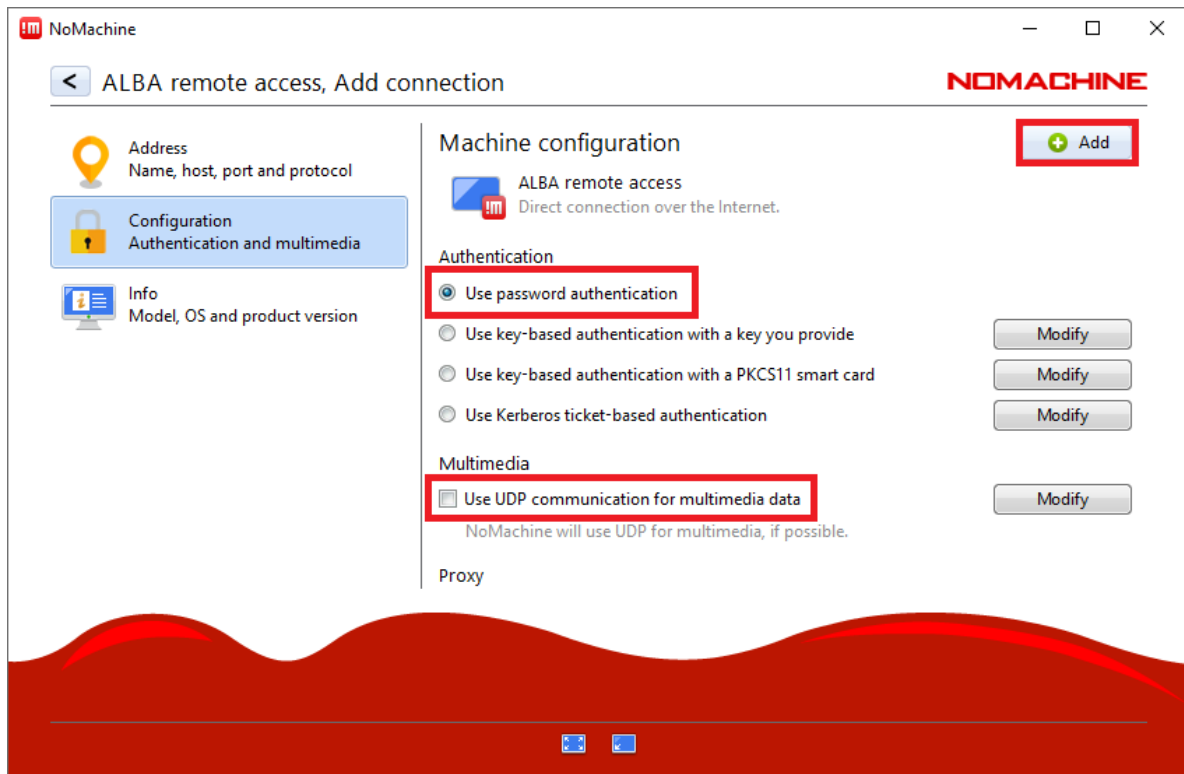
2. Choose the following parameters:

- Host: *remotex.cells.es*
- Port: *8080*
- *NX* as the protocol



3. Go to configuration and choose the following parameters:

- Choose "Password" authentication
- Uncheck the "Use UDP communication for multimedia data".
- Once done, click add



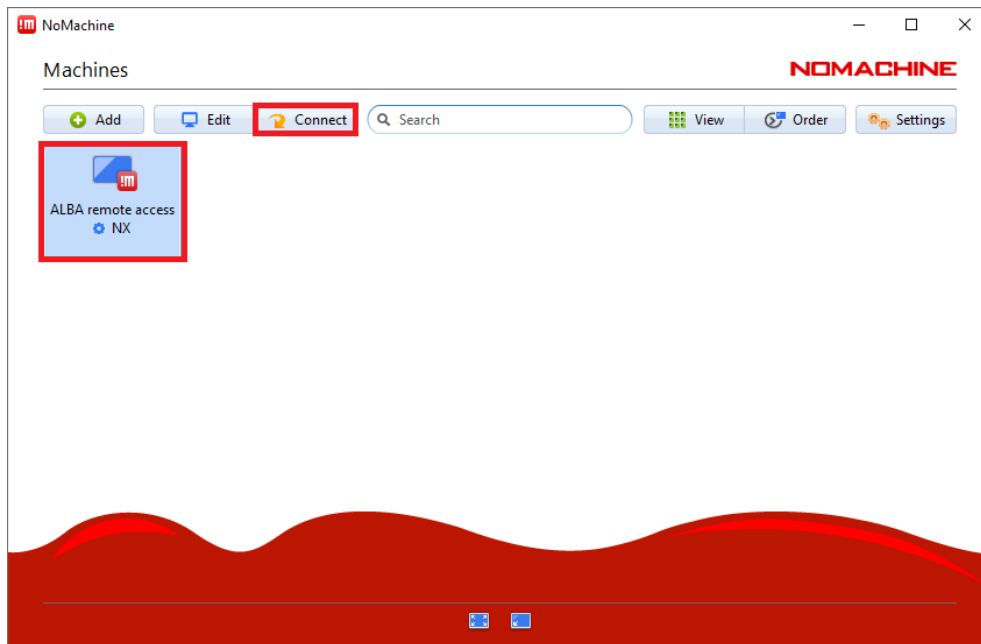
4. Your Nomachine Enterprise client is now configured and the NX connection to ALBA is ready to be used.



Configuring the connection to the beamline desktop PC

Establish a connection to the beamline desktop PC

1. Start the NoMachine Enterprise Client software on your PC. To continue you can double Click on *ALBA remote access*, or Click on *ALBA remote access* to select this connection and then click the *Connect* button to continue:



2. On the very first time you use this connection, you will get a prompt for verifying the host authenticity. You can simply click *OK* to continue.

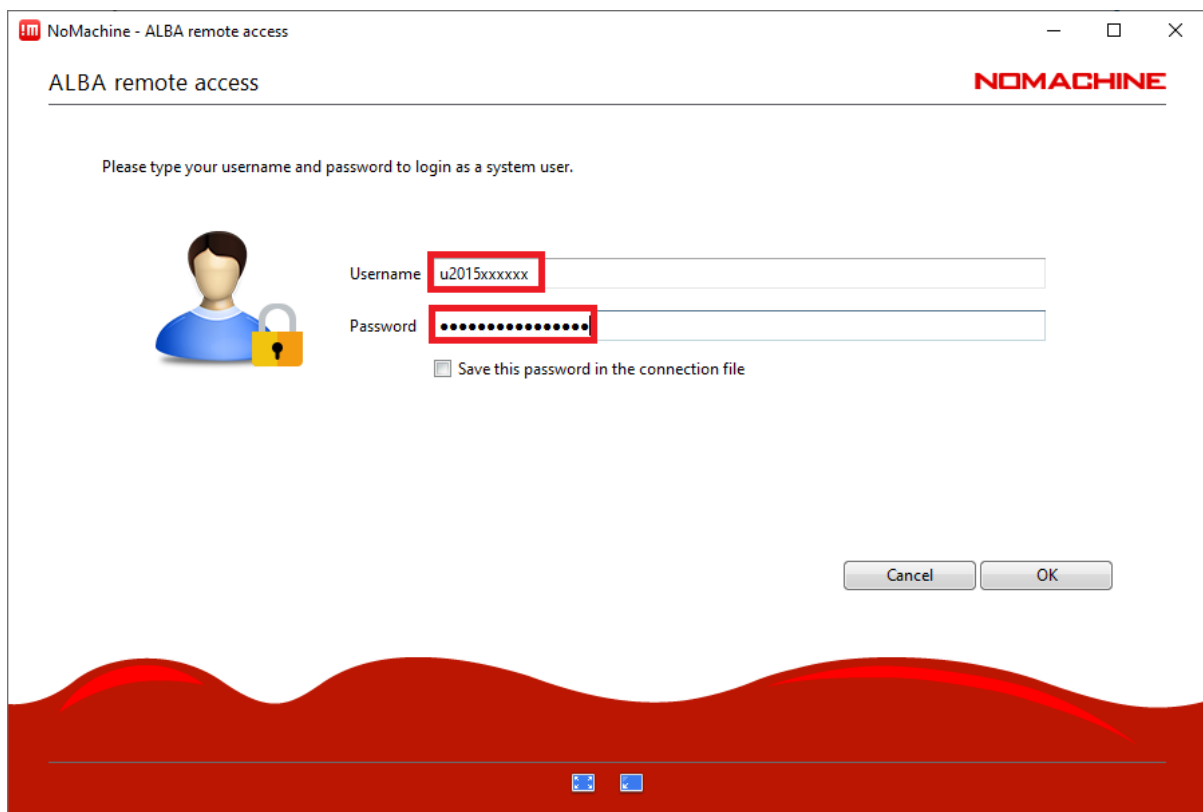


From now on the software will recognize this host fingerprint and you will no longer get the prompt above.

3. Now you should authenticate with your username and password.

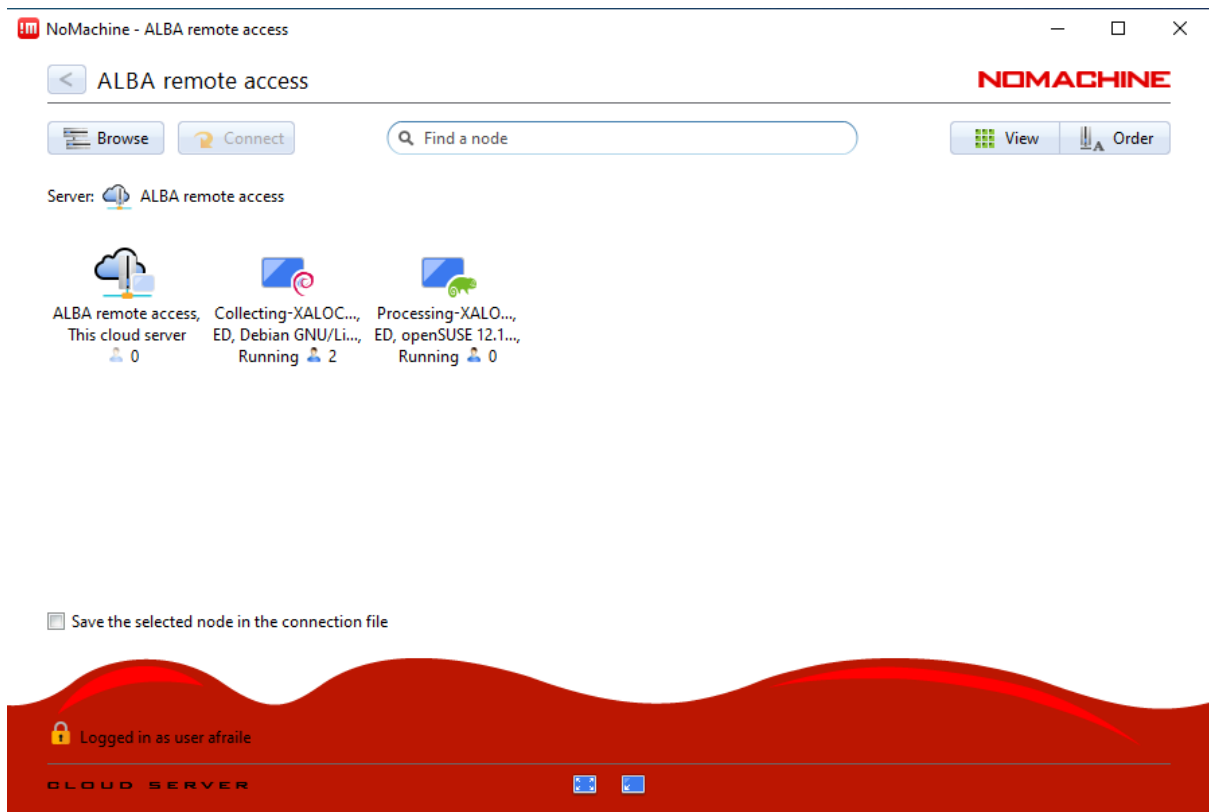
Typically, these credentials are provided to you the first time you visit ALBA for an experiment, with the recommendation to set your own password as well. They are the same credentials used to [remotely download your experiment data using SFTP](#).

If you don't remember the username or password, it is possible to reset it from the User Office portal (My Visits → Account Management), otherwise please ask your local contact at the beamline.



4. Now, you should get a screen listing the available *Physical displays*.

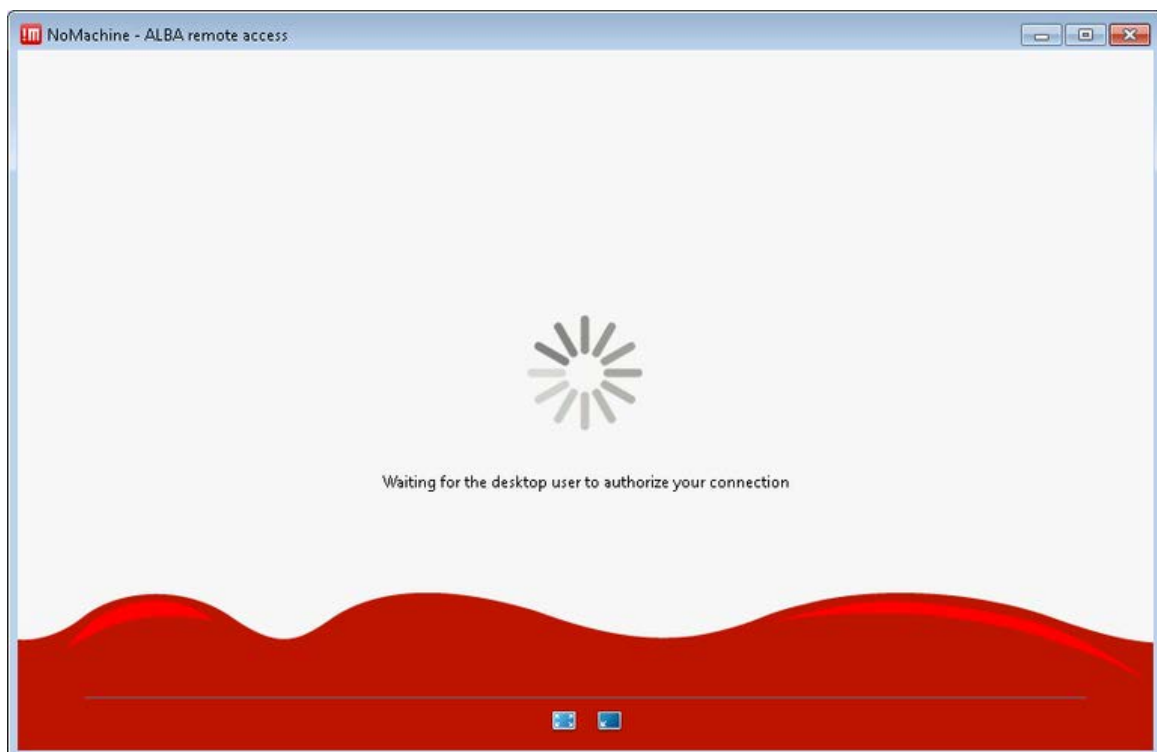
If you don't see any available desktop and instead get a message stating "*No available sessions*", you should change from *My desktops* to *All desktops* at the View icon at the top-right of the screen:



Now you should be able to locate the Physical display of the beamline PC and connect to it:

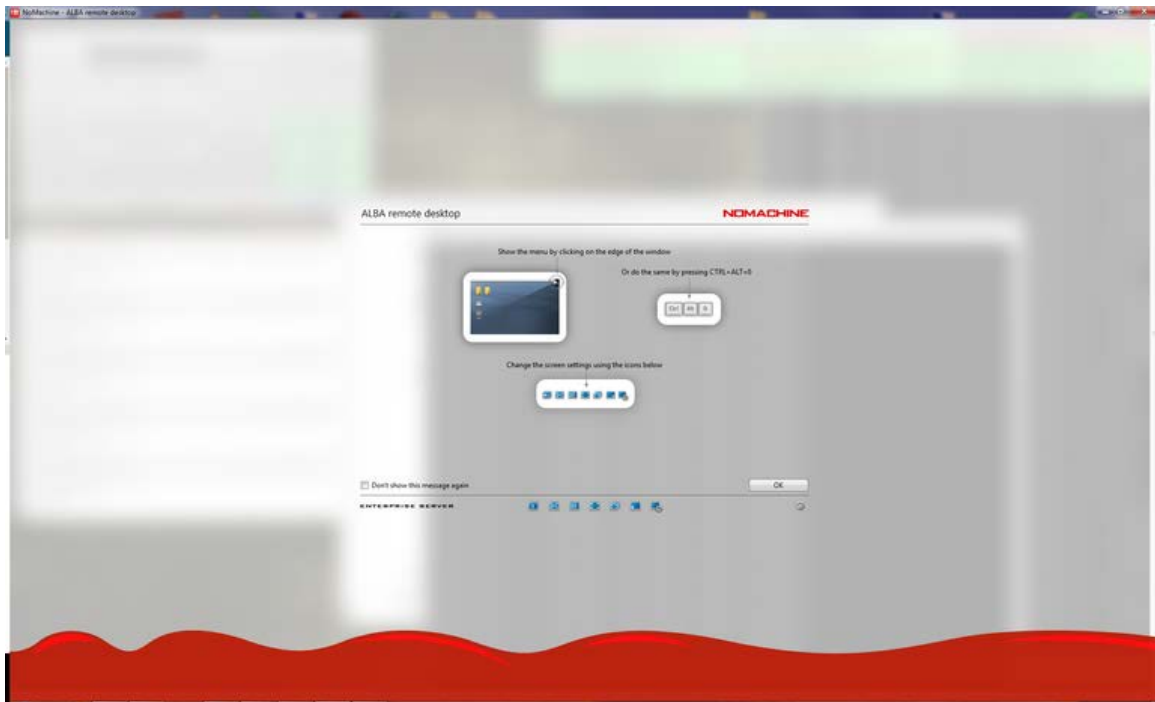
- For Xaloc (BL13): Use the machine labelled *Collecting* to perform data acquisition and the machine labelled *Processing* for data processing.
- For other beamlines: Typically only one machine is available, otherwise please check with your local contact who will tell you to which one you should connect to.

5. After initiating the connection to the Physical display, you will have to wait for the local user running the beamline PC to authorize your connection to join the existing session:



6. Once the current beamline user authorizes the connection, you will be shown the desktop of the beamline PC.

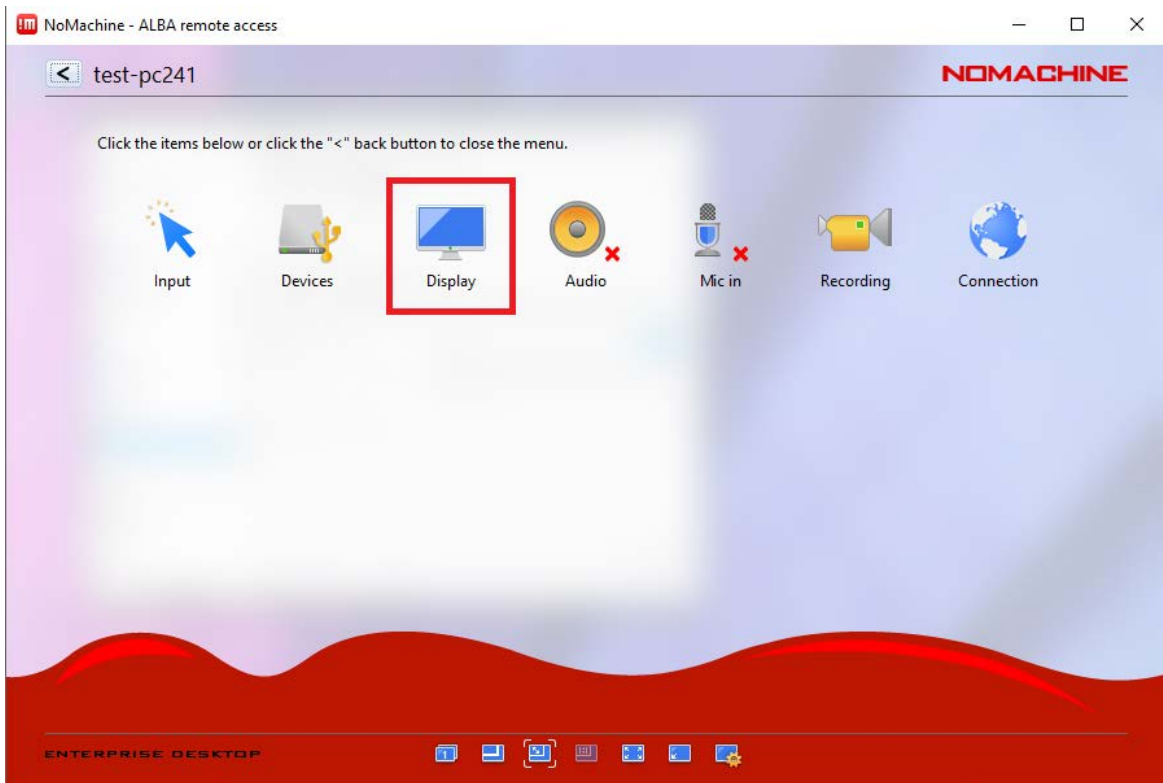
But on the first connection, you will also get a brief tutorial about how the software works, just click on OK:



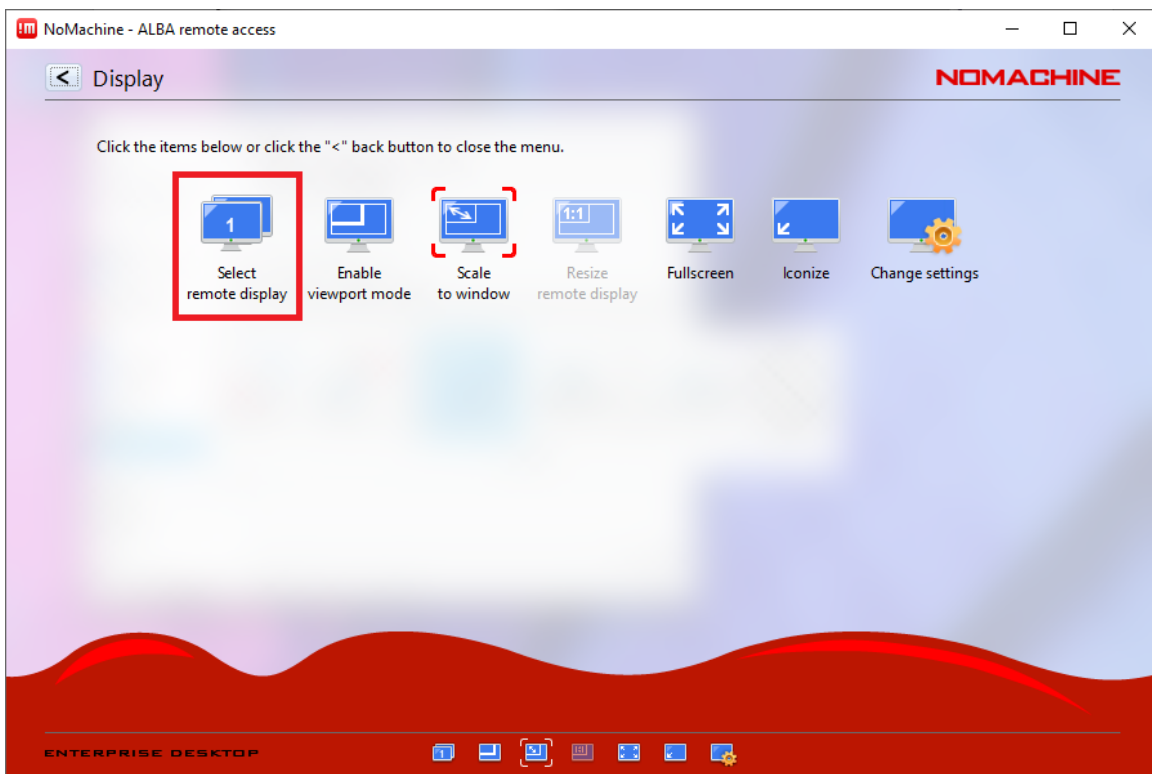
After the tutorial ends, you will get a full view of the desktop in the beamline PC.

7. In case you only see one of the three monitors in the beamline, you should adjust the NX Display settings.

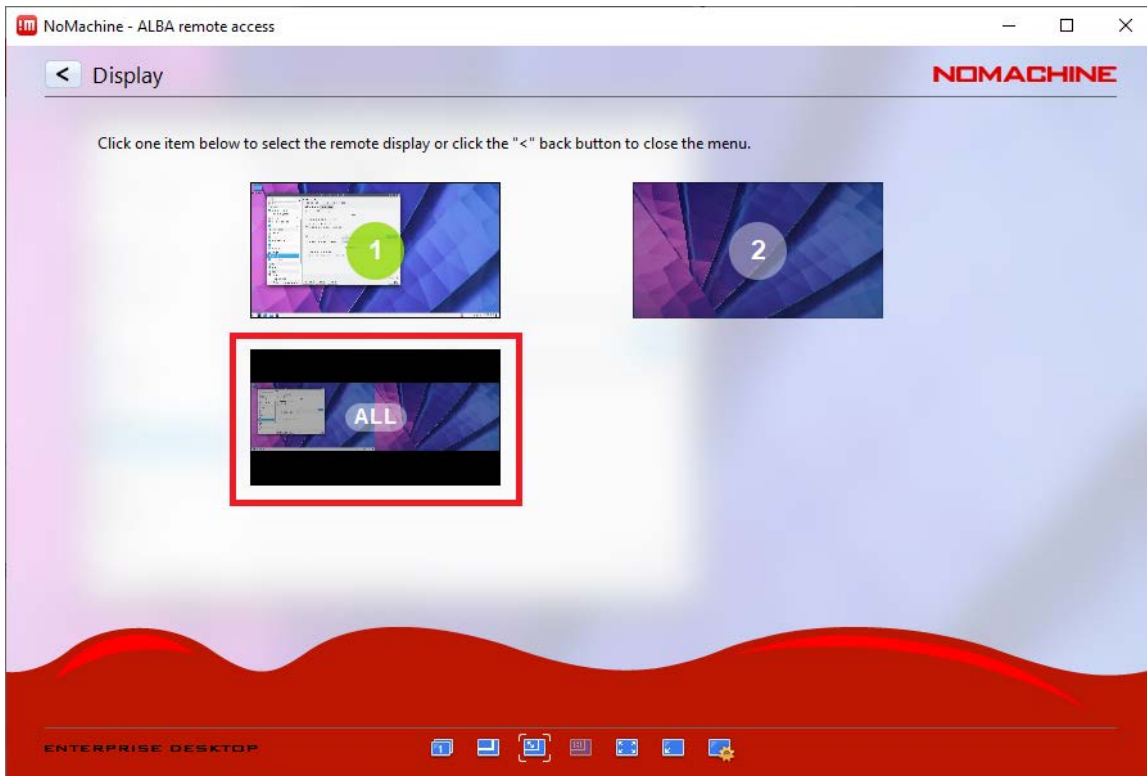
First of all type the keyboard shortcut *CTRL+ALT+0* (*number zero*) to bring up the NX settings screen (*CTRL+Option+zero* if connecting from a Mac). Then click on *Display*:



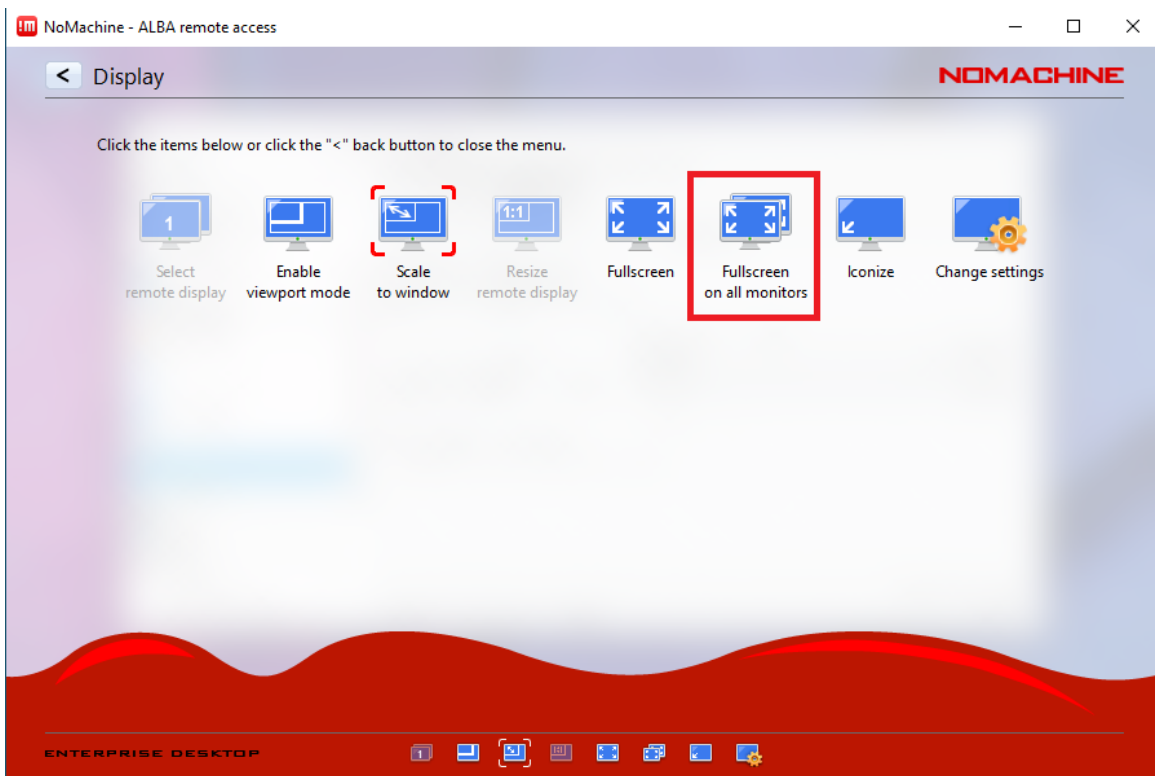
Next go to *Select remote display*:



And finally choose *ALL* to display all remote monitors in your PC:



In case you have multiple monitors, you should also enable the option *Fullscreen on all screens* in the *Display* menu:



Troubleshooting and frequently asked questions

I don't remember my username or password

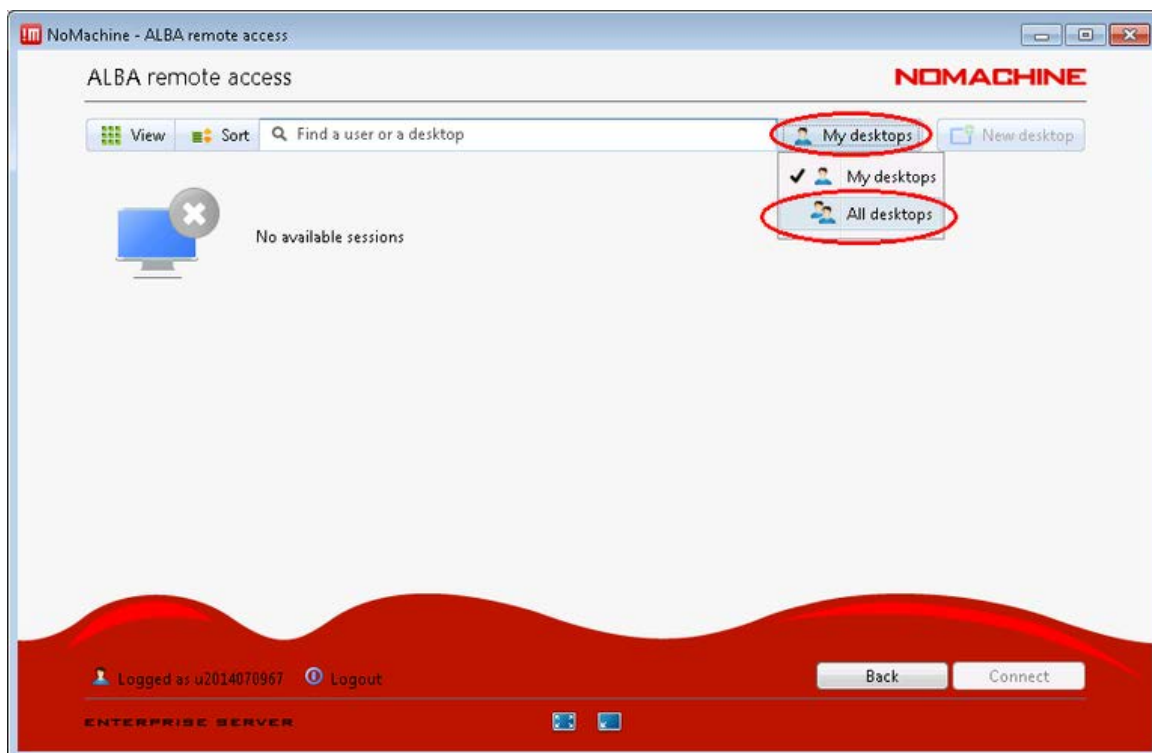
Your username is the "u" letter plus the <proposalid>, i.e: u2014xxxxxxx.

An initial password is typically provided to you the first time you visit ALBA for an experiment, with the recommendation to set your own password as well.

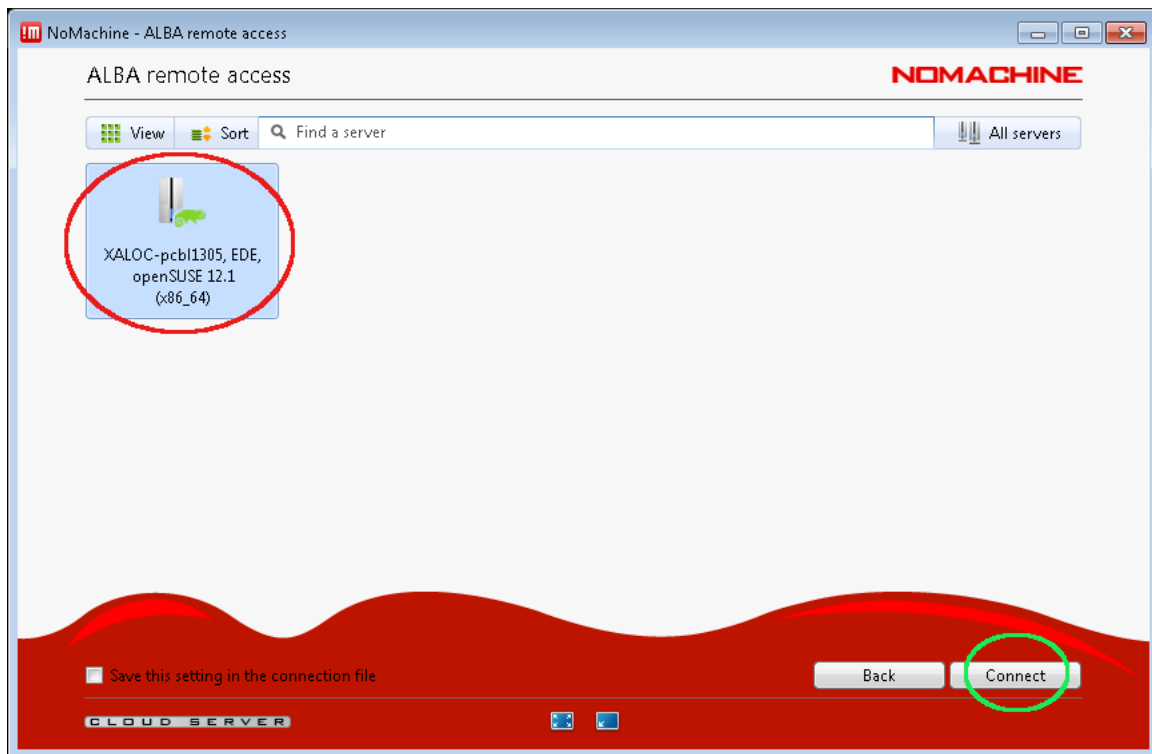
If you don't remember the password or need to change it, it is possible to reset it from the User Office portal (My Visits → Account Management), otherwise please ask your local contact at the beamline to reset it for you.

I get the error "No available sessions" after entering my user and password

If you don't see any available desktop and instead get a message stating "No available sessions", you should change from *My desktops* to *All desktops* at the top-right of the screen:



Now you should be able to locate the Physical display of the beamline PC and connect to it:



How do I access the NX settings (display, keyboard, etc...) menu?

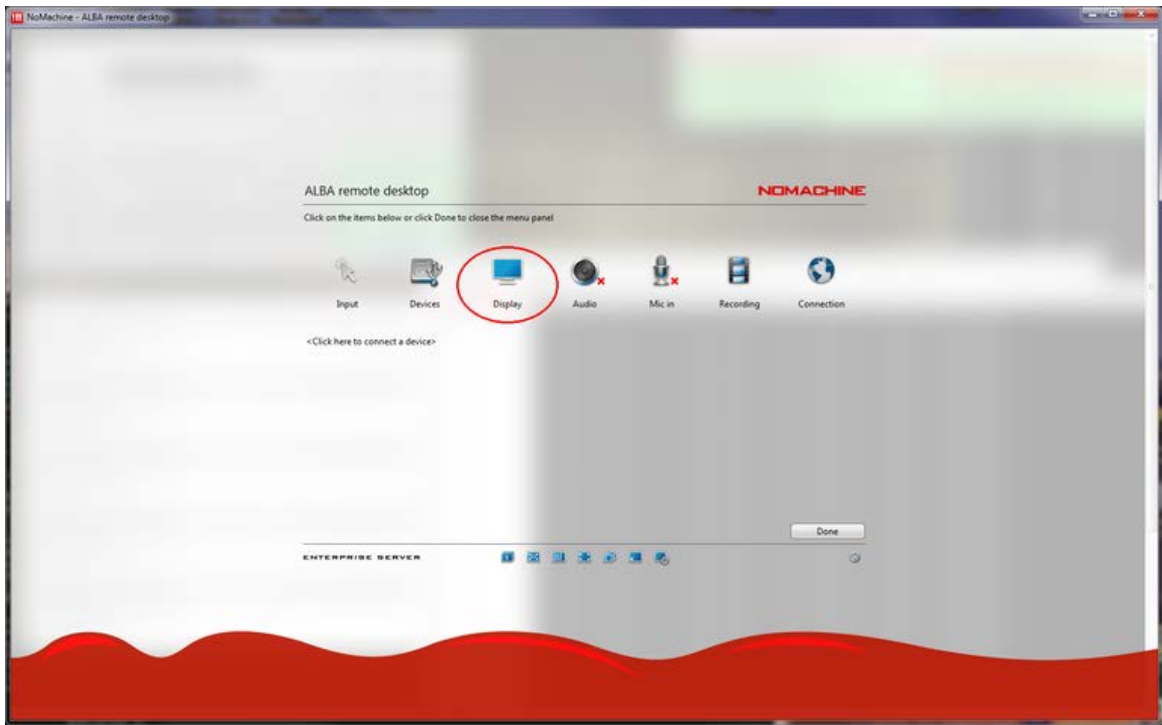
Once the remote session to your desktop is open and running, to access the Menu Panel, enter the key combination `Ctrl+Alt+0` (`Ctrl+Alt+zero`) or move your cursor to the page-peel in the top right-hand corner of the window. When connecting from Mac systems, the keyboard shortcut for bringing up the menu is `Ctrl+Option+0` (`Ctrl+Option+zero`)

You can also check [this Nomachine article describing all the available NX settings in detail](#) .

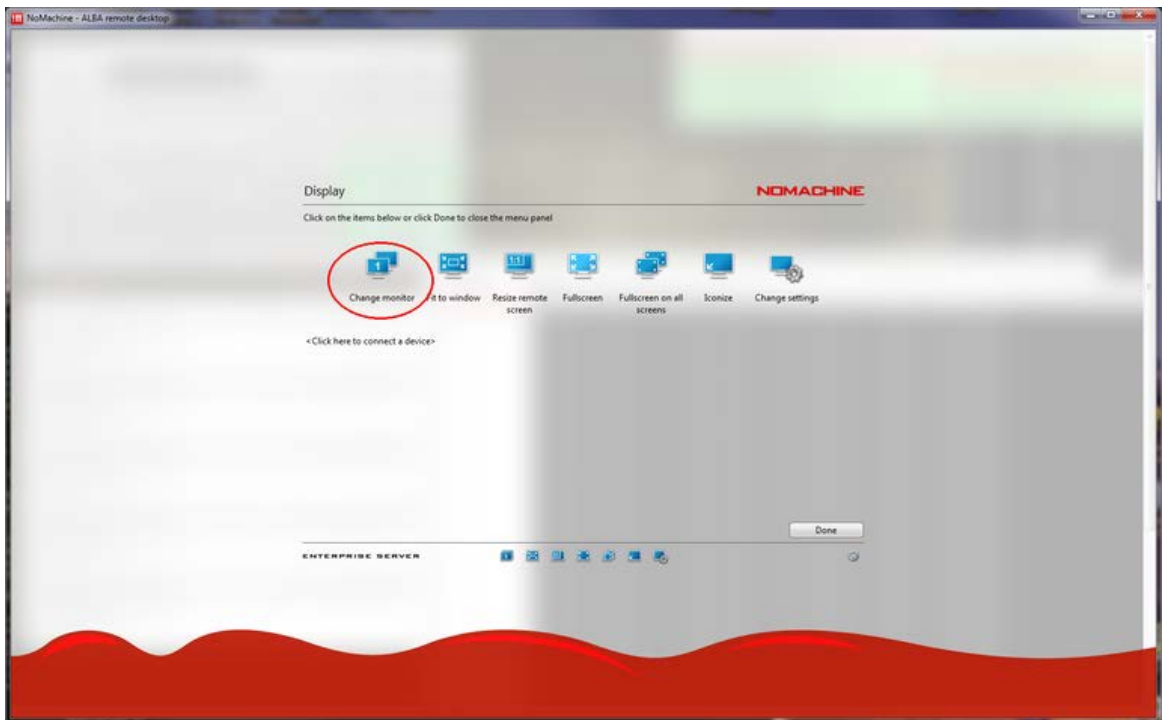
I can only see one of the remote monitors in the beamline

In case you can only see one of the monitors in the beamline, you should adjust the NX Display settings.

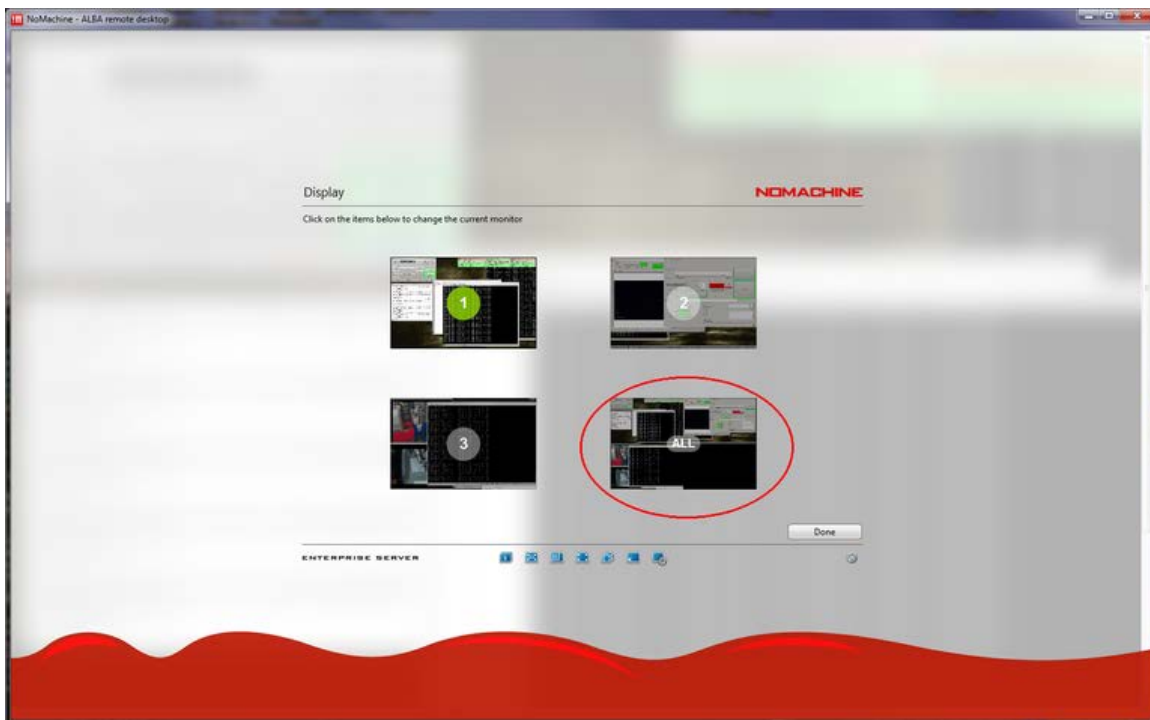
First of all type the keyboard shortcut `CTRL+ALT+0` (`CTRL+ALT+zero`) to bring up the NX settings screen (use `CTRL+Option+zero` if connecting from a Mac). Then click on *Display*:



Next go to *Change Monitor*:



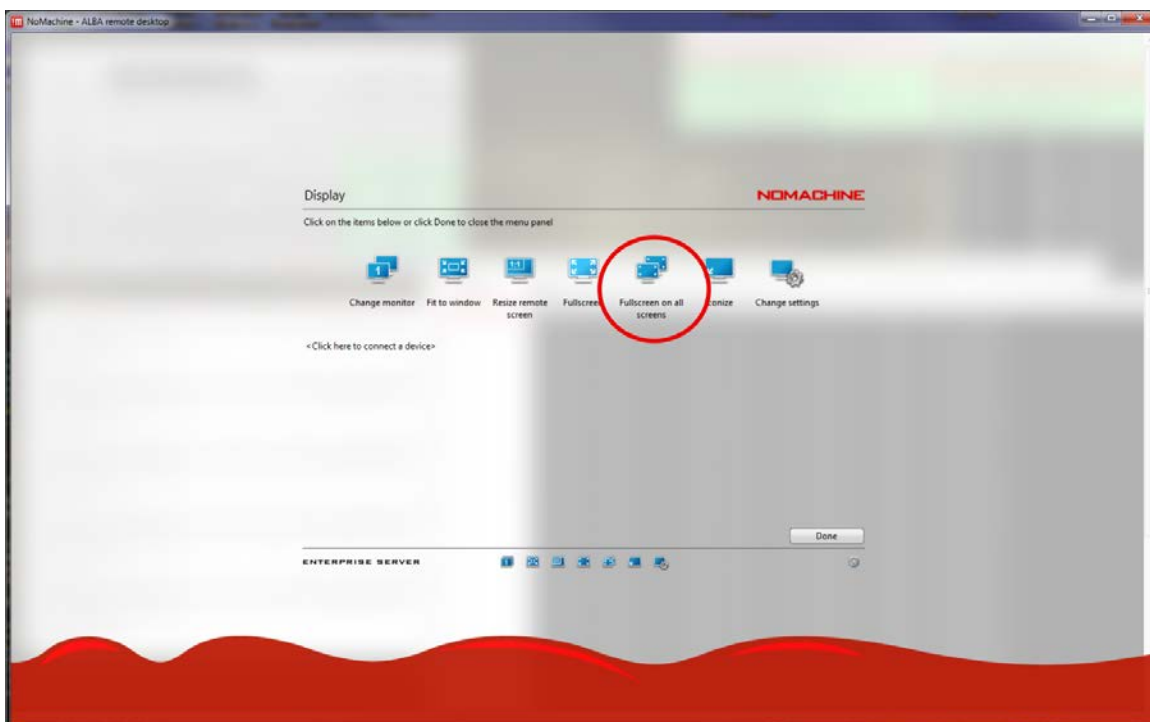
And finally choose *ALL* to display all the remote monitors in your PC:



Once you have configured the view of the three monitors, you can easily switch between them by scrolling horizontally to the edge of the screen.

I have multiple monitors at my PC, how can I use them all for the remote sessions?

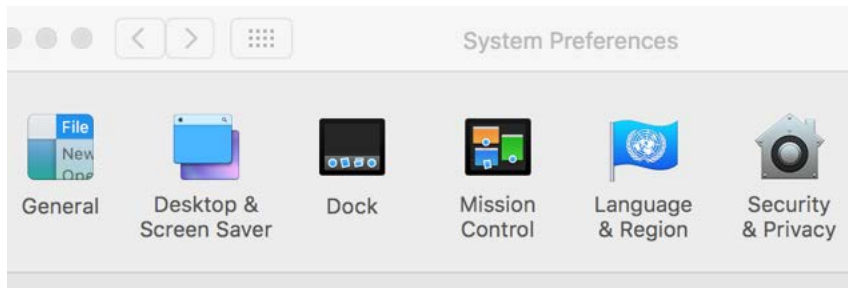
In case you have multiple monitors, you should enable the option *Fullscreen on all screens* in the *Display* menu:



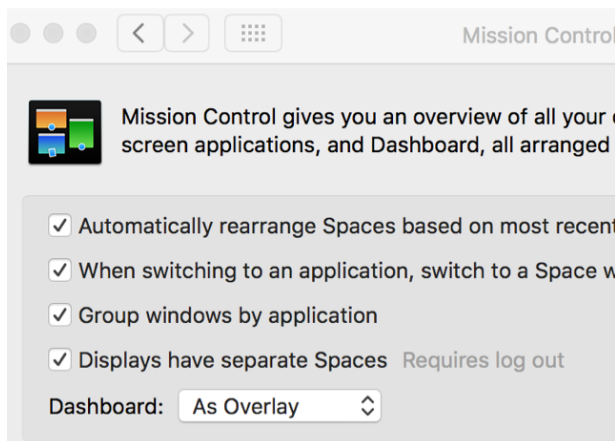
I have multiple monitors at my Mac, but the NoMachine session can only use one of them.

In some computers running Mac OS X, an application window can only use a single monitor by default. This is related to a specific Spaces configuration that you can rearrange following these:

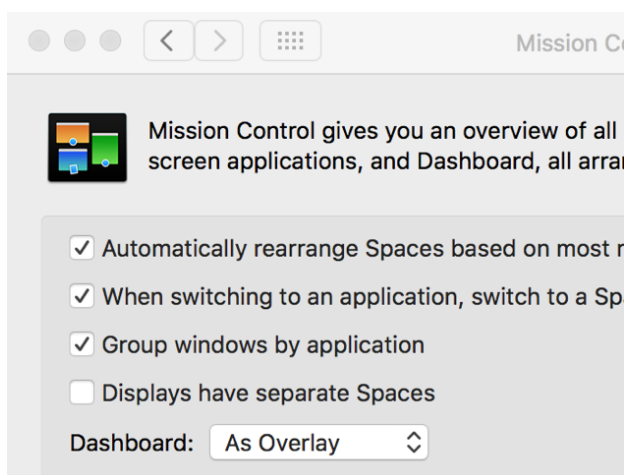
First go to System Preferences / Mission Control



You'll see an option "Displays have separate Spaces" which is checked by default:



You should uncheck this option and leave it like this:



Then proceed to log out and log back in, and you should now be able to use all your local monitors in NoMachine.

When trying to connect I get the error "*Please upgrade your NoMachine installation to version 7 or later and retry*"

In the summer of 2021 we have upgraded the NoMachine server, which now requires the clients to be version 7 or later.

Please download the latest version of the NoMachine Enterprise Client for your OS from the NoMachine website and upgrade it:

<https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client>



NoMachine Enterprise Client

 NoMachine Enterprise Client for Windows

 NoMachine Enterprise Client for Mac OS X

 NoMachine Enterprise Client for Linux

 [Learn more](#)

Installation of the software should be pretty straightforward, just follow the onscreen instructions.