# Remote Access Procedure at SOLEIL PROXIMA-1

# **NOMACHINE SETUP**

In order to remotely use PROXIMA beamlines, some prior settings need to be defined, the most important one being setting up the middle-ware NX NoMachine for accessing to the beamline from outside. Here are described the basic steps for properly setting up NoMachine. Eventually, and equally important, to experience a smooth control over MXCuBE, you may want to operate on a display with a screen resolution of 2560 x 1440, as MXCuBE on PROXIMA-1 has been optimised for this resolution. Lower resolution displays will still work, however the experience will be less pleasant as you may have to play with sliders when shifting windows.

### **NoMachine installation**

The current procedure is adapted for NoMachine version 5.3.10. Most likely the same procedure could be applied for more recent versions as well. The middle-ware NoMachine Player, its installation procedure and related can be obtained at the following URL: https://www.nomachine.com

#### **Connection setup**

Once NoMachine is installed, you will need to setup properly the connection to the SOLEIL PROXIMA-1 server in order to take control of the beamline. At the main window, select the *New* icon to create a new connection.

	NoMachine			NoMachine
Welcome to N	oMachine	NOMACHINE	Recent connections	NOMACHINE
			View & Sort Q. Find a user or a desktop	😨 New 🚰 Open 📮 Edit 🔗 Settings
	Insert the service URL or IP of the computer and press Enter		PX1-remote, isabet Cloud Server Subscription, Linux	NX, remote.synchrotron-soleil.fr
			Remote.synchrotron-soleILfr, isabet Cloud Server Subscription, Linux	NX, remote.synchrotron-soleil.fr
	Q. Find a user or a desktop		Connexion à nx-vip.synchrotron-soleil.fr, 20191059 Enterprise Server Premium Subscription, Linux	NX, nx-vip.synchrotron-soleii.fr
	New Open C Edit	o connect to this desktop	Connexion à nx-vip.synchrotron-solell.tr, 20191055 Enterprise Server Premium Subscription, Linux	NX, nx-vip.synchrotron-soleil.fr
Clic	k New or Edit to customize a connection ssh://192.168.7.15	5		
Don't show this		Continue		Freed

Please then select the NX protocol from the pull-down menu, and confirm with Continue.



In the Host sub-window, please specify *remote.synchrotron-soleil.fr* for the host name, with port number 4000. You will also need to unclick the UDP communication checkbox, and confirm with *Continue* 

	0.11							
Protocol	$\rightarrow$	Host		Authentication	$\rangle$	Proxy	$\rangle$	Save as
Insert the hostnar	e or IP and port	where you want t	to connec	et.				
	Host rer	note.synchrotron	n-soleil.fr				Port	4000
	The port was different port	chosen automati , please insert it al	cally base bove.	d on the default for the	protocol. I	f the remote comp	uter was config	jured to listen on a
		P communicatio	n for mult	timedia data				
	Use UD							
	Use UD							
	Use UE							

The authentication will need to be done through Password.



Please then select the option *Don't use proxy in the proxy* sub-menu.



You then need to save this connection setup as it suits you.

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Proto	col	<u> </u>	Host	$\rightarrow$	Authentication	$\geq$	Proxy	$\rightarrow$	Save as
Give a name to	your conne	ection. You	ur settings will t	be saved v	with this name.				
•	$\land$								
		• • •							
<u>III</u>	Name	Add a n	ame to the link						
		Create	e a link on the c	desktop					
									, L
								Back	Done

## **CONNECTION TO PROXIMA-1**

Once you have set up properly NoMachine for connecting to SOLEIL, you will need to create a session for properly getting access to the beamline control. From the main window, start a connection with the NX server of SOLEIL (through the link you created in the previous section).

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Recent connections	
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Add a name to the link	NX, remote.synchrotron-soleil.fr
PX1-remote, isabet Cloud Server Subscription, Linux	NX, remote.synchrotron-soleii.fr
	Connect

Inform then your *Username* and *Password*, as indicated in the SUNset for your session. Classically, the Username corresponds to the proposal number, and the password should have been communicated by the project main proposal.

PX1-romoto				
- A FIGHIOLE				
Please type your username a	and password to login.			
-	$\wedge$			
	Username	ProposalNumber		
	Password	*****		
	Save this	s password in the connection file		
			Back	ок

#### Double-Click on *proxima1-20*



To create a new custom session, click on *New Desktop*, Then *Create a new custom session* and confirm with the *Continue* button.

	NoMachine - PX1-remote		000	NoMachine - PX1-remote	
proxima1-20, CentOS Linux release	se 7.9.2009 (Core)		proxima1-20, CentOS Linux rele	ease 7.9.2009 (Core)	NOMACHINE
E View Sort Q. Find a user or a	a desktop	A My desktops	III View III Sort Q. Fit	1	2 My desktops
Physical display, created on 14/02/2 User 20100023, Linux desktop on :*	2023, 10:54 1	2 0 connected	Δ Σ	×	
	<create a="" custom="" desktop="" new="" or="" session=""></create>		Create a new virtual C desktop	Create a new custom session	
Logged in as 20100023 O Logout		Back Connect	Save this setting in the connection file		Back Continue
WORKSTATION EDITION			WORKSTATION EDITION		

From the custom window, select the default options and Continue



After few seconds, a Terminal will then start while you will now be connected to the computer controlling the beamline experiments, from which the experiments can be performed using MXCuBE.

To simplify procedures, we suggest that you open a fresh Terminal that will have the proper graphical options by entering the following command: *xfce4-terminal* &

# **MXCUBE AND DATA PROCESSING**

From a newly opened xfce4 Terminal, you can have access to MXCuBE and process the data (one terminal per applications).

To connect to MXCuBE, use the following command:

mxcube

To start albula (program to see standard collection diffraction images):

albula & (dans EIGER monitor, check if IP address is 195.221.8.71 port 80 Pause 2)

or

adxv & (to see characterization images).

To process data on the fast server

process

# CONTROLLING THE BEAMLINE WITH MXCUBE

To perform the experiments using MXCuBE, you need to login using the same credentials as the ones you used when connecting to the beamline control computer. The use of MXCuBE from remote remains the same as on local.