# 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**

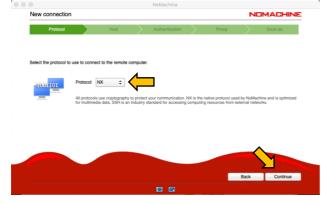
The current procedure is adapted for NoMachine version 5.3.10. Most likely the same procedure could be applied for more recent versions as well. The middle-ware NoMachine Player, its installation procedure and related can be obtained at the following URL: https://www.nomachine.com

#### **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.

000	NoMachine	NoMai	chine
Welcome to NoMachine	NOMACHINE	Recent connections	NOMACHINE
		📰 View 🚱 Sort 🔍 Q. Find a user or a desktop	💟 New 😰 Open 📮 Edit 🔗 Settings
Insert the service UF	IL or IP of the computer and press Enter	PX1-remote, isabet Cloud Server Subscription, Linux	NX, remote.synchrotron-soleil.fr
	+	Remote.synchrotron-soleil.fr, isabet Cloud Server Subscription, Linux	NX, remote.synchrotron-soleil.fr
	A, Find a user or a desktop	Connexion à nx-vip.synchrotron-soleil.fr, 20191059 Enterprise Server Premium Subscription, Linux	NX, nx-vip.synchrotron-soleil.fr
Vew Popen D Edit	Let others use an IP from this list to connect to this desktop	Connexion à nx-vip.synchrotron-soleil.tr, 20191059 Enterprise Server Premium Subscription, Linux	NX, nx-vip.synchrotron-soleii.fr
Click New or Edit to customize a connection	nx://192.168.7.156 ssh://192.168.7.156		
Don't show this message again	Continue		Connect
	88		

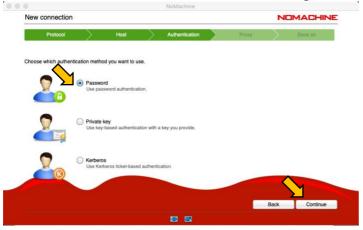
Please then select the NX protocol from the pull-down menu, and confirm with Continue.



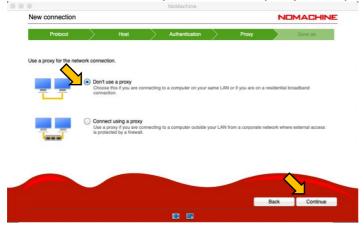
In the Host sub-window, please specify *remote.synchrotron-soleil.fr* for the host name, with port number 4000. You will also need to unclick the UDP communication checkbox, and confirm with *Continue* 

Protocol	$\rightarrow$	Host		Authentication	$\geq$	Proxy	$\rightarrow$	Save as
10000		11031		Autonication		Поху		Gave as
Insert the hostname	or IP and por	t where you want	to conne	ct.				
	Host n	emote.synchrotro	n-soleil.fr				Port	4000
	The port w different po	as chosen automa ort, please insert it :	tically base above.	d on the default for the	protocol. I	if the remote comp	outer was confiç	gured to listen on a
	🔲 Use U	JDP communicati	on for mul	timedia data				
	📄 Use U	IDP communicati	on for mul	timedia data				
	📄 Use U	JDP communicati	on for mul	timedia data				
	🔲 Use L	JDP communicati	on for mul	timedia data				M

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.

		<hr/>		<hr/>			<hr/>	
Proto	col	<u> </u>	Host		Authentication	 Proxy		Save as
Give a name to	your conn	ection. Yo	ur settings will t	be saved v	with this name.			
	$\land$							
	Name	Add a n	ame to the link					
<u>I</u>	Name							
		Creat	e a link on the o	desktop				
								M
							Back	Done

## **CONNECTION TO PROXIMA-1**

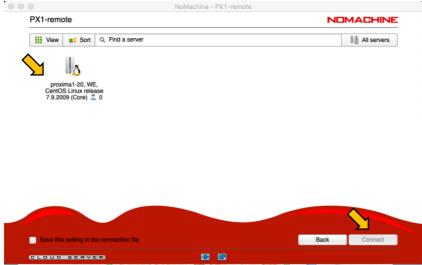
Once you have set up properly NoMachine for connecting to SOLEIL, you will need to create a session for properly getting access to the beamline control. From the main window, start a connection with the NX server of SOLEIL (through the link you created in the previous section).

Recent connections	NOMACHIN
View & Sort Q Find a user or a desktop	📑 New 🚰 Open 📮 Edit 🧬 Setting
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-remote		NOMACHINE
Please type your username	and password to login.	
	Username ProposalNumber	
	Password	
	Save this password in the connection file	
		Back OK

#### 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	<u> </u>	I I I I I I I I I I I I I I I I I I I	oMachine - PX1-remote
proxima1-20, CentOS Linux release	e 7.9.2009 (Core)		proxima1-20, CentOS Linux release 7.9.200	09 (Core) NOMACHINE
E View E Sort Q, Find a user or a	desktop	2 My desktops	View at Sort Q. Find a type	All My desktops
Physical display, created on 14/02/20 User 20100023, Linux desktop on :1	23, 10:54	2 0 connected	🗴 🔀 🐹	
	<create a="" custom="" desktop="" new="" or="" session=""></create>		Create a new virtual Create a new cu desktop session	stom
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 new Terminal for each applications (control, viewing, data analysis...).

## **MXCUBE AND DATA PROCESSING**

From a 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\_3.2 (dans EIGER monitor, check if IP address is 195.221.8.71 port 80 Pause 2) or

*adxv or adxv\_follow* ( 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.