# Instruction for the I21's remote users during Pandemic

Version 1.0

The following instruction is designed for the period of Pandemic for remotely connecting the I21 beamline workstations. Any further information please refer to Diamond User Office (https://www.diamond.ac.uk/Users.html) or contact the PBS: Kejin.zhou@diamond.ac.uk.

(1) To ensure a good quality of connection and remote operation, remote users are strongly encouraged to setup large screen monitors while connecting to Diamond Linux servers;

(2) Throughout the experimental session, users shall stick to their FedID and pwd as usual for accessing the beamline server workstation (i21-ws011.diamond.ac.uk) and the data analysis workstation (i21-ws002.diamond.ac.uk);

(3) All remote accesses need to be via NX technology. You can download the remote desktop app through the following link https://www.nomachine.com. Once you successfully install the NoMachine, you can create a new connection to Diamond nx user server. Detailed step by step instructions are given below in the page 2-5.

(4) Once you log in to the beamline server workstation (i21-ws011.diamond.ac.uk), you can launch the GDA client in a terminal window as explained in page 7.

(5) All I21-related connections need to be through ssh protocol. To do this, you need to open a terminal window and use command line to manually connect to the dedicated I21 workstation. Detailed step by step instructions are given below in the page 8.

(6) We highly recommend remote users to connect to the data analysis workstation (i21-ws002.diamond.ac.uk) for launching DAWN software for the RIXS data reduction. Having GDA and DAWN in the same workstation may significantly reduce the working efficiency and slow down the experiments.

(7) During experiments, if users encounter any problems which prevent the continuation of the experiments, please get in touch (via email) with the responsible collaborating scientist on the date during the social hours (08:30 – 20:00).

(8) As the experiments will be set up by the I21 staff scientists, estimated operations may include (but not necessarily limited to): aligning the sample during temp-dependent measurements, changing temperature, running the macro, etc. All these should be accessible via GDA client. Users are strongly encouraged to perform RIXS data reduction analysis for providing key information so that the collaborating scientist from the beamline can work collaboratively with users throughout the whole beamtime.
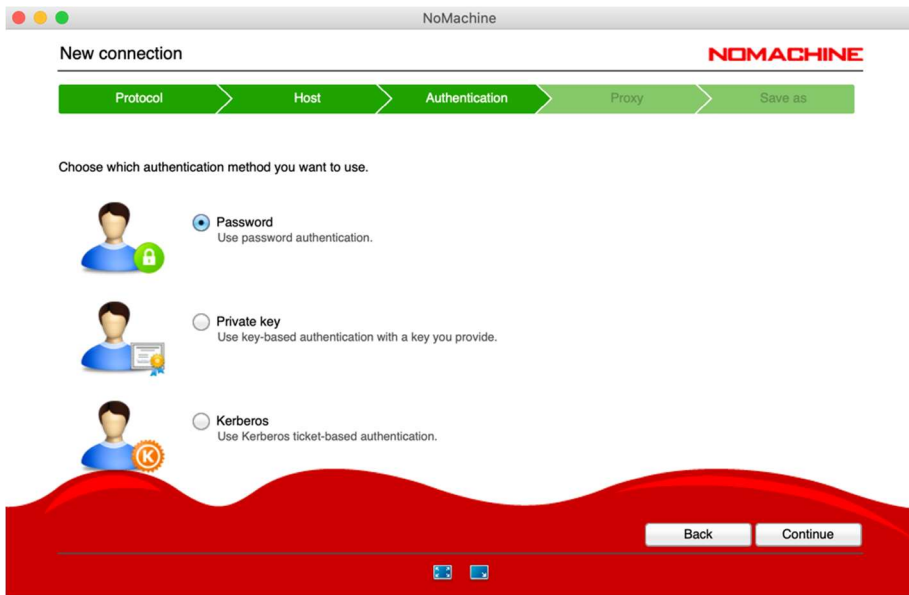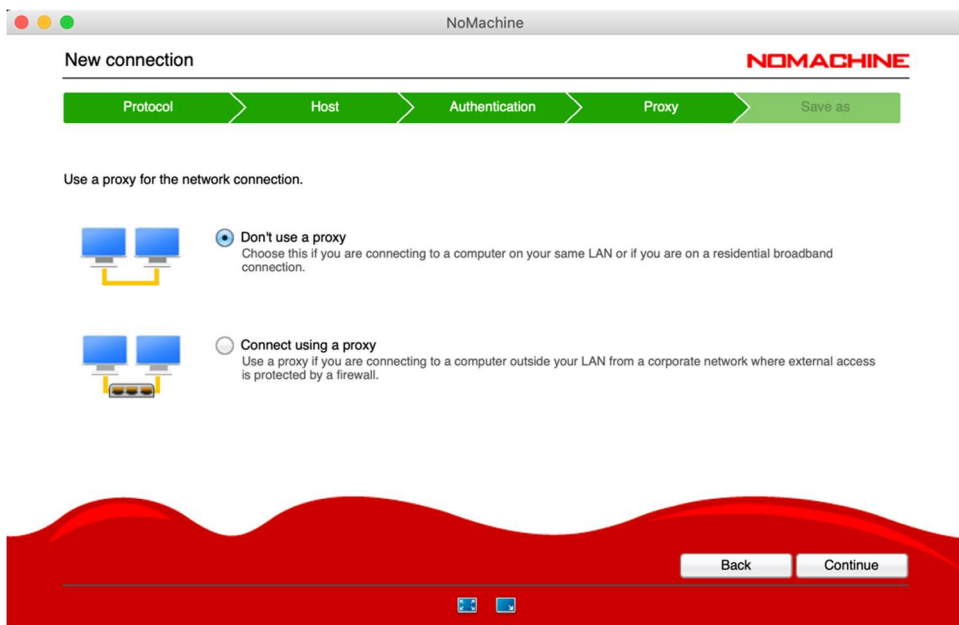
First, please use the NX protocol:
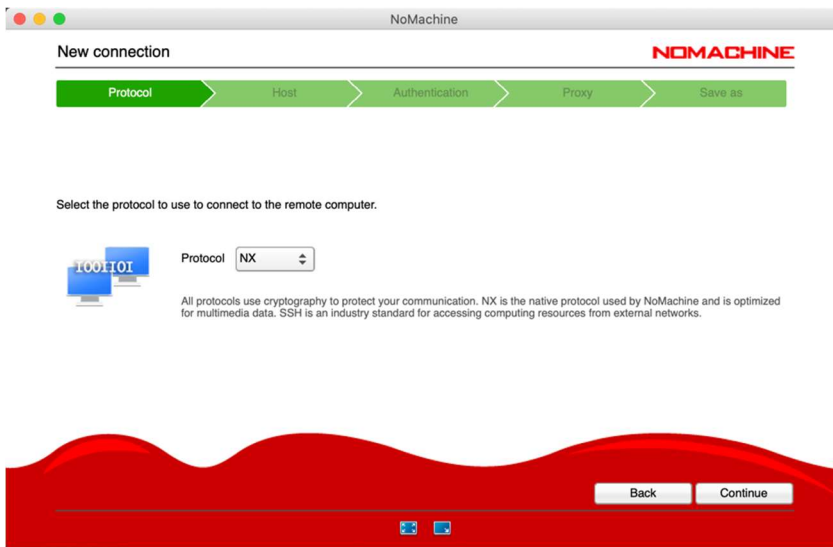
and use host name: nx-user.diamond.ac.uk (please keep the default Port: 4000!):
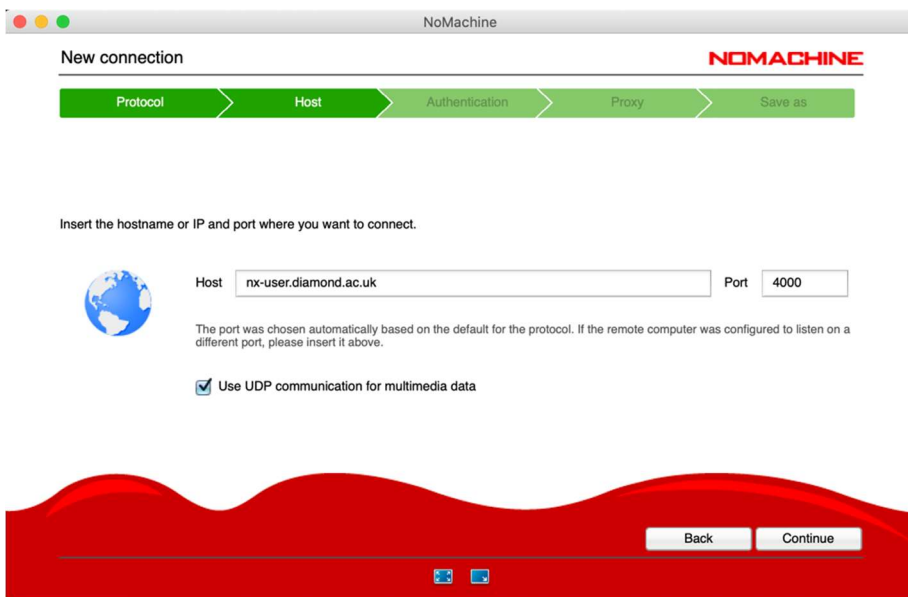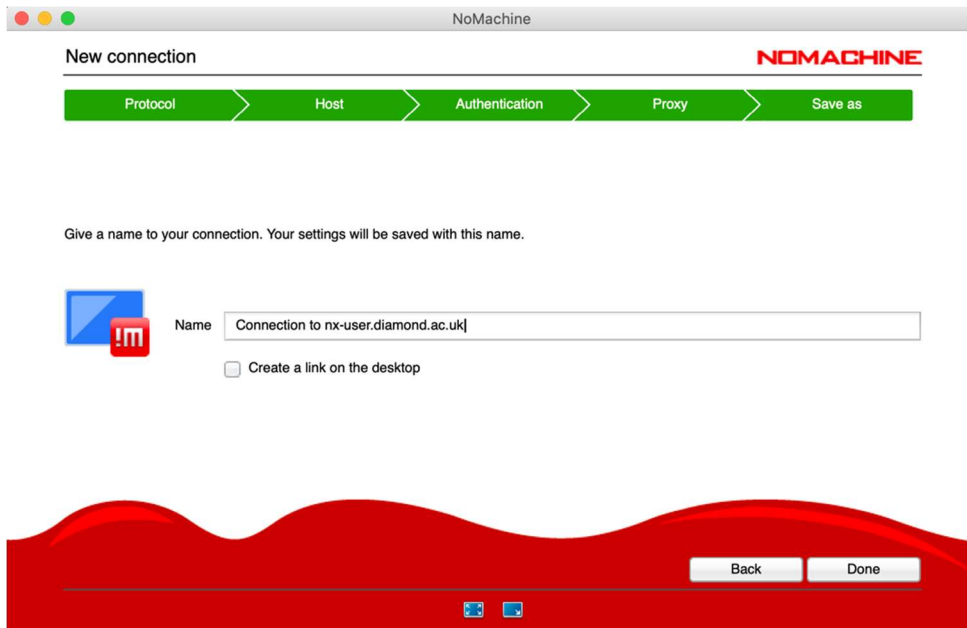

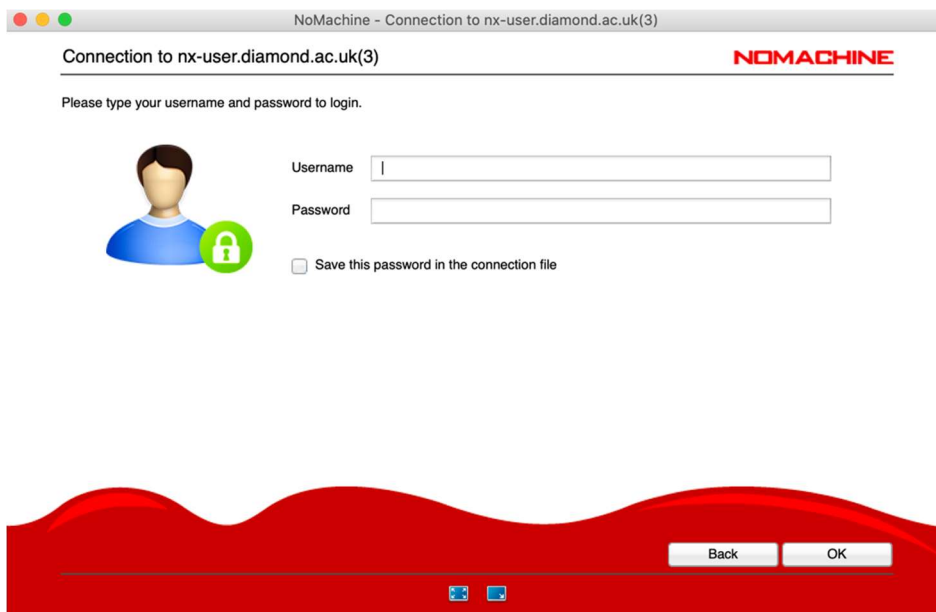Next step, please use Password as the authentication method:
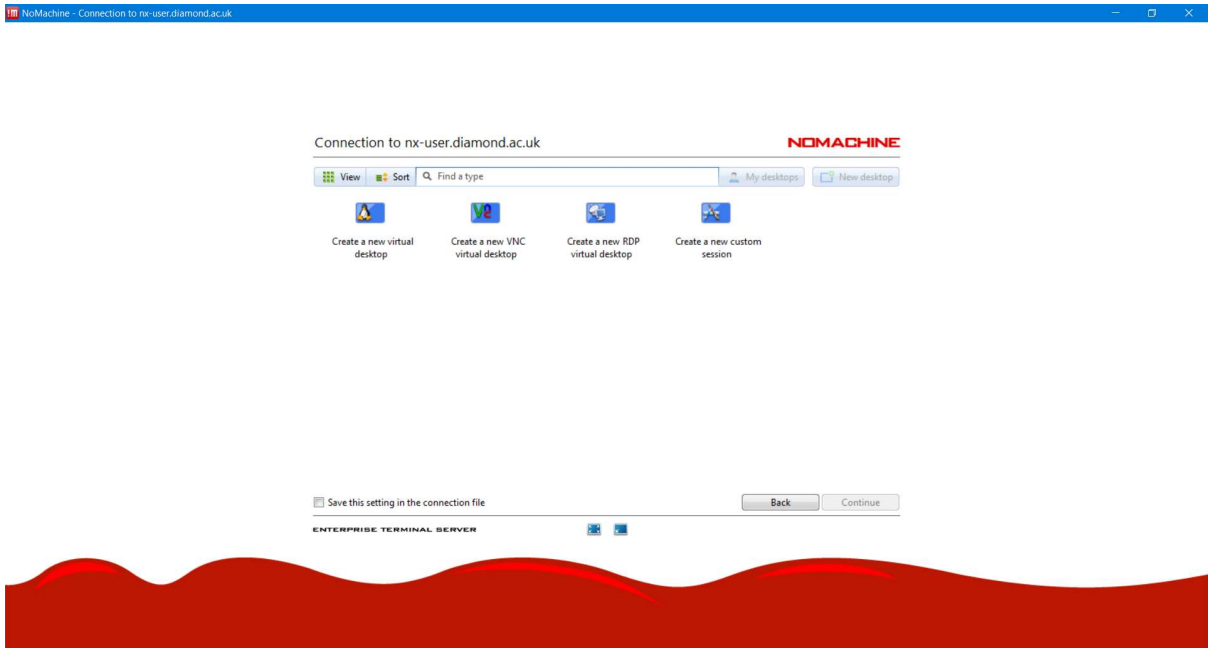
Then choose appropriate proxy format:

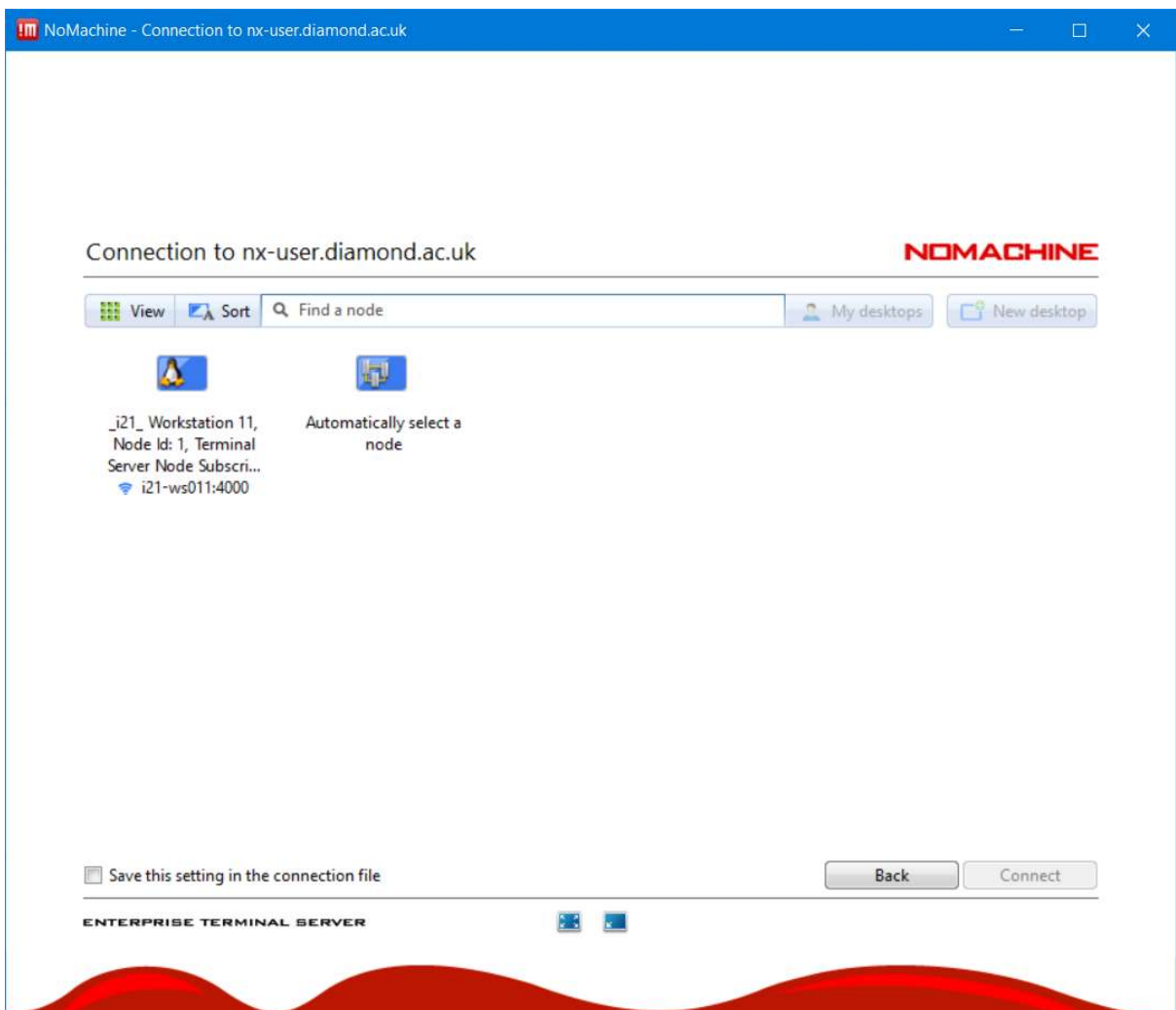And then give a new to your connection:

Once you save the connection, then double click the connection icon, you will be prompted to a new window below. From here you use your FedID and pwd to log into the nx-user server.
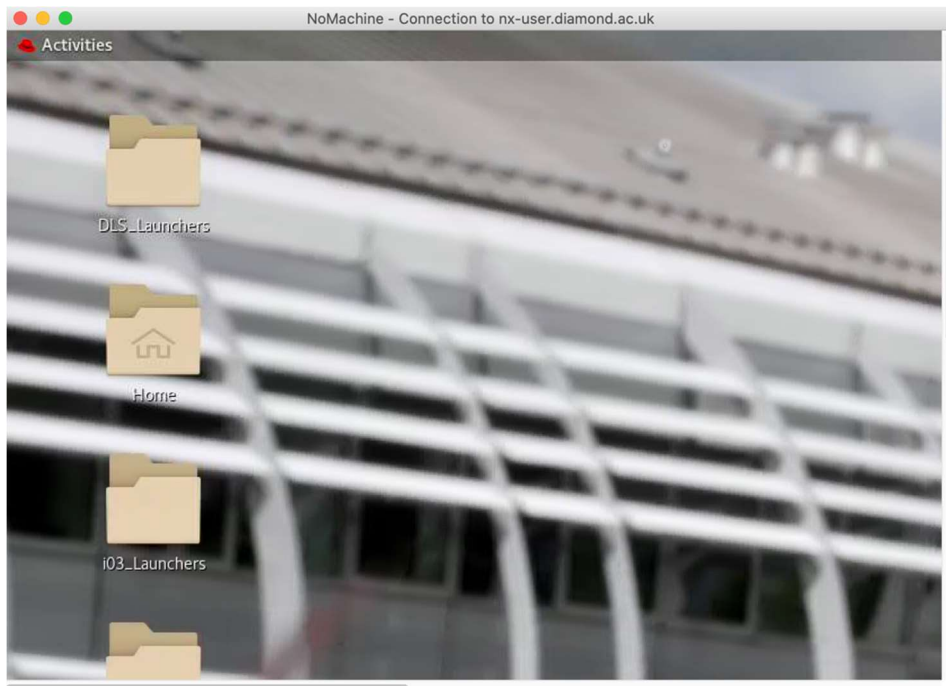
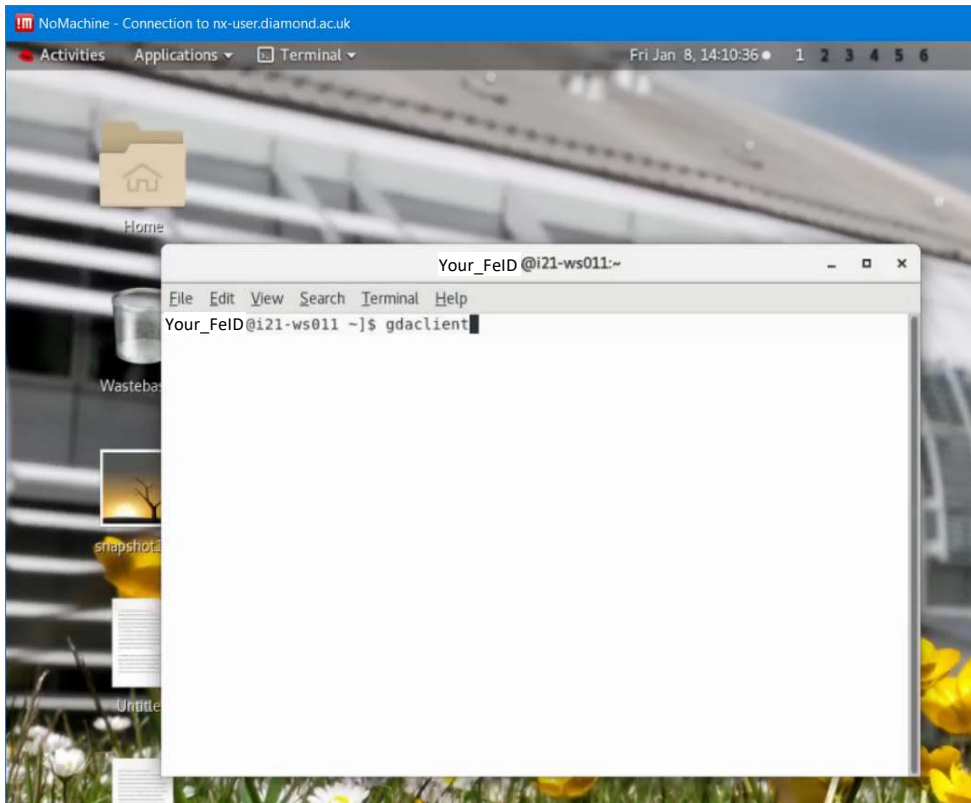Please click on *Create a new virtual desktop*

Please double click on i21 workstation 11

It will take a few clicks and then one should be able to connect to the nx-user server with a screen similar to the one shown below:

First, please use open an x-terminal and you can then open the GDA client using the command: *gdaclient*:

Once you successfully launch the GDA client, the rest of operations should in principle the same as from the on-site.

For connecting to the data analysis workstation, users need to open a new terminal and ssh to i21-ws002.diamond.ac.uk using his/her FedID and pwd. After logging into the ws002, you can open the DAWN by using the command: *module load dawn* (shown below):
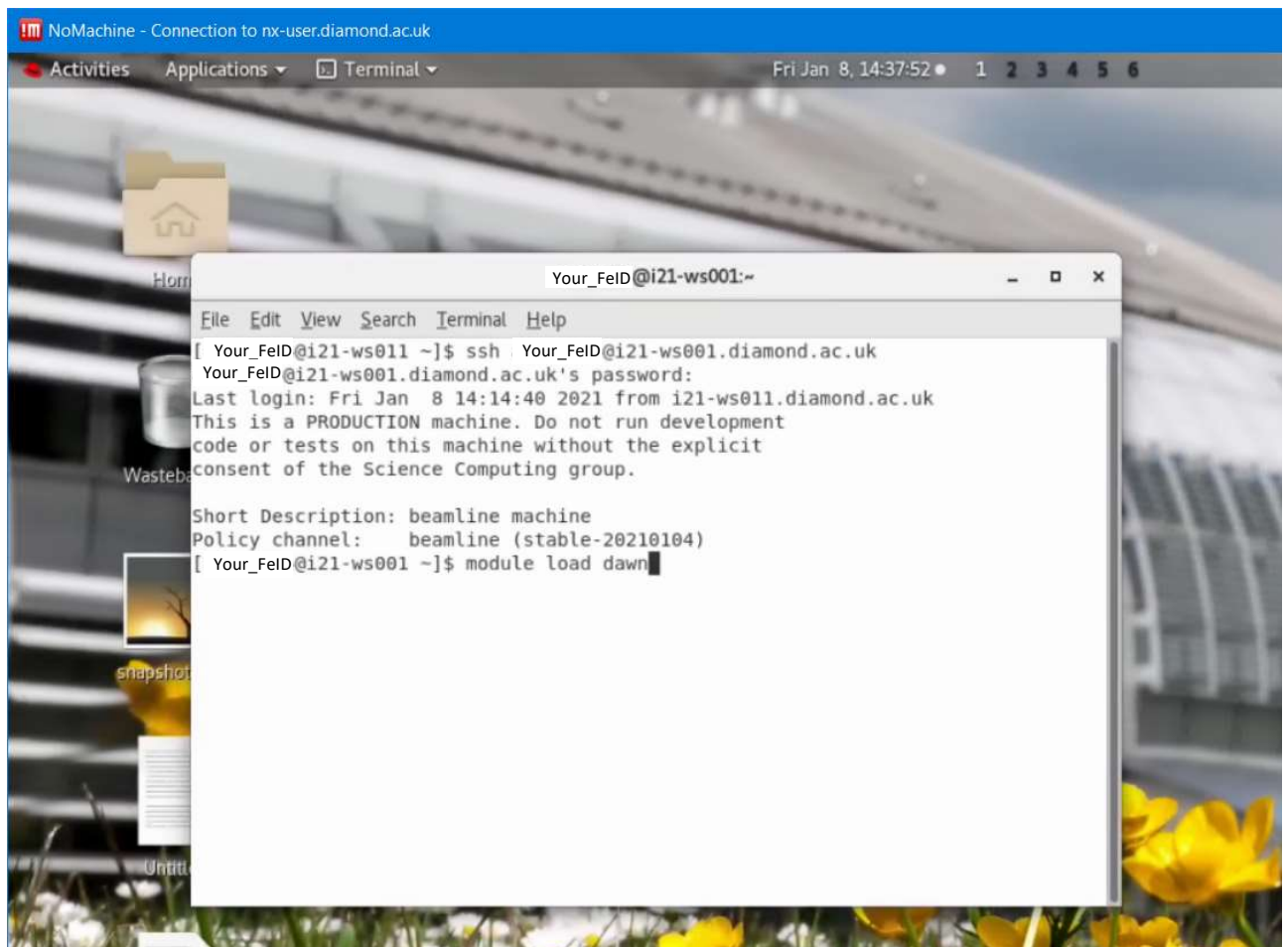
Then use the command: *dawn* to launch the dawn software:
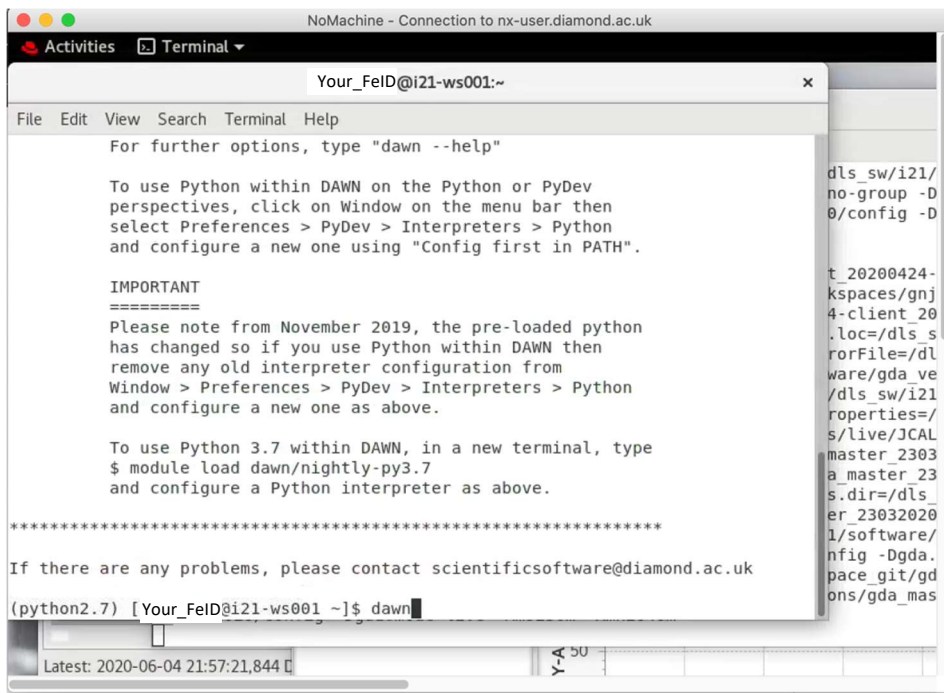
From here onwards, all operations should be the same as from the on-site.