DATA ACCESS AND ANALYSIS

On Site Data Access

Connecting from a Windows PC

If your hard drive is Windows only, connect it to a USB port on workstation. Open 'My Computer', and the X drive will be the storage server for the beamline.

🚪 Hy Computer			_ [D] ×
File Edit View Favorites Tools Help			27
🔇 Back + 🕑 + 🎓 🔎 Search 💫 Folders 🕼 🕽	XI		
Address 🕞 My Computer			🔹 🔁 Go
Name	Туре	Total Size	Free Space
Hard Disk Drives	Local Disk	68.2 GB	50.6 G8
Network Drives			
diamond\$ on 'Diamond Project Server (diamproject01)' (S:)	Network Drive	1.63 TB	490 GB
Zndg63276\$ on 'Diamond's SAN Storage Server (diamsanserv01)' (U:)	Network Drive	5.27 TB	3.05 TB
202 on '102-storage (102-storage.diamond.ac.uk)' (X:)	Network Drive	13.6 78	6.11 TB
3 objects		Ny Comput	er 🤇

Select the X drive, followed by data, followed by the year, and finally the proposal number. The subdirectory named after your proposal contains your experimental data. You can then drag and drop the data to your USB disk.

If you don't see an X drive, type <u>\\data.diamond.ac.uk</u> in the address bar, and then select B22 beamline, followed by the steps above.

Connecting from your laptop

data.diamond.ac.uk can be reached via **ssh** from the visitors network. This means data can also be reached using **scp** or **sftp**. An example Windows scp client would be **WinSCP**.

Under GNU/Linux you can use the **scp** command, or use the SSH features of the Konqueror (fish:// prefix) or Nautilus (File:Connect to Server menu entry) file managers.

For Mac OSX users the SSH Agent, Fugu or CyberDuck utilities may be useful.

We request you do not use the wireless network for data backup - ask your local contact for a wired visitors network connection.

Offsite Data Access

There are several methods to retrieve data from offsite.

- From a Windows machine use **WinSCP** (<u>http://winscp.net</u> see the details below).
- From a linux machine sftp to <u>YourFedID@nx.diamond.ac.uk</u>, then cd to your data and use get or mget to retrieve your data.
- From a Mac, use Cyberduck to sftp to YourFedID@nx.diamond.ac.uk
- 1. When you start WinSCP enter the host name as nx.diamond.ac.uk, User name as your FedID and your password as shown.

WinSCP Login			? 🔀
Session Stored sessions Environment Directories SSH Preferences	Session Host name: nx.diamond.ac.uk User name: vdp96743 Private key file: Protocol Eile protocol	Password:	Poţt number: 22 (*) • • • • • • • • •
Advanced options			Select color
About Lang	juages	Login <u>S</u> ave	Close

- 2. Click Login
- 3. Click on the drop down box and select root (as below)

Local Mark Files Command	ls Session (Options Remote H	elp					
🌢 🗏 🍙 • 🔐 🖓 •	e 🔤 🧬	8 🔊 I 🕂 E		🕐 Default 🔹	1 🍯 🔹			
My documents	- 👝 🗆		🖸 🚮 🖗 📴	C vdp96513	- 🔄 🛛		🙆 🚮 💿	1
Documents and Settings\vdg	96513\My D	cuments		/ Coot>				
Name 🔶 Ext	Size	Type	Changed A	home	Size	Changed	Rights	
a		Parent directory	17/02/201	vdp96513		28/02/2011 17:	rwxr-xr-x	
Code		File Folder	14/02/201	adobe		22/01/2010 10:	rwx	
CodeBackup		File Folder	15/12/200	Chewing		24/09/2009 11:	rwx	
Downloads		File Folder	24/02/201	Config		09/12/2009 17:	rwxrwxr-x	
eScience		File Folder	26/10/200	a.eggcups		24/09/2009 11:	rwxr-x	
aeal-0.0		File Folder	14/04/201	evolution		23/02/2011 09:	rwxrwxr-x	
GRHJournalPapers		File Folder	11/12/200	fontconfig		15/10/2010 11:	rwxr-xr-x	
GSTools		File Folder	09/09/200	aconf		23/02/2011 09:	rwx	
JournalPapers		File Folder	01/06/201	aconfd		23/02/2011 09:	rwx	
Keys		File Folder	17/02/201	Cimp-2.2		15/10/2010 11:	rwxr-xr-x	
My Music		File Folder	25/03/201	anome		24/09/2009 11:	rwxrwxr-x	
My Pictures		File Folder	26/08/201	gnome2		23/02/2011 09:	rwx	
My Videos		File Folder	25/08/201			24/09/2009 11:	rwx	
NewPapers		File Folder	23/02/201	astreamer-0.10		26/02/2010 16:	rwxrwxr-x	
OctaveFunctions		File Folder	26/02/201	🚞 .java		16/09/2010 09:	rwxrwxr-x	
Python		File Folder	13/04/201	🛅 .kde		31/01/2011 14:	rwx	
PythonModuals		File Folder	05/08/201	local		26/02/2010 16:	rwx	
RefereePapers		File Folder	11/08/201	macromedia		22/01/2010 10:	rwx	
SVNCode		File Folder	17/02/201	anatlab 💼		16/12/2009 16:	rwxrwxr-x	
0953-8984_18_33_525	610,032	Foxit PDF Docu	06/07/201	matplotlib 🧰		11/01/2011 17:	rwxrwxr-x	
4454_001.pdf	500,495	Foxit PDF Docu	13/12/201	imcop.		26/02/2010 16:	rwxr-xr-x	
AnalysisSoftware.ppt	627,712	Microsoft Office	07/10/200	imetacity		24/09/2009 11:	rwx	
AwayDay2010B22.ppt	1,321,472	Microsoft Office	19/07/201	🛅 .mozilla		04/11/2009 17:	rwx	
c103-e031.pdf	161,414	Foxit PDF Docu	12/11/200	nautilus		18/02/2011 17:	rwxr-xr-x	
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1			b .					1
B of 72,839 KiB in 0 of 73				0 B of 63,465 B in 0 of 57				
🧈 F2 Rename 📝 F4 Edit. 🞼 F5 Copy 🗳 F6 Move 🏕 F7 Create Directory 🗙 F8 Delete ङ F9 Properties 👖 F10 Quit								

- 4. Then click on dls folder, then b22, then data, then the year of your visit (e.g. 2015), then your visit number.
- 5. Your data should be in the visit folder, and can be copied from there to your computer.

Analysis Server Access

B22 has a remote access server specifically for the analysis of User data from offsite. It allows all B22 softwares (Opus, Unscrambler, Cytospec) to be used from a remote terminal.

Pre-requisites

To use Diamonds remote access service you will need to install a piece of software called 'NoMachine Client'. This is just a small program that allows you to connect securely to Diamond Light Source. You only need to do this once, and it should be downloaded and installed from:

https://www.nomachine.com/download-enterprise

...then scroll down to the 'Enterprise Client' section and select the client version appropriate for your operating system (Windows, MacOS X or Linux).

Alternatively for windows users there is a link provided in the "Quick Start Guide" screen on the home page of remote.diamond.ac.uk that will install a tested version of the NoMachine player along with the recommended set of additional fonts that may be needed to run some applications at Diamond. For detailed instructions on how to download and install client software for other operating systems, follow this link: <u>https://www.nomachine.com/DT09K00056</u>

Signing in to the web interface

Using a web browser navigate to <u>https://remote.diamond.ac.uk</u> Enter your FedID and password and click Sign In:



You will see a screen similar to the following:



Changing your connection settings

There are some options you may need to change such as the size of the screen that will open when you connect to Diamond or the speed of your internet connection, however in most cases the defaults will be fine. If you do need to tweak any of these then click on the 'Configure' link to get the following options. Change them as necessary then click 'Save'.

Configure - Micro:	soft Internet Expl values for each	lorer provided by Di
Parameter	Value	Custom Value
Connection type	LAN	•
Resolution	1024x768	•
Span monitors	No	•
These values will be this client.	used for all subseq	uent connections to this desktop from
	Save	Cancel

Connecting

You are now ready to connect, so just click on the 'Connect' link. This will download a small file which will connect you to Diamond.

<u>Note</u>

• Users of Microsoft Windows may get one or two firewall messages, in all cases you should click 'Allow access' or 'Unblock'.

The exact screens from here will vary depending on your Operating System and browser. Some of the more popular browsers are:

Internet Explorer

You should be presented with a question similar to the following. Select the option "Open"



<u>Firefox</u>

You should be presented with a dialog box similar to the following. Select the option "Open with NXMachine.Client.session (default)



Google Chrome

Chrome may download the file automatically and the following icon will appear at the bottom of your browser



Click on it and the NXClient will open.

<u>Note -</u> If your browser or security settings force you to download the .nxs file before opening it then it is recommended you delete them after you have finished as they will NOT be valid for future connections.

Signing into the NXClient

Once you have opened the file as above you will be presented with the following logon screen, this is connecting you securely to Diamond.

🛄 NX - leos	itream 🗖 🗖 💌			
NOM	1ACHINE			
Login	jah27030			
Password				
🔲 Login as a guest user				
Configure.	Login Cancel			

Enter your normal FedID and password followed by 'Login'. If this is your first time then you may be asked if you want to continue connecting. Please click 'Yes'.

🛄 NX				
	The authenticity of host nx-user.diamond.ac.uk, 172.23.146.10, can't be established.			
	The RSA key fingerprint is:			
	ff:f9:be:96:ff:b9:f4:d7:8c:ec:9d:e1:45:c9:fb:68.			
	Are you sure you want to continue connecting?			
	<u>Y</u> es <u>N</u> o			

Once your user name and password have been checked you will get a Window opened with a normal desktop which you can now use just as if you were at Diamond, and if you wish you can close your web browser.



B22 virtual machine platforms disconnection & logout policies

There are 10 virtual machines which are shared out on a one-to-one basis (So the system will allow 10 users to be remotely connected simultaneously). In each case:

- When a user disconnects from the desktop, the session is maintained for another 12 hours and then released and the user is logged out. A user can reconnect to a disconnected session during the first 12 hours. See notes on front screen of remote.diamond.ac.uk for details on how to do this
- When a user logs out of the desktop, the session is immediately released
- After 12 hours any active sessions are released and the user is logged out anyway.

For more details please read the instructions in the "Session Option Details" on the home screen of https://remote.diamond.ac.uk

Once you have finished working with your machine please select the Start button, followed by Log Off, please do not just click on the cross at the top right.

Known Issues

 If you are unable to see the 'Start' button on the new desktop this is probably because the default resolution from the remote connection is larger than your local screen can support, hence the screen gets cropped. To correct this do the following:

- First mouse click into the new remote desktop, then hold down the Ctrl and Esc key to bring up the windows start menu
- Press the 'l' key logoff the remote session
- Change your connection settings to a lower resolution setting (see Changing your connection Settings in previous section)
- Reconnect to new remote desktop
- 2. When disconnecting on some occasions you may be presented with an NX error message, simply click OK and your session will close normally.

	ERROR: get bitmap 2:34
-	Ok
	OK.

3. <u>For Unscrambler X</u>: When you open Unscrambler, you need to enter the correct IP address as mentioned in the figure below (172.23.6.240). For the user name and password you can type any letters in both places. Everytime you open Unscrambler you'll need to check/enter the right IP address, this is normally done automatically after the second login but it depends on the virtual machine you are connected to each time.

Login	×
User Name:	
Password:]
Server IP Address: 172.23.6.240	
OK Cancel	

- 4. <u>For OPUS</u>: You might need to change the setup if you have a problem when displaying the data. In case you are not able to display more than one spectrum in the spectrum window, go to the "setup" tab, click on "user settings" then "new file" and click on "add new spectrum to window" then click "ok".
- 5. You can access your data collected at Diamond from the Data (P:) where you can search for your experiment folder. All the new analyzed data and every change you made to a file should be saved in the processing sub-folder of your visit folder. You will be able then to copy your analyzed data from the processing folder to your computer as mentioned in the section "Off site data access" on page 2 of this document.
- 6. Your data will be available for direct access for 6 months from the date of your experiment. If you need access after this time, you should email your local contact so that IT can renew the access for you.