Remote access session on NoMachine or FastX (and add aliases to your .bashrc file)

This page is meant as a primer for initiating remote access session to hutch laser controls systems. If the desire is to access accelerator-side controls systems such as those for the LCLS-I and LCLS-II photoinjectors, the following page is also recommendable: Remotely connecting to S20 laser controls and diagnostic (for on-shift QLOs)

(i) TLDR

When working off-site, it may be important access the critical controls and computing architecture needed to support hutch activities. NoMachine , an application-based tool, and FastX, a browser-based utility, are two different ways to get this access. This brief tutorial walks through some of the basic steps of use.

Note also that MobaXterm is another well-recommended remote access platform that, while not shown in this tutorial, is often preferred above NoMachine for its stability and added conveniences.

Before getting started: remote access permissions

If this is your first time ever accessing SLAC's networks, you may need to review the procedure for securing the correct access permissions to the networks needed: Unix account permissions for accessing SLAC networks and remote machines

NoMachine

Before doing anything, make sure you start with a machine on the SLAC network (you may need to VPN using Cisco AnyConnect)
 Open NoMachine, start with settings circled in blue

PSNXSERV		NOMACHINE
Give a name to your connection. Your settings will be sav Name PSNXSERV Insert the hostname or IP and port Where you want to co Host psnxserv.slac.stanford.edu Direct connection over the Internet Click Advanced to modify the login and network settings	ed with this name.	Protocol SSH Port 22
Click Advanced to modify the login and network settings	Host: Port:	psnxserv.slac.stanford.edu, SSH 22 TCP
	Authentication:	User efcunn, Password
0	Authentication: Proxy:	User efcunn, Password No
	Authentication: Proxy:	User efcunn, Password No

Make sure you've chosen 'password authentication'

achine - PSNASERV	
PSNXSERV	NOMACHINE
Choose which authentication method you want to use.	
Password Use password authentication.	
 Private key Use key-based authentication with a key you provide. 	Settings
Smart card Use key-based authentication with a key stored on a PKCS11 smart card.	Settings
Kerberos Use Kerberos ticket-based authentication.	Settings
Use a proxy for the network connection	Settings
	ОК
1	

Select the one called PSNXSERV and then 'Connect'



NoMachine - PSNXSERV			
PSNXSERV			ACHINE
Please type your username a	nd password to login.		
	Username efcunn		
	Password •••••		
	Save this password in the connection file		
		Back	OK

Select the session called PSNXSERV and then 'Connect'

III NoMachine - PSNXSERV			
PSNXSERV		NE	MACHINE
View Sort Q	, Find a user or a desktop	2 My desktops	New desktop
PSNXSERV, efcunn, Custom session on :1012 🔔 0			
	<create a="" custom="" desktop="" new="" or="" session=""></create>		
🚨 Logged in as efcunn	O Logout	Back	Connect
TERMINAL BERVER	88		

• You will be presented with a terminal window.

Type the following to tunnel and connect to psdev, which is the main hub for connecting to hutch machines:

ssh psdev

Wait until you've connected, then connect to the computer you want (e.g. mec-monitor) using ssh:

ssh mec-monitor

From there, for example, you can run MEC Home, MEC Python, VNC Viewer, or whatever! (Note that instead of tunneling through psdev to an LCLS machine, it may occasionally be important to access mcclogin and and physics@lcl s-srv01 instead for e.g. supporting work at the LCLS-I photinjector.)



.bashrc trouble

NOTE: If you follow the steps above, but the terminal says something like -bash-4.2\$ instead of something like [username@hostname ~]\$ then there's a good chance that you won't be able to type in the shortcut command you're used to using to open a controls GUI (e.g. las for launching the NEH Laser Hall Laser Home Lucid screen or mec for launching the MEC Home EDM screen).

-bash-4.2\$

If this is the case, you'll need to make sure you follow the directions below about configuring your .bashrc file (or, alternatively, figure out why your .bashrc file isn't being sourced correctly). Until then, you still won't be able to get what you want $\underbrace{\mathbf{U}}$.

FastX

• Open a web browser and go to the following website: https://fastx3.slac.stanford.edu:3300/

🔆 SSH FastX	× +			
← → C 🏠 🔒 fastx3	slac.stanford.edu:33			
		Fast and Secure Connecti	ions to your Linux desktop	S
		Username		
		Password		
			0	
		□ Use public key authentication	Manage private keys	S
		Login	÷	cc
		Powered by FastX	Build: 3.2.36	
			NEL	

Log in using your Unix account credentials



Close the pop-up message

👯 My Sessions FastX	× +	o		-		>
\leftarrow \rightarrow C \triangle \square fast	bG.slac.stanford.edu:3300/session/ 😢 🖈	3	1	•	*	E
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+ This is a Federal computer system and is the property of the United States Government. It is use only. Users (authorized or unauthorized) have no explicit or implicit expectation of privily system you expressly consent to the terms and conditions in https://www.slac.stanford.edu/comp/policy/use.html						- 1
	Close					

Start a new session by clicking the '+' sign

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Select 'Terminal'		
👯 My Sessions FastX	× +	•
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		Cancel Launch Y

Click "Launch" in the bottom-right corner

👯 My Sessions FastX	× +		•			
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No sessions running	Image: Second system Image: Second system TEMBETA Desktop Terminal Image: Second system term term	inch ×				

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Editing your alias shortcuts in your .bashrc file

If it's your first time using the terminal line under your own log-in credentials (whether using FastX, NoMachine, etc.), you'll need to define some commands in order to run the utilities you want.

To do so, from your terminal type gedit ~/.bashrc (or otherwise open the .bashrc file in another favorite text editor like emacs or vim). This will bring up a new window.

Copy the text below and paste it into the file you've opened. [Note: the NoMachine windows share the same clipboard as your desktop, though this may be trickier using FastX.] Once successful, click 'save' and exit the text editor. Now from the terminal, you should be able to do things like launch MEC Home, mecpython, VNC, etc.

If you're still having trouble, try typing source ~/.bashrc or try exiting your session completely and starting with a fresh terminal to make sure it sees the new definitions.

WARNING: THERE MAY BE SPECIAL CHARACTERS PROBLEMS WHEN COPYING AND PASTING - WATCH OUT FOR PROBLEMS!!

SEE ALSO: https://github.com/pcdshub/shared-dotfiles and https://github.com/pcdshub/shared-dotfiles/blob/master/on_site/bashrc !!

-----Copy everything below this line into your .bashrc file-----

```
# .bashrc
# Source global definitions
if [ -f /etc/bashrc ]; then
 . /etc/bashrc
fi
#### PATH definitions starts ####
# clear the path before assigning relevant values
export PATH=$PATH
export PATH=/reg/common/package/python/2.7.2/bin:$PATH # commented out by Zhou
export PATH=/reg/g/pcds/package/epics/3.14/base/current/bin/linux-x86/:$PATH
export PATH=/reg/g/pcds/epics-dev/screens/edm/cxi/current/:$PATH
#snelson: added what we have in xpp
export PATH=/reg/neh/operator/mecopr/bin:${PATH}
export PATH=/reg/common/tools/bin:${PATH}
export PATH=/reg/g/pcds/engineering_tools/mec/scripts:${PATH}
export PATH=/reg/g/pcds/pyps/apps/iocmanager/latest:${PATH}
#### PATH definitions ends
                         ####
```

Final note:

This page is also mirrored here on the LCLS Laser Confluence: How to remotely connect to the EPICS control system for lasers

Related articles

- How to make a new recipe for the LPL
- Remote access session on NoMachine or FastX (and add aliases to your .bashrc file)
- Fully power down the SPL
- Cold start the SPL
- New big compressor alignment procedure