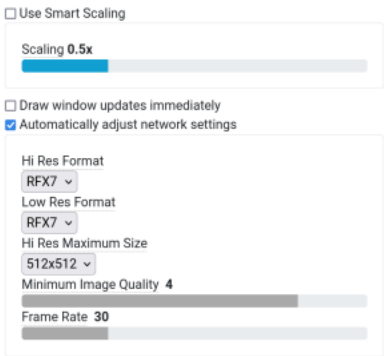
SLAC network 101

Read: Remote access to facethome and facet-srv01

Read: SSH

FastX

- https://fastx3.slac.stanford.edu:3300/ (webbrowser)
- If the resolution is not high enough, e.g., to open camera monitors: turn off smart scaling and increase the resolution



- Using fastx3 webinterface behind a firewall:
  - connect via ssh first via local port forwarding: ssh smeuren@fastx3.slac.stanford.edu -L 33000:localhost:3300
  - connect to localhost:33000 in your local browser (port 33000 is arbitrary, it just has to be consistent)

NoMachine

- Read here: NoMachine

Connecting to the SLAC network via ssh

- ssh smeuren@fastx3.slac.stanford.edu -Y
- ssh smeuren@centos7.slac.stanford.edu -Y
- ssh smeuren@rhel6-64.slac.stanford.edu -Y

Control computers

See also: Data Analysis

- fphysics@facet-srv01
- fphysics@facet-srv20 (DAQ)
- fphysics@facet-srv20-2 (newest, most powerful, DAN)
- Screen grabber usually runs on lcls-srv02: login via ssh physics@lcls-srv02 -Y

Login to the control servers

a. get onto the SLAC network if you are not there (e.g., fastx3.slac.stanford.edu); use "-Y" for x-forwarding
b. log onto mcclogin: ssh smeuren@mcclogin -Y
c. log onto the control server (list: see above), e.g.: ssh fphysics@facet-srv20 -Y
d. if it asks you for a password, you do not have an account (see "get access to the control server below")

Save typing time

- Shortcut for ssh:
  export fx=smeuren@fastx3.slac.stanford.edu
  export cent=smeuren@centos7.slac.stanford.edu
  alias sshfx="ssh $fx -Y"
  alias sshcent="ssh $cent -Y"
- put such aliases into ~/.cshr or ~/.bashrc (depending on the shell)

Login via ssh without password

a. Generate a key on your local computer (default options, empty passphrase): "ssh-keygen -t rsa"

```
seb@sebszen:~/.ssh$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/seb/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/seb/.ssh/id_rsa
Your public key has been saved in /home/seb/.ssh/id_rsa.pub
The key fingerprint is:
```

b. Find the folder where the "authorized_keys" folder is located on the remote server:

```
[smeuren@fastx3 ~]$ pwd
/home/smeuren
[smeuren@fastx3 ~]$ cd .ssh/
authorized_keys  id_ed25519       id_ed25519.pub   id_rsa           id_rsa.pub       known_hosts
```

c. Let the server know that you are authorized to login without password:
   - cat /home/seb/.ssh/id_rsa.pub | ssh smeuren@fastx3.slac.stanford.edu 'cat >> /home/smeuren/.ssh/authorized_keys'
   - Note that you need to change username / servername and the location of "authorized_keys" (pwd when you log into the server should help; see step b)
   - login without password

ssh with port tunnel

- creating a port tunnel to the FACET control server: ssh fphysics@facet-srv01 -Y -R 42000:e320pi:42000
  (note difference between local and remote port forwarding, i.e., direction: server on remote or server on local -L / -R)

Get access to the control server

- get an fphysics account: Remote access to facethome and facet-srv01
- after you have access: follow instructions given directly after login to create your personal profile

Troubleshooting

- Read: SSH
- In case your login fails: test "klist". If there is nothing, do kinit

```
smeuren@mcclogin $ klist
klist: No ticket file: /tmp/krb5cc_16820
smeuren@mcclogin $ kinit
smeuren@SLAC.STANFORD.EDU's Password:
```

- If you don't have write access to your AFS filesystem or you have some issues with ssh-keys that cannot be read: aklog. After this, klist should read similar to this:

```
[smeuren@mcclogin ~]$ klist
Ticket cache: FILE:/tmp/krb5cc_16820
Default principal: smeuren@SLAC.STANFORD.EDU

Valid starting       Expires              Service principal
02/13/2024 08:50:13  02/14/2024 09:50:09  krbtgt/SLAC.STANFORD.EDU@SLAC.STANFORD.EDU
        renew until 02/20/2024 08:50:09
02/13/2024 08:50:21  02/14/2024 09:50:09  yfs-rxgk/_afs.slac.stanford.edu@SLAC.STANFORD.EDU
        renew until 02/20/2024 08:50:09
02/13/2024 08:50:21  02/14/2024 09:50:09  afs/slac.stanford.edu@SLAC.STANFORD.EDU
        renew until 02/20/2024 08:50:09
```

Various Tricks

Screen capture on control computer

mccsg

Copying files to the SLAC cluster (AFS file system):

from computer to cluster:
scp -r "local file path" smeuren@rhel6-64.slac.stanford.edu:/afs/slac.stanford.edu/u/gu/smeuren/

from cluster to control server:
smeuren@mcclogin $ scp -r /afs/slac.stanford.edu/u/gu/smeuren/ "filename" fphysics@facet-srv01:/home/fphysics/smeuren/

Facet-II elog

http://physics-elog.slac.stanford.edu/facetelog/index.jsp

- Print screenshot to FACET elog
  log onto the control computer mccsg

Getting internet access on the control network (webbrowser)

- ssh to mcclogin (-Y), ssh to, e.g., fastx3
- run firefox there

SLACK

- https://slack.com/workspace-signin
- The workspace is "facet-II"

Google drive

see: FACET-II Home