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Coop guide to CERN

Starting out at CERN!

Before you can come

- You should have received an email from [cms.people@cernNOSPAMPLEASE.ch](mailto:cms.people@cern.ch). Follow instructions to set up a CERN account
- First you will need a visa. Apply at the French consulate in Boston. Further instructions
- You will need to pass basic safety trainings (safety at CERN and computer security) using the safety site [?](#).

Getting registered upon arrival

- Useful link for maps [?](#)
- Get into CERN campus by showing the guard at the front your paperwork and tell them you're going to get registered.
- Go to the Users' Office in building 61 R-010 to get registered and to get started on your French and Swiss cards applications. This process may take ~1 month
- Get your CERN badge printed out at building 55 (near entrance B). You'll need this to enter and exit the campus.
- You may need a dosimeter; that is also something that is taken care of in building 55.

Safety Training Courses

- There are three basic mandatory online safety courses that you need to take through the learning hub [?](#).
- In order to go underground, you'll need to enroll in the Self-Rescue Mask course [?](#), which is in person.
- Radiation protection training is required to obtain a dosimeter (see below).

Getting a dosimeter

- You'll need an Institute Certificate, signed by the radiation safety director at Northeastern. (You don't need the institute stamp.)
- Complete the radiation protection training [?](#) according to the requirements for Supervised Radiation Areas.
- The dosimetry office is on the right when you enter building 55. Bring the Institute Certificate and your CERN badge. Afterwards, they'll send you upstairs to the biometry office.

Request CMS Surface Buildings Access

- Log into ADaMS [?](#), and go to Request Access. The surface buildings code is CMS_S.

Public Transportation

- Daily free CERN shuttles [?](#).
- Tram/Bus passes are more useful if you need to travel into Geneva. Find passes here [?](#)
- Otherwise Biking is very common

Computing

What you should have to start

- Linux capabilities
- Dual boot dual boot [↗](#)
- Virtual machine virtual machine [↗](#)
- Getting Root for local work ROOT_download [↗](#)
- Set up a github account join github [↗](#)

Cern specific

- Create an lxplus account
- Example log in for lxplus ssh -X -Y cfreer@lxplusNOSPAMPLEASE.cern.ch
- Northeastern also has a server in Building 32, Room C-17 (B32-C-017)
- To log in: ssh -X -Y cfreer@cmsneu
- Connect your github to lxplus. Create/Edit ~/.gitconfig to have the following(replace as necessary).

```
[user]
name = Chad Freer
email = chad.freer@cernNOSPAMPLEASE.ch
github = chadfreer
```

Northeastern machine shortcomings:

- Doesn't have VOMS, so can't export for crab jobs.
- Has slc5, not slc6, so can't use CMSSW_7_X

Getting grid access

- Go to certification authority [↗](#) and click on "New Grid User certificate" (you may need to verify account)
- You should see "Your new certificate is ready". Click on "Download this certificate". (keep a backup of this certificate Mac [↗](#) or other [↗](#))
- Install the certificate in your browser (instructions for this and other information at CMS VO Twiki)
- Register with CMS VO [↗](#)

Installing grid certificate on lxplus

- export the certificate from your browser as a .p12(possibly .pfx) file.
- Log in to lxplus and create a directory ~/.globus/

```
1. mkdir ~/.globus/
```

- Copy your certificate file to this directory. Example:

```
1. scp YourCert.p12 cfreer@lxplus.cern.ch:~/.globus/YourCert.p12
```

- Use the following commands replacing YourCert.p12 with the actual name (rm old files if you are renewing)

```
1. cd ~/.globus
```

2. `rm -f usercert.pem`
3. `rm -f userkey.pem`
4. `openssl pkcs12 -in YourCert.p12 -clcerts -nokeys -out $HOME/.globus/usercert.pem`
5. `openssl pkcs12 -in YourCert.p12 -nocerts -out $HOME/.globus/userkey.pem`
6. `chmod 400 userkey.pem`
7. `chmod 444 usercert.pem`

AFS space and workspace on lxplus

- Go to CERN resources [↗](#) --> List Services --> AFS Workspaces --> Settings
- Increase home folder quota up to 10 GB, add workspace and increase quota up to 100 GB

Need to get EOS space to store NTuples and such

- Fill out a GGUS ticket [↗](#)
- Example ticket here [↗](#)

Grid computing - CRAB

- Main comprehensive instruction twiki for CRAB3
 - ◆ Unfortunately, the instructions for signing up for the grid do not say how to install your certificate (userkey.pem and usercert.pem) - which is very important
 - ◆ First make sure that you have permission to access your /store/user/username area
 - ◇ Some EOS links: 1 [↗](#), 2 [↗](#), 3

Extra Coding resources

- Basic Linux tutorial [↗](#) (See the "frequent bash commands" section for bash commands you'll have to use a lot here!)
- C++ Guide [↗](#)
- Python Introduction [↗](#)
- Kelsey Yee's wonderful ROOT lessons [↗](#)
- VIM [↗](#) cheat sheet

Frequent Bash Commands

- `scp [source path] [destination path]`. Secure copy is a way of shuttling stuff between your personal file system and your lxplus file system, which is a thing you'll probably have to do at some point. Note that you can only call this on your personal computer, as that is the one that is doing the ssh-ing. Structure the lxplus path `[username]@lxplus.cern.ch//path/to/thing`, and your personal computer path `~/your/normal/path`.

More on ROOT

- Diving Into ROOT
- ROOT@BABAR I [↗](#), ROOT@BABAR II [↗](#), ROOT@BABAR III [↗](#)
- ROOT for Beginners: Day1 [↗](#), Day2 [↗](#), Day3 [↗](#), Day4 [↗](#), Day5 [↗](#)
- Install ROOT on Mac OS X: Homebrew, [↗](#) homebrew-hep [↗](#)

More on Github

How to use Git?

* A simple guide [↗](#)

What to do if you accidentally delete files?

- Do not panic! You can restore accidentally deleted files.
- If the files were present on AFS, follow these instructions:
<https://twiki.cern.ch/twiki/bin/view/Main/BrettJacksonRecoverAFS>
- If the files were present on EOS, follow these instructions:
https://cern.service-now.com/service-portal?id=kb_article&n=KB0004789 [↗](#)

People

CERN Phonebook [↗](#)

Northeastern

- Darien Wood, 32/4-C21, (darien@neu.edu)
- Emanuela Barberis, 32/4-C21 (Emanuela.Barberis@cern.ch)
- Toyoko Orimoto, 32/4-C17 (Toyoko.Orimoto@cern.ch)
- David Morse, 32/4-C21 (david.michael.morse@cern.ch)
- Andrea Massironi, 32/4-C17 (Andrea.Massironi@cern.ch)
- Apichart Hortiangtham, 32/4-C21 (apichart.hortiangtham@cern.ch)
- Chad Freer, 32/4-C17 (chad.freer@cern.ch)
- Tanvi Wamorkar, 32/4-C17 (tanvi.wamorkar@cern.ch)
- Andrew Wisecarver, 32/4-C21 (andrew.lloyd.wisecarver@cern.ch)
- Bingran Wang, 32/4-C21 (bingran.wang@cern.ch)
- Gabriel Madigan (gabemadigan@gmail.com)
- Abraham Tishelman Charny, 32/4-C17 (abraham.tishelman.charny@cern.ch)
- Megan Stark (walsh.me@husky.neu.edu)
- Vivian Thi Nguyen, 32/4-C21 (vivan.nguyen@cern.ch)
- Kelsey Yee, 32/4-C17 (kelsey.amber.yee@cern.ch)

Useful Contacts

- Andrew Brinkerhoff, 32/4-B08 (andrew.wilson.brinkerhoff@cern.ch)
- Alex Madorsky, 512/1-004 (alexander.madorsky@cern.ch)
- Khristian Kotov, 42/2-034 (khristian.kotov@cern.ch)
- Mikhail Matveev, 40/3-A02 (Mikhail.Matveev@cern.ch)
- Darin Acosta, 32/4-B08 (Darin.Acosta@cern.ch)
- Pierluigi Bortignon, 32/4-B08 (Pierluigi.Bortignon@cern.ch)
- Armando Lanaro, 892/2-D19 (Armando.Lanaro@cern.ch)
- Tim Cox, 40/3-A02 (Timothy.Cox@cern.ch)
- Indara Suarez, 510/1-011 (indara.mayeli.suarez.silva@cern.ch)
- Wei Shi, 32/4-A05 (weishi@rice.edu)
- Mikhail Ignatenko, 40/R-A28 (mikhail.ignatenko@gmail.com)

Northeastern offices

- 32/4-C17
- 32/4-C21

CMS

Twiki pages

- L1 CSCTF twiki
- Upgraded emulator
- L1 Offline Development
- L1 Trigger Upgrade
- Level 1 approved results
- L1 Trigger MiniDAQ
- DQM Development

- [CMS Glossary](#)

Meetings

- Higgs meetings (weekly) - Higgs-Exo [↗](#): Mondays at 16:00, 500-01-001
- General Muon Meeting [↗](#): Mondays at 17:30, 40-2-A01
- L1T Online Software Meeting [↗](#): Tuesdays at 11:00, 40-R-A10
- Run Organization Meetings [↗](#): Tuesdays at 14:30, 40-S2-A01
- Level-1 Trigger and DPG meeting [↗](#): Tuesdays at 16:00, 40-R-A10
- CSC weekly meeting [↗](#): Wednesdays at 18:00, 40-02-A01
- Joint L1-DPG TSG Meeting [↗](#): Thursdays at 14:00, 40-R-A10
- 2016 Muon Trigger commissioning meeting [↗](#): Thursdays at 16:00, 40-R-A10
- EMTF Working Meeting [↗](#): Thursdays at 17:00, 6-R-012
- Stage-2 Emulator Meeting [↗](#): Fridays at 17:00, online

- NEU Meeting [↗](#): Thursdays 15:00, online

Operational knowledge

- Experts on-call / shifter contacts
 - ◆ Unlisted: the "CSC expert operator", 16-1972
- CMS Online Workbook - daily run meeting, shift, on-call
- CMS Commissioning 2016 - Global runs, cosmics, schedule

CERN

Mailing lists

- [CMS hypernews](#) [↗](#)
- [CERN e-groups](#) [↗](#)

Wi-fi access

- Eduroam
 - ◆ On [CERN Certification Authority](#) [↗](#) page, click "New EduRoam certificate"

Printing

- To use the printer on our floor you need to use safari to connect to printer 32-4210-HP [↗](#)

Room keys

- [Locks and Keys](#) [↗](#) --> [Key request form](#) [↗](#)
- If you get locked out, you can call CERN security (CSR) at 78877

Room and building access

- [Access status and requests](#) [↗](#)
 - ◆ 354-01-002 (CMS centre), for meetings.
 - ◆ P5 Control Room (CMS CR), for trigger operations
 - ◆ P5 USC55 Service cavern for track finder hardware (may as well also do UXC55 experimental cavern)
 - ◇ Need self-rescue mask training (and dosimeter [↗](#) for UXC55)

- ◆ BE SURE TO HIT "SEND"
 - ◆ May first have to pass CERN safety course[?]: 010 (Access to offices), 110 (LHC tunnels), 220 (CMS experiment)
 - ◆ ADaMS[?] has a nice summary of your current access rights, and things blocking them
- Meeting room availability[?]

CERN car

- Just visit the CERN Car Pool[?] to get an RFID card for car sharing[?]
 - ◆ First you need to get Car Driving Authorization[?] - need pdf of home country driver's license

Coop work

Various projects that coops have worked on

- Trigger work EMTF Intro
- EMTF DQM
- L1T DQM Development
- ECAL work. Summarized in Kelsey's slides[?] or Kelsey's Intro[?]
- Mini-CSC work

This topic: Sandbox > NortheasternCoopExperience

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