

Data Analysis

Important locations

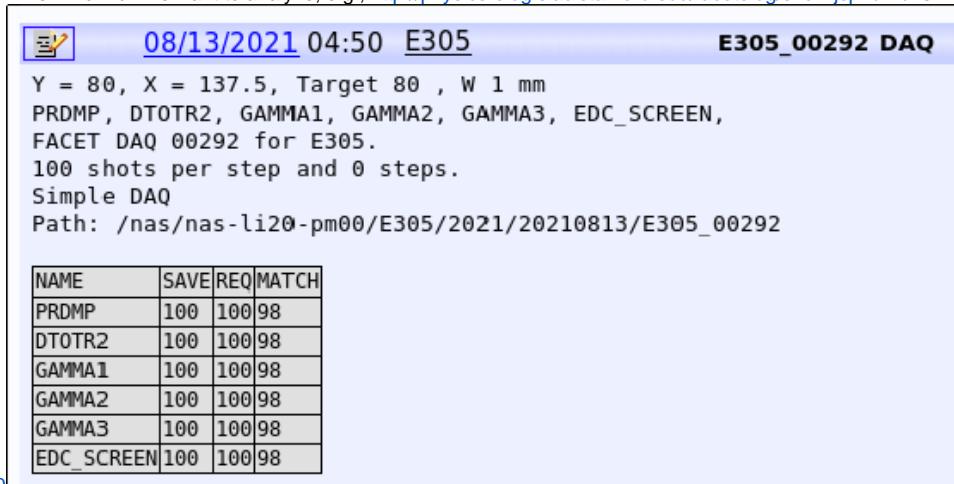
- FACET elog: <http://physics-elog.slac.stanford.edu/facetelog/>
- Important nodes: "rhel6-64.slac.stanford.edu" (general login node) "mcclogin" (node to reach the control servers) "facet-srv01" (control server, which requires access as fphysics@facet-srv01)
- Data storage: /nfs/slac/g/facetdata/nas/nas-li20-pm00 (accessible from, e.g., mcclogin) [eventually mirrored from: /nas/nas-li20-pm00/E320/ (which is accessible from facet-srv20)]
- Data from first run: /u1/facet/matlab/data (you can access e.g., from fphysics@facet-srv20)
- Scopedata: /u1/facet/physics/e320/scopedata/ (copied to /nas/nas-li20-pm00/E320/)
- Attention: one might need to work explicitly in "bash" to use wildcharacters, e.g., : `scp -r fphysics@facet-srv01:/u1/facet/physics/e320/scopedata/2021_08_13__22* /afs/slac/u/gu/smeuren/scopedata/`

Copying files to your local computer

- Method A: use a bunch of scp to bring data to a node with internet access; then use scp from your local computer to download them. This can cause quota issues though. For details see the sections below.
- Method B (avoiding quota issues):
 - tar the folder that you want to copy [`tar -zcvf file.tar.gz /path/to/dir/`]
 - use the script from [Control network: little tricks](#) to copy the tar file to your local computer
- Desperate means to download old data:
 - copy the data from /nfs/etc. to a facet server (no quota issues there): `(smeuren@mcclogin $ scp -r /nfs/slac/g/facetdata/nas/nas-li20-pm00/E320/2022/20220820/E320_03027/ fphysics@facet-srv20:/home/fphysics/smeuren/)`
 - tar the folder on the control computer and use Method B above

Example data analysis procedure (Version A)

1. Go to the FACET elog: <http://physics-elog.slac.stanford.edu/facetelog/>
2. Find the shift summary with information about the data sets taken, e.g., <http://physics-elog.slac.stanford.edu/facetelog/show.jsp?dir=/2021/32/13.08&pos=2021-08-13T06:00:00>
3. Determine which run we want to analyze, e.g., <http://physics-elog.slac.stanford.edu/facetelog/show.jsp?dir=/2021/32/13.08&pos=2021-08-13T04:50:00>



NAME	SAVE	REQ	MATCH
PRDMP	100	100	98
DTOTR2	100	100	98
GAMMA1	100	100	98
GAMMA2	100	100	98
GAMMA3	100	100	98
EDC_SCREEN	100	100	98

4. (Log into facet-srv20 (you need permission, see [FACET Computing](#)): `ssh fphysics@facet-srv20 -Y`): only needed if the data analysis should be done on the cluster
5. Optional: verify, that you can access the path shown in the elog entry
6. Log into a general SLAC computing node from your own computer, e.g., `ssh smeuren@rhel6-64.slac.stanford.edu`
7. Get your personal home folder via `pwd`, e.g., `/afs/slac.stanford.edu/u/gu/smeuren`
8. Log into mcclogin, e.g., `ssh smeuren@mcclogin -Y`
9. `smeuren@mcclogin $ scp -r fphysics@facet-srv20:/nas/nas-li20-pm00/E305/2021/20210813/E305_00292 /afs/slac/u/gu/smeuren/`

Example data analysis procedure (Version B)

Here is how to copy data using the fastx3 webinterface:

Copy the data from fastx3 to your personal computer:

- `scp -r smeuren@fastx3.slac.stanford.edu:/afs/slac.stanford.edu/u/gu/smeuren/E320_03872 .`

Nodes with access to the internet

1. Log into mcclogin, e.g., `ssh smeuren@mcclogin -Y`
2. Log into, e.g., `ssh smeuren@rhel6-64.slac.stanford.edu -Y`
3. start firefox (slow due to x-forwarding)

Read the metadata (matlab) files from python

1. Get access to python (e.g., on facet-srv01): `source $PACKAGE_TOP/anaconda/envs/python3.7env/bin/activate` On rhel: `source /afs/slac/g/lcls/package/anaconda/envs/python3.7env/bin/activate` (one might need to explicitly start a bash shell)
2. run `python3`