DAQ

Infrastructure

DAQ

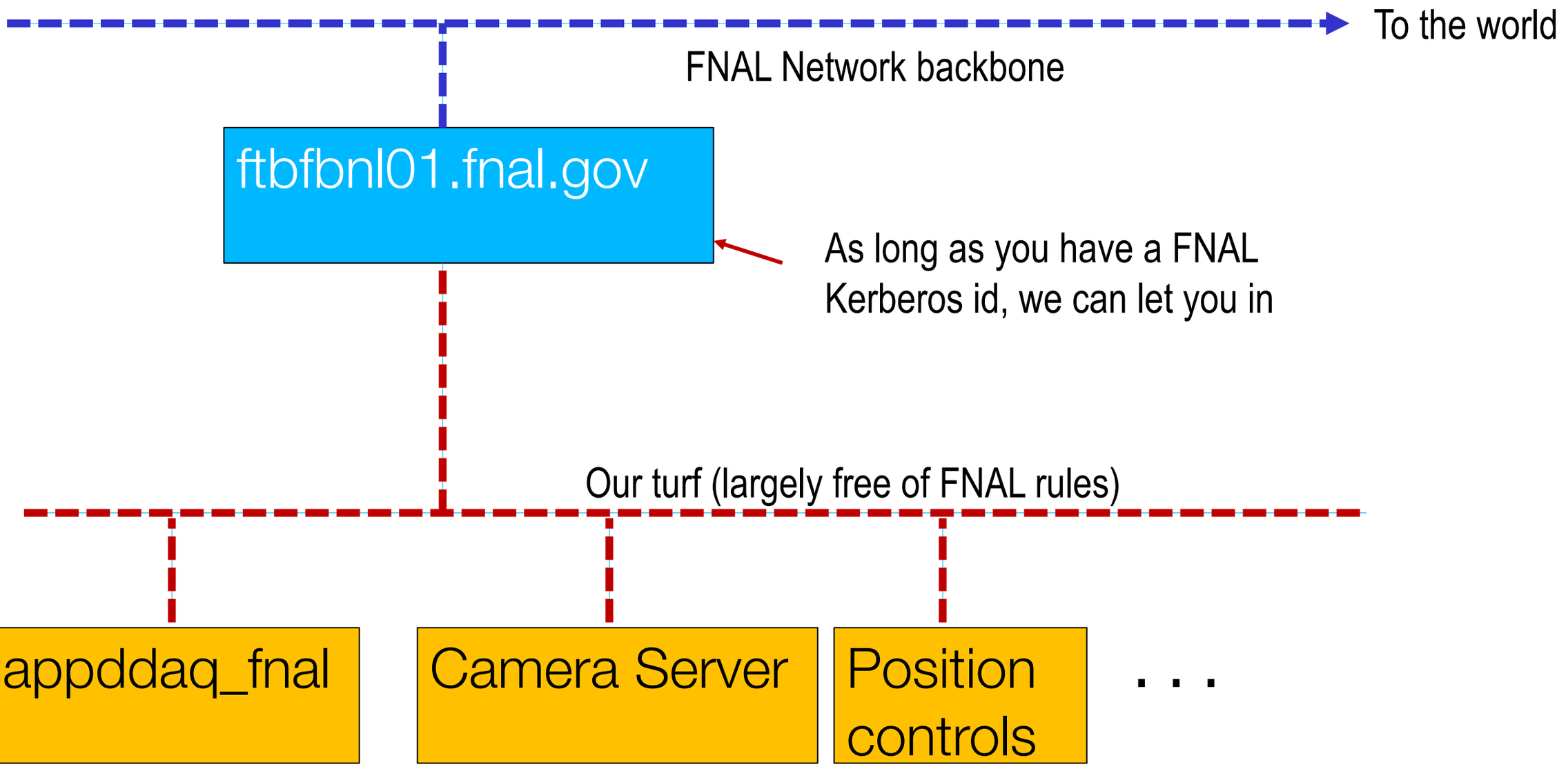
Table control?

FTBF Desktop machines

Cameras

Packing list

Infrastructure



DAQ

The machine we call lappddaq_fnal

Local storage, 65% full, should be ok (we can delete last year's data if we have to)

DAQ setup should mostly work as it did last time around

We save

- The setup script itself (900)
- beam parameters (910/911)
- 1724 serial numbers (connection to calibration) (920/921)
- A webcam picture of the setup – does it move it the right direction? (940)

```
$ dlist -t 9 -i   /gpfs02/eic/TEST.RUNS/2021-FNAL/lappd/beam/beam_lappd-
00020533-0000.evt
 -- Event     1 Run: 20533 length:  9782 type:  9 (Begin Run Event)  1623818826
Packet   900  1210 -1 (sPHENIX Packet)   4 (IDCSTR)
Packet   910   162 -1 (sPHENIX Packet)   4 (IDCSTR)
Packet   911    24 -1 (sPHENIX Packet)   6 (ID4EVT)
Packet   920   256 -1 (sPHENIX Packet)   4 (IDCSTR)
Packet   921    14 -1 (sPHENIX Packet)   6 (ID4EVT)
Packet   940  8108 -1 (sPHENIX Packet)   4 (IDCSTR)
```

Beam parameters (910 & 911)

We reach out to “ACNET” and get some beam parameters (we don’t use all, but we can re-use existing software to extract the info)

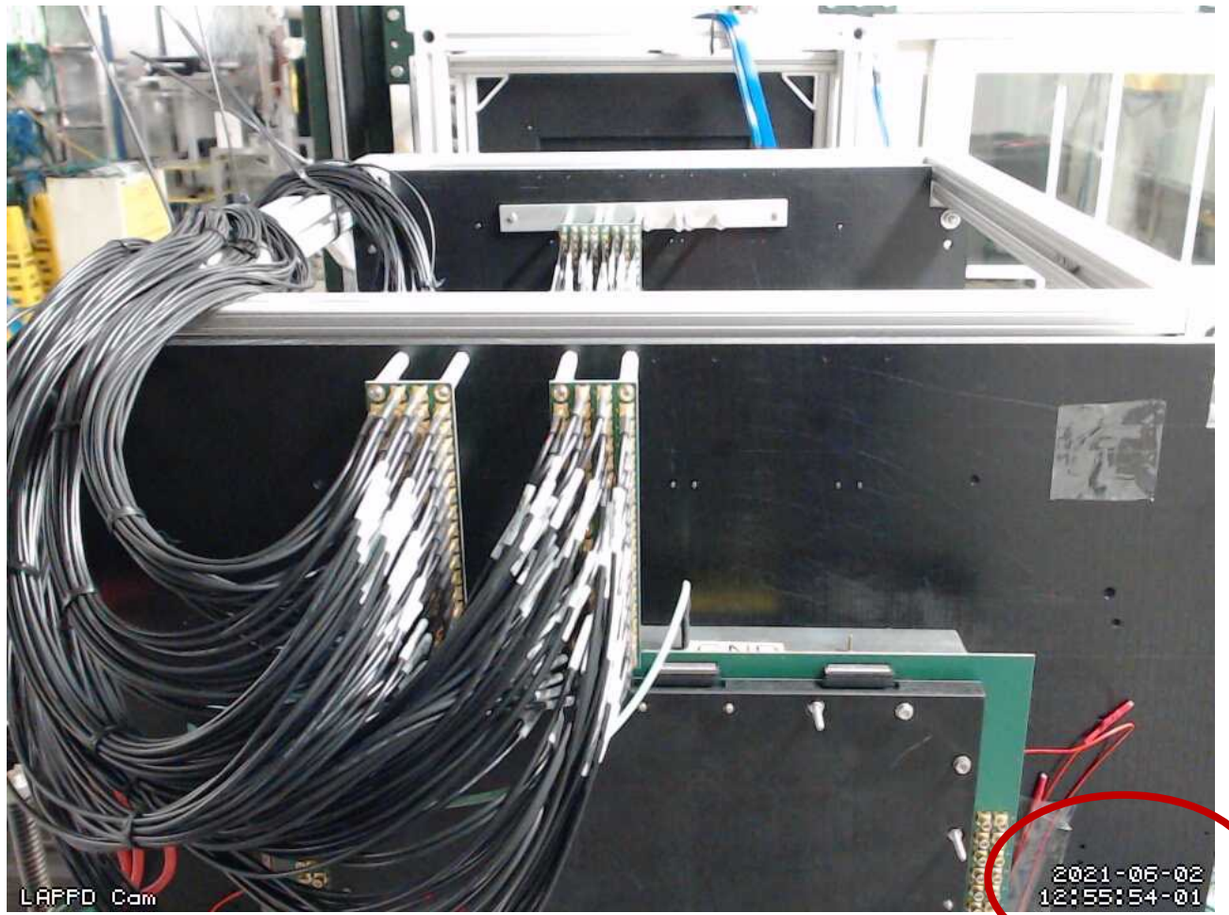
```
$ ddump -t 9 -p 910   /gpfs02/eic/TEST.RUNS/2021-FNAL/lappd/beam/beam_lappd-
00020533-0000.evt
S:MTNRG         =  120   GeV
F:MT6SC1        =  71856     Cnts
F:MT6SC2        =  71336     Cnts
F:MT6SC3        =  57389     Cnts
F:MT6SC4        =  67057     Cnts
F:MT6SC5        =  1         Cnts
E:2CH           =  580.1 mm
E:2CV           =  59.87 mm
E:2CMT6T        =  74.66 F
E:2CMT6H        =  37.5  %Hum
F:MT5CP2        =  .2338 Psia
F:MT6CP2        =  .8419 Psia
F:MTSCL1        =  10430     Cnts
F:MTSCL2        =  0         Cnts
F:MTSCL3        =  1         Cnts
F:MTSCL4        =  1         Cnts
F:MTSCL5        =  55007     Cnts
F:MTSCL6        =  10430     Cnts
F:MTSCL7        =  67053     Cnts
F:MTSCL8        =  0         Cnts
```

911 contains the same numbers *10000 for easy programmatic access

```
$ ddump -t 9 -p 911 -g -d   /gpfs02/eic/TEST.RUNS/2021-
FNAL/lappd/beam/beam_lappd-00020533-0000.evt
Packet   911    24 -1 (sPHENIX Packet)   6 (ID4EVT)
    0 |     1200000  718560000  713360000  573890000  670570000       10000
    6 |     5801000     598700     746600     375000       2338        8419
   12 |   104300000          0      10000      10000  550070000  104300000
   18 |   670530000          0
```

Cameras/etc

I’m going to set up camera server as we did last time (packet 940)



Transfers to RCF/SDCC

We want to run the analysis mostly at the RCF

Some simple online monitoring (just to see that all is there) with a local pmonitor

Sanghwa demonstrated that working at the RCF is “snappy”

But of course the data need to get there

Alexander (b/c he’s there longest) makes a directory /gpfs02/eic/TEST.RUNS/2022-FNAL
I just made one to show this, but better if owned by Alexander)

The rftpexp machine is gone, but we can sshfs-mount via sftp.sdcc.bnl.gov:

```
$ sshfs purschke@sftp.sdcc.bnl.gov:/gpfs02/eic/TEST.RUNS/2022-FNAL/lappd rcf/
```

Then that $HOME/rcf looks just like a local disk (remember this is still from Bob’s lab):

```
$ rsync -av   /data/eic/lappd/rcdaq-00000975-0000.evt $HOME/rcf/
sending incremental file list
rcdaq-00000975-0000.evt

sent 553,971,867 bytes  received 131 bytes  11,662,568.38 bytes/sec
```

Automate Transfers to RCF/SDCC

Script run from cron every n hours.

```
#20 * * * * /home/eic/rcf_transfers/transfer_to_rcf.sh >>
/home/eic/rcf_transfers/rcf_transfers.log 2>&1
```

You need to (once, after a reboot) start a local ssh agent and unlock your key

```
$ cat transfer_to_rcf.sh
#! /bin/bash

isrunning=`ps -fu eic | grep transfer_to_rcf | grep -v grep | wc -l`
echo $isrunning

if [[ $isrunning -gt 3 ]]
then
  echo "transfer_to_rcf.sh already running, quitting"
  exit 0
fi

cd /home/eic/rcf_transfers
[  -f agent.sh ] || exit
. agent.sh

rsync --bwlimit=100G -avx /data/eic/fnal/ $HOME/rcf/
```

The FTBF-CR-XX machines

Fall-back option if the RCF work is too slow (but maybe not…)

What we are really after is the local display…

However:

The root version is 5.34

We need to ask for permission to use the /home disk (that is local), the only local disk with some space

```
[ftbf_user@ftbf-cr-01 ~]$ df
Filesystem                      1K-blocks       Used Available Use% Mounted on
/dev/sda3                        20469760    9914744  10555016  49% /
/dev/sda4                        20469760      34100  20435660   1% /tmp
/dev/sda5                        20469760    4714808  15754952  24% /var
/dev/sda7                         9717760      33040   9684720   1% /var/cache/cvmfs
/dev/sda8                       408434840      91008 408343832   1% /home
if-nas-0.fnal.gov:/ppdsoft/ftbf 2147483648 2111856640  35627008  99% /home/nfs
if-nas-0.fnal.gov:/ppdsoft/products 2147483648 2111856640  35627008  99% /fnal/products
filesrv01.fnal.gov:/web/sites   1932735488 1793893376 138842112  93% /web/sites
```

Packing list

Need to pack for some flexibility; I'll collect what we need to run the DAQ (where?)

- Some switches
- The cam pi
- Some support material (ethernet/power cables, spare disks, etc)
- my "FNAL survival toolkit"…
- Do we see the need for an additional PC just in case?

I assume that Bob takes care of the actual DAQ machine, scopes, monitor, etc etc?

The End