MLP’s items

Storage cleanup

Tapping into the Jlab storage???

Grafana / Prometheus (right now for the MPOD, more to come)

Metadata in data files

Storage cleanup

I use a standard “safe-delete” script of mine that I have been using everywhere

It checks that a to-be-deleted candidate

- is on the backup disk, and
- has the same size

(I would love to also verify a checksum, but it would take way too long, cannot be done)

How? (so other can take over one day…)

The backup is a complete “mirror” of our data directories.

The real thing:

```
(base) mep@carbon:~$ ls /scratch/data/
AstroPix  CAEN  KCU0  KCU1  mlp_crap
```

The backup:

```
$ ls /data/purschke/BIC/data/
AstroPix  CAEN  KCU0  KCU1  mlp_crap
```

Safe-delete

I then do a “find” of all (backup) and older-then-7-days (carbon) files and finesse the output (I had just deleted everything >7 days, so I show with this >6):

```
(base) mep@carbon:/scratch$ find data -mtime +6 -type f -ls
1075419481 1827516 -rwxr--r--   1 mep      mep      1871372288 Apr 13 14:02 data/KCU0/junk/junk_ROC_0-00000329-0000.evt
1075419482    7504 -rwxr--r--   1 mep      mep         7684096 Apr 13 14:04 data/KCU0/junk/junk_ROC_0-00000298-0000.evt
1075419483  996320 -rwxr--r--   1 mep      mep      1020231680 Apr 13 15:40 data/KCU0/junk/junk_ROC_0-00000331-0000.evt
```

I re-arrange this so I have the filename followed by size:

```
(base) mep@carbon:/scratch$ find data -mtime +6 -type f -ls | awk '{print $NF, $7}'
data/KCU0/junk/junk_ROC_0-00000329-0000.evt 1871372288
data/KCU0/junk/junk_ROC_0-00000298-0000.evt 7684096
data/KCU0/junk/junk_ROC_0-00000331-0000.evt 1020231680
```

and capture this outoput in a file (filelist_local.txt) . Do the same on the backup, just all files (no mtime):

```
$ find data/ -type f -ls | awk '{print $NF, $7}' > $HOME/filelist_backup.txt
```

And I transfer that backup filelist to carbon

Example

Here are the entries for “junk_ROC_0-00000001-0000.evt” (and you see they match):

```
(base) mep@carbon:~$ grep junk_ROC_0-00000001-0000.evt filelist_backup.txt filelist_local.txt
filelist_backup.txt:data/KCU0/junk/junk_ROC_0-00000001-0000.evt 245760
filelist_local.txt:data/KCU0/junk/junk_ROC_0-00000001-0000.evt 245760
```

Now I take all those entries from both files together, sort them, and find all the one that are NOT unique (that is, they identically appear twice):

```
$ cat filelist_backup.txt filelist_local.txt | sort -V | uniq -d
```

Those are all files that can be deleted. Put those filenames in a list:

```
$ cat filelist_backup.txt filelist_local.txt | sort -V | uniq -d | awk '{print $1}' >
~/to_be_deleted.txt

$ rm `cat ~/to_be_deleted.txt`
```

Port forwards

Zisis and I had a pow-wow after the meeting Monday to go over the suggested local laptop setup. Here is what I have (replace “purschke” with your favorite name):

```
Host bicdaq bnl-daq
     ServerAliveInterval 60
     HostName bnl-daq
     User mep
     LocalForward 9922 localhost:22
     ProxyJump purschke@hallgw.jlab.org

Host carbon
     ServerAliveInterval 60
     HostName carbon
     User mep
     LocalForward 13666 localhost:666
     LocalForward 13080 192.168.60.20:80
     LocalForward 3010 localhost:3010
     LocalForward 5912 localhost:5902
     LocalForward 5913 localhost:5903
     LocalForward 5914 localhost:5904
     LocalForward 5915 localhost:5905
     LocalForward 5916 localhost:5906
     LocalForward 5917 localhost:5907
     LocalForward 9923 localhost:22
     ProxyJump mep@bnl-daq
```

Elog

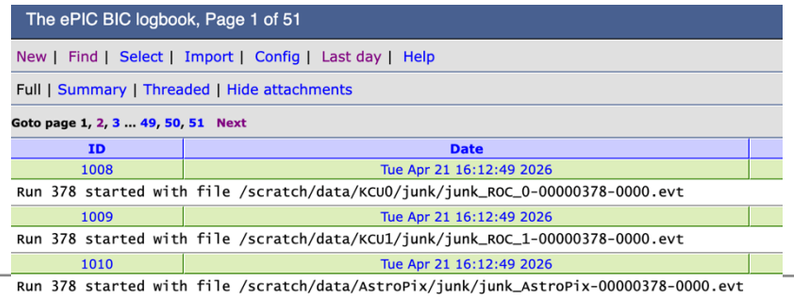
MPOD internal web page

Grafana URL

6 different VNCs (let’s make 5902 the standard monitoring one, the others are first come, first serve)

A port-forward to carbon’s ssh port; allows you to have one main login, and many others without typing the numbers

What is where


The ePIC BIC logbook, Page 1 of 51

New | Find | Select | Import | Config | Last day | Help

Full | Summary | Threaded | Hide attachments

Goto page 1, 2, 3 ... 49, 50, 51 Next

ID	Date
1008	Tue Apr 21 16:12:49 2026

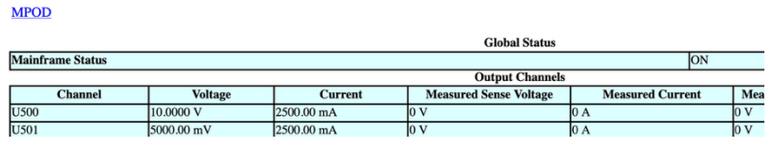
Run 378 started with file /scratch/data/KCU0/junk/junk_ROC_0-00000378-0000.evt

1009	Tue Apr 21 16:12:49 2026

Run 378 started with file /scratch/data/KCU1/junk/junk_ROC_1-00000378-0000.evt

1010	Tue Apr 21 16:12:49 2026

Run 378 started with file /scratch/data/AstroPix/junk/junk_AstroPix-00000378-0000.evt

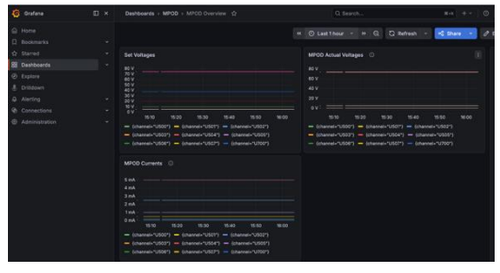

MPOD

Global Status

Mainframe Status	ON

Output Channels

Channel	Voltage	Current	Measured Sense Voltage	Measured Current	Mea
U500	10.0000 V	2500.00 mA	0 V	0 A	0 V
U501	5000.00 mV	2500.00 mA	0 V	0 A	0 V



Elog http://localhost:13666

MPOD internal web page http://localhost:13080

Grafana URL http://localhost:3010

VNC vncviewer localhost:5902 … 5907

What is that port 9923 about?

I make ONE “main” login in the morning with “ssh carbon”, have to punch in the numbers etc

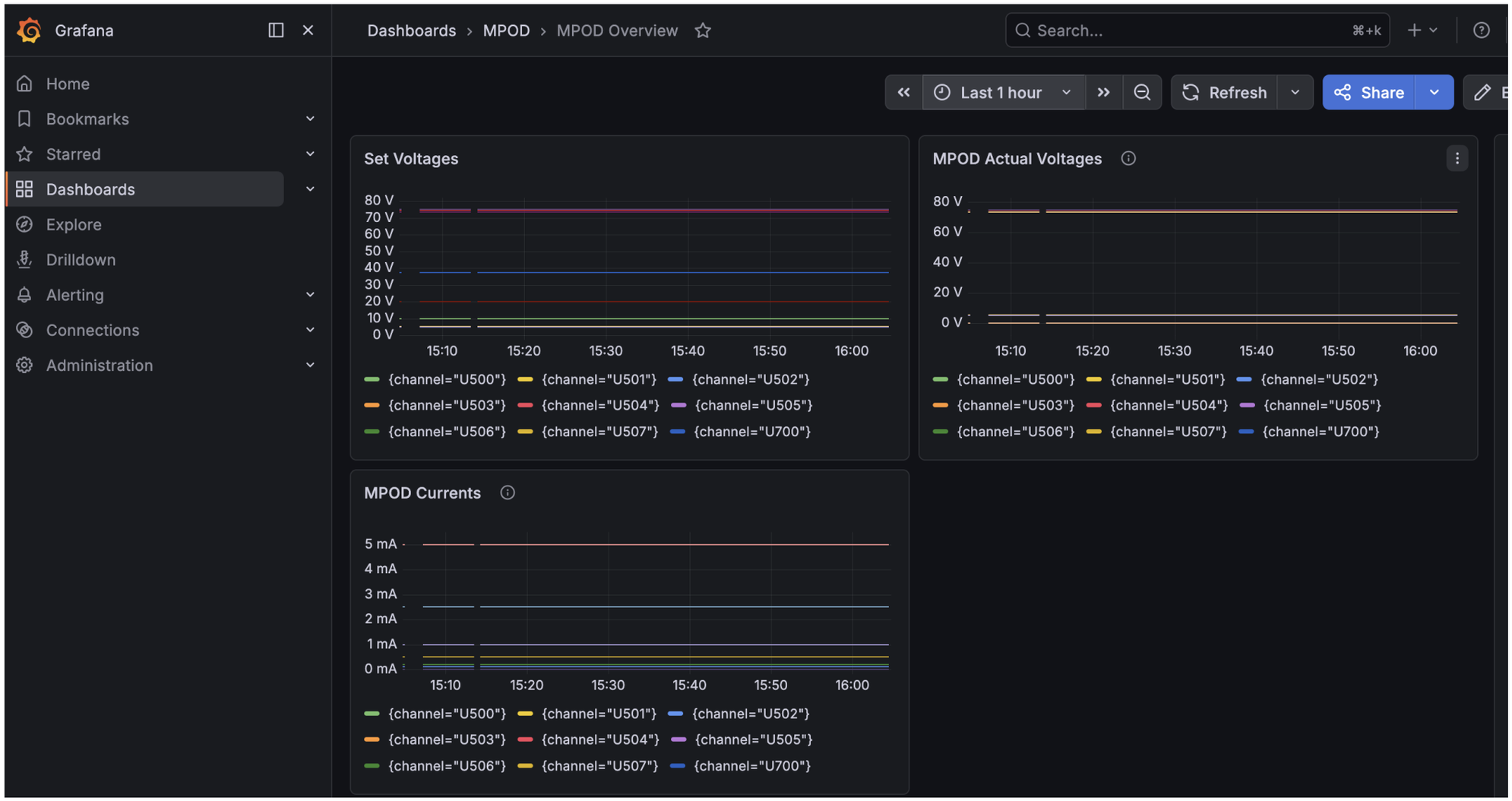
But from that point on, my local port 9923 ends at carbon’s ssh port

Without going through the number-code authentication again I can do

```
mlpmacM2-4:~ purschke$ ssh -p 9923 mep@localhost
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-106-generic x86_64)
< Lines deleted >
(base) mep@carbon:~$
```

Grafana

So far I added the MPOD setup to Grafana. I'll add more "metrics" over time.



Metadata in data files

I designed the Prometheus MPOD "scraper" that feeds into prometgheus/grafana so it can also give you a "flat" output table – http://localhost:9110/data

I added this to the CAEN setup (open to better suggestions…)

```
rcdaq_client create_device device_file 9 900 "$MYSELF"
rcdaq_client create_device device_file 9 901 "$HERE/CAEN_setup.sh"
rcdaq_client create_device device_command 9 0 "curl http://localhost:9110/data > /tmp/mpod_data.txt"
rcdaq_client create_device device_file_delete 9 910 "/tmp/mpod_data.txt"
rcdaq_client create_device device_rtclock 1 1013
```

```
 $ ddump -t 9 -i -p 910 /scratch/data/CAEN/junk/junk_CAEN-00000378-0000.evt
 -- Event      1 Run:    378 length:   3658 type:   9 (Begin Run Event)   1776802369
channel  outputVoltage  outputMeasurementSenseVoltage outputCurrent  outputMeasurementCurrent
U500  10.0  0.0   2.5   0.0
U501  5.0   0.0   2.5   0.0
U502  5.0   0.0   0.100098 0.0
U503  5.0   0.0   0.5   0.0
U504  5.0   0.0   0.199951 0.0
U505  5.0   0.0   0.199951 0.0
U506  5.0   0.0   0.199951 0.0
U507  5.299805 5.298828 0.5   0.439453
U700  37.499996   0.053073 0.01  0.0
U701  74.5  74.499916   0.01  0.008658
U702  74.5  74.500023   0.01  0.007664
< --- lines deleted --- >
```