

Controls SW Group Meeting

October 26, 2023

Agenda

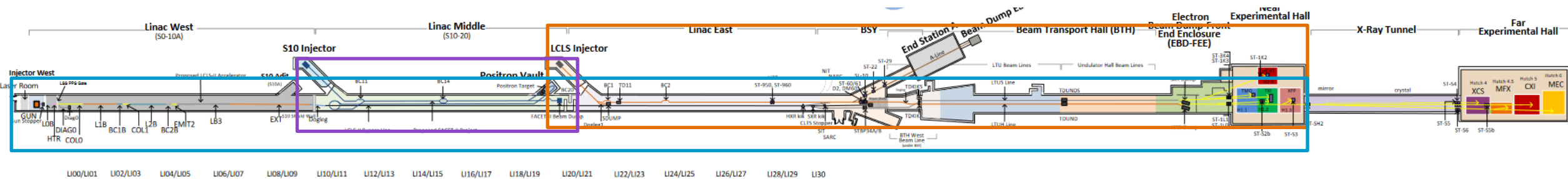
1. State of the machine
2. Schedule & upcoming work
3. *Archiver management*

T. Summers

State of the Accelerators

All (being) recovered following last week's planned maintenance power reduction

- **LCLS-SC: Tuning and characterizing beam through SXR (switch to HXR next week)**
 - Cryomodules back at 2K Monday afternoon (they idle at 4K for power savings last week – only takes a few hours to switch).
 - Beam recovery delayed due to linac middle PPS certifications – but did resume yesterday.
- **FACET: Tuning beam through to experiment area**
 - Last week was PPS testing, a delay in the global certification held off SC linac for a few days.
 - Plan to continue tuning beam and running to experiment area as soon as possible.
- **LCLS-Cu/NC: Running experiments through HXR**
 - Delivering beam to user program.
 - Generally struggled to resume program over weekend following last week's PAMM-lite/power line maintenance



Upcoming maintenance periods

Next week: NC Linac POMM on Wednesday

Following week: Last Linac PAMM of the year!

Start Date ↓	End Date	Program	Machine Status	Description
11/27/2023	01/26/2024	AOSD LCLS	Downtime	Nov-Jan Linac West Downtime
11/27/2023	12/20/2023	All Accelerators	Downtime	Nov-Dec FACET & LCLS Cu Downtime (includes BSY, BTH, and EBD-FEE)
11/07/2023	11/09/2023	All Accelerators	PAMM	11/7 - 11/9 PAMM
11/01/2023	11/01/2023	AOSD LCLS	POMM	LCLS POMM: Klystron Gallery work in LI20-30 only.

- Let me know if you'd like to add a POMM job for next week
- Nov. 7-9th PAMM Planning meeting is next Thursday, get your jobs in by the end of next Tuesday - Halloween :)
- Staggered lock-up times for all accelerators
- Enter your PAMM and Downtime jobs **asap** to help with planning
- Note the 2 buckets, both starting Nov. 27th
 - bucket ending Dec. 20th for Linac Middle, Linac East, BSY & downstream
 - bucket ending Jan. 26th for Linac West (STCAV and LCLS-II-HE work)

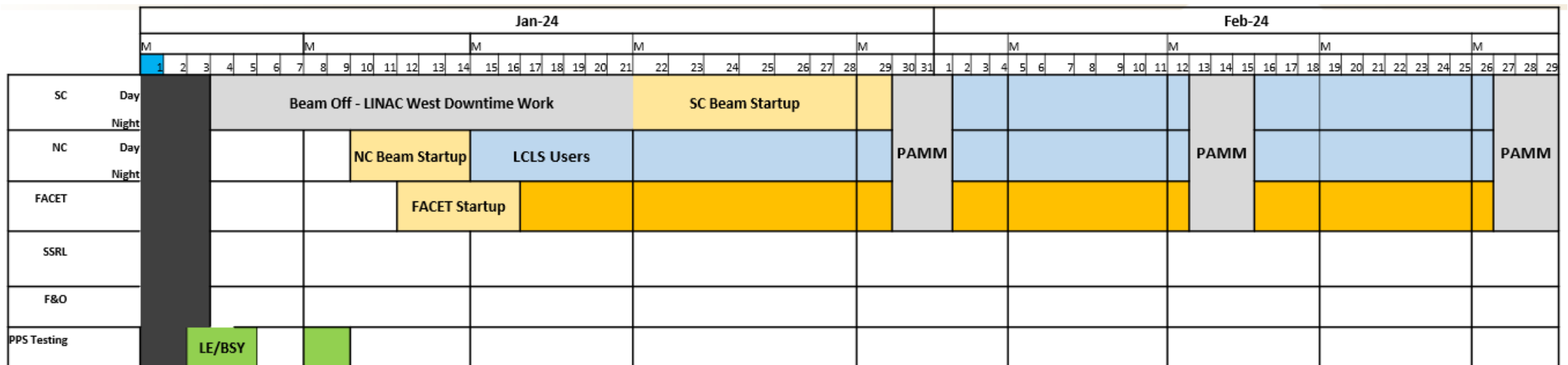
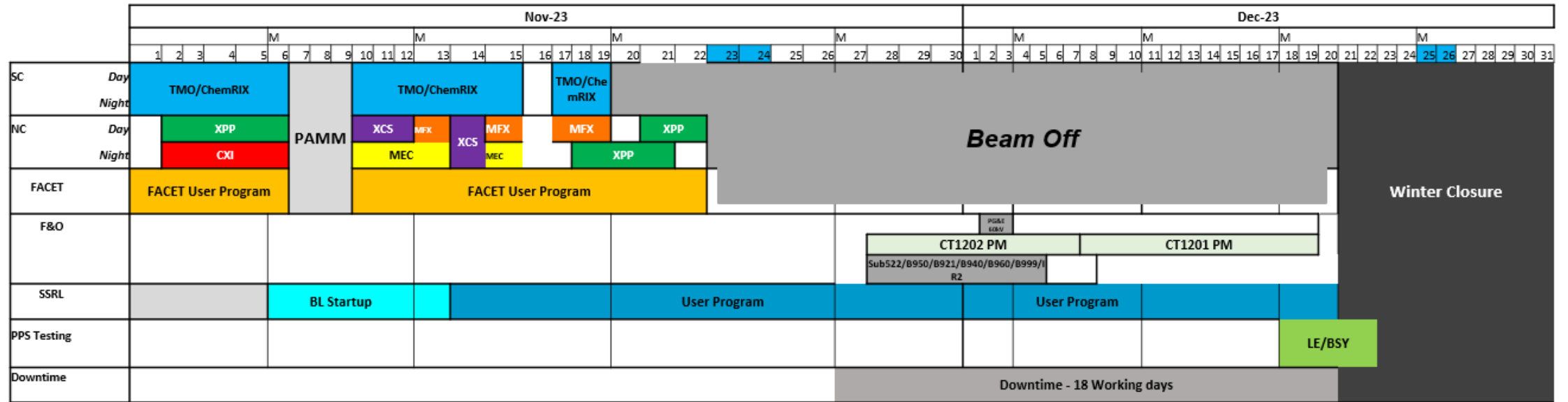
Typical PAMM schedule

	Mon	Tue	Wed	Thu	Fri	Legend	
Linac West						TBD	
S10 Inj						Permitted Access	
Linac Mid						Controlled Access	
S20 Inj						Search	
Linac East						Safety Cert.	
BSY/BTHW						No Access	
BTH						POMM	
EBD-FEE						MD/Comm.	
						Users	

60 kV Power & Lin. Mid. PPS Cert.					Cert. Conting.	
16	17	18	19	20	21	22
Mon	Tue	Wed	Thu	Fri	Sat	Sun

- Everyone agrees – trying to recover the NC linac and deliver to users starting Friday night was not optimal.
- People making the schedule really believed it would be ok since there wasn't invasive work planned on the NC linac.
- But many systems were [unexpectedly] affected by the power switchover and proved difficult to recover and tune up...
- **Matt has a recovery post-mortem scheduled for Oct 31. If you didn't get the invite but would like to attend let him know.**

Big picture through November - February



Looking ahead - November

- All accelerators plan to run the next few weeks
- Electrical substation maintenance Sub 521/B033/B081 Nov. 13-17th – beam programs unaffected
 - B081 is the Magnet Measurement Facility (undulators), plus Shipping/Receiving
- Things get interesting after the Thanksgiving 4-day weekend (*calendars and outage info from Sharon's slides**)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
11/20/2023 • LCLS SC Beam off – prep for Downtime/Access • LINAC West Access – STCAV2/LCLS-II-HE • LINAC Cu User Program • FACET II User Program • SSRL User Program	11/21/2023 • LINAC West Access – STCAV2/LCLS-II-HE • LINAC Cu User Program • FACET II User Program • SSRL User Program	11/22/2023 Downtime Planning Mtg • LINAC West Access – STCAV2/LCLS-II-HE • LINAC Cu User Program – 6pm – 12pm Characterize/Beam Off • FACET II User Program – Characterize/Beam Off • SSRL User Program DEADLINE for Winter Closure Work Requests	11/23/2023 Thanksgiving Holiday	11/24/2023 Thanksgiving Holiday	11/25 & 11/26 • SSRL User Program
11/27/2023 • SSRL User Program • Electrical PM Sub522/IR2 – Preparations tentative Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	11/28/2023 • SSRL User Program • Electrical PM Sub522/IR2 - tentative Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	11/29/2023 Downtime Planning Mtg • SSRL User Program • Electrical PM Sub522/IR2 - tentative Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	11/30/2023 • SSRL User Program • Electrical PM Sub522/IR2 - tentative Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE		

Looking ahead - December

- December we're in the downtime, with Substation 522/IR2 electrical maintenance outage continuing from the last week of November until recovery December 8th.
- Another 60kV switchover scheduled Dec. 2-3 due to continuing maintenance on 230kV line (carried over from last week). Machines not running and Cryoplant idling at 4K so lower impact.

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
				12/01/2023 • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	12/02 & 12/03 • SSRL User Program • Tentative – 60kV Switchover for PG&E 230kV maintenance • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE
12/04/2023 • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	12/05/2023 • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE ALD/Division Directors Review job requests for Winter Closure	12/06/2023 Downtime Planning Mtg • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	12/07/2023 • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	12/08/2023 • SSRL User Program • LCLS-BTH Recovery from Power Outage Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE	12/09 & 12/10 • SSRL User Program • Electrical PM Sub522/IR2 - <i>tentative</i> Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE

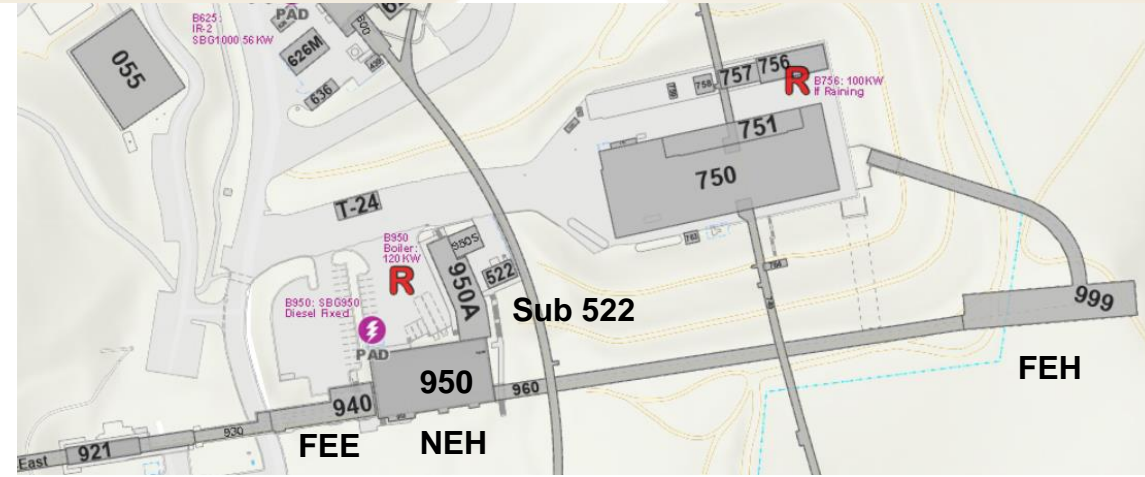
Electrical PM - Sub522/B950/B921/B930/B940/B960/B999

Scope of Work:

- 4x 12kV Substation maintenance
- All PM work for B950 and B921

Impacted by Outage:

- B522/B950
 - Central Utility Plant (CUP) at B950, (*generator required for B950 Boiler*)
 - B950 Lights, HVAC, Power, PCW, Chilled Water from B911 to FEH (rack cooling impacted) including B901, MPS/PPS, FA/ODM
 - Card Readers/Cameras
 - NEH Hutches and Labs
 - Lighting Inverter
 - Electric Vehicle Chargers
 - B950A PCW skid (*K.Chan*)



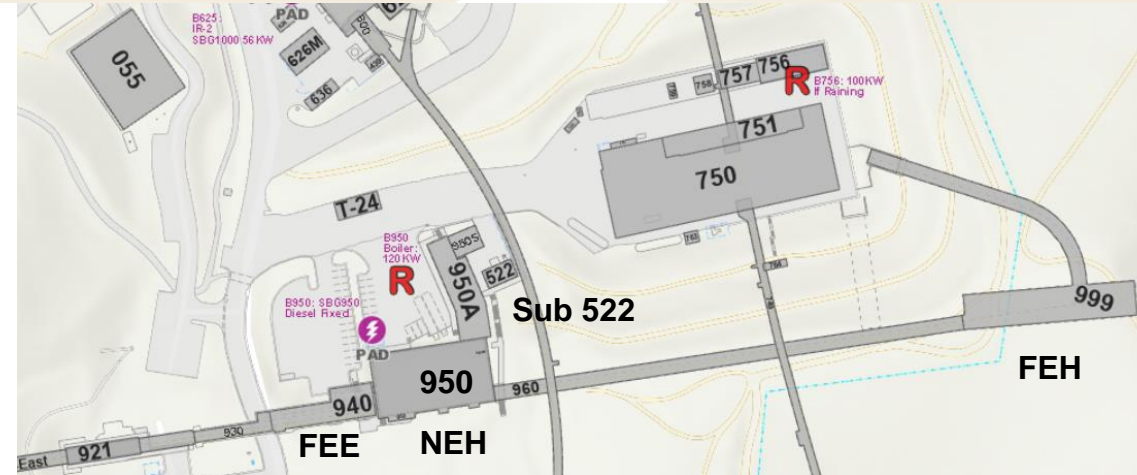
Duration: 8 Days

***Proposing: Nov 28 – Dec 7
(assessing impacts to Downtime work
planning – potential weekend work
needs review)***

Electrical PM - Sub522/B950/B921/B930/B940/B960/B999

Impacted by Outage:

- B930/B940
 - EBD-FEE area – Lights, HVAC, power, PCW, Chilled Water, MPS/PPS
 - *Downtime FEE work and auxiliary utilities required in discussion*
- B960/B999
 - XRT/FEH area – Lights, HVAC, power, PCW, Chilled Water, MPS/PPS, FA/ODM
 - Lighting Inverters
 - FEH Hutches and Labs
 - Card Readers/Cameras
- B921
 - XTCAV
 - half Undulator Hall – requires controlled systems shutdown/recovery (*motion control, vacuum, BPM, magnet PS*)
 - B921 FA
 - Undulator Hall HVAC and Lighting
 - Card Readers/Cameras



Duration: 8 Days

Proposed: Nov 28 – Dec 7

(assessing impacts to Downtime work planning - potential weekend work needs review)

Electrical PM – IR2/B055/B730



Duration: 8 Days

Proposed: Nov 28 – Dec 7

Scope of Work:

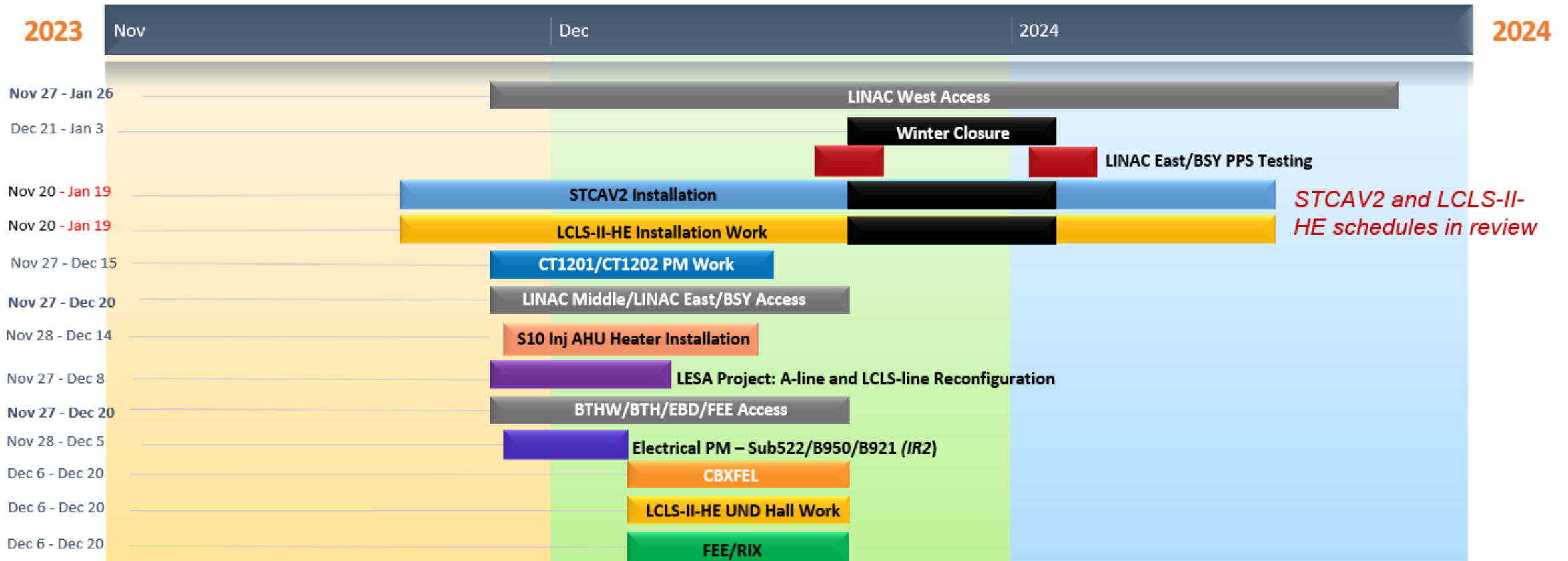
- 12kV Substation Maintenance

Impacted by Outage:

- B620 – LSST Cleanroom (*egress temporary lighting requested*)
- B621/B624/B626/B625
- B055 – ARCAS Gym (*any scheduled classes will be cancelled the week of the outage*)
- B730 – SSRL shop space/elevator sump pump (*generator required*)
- Pumps in the tunnels to move water out to the polytank (cord and plug)
- FA/ODM – need to be secured by CEFFT
- PMS Radiation Monitors fed from B625 (*notification to Ann Harris, RP*)

Winter Downtime and Closure

- Reminder that no work is allowed to be performed during the winter **closure** Thurs. Dec. 21st – Thurs. Jan. 4th without senior management approval – deadline for requests is Wed. Nov. 22nd (day before Thanksgiving).
- No un-approved access to the site, even for 'green' work.
- List of high-impact jobs during the downtime:



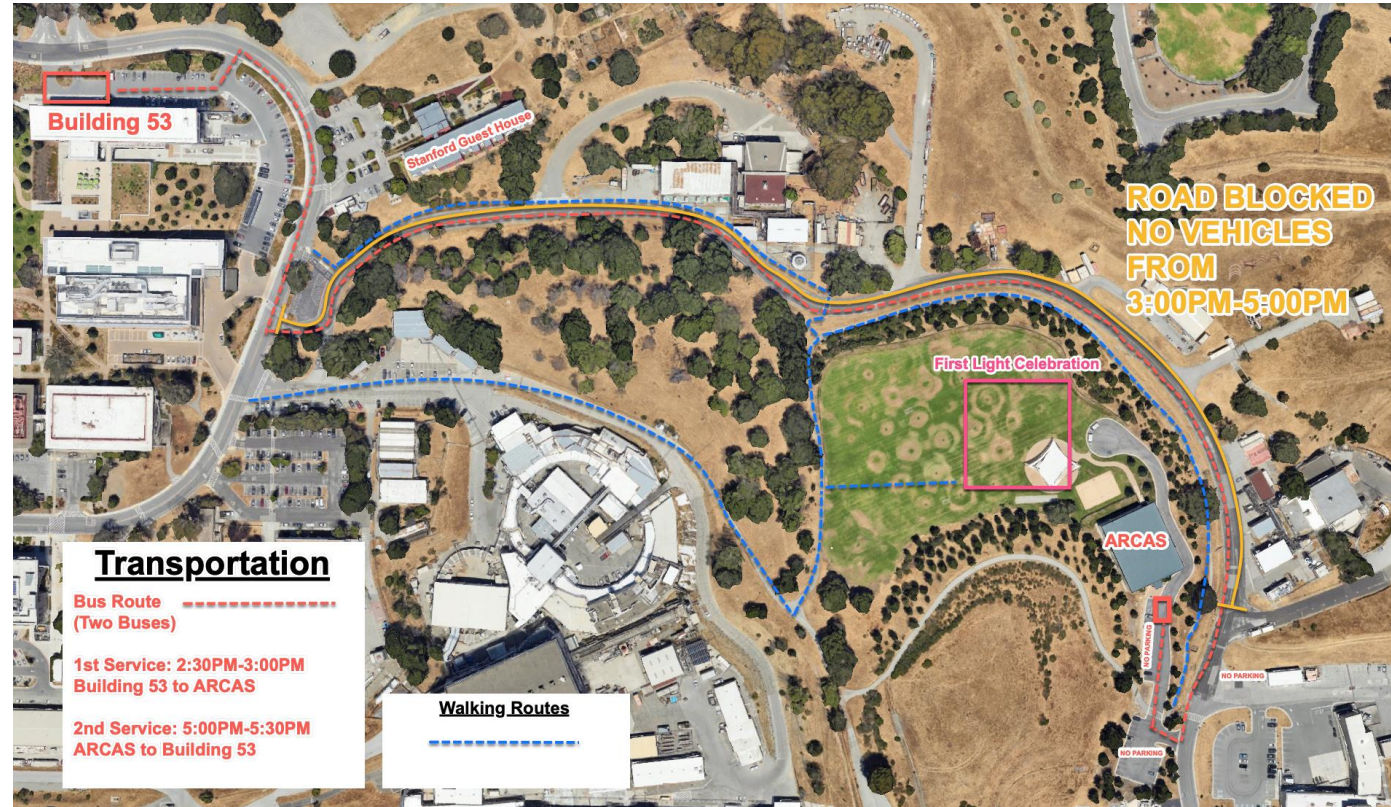
First Light Event today 3-5 pm - Arrillaga Field

See Mike Dunne's email from Tuesday:

Joining us for the celebration will be:

- Secretary of Energy Jennifer Granholm
- Under Secretary for Science and Innovation Geraldine Richmond
- Director of the Office of Science Asmeret Asefaw Berhe
- DOE SLAC Site Office Manager Hanley Lee
- Stanford interim president Richard Saller
- SLAC Director John Sarrao

After formal remarks, we will gather for a group photo and then raise a toast, followed by the opportunity to mingle with colleagues while enjoying snacks and a live band!



Welcome Tiffany Tran!



- New Intern! Will be working with Claudio and Mike Z to prototype a unified and updated set of web tools for services such as CATER, DEPOT, CAPTAR, and others.
- Born and raised in San Jose, California
- Graduated from UCI in June 2023 with a Bachelor's degree in Informatics (emphasis in Human Computer Interactions) and minor in Management
- Worked as a Software Developer intern for capstone projects at Octane OC and Odyssey App
- Worked as a Recreation Leader for the City of San Jose since 2016
- Avid foodie and love road trips and traveling
- **Excited to be here :)**

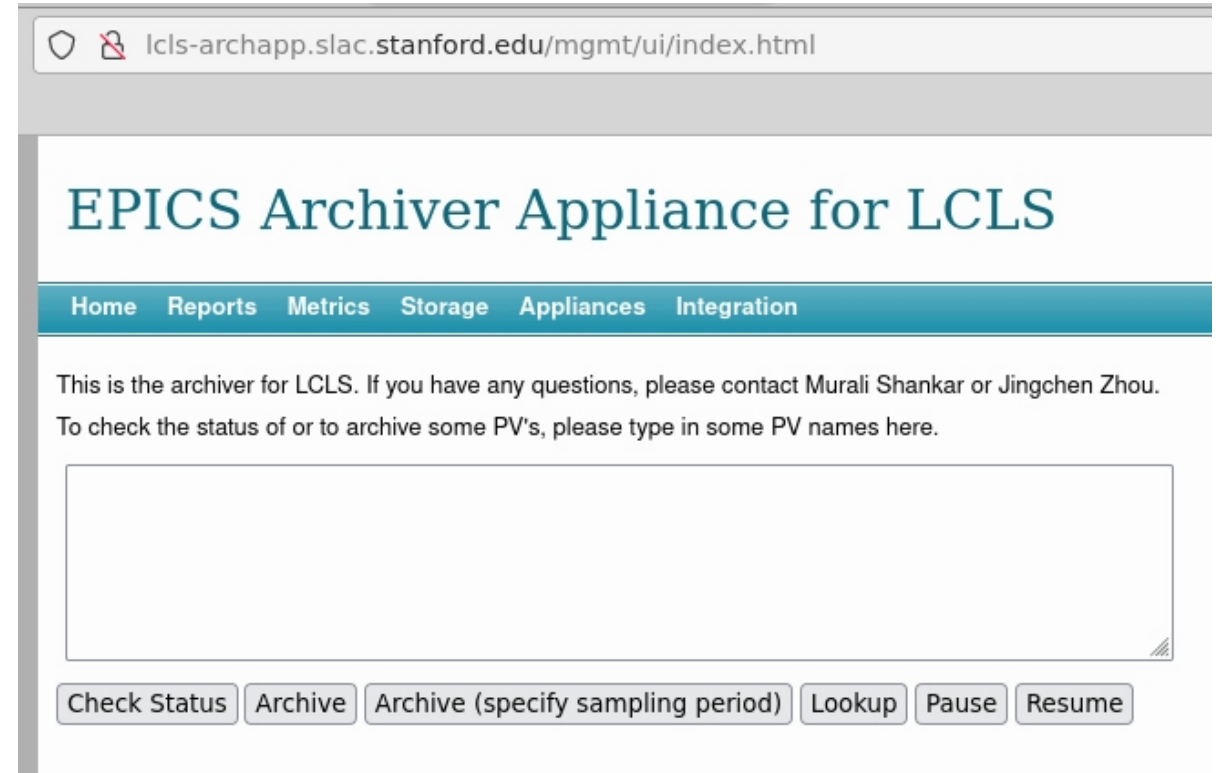
Bonus Content

How do we manage our archived data?

Learn how to use the archiver's web interface to see the state of the archiver servers and their archived PVs, plus how to pause/resume or change how a PV is being archived through the web or bulk scripts.

How do we manage our archived data?

- The Archive Appliance is the standard EPICS archiver used all around the world
 - Designed and build here at SLAC!
Murali Shankar is architect and guru.
 - Official user guide is here:
https://slacmshankar.github.io/epicsarchiver_docs/userguide.html
- Each appliance has a web management page
 - <http://lcls-archapp.slac.stanford.edu/mgmt/ui/index.html>
 - <http://facet-archapp.slac.stanford.edu/mgmt/ui/index.html>
 - <http://testfac-archapp.slac.stanford.edu/mgmt/ui/index.html>
 - Access these from anywhere on the SLAC network
Username = eoicdesk
Remember this was set up to “addPVS”
- The cryoplant archiver is a bit different
 - Doesn't have the same webserver setup, can only be accessed from the controls network and needs no authentication
 - <http://cryo-archapp.slac.stanford.edu:17665/mgmt/ui/index.html>



Getting information on the Archiver servers

Archiver “Storage” section

- Currently have several servers or ‘appliances’ running at SLAC to support LCLS, FACET, Cryoplant, TestFac, (the Photon side)
 - Only LCLS uses a cluster of 7 servers (accessed simply by pointing at ‘lcls-archapp’), others are single-instance

EPICS Archiver Appliance for LCLS

Instance Name	Status	PV Count	Event Rate	Data Rate (GB/day)	Capacity consumed
lcls-archapp01	Working	222190	7,498.06	13.63	N/A
lcls-archapp02	Working	212451	10,576.24	18.17	N/A
lcls-archapp03	Working	214934	8,496.4	14.03	N/A
lcls-archapp04	Working	233365	15,231.64	24.73	N/A
lcls-archapp05	Working	261150	14,785.29	24.59	N/A
lcls-archapp06	Working	308167	13,199.62	23.49	N/A
lcls-archapp07	Working	135329	1,634.91	4.19	N/A

Here are the some detailed storage metrics of the appliance **lcls-archapp01**.

Name	Total space (GB)	Available space (GB)	Available space (%)
STS	62.61	61.72	98.58
MTS	1,099.59	768.49	69.89
LTS	279,396.77	108,277.26	38.75

EPICS Archiver Appliance for FACET

Instance Name	Status	PV Count	Event Rate	Data Rate (GB/day)	Capacity consumed
facet-archapp	Working	235956	1,977.54	3.57	N/A

Here are the some detailed storage metrics of the appliance **facet-archapp**.

Name	Total space (GB)	Available space (GB)	Available space (%)
STS	63	62.58	99.33
MTS	824.48	769.12	93.29
LTS	279,396.77	108,277.26	38.75

Short, Medium, and Long Term Storage

Three tiers that data is constantly moving through

- Short (STS) – memory on each server
- Medium (MTS) – local disk on each server
- Long (LTS) – now on the S3DF – easy to extend TBs as needed now (just \$\$\$)
 - LCLS and FACET have the same LTS so the numbers match
 - The CRYO archiver is a local backup of data on the LCLS archiver, so it has no separate LTS

EPICS Archiver Appliance for LCLS

Instance Name	Status	PV Count	Event Rate	Data Rate (GB/day)	Capacity consumed
lcls-archapp01	Working	222190	7,498.06	13.63	N/A
lcls-archapp02	Working	212451	10,576.24	18.17	N/A
lcls-archapp03	Working	214934	8,496.4	14.03	N/A
lcls-archapp04	Working	233365	15,231.64	24.73	N/A
lcls-archapp05	Working	261150	14,785.29	24.59	N/A
lcls-archapp06	Working	308167	13,199.62	23.49	N/A
lcls-archapp07	Working	135329	1,634.91	4.19	N/A

Here are the some detailed storage metrics of the appliance **lcls-archapp01**.

Name	Total space (GB)	Available space (GB)	Available space (%)
STS	62.61	61.72	98.58
MTS	1,099.59	768.49	69.89
LTS	279,396.77	108,277.26	38.75

EPICS Archiver Appliance for FACET

Instance Name	Status	PV Count	Event Rate	Data Rate (GB/day)	Capacity consumed
facet-archapp	Working	235956	1,977.54	3.57	N/A

Here are the some detailed storage metrics of the appliance **facet-archapp**.

Name	Total space (GB)	Available space (GB)	Available space (%)
STS	63	62.58	99.33
MTS	824.48	769.12	93.29
LTS	279,396.77	108,277.26	38.75

EPICS Archiver Appliance for CRYO

Instance Name	Status	PV Count	Event Rate	Data Rate (GB/day)	Capacity consumed
cryo-archapp	Working	37445	862.49	1.42	N/A

Here are the some detailed storage metrics of the appliance **cryo-archapp**.

Name	Total space (GB)	Available space (GB)	Available space (%)
STS	47.22	47.1	99.75
MTS	457.82	155.9	34.05

More Archiver Metrics

Total vs Connected vs Paused PV counts

- **Check the health and workload of each archiver**
 - Each one has about 200K PVs, but many 10Ks are paused*
 - The data rate is just under 1 TB per week at current rate
- **The archiver is essentially doing a 'camonitor' for each archived PV and storing that data in individual text files (+++millions of them!!!)**
 - If the PV becomes disconnected, the archiver keeps trying to reconnect but more slowly over time, and eventually it becomes Paused.
 - There is an automated processes that tries to Resume these, but there's a history of this not working well.
- **All these disconnected PVs are why it takes several hours for each appliance to reconnect to all its PVs after a reboot**
 - We're going to start a campaign to clean up the dead PVs
 - First – we're QA'ing that all PVs in .archive files are actually in the archiver
 - Next – we'll combine lists of dead PVs by subsystem, check with the experts, and delete them if they're really gone (e.g. renames like UNDO -> UNDS) – the data is kept, or pointed at a new PV name.

Q Icls-archapp.slac.stanford.edu/mgmt/ui/metrics.html

EPICS Archiver Appliance for LCLS

Home Reports Metrics Storage Appliances Integration

25 Page 1 of 1

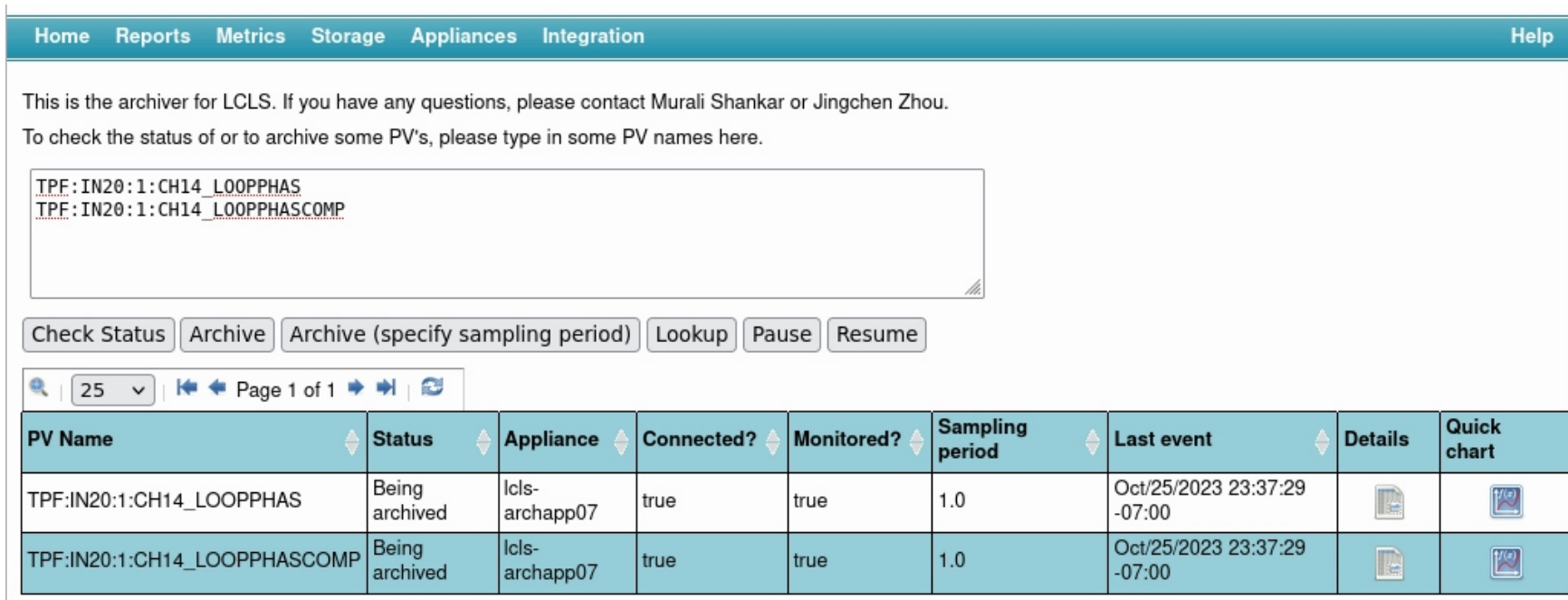
Instance Name	Status	PV Count	Connected	Event Rate	Data Rate (GB/day)
Icls-archapp01	Working	222190	222078	7,500.64	13.63
Icls-archapp02	Working	212451	211888	10,585.26	18.19
Icls-archapp03	Working	214934	213530	8,501.07	14.04
Icls-archapp04	Working	233365	233183	15,238.65	24.74
Icls-archapp05	Working	261150	260943	14,790.51	24.6
Icls-archapp06	Working	308167	307966	13,208.52	23.5
Icls-archapp07	Working	135329	135205	1,634.95	4.19

Here are the some detailed metrics of the appliance **Icls-archapp02**





Attribute	Detail
Appliance Identity	Icls-archapp02
Total PV count	212451
Disconnected PV count	563
Connected PV count	211888
Paused PV count	72150
Total channels	1327911
Approx pending jobs in engine queue	1
Event Rate (in events/sec)	10,585.43
Data Rate (in bytes/sec)	225,999.64
Data Rate in (GB/day)	18.19
Data Rate in (GB/year)	6,637.65
Time consumed for writing samplebuffers to STS (in secs)	1.91
Benchmark - writing at (events/sec)	55,362.36
Benchmark - writing at (MB/sec)	1.13
PVs pending computation of meta info	0
Total number of reference counted channels	1310363
Total number of CAJ channels	1310363
Channels with pending search requests	2049 of 1310363
Total number of ETL(0>1) runs so far	1332
Average time spent in ETL(0>1) (s/min)	29.1

How to see what a PV is doing?

- **Dump a list of PVs in the box and click 'Check Status'**
 - Or enter part of the PV (e.g. TPF:IN20:1:CH14*) and click 'Lookup' to (eventually) return a list of all matching archived PVs
- This page refreshes every minute and always puts you back to the top of Page 1, which is annoying with long lists.
- Open a PV's Details link in a new tab to see it's parameters and make some changes if needed (next slide)



The screenshot shows the LCLS archiver interface. At the top, there is a navigation bar with links for Home, Reports, Metrics, Storage, Appliances, Integration, and Help. Below the navigation bar, there is a message: "This is the archiver for LCLS. If you have any questions, please contact Murali Shankar or Jingchen Zhou. To check the status of or to archive some PV's, please type in some PV names here." Below this message is a text input field containing two PV names: "TPF:IN20:1:CH14_LOOPPHAS" and "TPF:IN20:1:CH14_LOOPPHASCOMP". Below the input field are several buttons: "Check Status", "Archive", "Archive (specify sampling period)", "Lookup", "Pause", and "Resume". Below the buttons is a pagination control showing "25" items per page and "Page 1 of 1". Below the pagination control is a table with the following data:

PV Name	Status	Appliance	Connected?	Monitored?	Sampling period	Last event	Details	Quick chart
TPF:IN20:1:CH14_LOOPPHAS	Being archived	lcls-archapp07	true	true	1.0	Oct/25/2023 23:37:29 -07:00		
TPF:IN20:1:CH14_LOOPPHASCOMP	Being archived	lcls-archapp07	true	true	1.0	Oct/25/2023 23:37:29 -07:00		

Archive PV Details

- See the type, rate, last event, and more!
- Check for errors – like events lost due to the buffer being full or the type being changed
- Updated the rate from the link on the right

Change the archival parameters for PV TPF:GUNB:1:CH14_LOOPPHAS

Choose the sampling mode for these PVs:

Monitor ▾

Set the sampling period for the PV to :

1.0 (secs)

Ok

- Pause, Resume, Delete, or Rename PVs here too

Change the name of PV TPF:GUNB:1:CH14_LOOPPHAS to the specified name

Enter the new name:

Ok

- Fixing a type change manual – Pause the PV, Delete it (but not the data – it's a checkbox), then Re-Archive it. The data *should* stitch together. But please ask for help on this one.

Attribute	Detail
PV Name	TPF:GUNB:1:CH14_LOOPPHAS
Instance archiving PV	lcls-archapp07
Archival params creation time:	Jun/26/2023 15:27:18 -07:00
Archival params modification time:	Jun/26/2023 15:27:18 -07:00
Archiver DBR type (from typeinfo):	DBR_WAVEFORM_DOUBLE
Is this a scalar:	No
Number of elements:	15
Precision:	0.0
Units:	ns
Is this PV paused:	No
Sampling method:	MONITOR
Sampling period:	1.0
Are we using PVAccess?	No
Extra info - SCAN:	Passive
Extra info - RTYP:	subArray
Channel Name	TPF:GUNB:1:CH14_LOOPPHAS
Host name	lcls-prod01.slac.stanford.edu
Controlling PV	
Is engine currently archiving this?	yes
Archiver DBR type (initial)	DBR_WAVEFORM_DOUBLE
Archiver DBR type (from CA)	DBR_WAVEFORM_DOUBLE
Number of elements per event (from CA)	15
Is engine using monitors?	yes
What's the engine's sampling period?	1.0
The SCAN period (ms) after applying the jitter factor	0
Is this PV currently connected?	yes
Connection state at last connection changed event	Not connected
When did we receive the last event?	Oct/25/2023 23:36:49 -07:00
What did we last push the data to the short term store?	Oct/25/2023 23:36:42 -07:00
When did we request CA to make a connection to this PV?	Aug/31/2023 10:26:46 -07:00
When did we first establish a connection to this PV?	Aug/31/2023 10:26:47 -07:00
When did we last lose and reestablish a connection to this PV?	Oct/19/2023 16:22:51 -07:00
When did we last lose a connection to this PV?	Never
How many times have we lost and regained the connection to this PV?	9
How many events so far?	544436
How many raw scan events so far?	0
How many events lost because the timestamp is in the far future or past so far?	0
Timestamp of last event from the IOC - correct or not.	Oct/25/2023 23:36:49 -07:00
How many events lost because the sample buffer is full so far?	30
How many events lost because the DBR_Type of the PV has changed from what it used to be?	0
How many events lost totally so far?	30

Change archival parameters

Pause archiving

Resume archiving

Delete PV

Consolidate data

Rename PV

Change appliance

What if the PV isn't being archived?

- If PVs are 'Not being archived' but you want them to be*
 - Just click the "Archive" button.
 - It will switch to 'Initial sampling' for a minute while it monitors the value and tries to be smart about setting the correct buffer (rate). If you want to set a specific scan/monitor and rate, click the "Archive (specific sampling period)" button and manually enter it instead.
 - If it's already archived nothing happens so it's safe.
 - If it's already archived, using the (specify sampling period) won't do anything, you need to go to the details to change how it's configured.
- This screenshot is showing something important!
 - The FACET archiver can't read the Cryoplant's PVs so after 'Initial sampling' it will go back to 'Not being archived'
 - be careful you're logged onto the correct archiver!

EPICS Archiver Appliance for FACET

PV Name	Status	Appliance	Connected?	Monitored?	Sampling period	Last event
CTD:CP14:1120:TEMP	Not being archived	N/A	N/A	N/A	N/A	N/A
CTD:CP14:1130:TEMP	Not being archived	N/A	N/A	N/A	N/A	N/A
CTD:CP14:1140:TEMP	Not being archived	N/A	N/A	N/A	N/A	N/A

* Best practice is to always use the .archive files in your IOC as the source of truth – only enter PVs through this interface if you need to get them in faster than you can release an updated IOC and .archive files. If you do add them through the website way, you should also update the .archive files for consistency. Mike Z has training slides from several years ago explaining all about how the .archive files work – ask if you would like those.

Bulk actions

- Used to be able to paste 1000s of PVs in this interface and click Archive, Pause, or Resume.
 - Now, this only seems to work for ~25 PVs at a time (not sure if this is a bug?)
- The easier way to do bulk actions is through scripts
see https://slacmshankar.github.io/epicsarchiver_docs/api/mgmt_scriptables.html
- There are some **archiver_admintools** Python files floating around that build these scriptables into usable functions we can use on text files with lists of PVs (really useful for renaming big lists!)
 - These need to be updated, and will be soon (Chris G has worked with them a lot)
 - we'll share the updated repo info then
 - For now, please come and ask us if you need to use them or understand what they can do!

```
origin /afs/slac/g/cd/swe/git/repos/slac/archiver/archiver_admintools.git/ (push)
tsummers@mcclogin:~/Archiver/archiver_admintools$ ll
total 60
-rwxrwxr-x 1 tsummers cd 1624 Sep 12 2022 addPVAliases.py
-rwxrwxr-x 1 tsummers cd 1886 Sep 12 2022 appendAndAlias.py
drwxrwxr-x 3 tsummers cd 2048 Sep 12 2022 archiver_admintools
-rwxrwxr-x 1 tsummers cd 1511 Sep 14 2022 changeArchivalParameters.py
-rwxrwxr-x 1 tsummers cd 1800 Sep 12 2022 consolidatePVData.py
-rwxrwxr-x 1 tsummers cd 2221 Feb 16 2023 deletePVList.py
-rwxrwxr-x 1 tsummers cd 1291 Sep 12 2022 getPVStatus.py
-rwxrwxr-x 1 tsummers cd 629 Jul 27 14:51 getPausedPVs.py
-rwxrwxr-x 1 tsummers cd 2139 Sep 12 2022 pausePVList.py
-rw-rw-r-- 1 tsummers cd 7314 Jul 10 17:29 pv_list.txt
-rw-rw-r-- 1 tsummers cd 26917 Oct 28 2022 pv_list_full.txt
-rwxrwxr-x 1 tsummers cd 2327 May 10 13:35 renamePVList.py
-rwxrwxr-x 1 tsummers cd 1560 Jun 22 23:54 resumePVList.py
-rw-rw-r-- 1 tsummers cd 24 Jul 27 14:59 temp.txt
```