

Controls SW Group Meeting

April 20, 2023

T. Summers

SLAC NATIONAL
ACCELERATOR
LABORATORY

Stanford University |  U.S. DEPARTMENT OF ENERGY

State of the Accelerators

“Purgatory.” - ACR

All machines are currently off while several major tasks are underway:

- Complete arc-flash re-labeling of breakers needed for operation.
 - Reminder to not operate any breaker with label older than March 2023.
- Implement CAP* regarding CoHE* and LOTO training.
 - More LOTO instructors being trained, electrical workers assigned new training.
- Cryoplant 1 recovery planned to start next week and will take a month to reach stable 2K.
- LCW restoration S10-S30 – planning underway targeting S25 & S26 4/25-26, then S27 & S28 4/27-28.
 - Controls preparation will be included in planning – let me know if you have any special concerns.
- Detailed machine access schedule being maintained during this strange time:
 - https://slac.sharepoint.com/:x:/s/AOSD/aosd_maint/EfpVyvtO_5ZHimHRpyWoE3EBPfB9x5YwPFhBqHqawloxdg?e=S4p9pe
- ACR is staffed M-F 7am-5pm, SPEAR M-F 8am-4pm, otherwise call 650-926-2151 for on-call EOIC.
- AD goal to recover SC gun as soon as possible to check health.

Controls Software Status

LAF* currently in a PAMM (Tuesday to Thursday)

- 25 software jobs approved. Please close them when finished, otherwise we'll roll them to the next bucket.

Schedulers are committed to keeping a consistent PAMM schedule

- Please continue to add your jobs into the appropriate buckets.
- Benign software jobs continue to be handled on case-by-case basis.

08/01/2023	09/16/2023	All Accelerators	Downtime	August/September downtime (LCLS SC, FACET, LCLS Cu)
05/30/2023	06/01/2023	All Accelerators	PAMM	5/30-6/1 PAMM
05/16/2023	05/18/2023	All Accelerators	PAMM	5/16-5/18 PAMM
05/02/2023	05/04/2023	All Accelerators	PAMM	5/2-5/4 PAMM
04/24/2023	04/28/2023	All Accelerators	Downtime	Accelerator Work for 4/24-4/28. No access to Sectors 0-30 or BSY.
04/18/2023	04/20/2023	All Accelerators	PAMM	4/18-4/20 PAMM

Controls work that may impact you

- BSA receiver stress testing on Prod (timing team)
- FACET controls environment upgrade
- One (of seven) of the lcls archive appliances getting upgraded to RHEL7 tomorrow morning – will be gap in data


Plan for Next Week

From Sharon's Wednesday Downtime Planning meeting

Dashboard: <https://slac.sharepoint.com/sites/AD/committees/iwp/Pages/IWP-Dashboard-2022-2023-Downtime.aspx>

Weekly slides:

https://slac.sharepoint.com/%3ap%3a/r/sites/AD/committees/iwp/shared_docs/IWPC_2023_Downtimes/DowntimePlanning_19Apr2023.pptx

April					
Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
04/17/2023 <ul style="list-style-type: none"> • LCW S10-30 WPC • Cryoplant – Gas Circulation • Hutch PPS end-to-end secure loop 	04/18/2023 <ul style="list-style-type: none"> • PAMM • LCW S10-30 WPC • Cryoplant – Gas Circulation 	04/19/2023 Downtime Planning Mtg  <ul style="list-style-type: none"> • PAMM • LCW S10-30 WPC • Cryoplant – Gas Circulation 	04/20/2023 <ul style="list-style-type: none"> • PAMM • LCW S10-30 WPC • Cryoplant – LINAC to 100K – pending approvals • SSRL Past-Present-Future 50th Anniversary 	04/21/2023 <ul style="list-style-type: none"> • LCW S10-30 WPC • Cryoplant – LINAC to 100K – pending approvals 	04/22 & 04/23
04/24/2023 <ul style="list-style-type: none"> • LINAC Substation Maintenance - tentative • Cryoplant – LINAC to 4K 	04/25/2023 <ul style="list-style-type: none"> • LINAC Substation Maintenance - tentative • Cryoplant – LINAC to 4K 	04/26/2023 Downtime Planning Mtg <ul style="list-style-type: none"> • LINAC Substation Maintenance - tentative • Cryoplant – LINAC to 4K 	04/27/2023 <ul style="list-style-type: none"> • LINAC Substation Maintenance - tentative • Cryoplant – LINAC to 4K • LCLS SC Gun Startup - tentative 	04/28/2023 <ul style="list-style-type: none"> • LINAC Substation Maintenance tentative • Cryoplant – LINAC to 4K • LCLS SC Gun Startup - tentative 	04/29 & 04/30 <ul style="list-style-type: none"> • Cryoplant – Fill • LCLS SC Gun Startup - tentative

Disclaimer!

This schedule is a current best guess. Next week it will look different.

The dashboard link has lots of good links for WPC and a link to the current week's detailed slides - always a valuable read.

All zones will be in No Access except for BTH and EBD-FEE which will be open starting Tuesday 4/25.

PPS and BCS testing is ongoing.

Update on RHEL7 upgrade project

Fantastic progress over the past few months!

Many thanks to Ken and Jingchen, and to Mike, Debbie, and everyone else involved with coordinating, planning, testing, and checking their systems during this process.

Full list of controls computers: <https://www.slac.stanford.edu/grp/cd/soft/unix/slaonly/lclsUNIX.html>

Done:

- lcls-daemon1 (April 13)
- lcls-daemon0 (April 4)
- ACR OPIs (March 28)
 - Excluding FACET corner, only log into these as fphysics
- lcls-srv01 (March 21)
- lcls-srv02 (March 14)
- lcls-srv04 (February 21)

Upcoming – dates TBD:

- cryoplant OPIs (today!)
- cryo-daemon1
- facet-daemon1
- mcclogin
- FACET ACR OPIs
- lcls-daemon02
- archive appliances:
LCLS(1-7), FACET, Cryo, Testfac
 - lcls-archapp1 replaced with lcls-archapp11 tomorrow

Notes about RHEL7 – OPIs and remote servers

OPIs in the ACR and Cryoplant CMR

- Access the login prompt by pulling up the splash screen with the mouse
- Hit the Windows button to get to a display showing all the running applications
 - You also get it by moving the mouse to the top left corner of the screen – yes, it’s annoying – what was RedHat thinking?!
- Hit the control key to get a sonar ping showing where the mouse cursor is.
- The operators are good resources for questions, otherwise reach out to me with comments and issues.

Logging into remote production servers

- Reminder to remove the old ssh key before trying to ssh to lcls-srv01 (or lcls-srv04) - one time only:

On mcclogin, type: **ssh-keygen -R lcls-srv01**

ssh to lcls-srv01 and reply Yes to the prompt about adding to known hosts

- I’m still getting occasional messages from infrequent users that something’s not right (e.g. x-forwarding disabled)

Notes about RHEL7 – IOC daemons

Main difference – softiocs are now managed with systemd instead of init.d

(Thanks Kristi for sending this information in a cheat sheet)

- Auto-startup on a daemon server (see examples below).
 - **RHEL5 and RHEL6**
ssh laci@lcls-daemon1
cd /etc/init.d
./st.<ioc> <stop,start,restart>
 - **RHEL7**
ssh laci@lcls-daemon1
systemctl <stop,start,restart> st_<ioc>.service
Note: the service files are at /etc/systemd/system
- If you forget the command to restart your ioc from the daemon server, the commands can be found at the end of \$TOOLS/script/siocRestart.

Other Reminders and Things

- You'll notice extra security today – it's for SSRL's 50th year anniversary events.
- Good news! Chris Myers will be starting in my team on May 1st.
- The North Access/Bypass Road middle section is closed due to a big sink hole, fix date TBD.
- Please do not use “cram upgrade -f <facility> -l ALL” unless rebooting all CPUs and IOCs affected.
 - Risk creating problems for the next person who boots in the untested changes.
- Conferences are back! I'm offering my free services as a conference editor :)
 - Happy to pre-edit your papers (even the references) so you can get 'green-stamped'
- If you have any issues, reminders, requests, or did-you-knows to include in this meeting send them to me!

Welcome Mike Puckett!



- Started with us April 10, reporting to Jeremy
- Graduated from University of Texas at Austin with a Bachelor degree in Computer Science.
- Worked at Apple from 1988-2004 in CPU Software organization in many engineering positions as well as management.
- Worked at Amazon on team that brought the original Kindle to market (Amazon's first physical device!)
- Worked at Sleep Number making the smart beds smarter (presented this topic during his interview).
- Worked at several Silicon Valley start ups along the way.
- Enjoys hiking in the Bay Area, especially at Point Reyes.

Special Presentation

Drake Jha - SC Timing System: BSA Plot and Diagnostic Tools

Topic 1) BSA has now available a more user-friendly interface to view data point during an acquisition. It is also possible to read the X,Y of a specific point in the plot.

Topic 2) SC Diagnostic Tools includes raw troubleshooting for SC Timing and shelf manager. The ultimate goal here is to have a user-friendly interface to query the quality of the timing signal all the way to a receiver level. We are improving the interface as we are using the tool during commissioning.