

FST Expert Information

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March 25th, 2024

Required Server Access (Complete ASAP)

1. Go to <https://www.star.bnl.gov/starkeyw> and log in with your Kerberos credentials (RCF account) and upload your Public SSH key in Open SSH format.
2. Request access to the following Accounts/Hosts:
 - Under “Reason for this association:”, state “FST expert”.

This account name will be replaced by your RCF account name



ACCOUNT ▲	HOST ▾
evpops	daqman.starp.bnl.gov (130.199.60.86)
evpops	evp.starp.bnl.gov (130.199.60.32)
evpops	rts02.starp.bnl.gov (130.199.61.167)
gwilks3	onlcs.starp.bnl.gov (130.199.60.57)
sysuser	alh.starp.bnl.gov (130.199.60.2)
sysuser	sc5.starp.bnl.gov (130.199.60.78)
sysuser	softioc4.starp.bnl.gov (130.199.60.51)
ACCOUNT	HOST

3. Email me (gwilks3@uic.edu) that you have done so. I will reach out to Michael Poat and confirm that you need access to these servers for your work as an FST expert.
4. I will send you my ssh config file to make login much simpler for you.

Required Server Access (Complete ASAP)

Host	Description
daqman.starp.bnl.gov	For the pedestal .txt files and apv settings.
evp.starp.bnl.gov	Event pool machine, have access to it (newest daq files). Can run star-sw (can do starver) Not recommended for time consuming processes.
rts02.starp.bnl.gov	Run control.
onlcs.starp.bnl.gov	Access to the event pool. Able to run star-sw (can do starver). You can run your offline tests here if you need event pool daq files. Job submission is also available.
alh.starp.bnl.gov	Alarm handler: to test alarm mechanism.
sc5.starp.bnl.gov	Slow control GUIs
softioc4.starp.bnl.gov	Access to the FST MPOD and cooling IOCs

Other Important Information

- Sign up for the following email lists on this webpage (<https://www.star.bnl.gov/central/lists/>):
 - “Operations” under “Experiment”: important for knowing when there will be access days and other issues/maintenance occurring at STAR.
 - “FST” under “Detector Subsystems”: all FST related information.
 - “STAR Forward Upgrade” under “Detector Subsystems”: important updates about the forward upgrade system.
- You will need access to the Google Drive which contains most of the information you will need as expert.

General Duties

- Respond to phone calls during the run if a problem should arise with the FST.
 - Multiple people are listed as experts, so shift-crew can always reach out to us as well.
- Refilling the FST cooling system when system goes below 50% capacity (~ every 2 months).
- Dealing with any FST alarms signaled by the alarm handler.
 - Too high or low bias current, bias voltage, temperature, etc.
- Updating the FST pedestal/noise database periodically (~ every 10 days).
 - Gavin Wilks or Ziyue Zhang can handle this.

- Always feel free to contact another expert if you are not sure exactly what to do.

Important In-person Training (April 2-4, 2024)

1. Walkthrough of shift-crew GUI, expert GUI, and expert cooling GUI.
2. How to pump more NOVEC cooling fluid into smaller container.
3. How to refill FST cooling system with NOVEC.
4. How to turn on/off cooling with expert cooling GUI.
5. Where the FST MPOD crates are located (manual switches for on/off).
6. Adjusting hardware limit of bias current.
7. Turning on and ramping FST HV with shift crew GUI.
8. How to troubleshoot issues with FST HV ramping.
9. How to take a pedestal run for the FST.
10. Comparing pedestals/noise to previous pedestals/noise.
11. How to readout sensor/PPB temperatures.
12. Turning off the FST with shift crew GUI.
13. Where to find spare parts and how to switch them.

Other Training (In-person or Remote)

1. How to access GUIs and run control remotely.
2. Updating software bias voltage/current limits.
3. Updating bias voltage/current alarm limits.
4. How to update pedestal/noise database.

Documents in FST_Documents (Google Drive)

FstSlowControl/MPOD/

- FstMpodSlowControlPVMap_ExpertGUI.pdf :
 - All PVs for the FST system and where they are displayed in the expert GUI.
- FstMpodSlowControlInstruction_ShiftCrewV2.9.pdf :
 - All shift crew instructions. In general, these can be followed by the expert, but portions will talk about consulting an expert. For this, refer to FstMpodSlowControlInstruction_ExpertV3.0.pdf.
- FstMpodSlowControlInstruction_ExpertV3.0.pdf :
 - Slow control instructions for expert. Also includes information for: FST MPOD crate alarm mechanism, updating trip current limit, updating the alarm current/voltage limit, and how to reset MPOD IOCs.
- FstMpodSlowControlAlarmMechanism.pdf :
 - How the alarm mechanism works and related information.
- FstMpodSlowControl.pdf :
 - Presentation on the slow control.
- FST Alarm PV List.xlsx :
 - List of FST alarms and which rdo/disk/module they are associated with.

Documents in FST_Documents (Google Drive)

FstSlowControl/Cooling/

- FST-Cooling-Manual-v1.3.pdf: Everything someone needs to know about cooling system.
 - How read the front panel.
 - Interlock system.
 - Filling and starting the cooling system.
 - Power cycling the rack.
 - Restarting the IOCs.
 - Pumping NOVEC from drum barrel.

PedestalTest : code for comparing pedestals and noise between two pedestal runs.

Documents in FST_Documents (Google Drive)

FstOnlineSoftware/

- FstOnlineZS.pdf* :
 - APV and channel mapping of FST sensors. How common mode noise is calculated for zero suppression.
- FstOnlineMonitorMap.pdf :
 - Physical mapping of the FST to the database values.
- FstOnlineGeometry.xlsx :
 - Physical information about placement of FST in the STAR coordinate system.

FstMaintenance : pictures from maintenance can be put here.

FstIntallation* : Information regarding the assembly of the FST disks and the installation into the TPC cone.

FstFNALModuleAssembly* : assembly of each module and related documents.

FstCommission* : commissioning plan for Run 22

*These will probably not be needed for your work.