# Archiver & Alarm

SeokHee Park

Yonsei University

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Archiver: phase 3

- ~26000 PVs (including aliases)
- Allowing CORS request for ARICH monitoring tools
- Basically working well, except a few troubles
  - Archiver stuck due to adding ~O(1000) of non-existing PVs
    - Restart the archiver & abort every METAINFO requests
  - 'Too many file open' from retrieval webapps
    - Archiving keeps continuous -> Restart ONLY retrieval webapp
    - Increase nofile limit (soft & hard) on b2arch1 & b2arch2
- The archiver status was monitored by "B2ARCH:status" PV
  - Generated from monsrv
  - Check the change of related pb file automatically and send an email alert.
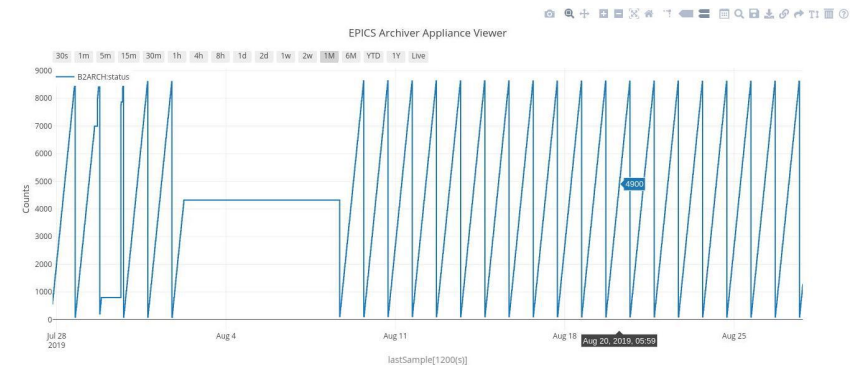
Archiver: phase 3

```
10      7 * * 1 b2arch /home/group/b2arch/archstatus_scr/disconnectedchecker.sh
*       * * * * b2arch /home/group/b2arch/archstatus_scr/archstatus.sh
```

- archstatus.sh: script to check 'B2ARCH:status' PV

- disconnectedchecker.sh
  - Check the disconnected PV list everyday (currently everyweek)
  - To prevent many disconnected PV to avoid the Archiver crash
  - We noticed to the PV manager if the PVs were disconnected and ask to keep current disconnected status or to pause

- Manage list of archived PV on confluence
  - Still some groups of PVs are missing
  - We will contact individually

- Convert pb files to ROOT and send to kekcc (Sungjin's talk)

Archiver: summer shutdown

- Move persistence from jdbm2 to MySQL
  - Archiver developer highly recommend to use MySQL
  - This does not effect to end user's usage including file structure.
  - No official migration tool between jdbm2 to MySQL
    - extract every archiving PV name and parameters and add manually
    - Many PVs are not online -> Cannot add all of them on new archiver
    - **If your PVs are on, please notice to me!**
  - To provide phase 3 data, mirror archiver is running on b2arch2
    - **http://b2arch2.daqnet.kek.jp:17668/retrieval/ui/viewer/archViewer.html**
    - ~20 min delayed refreshing
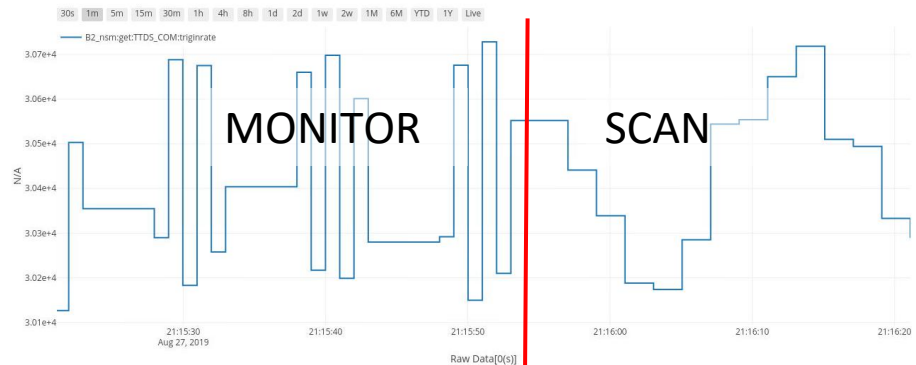   - New PVs after summer shutdown do not mirrored

Archiver: SCAN & MONITOR

- Answer for Sugiura-san, but someone can be needed

  - Q. For test purpose, sampling period was set by 2s. But the period looks weired like right plot.
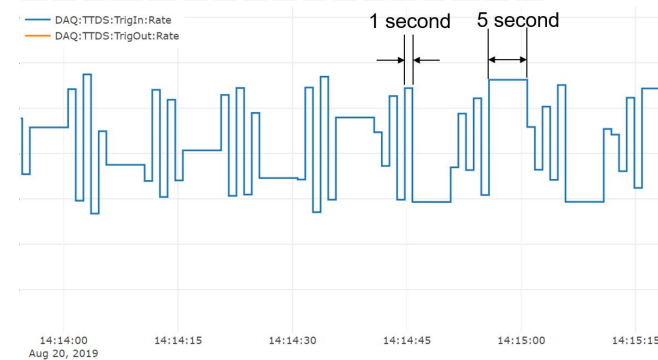
  - This is due to difference of two sampling modes
    - The default value is MONITOR. For MONITOR, archiver estimate the amount of storage needed using the sampling period and fill it up.
    - If you want to pick a exact value periodically, use SCAN

Archiver: SCAN & MONITOR

- How to change the sampling mode
  - WebUI
    - For new PV

    - For old PV

    - Or, use mgmt BPL and script... I will prepare soon.

Archiver: Plan

- Add missing PVs soon. I'm checking a couple of PVs in each group everyday, but need PV providers' help :-)

- Prepare backup procedure for MySQL persistence.

- Documentation and Git
  - Modify install script for MySQL and update confluence
  - Cleaning up the archiver managing scripts and upload on stash

- Knowledge transfer to Yongkyu and Sungjin

- View-only archiver on DESY or KEK? (~1 day late mirror)

Alarm: history of fail

- My alarm project was failed… why?
  - Alarm daemon failed
    - Timeout when get the run control status and some nsm distributed PV
    - + Sending VGET signal to the other daemon should be not so good.
    - Hard to identify what is normal run stop and what is error or crash
  - Otherwise, GUI working well -> I can reuse
  - Also, need to connect two or more nsm networks

- CSS alarm UI doesn't work for nsm(2socket)
  - nsm2cad converted PV also not so helpful because we need to set the alarm level and limit for each PV on nsm2cad level.

Alarm: plan

- First plan
  - Start from simple nsm2 example of Nakao-san
    - Including multiple nsm network conenction
  - After making the part of getting nsm value, bring back the previous alarm daemon's function.

- However, Yamada-san present really nice error diagnosis system, I need to work with him.

- Final goal
  - Make sound alarm for unexpected run stop
  - Make sound alarm for water leak or high (low) temperatures
  - and so on…

backup

4. What's the difference between SCAN and MONITOR?

These are minor variations of the similar concepts in the ChannelArchiver and other archivers. Both SCAN and MONITOR use camonitors.

○ For MONITOR, we estimate the amount of storage needed using the sampling period and fill it up. The capacity is computed using something like so (see `ArchiveEngine.java:addChannel`)

```
int buffer_capacity = ((int) Math.round(Math.max((write_period/pvSamplingPeriod)*s
ampleBufferCapacityAdjustment, 1.0))) + 1;
```

For example, if the `write_period` is 10 seconds, and the `pvSamplingPeriod` is 1 second, we would allocate `10/1 + 1 = 11` samples for the default `sampleBufferCapacityAdjustment` . Thus, in the case where the PV is changing at a rate greater than 1Hz, you should expect 11 samples, a gap where we run out of space and throw away samples, then 11 samples when we switch buffers and so on.

○ For SCAN, the engine updates one slot/variable at whatever rate is sent from the IOC. And then a separate thread picks the value of the one slot/variable every sampling period and writes it out.