2x2 Slow Controls Status

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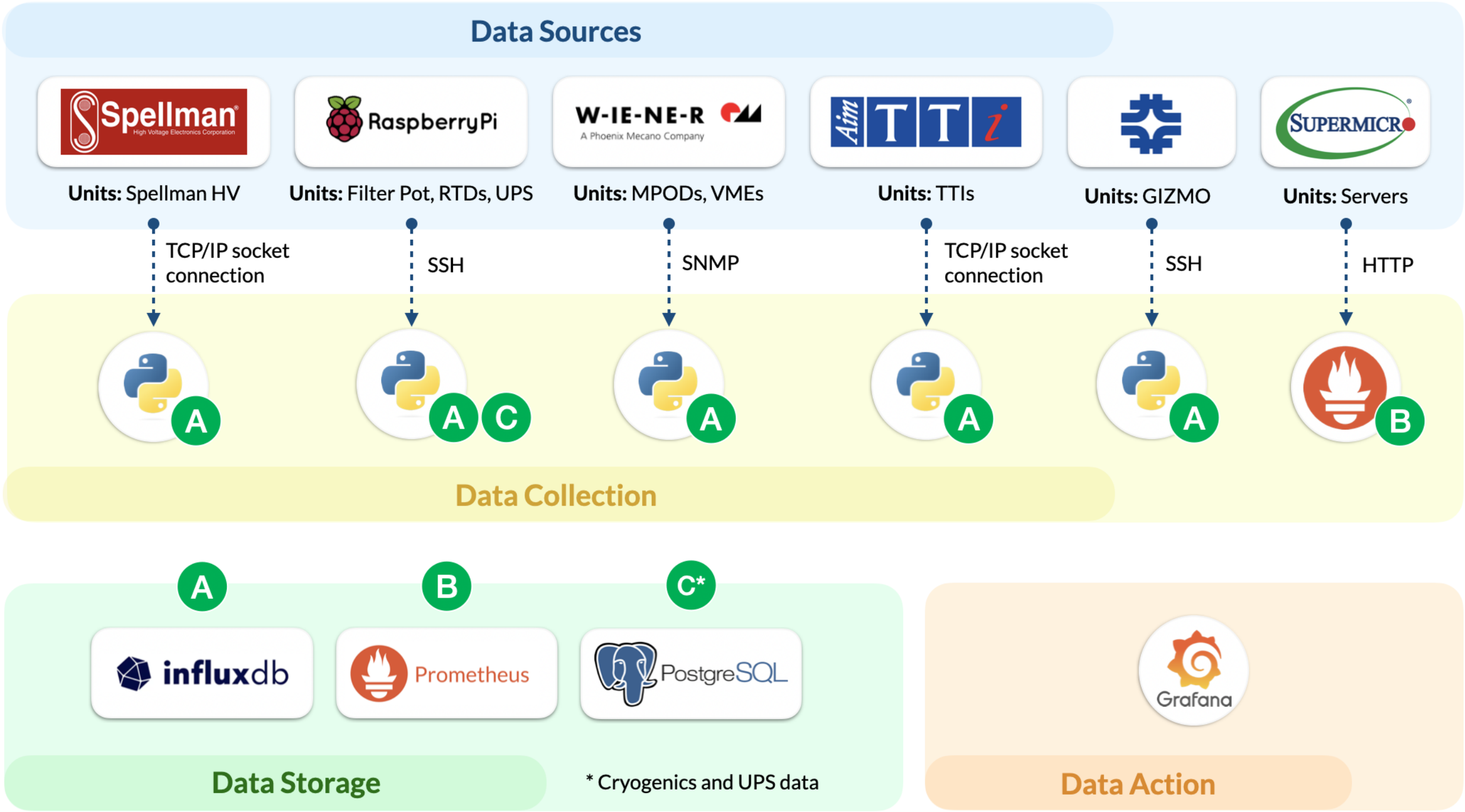
2x2 DAQ/Computing Meeting
Thursday 11, July 2024

The Big Picture

UPS not included yet.

PM MPOD not included yet.

TTIs need more tests.

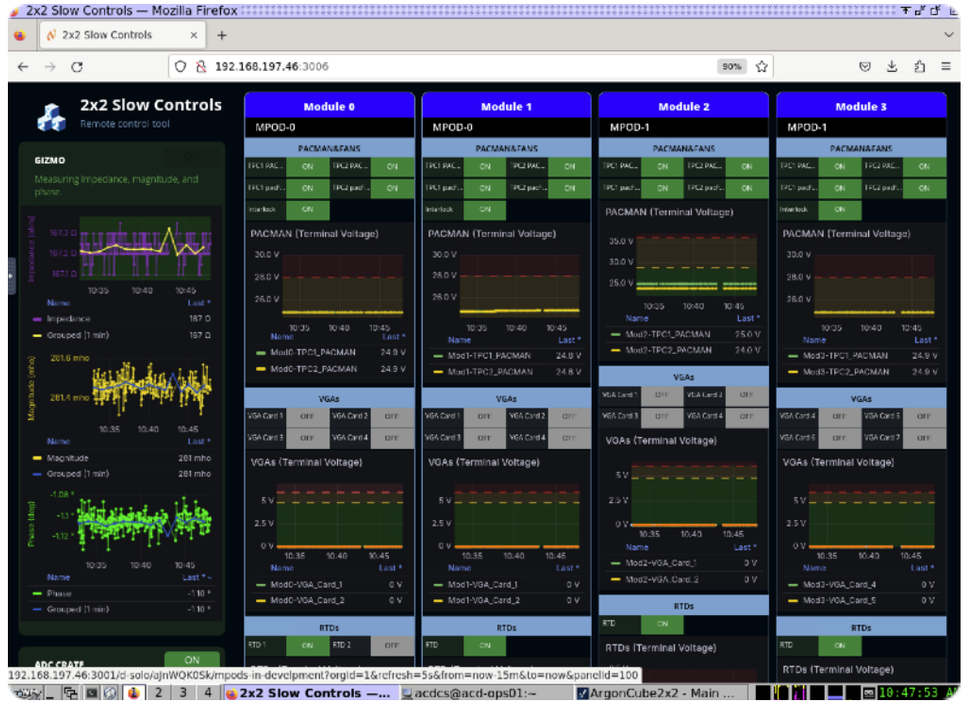


Current Monitoring Setup

- Configuration is set by power cycling a channel on the GUI.
  - All configuration exists on a set of JSON files located at: */home/acd/acdcs/2x2/SlowControls2x2/GUI/Classes/Backend/CONFIG*.
  - Can also be accessed through GitHub.
- How to (currently) change one of these pre-defined values?
  - On the adcs area, create a new branch with any name of your preference.
  - Make the desired configuration changes on the JSON files.
  - Push your changes to git.
  - On GitHub, make a pull request to the main branch.
  - After merging with main, go back to the acdcs area and checkout to main again.
  - Pull changes to main.
  - Re-run the container by going to */home/acd/acdcs/2x2/SlowControls2x2/GUI/* and do *./run-production.sh*
- This software hasn't been developed to make changes on the pre-defined configuration, that's why we don't have a 'user friendly' way to do it. We will have an expert tool in the future for this using EPICS or IGNITION.

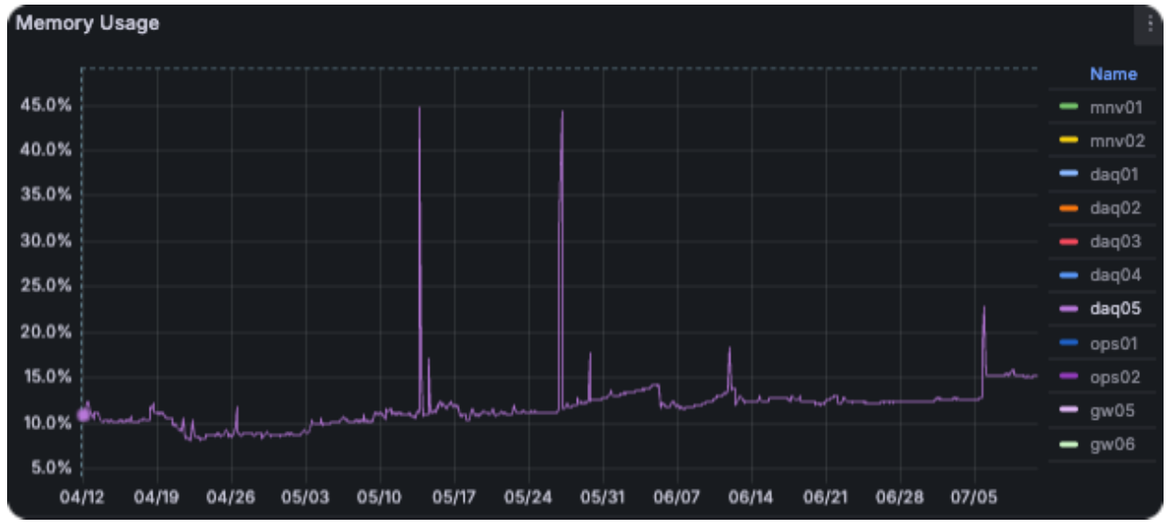
The Big Picture

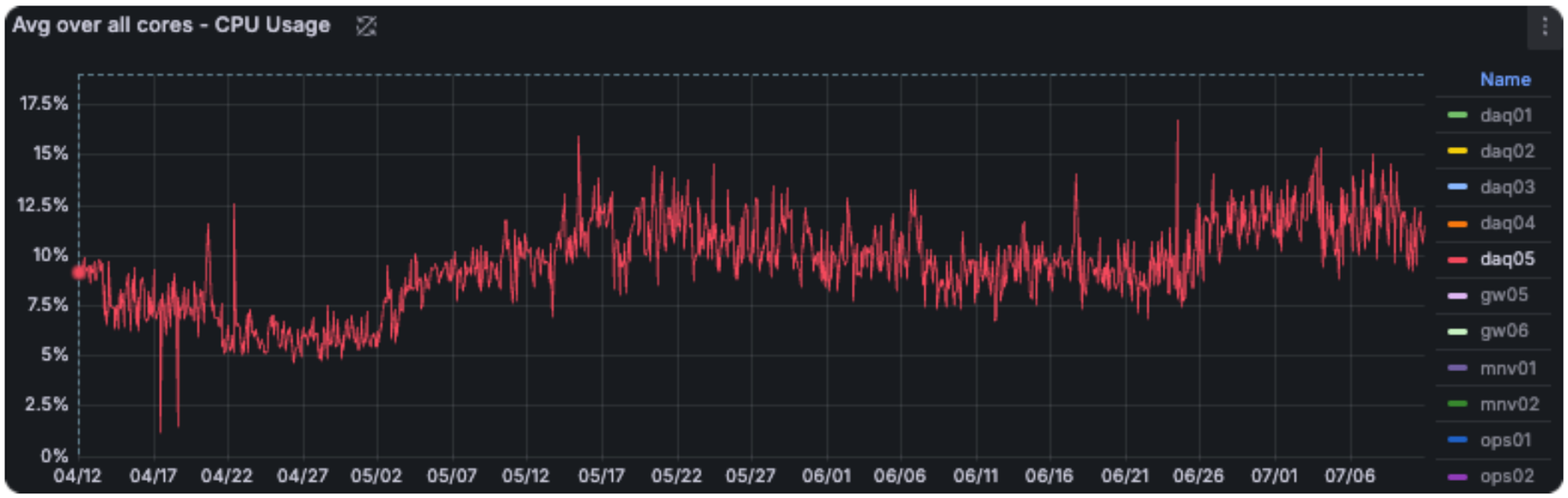
- System has proved itself to be stable and consistent.
  - Pros: It works.
  - Cons: Remote controls/config not optimal (HV).
  - Cons: Not scalable for DUNE ND slow controls dimension. Current sampling rate 0.1-0.5 Hz.

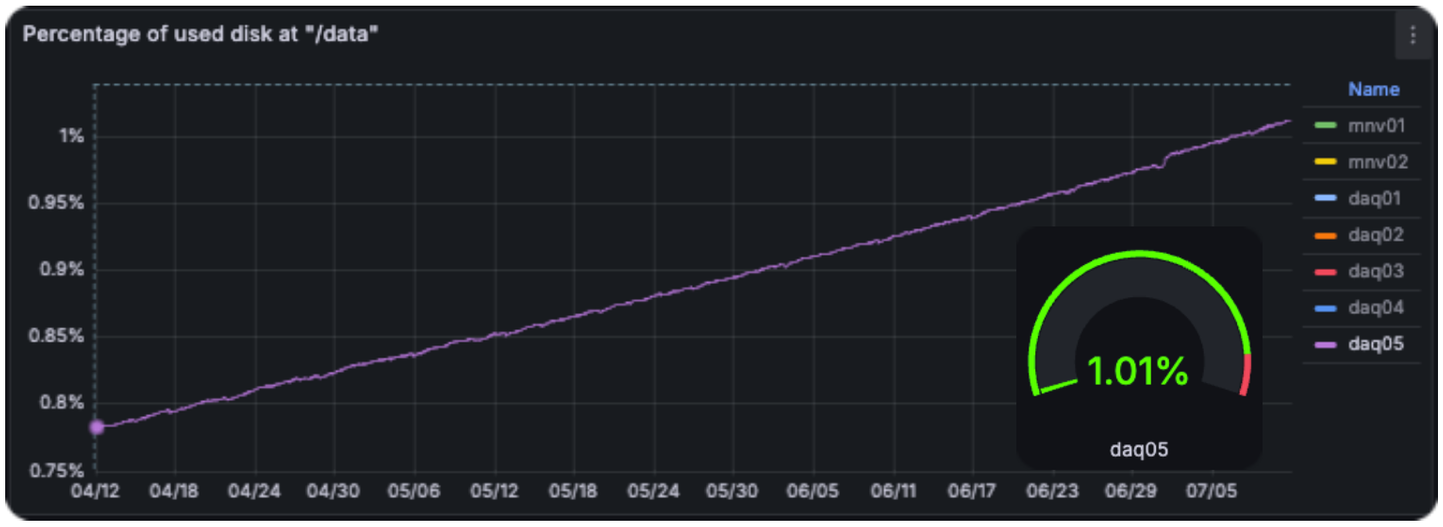


acd-daq05

- Resources consumption.
  - 1.1% of */data* used.
  - This is 104GB out of 10T available.







No resource limitations to start implementing new technologies such as EPICS or Prometheus.

Filesystem /data is backed on acd-daq05.fnal.gov. RITM2030156

Containers storage will be moved to the new /containers partition after July 12.

Time to Move Forward

- Slow Controls pending tasks:
  - Push UPS, MPOD PM, and TTIs monitoring to influxDB and Grafana.
- Goals for next beam run ***(discussion is welcome/needed)***:
  - Replace current GUI with EPICS for remote controls and configuration.
    Tests with devices will be needed, need to coordinate with RC.
  - Re-target slow controls data to be saved on PostgreSQL DB supported by Fermilab rather than InfluxDB.
  - Allow Grafana login through SSO.
  - Setup IGNITION for testing on 2025.

Important: We will continue using Grafana!

- **Thanks to the team who made this possible:** Geoff, Louis, Kevin, Luis, Bruno, DeMario, Livio, Jan, Nimmy, Faiza, Jessie.
- Perfect time to get new people involved!
  - Sungbin is already the expert on EPICS. Looking for another student/postdoc to become the expert too!
  - Looking for a student/postdoc to start exploring IGNITION.

Slow Controls Meetings

- Next meeting this Monday 07/15 at 10AM CT.
  - Biweekly meetings. Online only.
  - Email will be sent shortly.

- Agenda for next meeting:
  - Current status of slow controls in detail.
  - Plan and team organization for new developments.
  - Sungbin will show updates on EPICS.

- Subscribe* to the **new** mailing list: ***DUNE-2X2-SLOW-CONTROLS***
  - *Ticket for creating this list opened this morning, will announce it on the OPS channel so people can start subscribing.