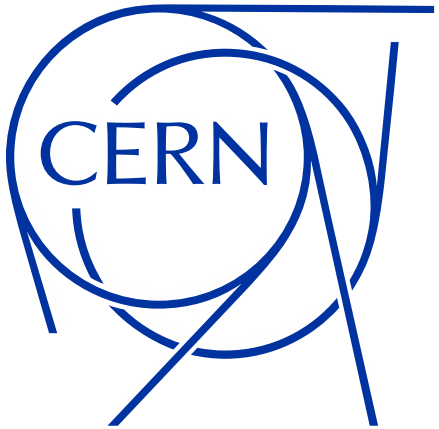


Progress report for UEM
(Unified Experiment-specific Monitoring)

Ewoud Ketele (CERN/IT) and Domenico Giordano (CERN/IT)

14/09/2023

Status of WLCG monitoring

ATLAS/CMS

- MONIT OS/influxDB infrastructure is used to store job data
- Job data is readily available in MONIT

LHCb

- mySQL database and LHCb OS are used to store job data
- Both data sources were made available in MONIT infrastructure this year as part of this project

But there are still gaps:

- LHCb: some fields necessary for monitoring purposes missing
- ALICE: no job-related data sources in MONIT infrastructure available (yet)

Introduction to the UEM project

WLCG Monitoring can (still) be improved

- "… A unified WLCG monitoring is a prerequisite for optimization of WLCG operations."
  – LHCC referee, August 2021
- "… The interoperability and maintenance of the monitoring tools are seen as critical areas that would benefit of a larger adoption of the CERN IT MONIT as unified monitoring infrastructure."
  – WLCG Operations and Coordination and LHC experiments, Pre-GDB, March 2022

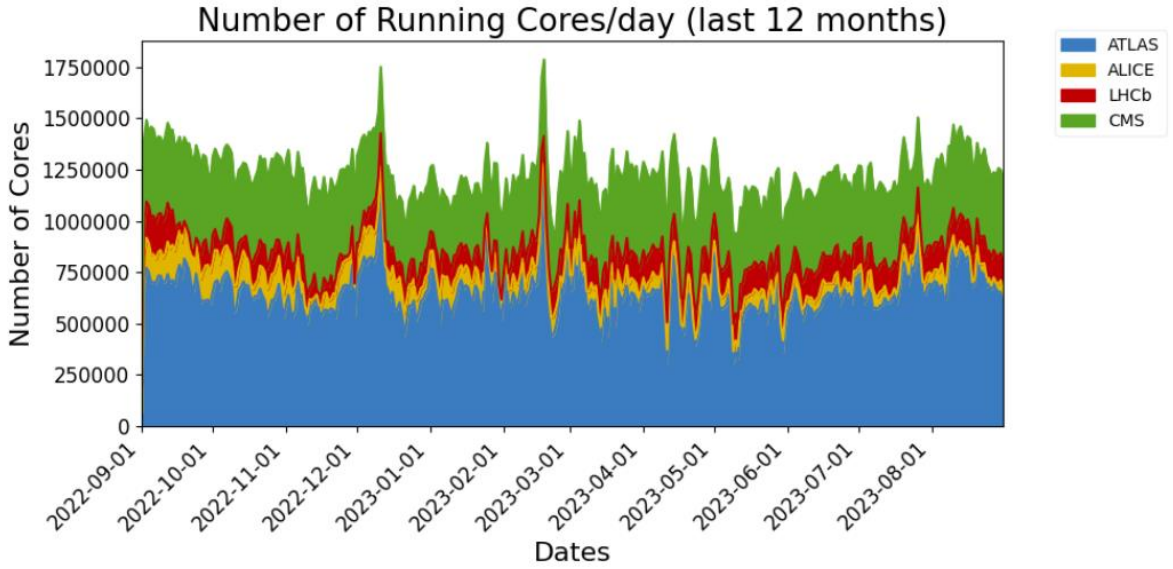
The goal of the UEM project is

1. to help experiments with this transition to MONIT
2. to find common metrics in the job monitoring of the experiments
3. to make these common metrics available in unified WLCG dashboards for easy access and overview

Migration from LHCb monitoring to MONIT

Automating the extraction of the LHCb input for the plots of the half-yearly RRB report

- These plots that appear in the final report are created by CRIC
- They extract the necessary data from different data sources using automated scripts
- Except, there was no automatic routine to extract this data from LHCb

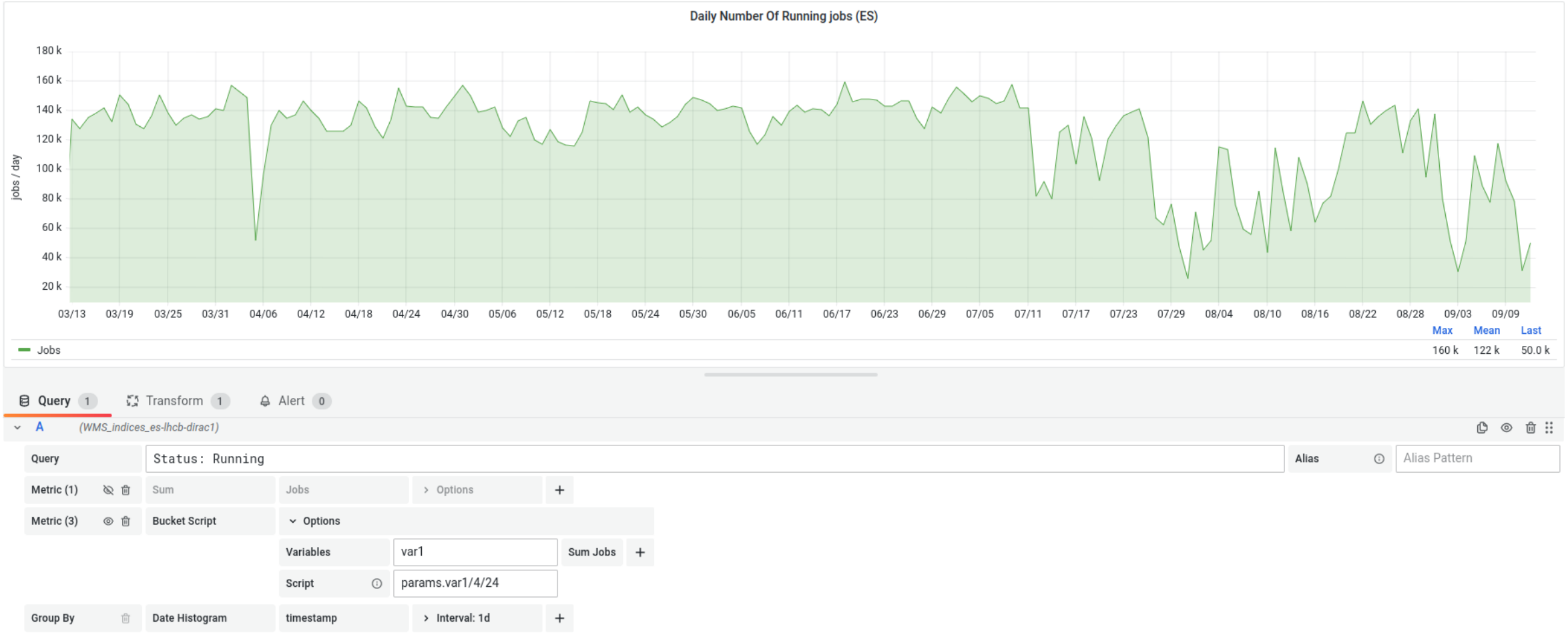


However, this data was available in LHCb OpenSearch

Note: Since the number of cores used by each LHCb job is not yet available as information, we count the number of jobs (for now)

But: mainly single core jobs anyway

Automated extraction of LHCb input for RRB report via MONIT infrastructure



LHCb input for RRB report in MONIT Grafana

Properly validated with/by the LHCb experts

Now, CRIC can extract the data through the Grafana API automatically

Easy to adapt when definitions change or core information becomes available

Migrated the entire RRB report to MONIT Grafana

Rather than use a static report, it might be interesting to use a “live” one with all the upsides of Grafana

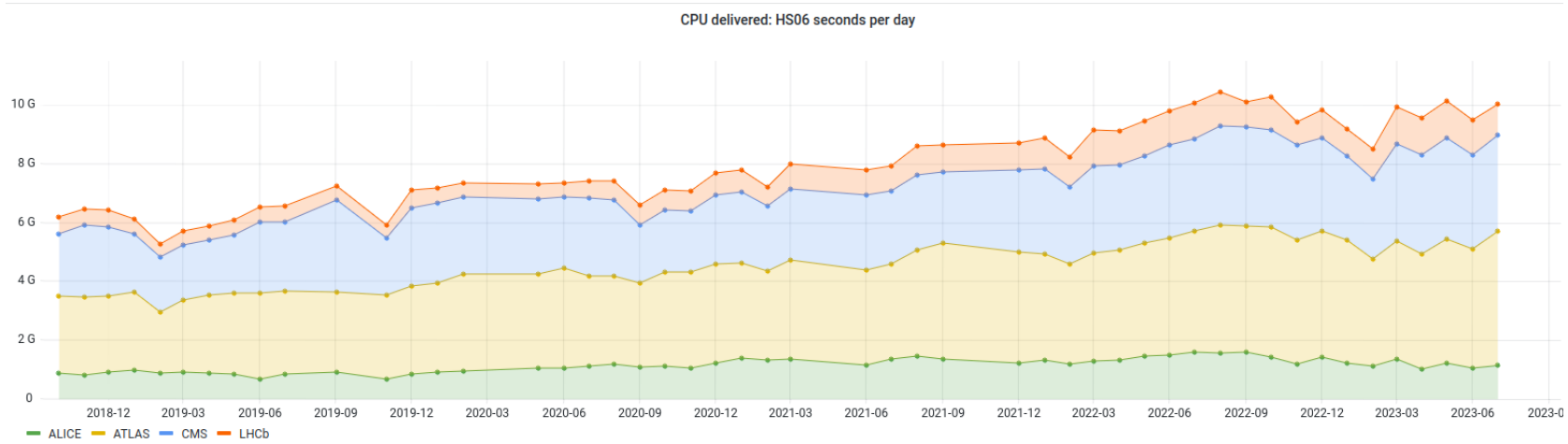
- Most data sources used for the report are already available in Grafana anyway
- Plots always show most recent version of the data

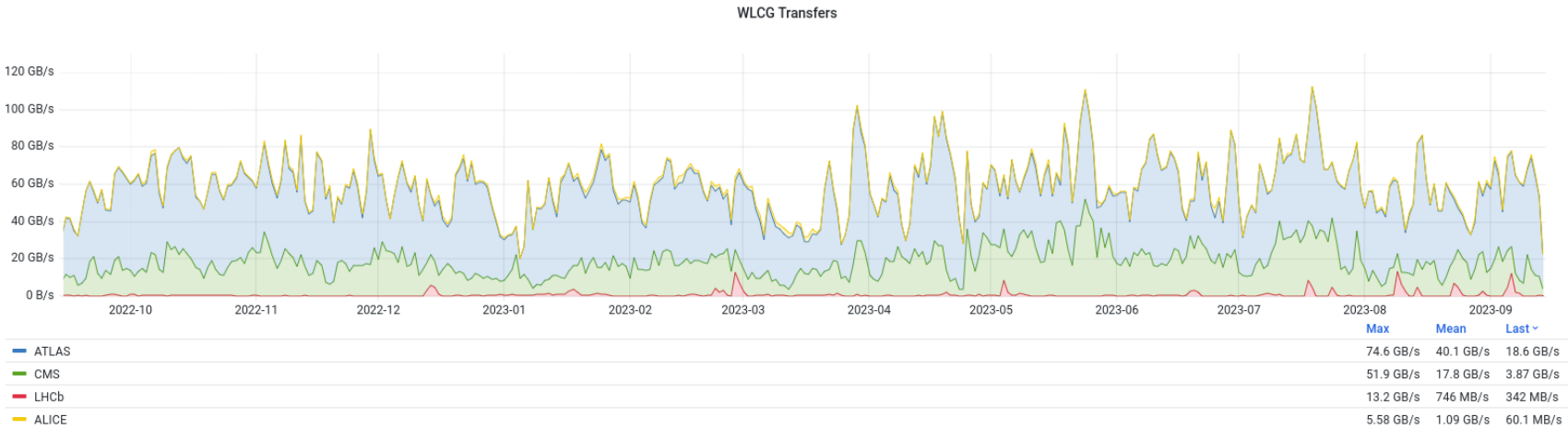
Data is still downloadable through the Grafana API

- For static use cases such as papers or reports
- For cases where the Grafana layout is not satisfactory

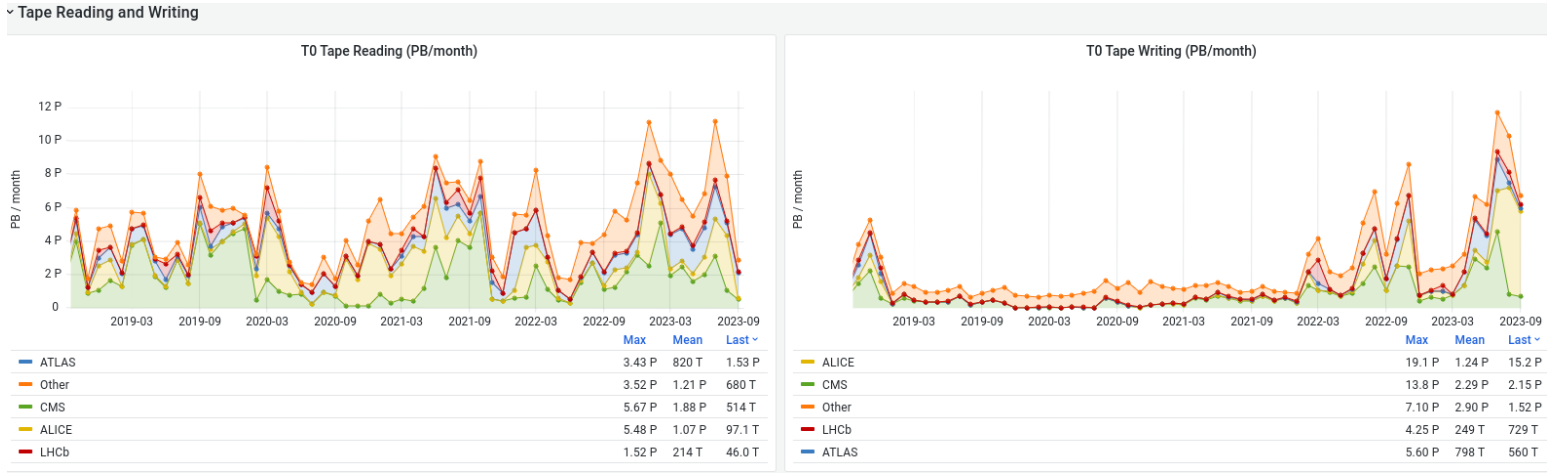
RRB Dashboard can be found here

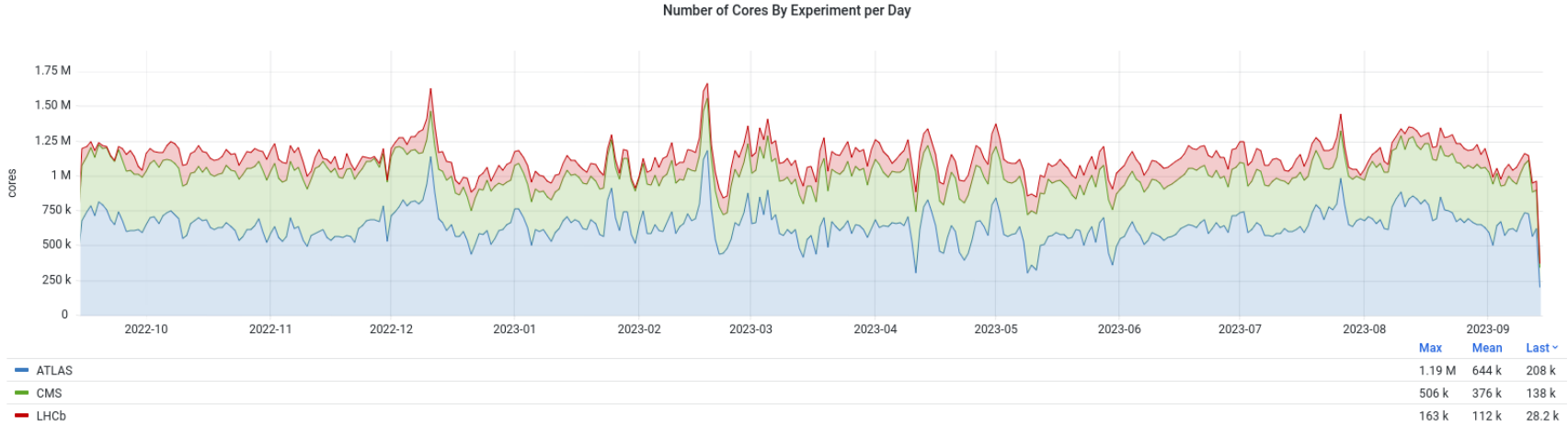
The RRB report in MONIT Grafana





The RRB report in MONIT Grafana





Status of MONIT Grafana RRB report

Grafana version of the RRB report

- Has most of the plots of the static report (only one still missing)
- Queries were extracted from the code used for the static report
- Validation is done by comparing against the data from the static report

Still some gaps

- ALICE data is missing for some plots
- Some discrepancies found in validation process

Next steps for UEM

- **Almost finished with LHCb**
  - Still working on creation of dashboards-as-code with jsonnet
  - Work of the last year will be presented during the next LHCb week
- **Taken first steps for integration of ALICE in MONIT**
  - Talks about the infrastructure necessary to extract data from the ALICE platform
- **Continue validation process of the RRB dashboard**

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