VS tests

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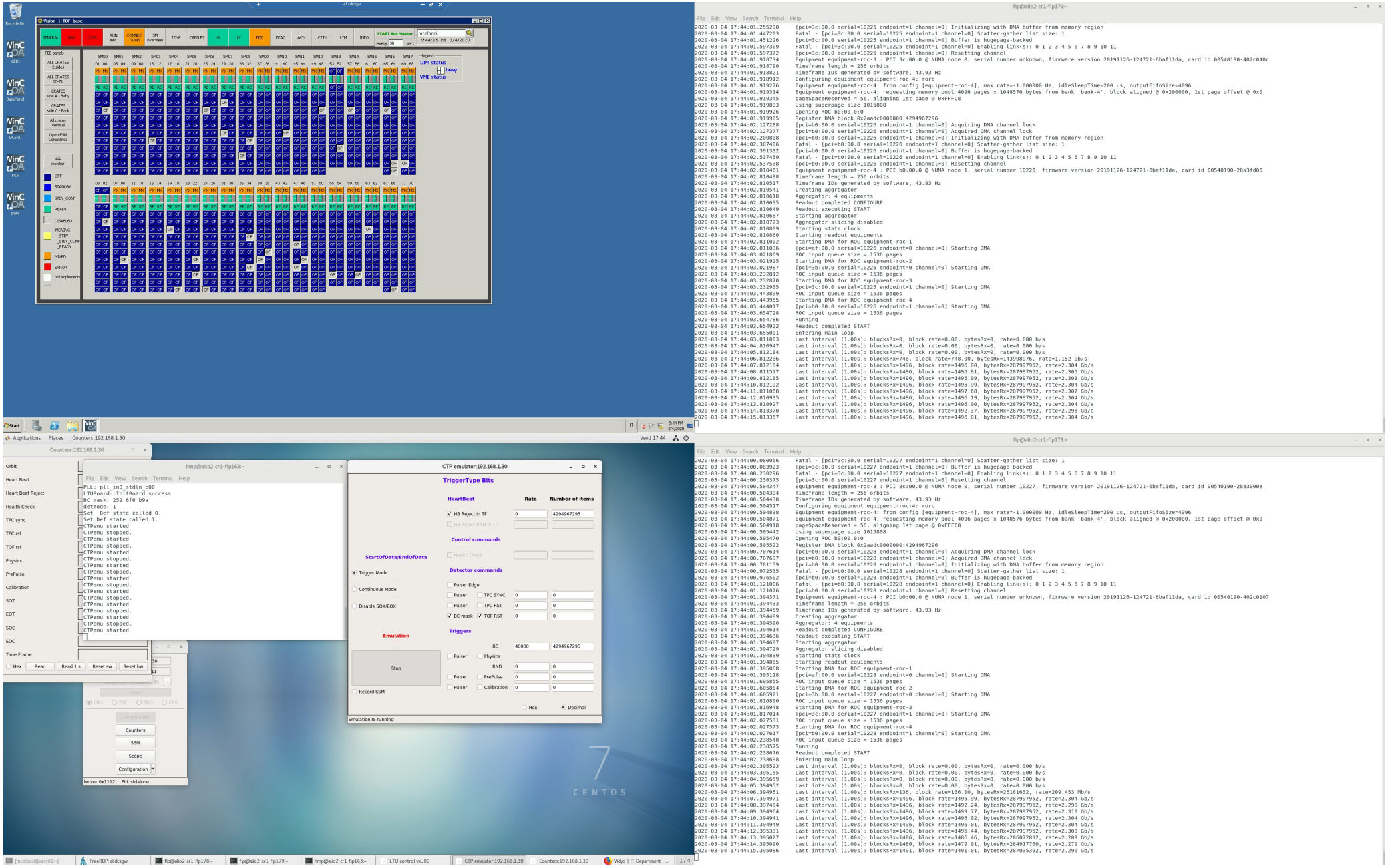
for the O2 Vertical-Slice Test Crew

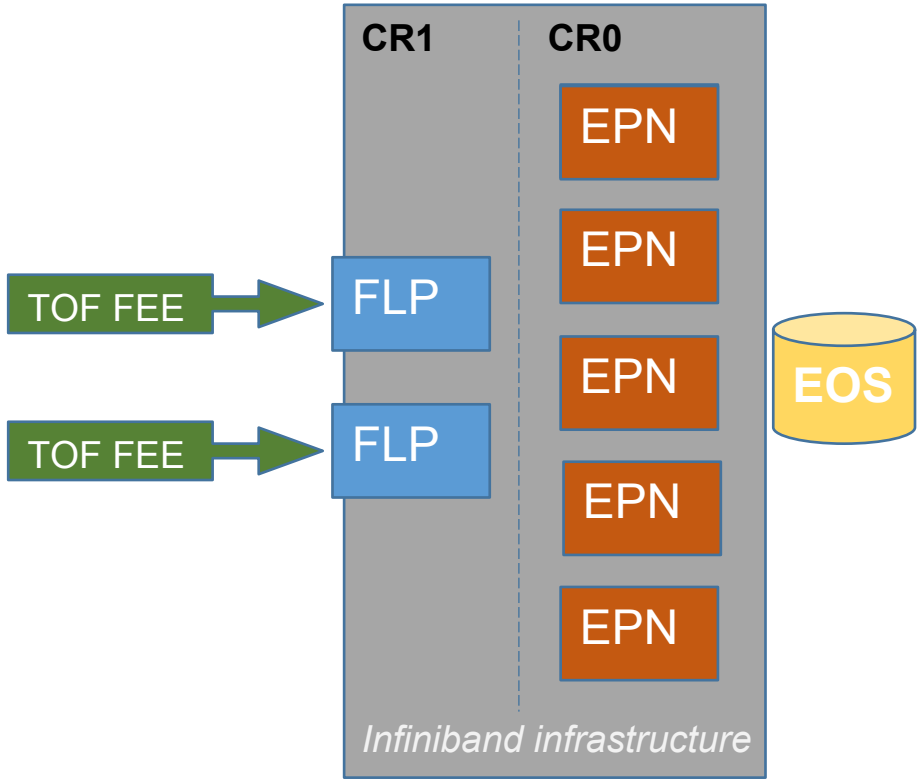
Extension/update of the presentation at the VS integration meeting: https://indico.cern.ch/event/895728/



Preparation phase (TOF team): We successfully (re)tested all our 68 active links up to the FLP after the last FLP update (see the screenshot in attachment). We profit to thank again the DAQ experts for the great support (as usual)!

VS tests

- Preparation
  - HW and SW on FLP and EPN
  - 2 TOF FLPs moved to VS using their LTU
  - 5 EPN nodes (config + orchestrator process)
- Thu + first part of Fri
- Part 1 (more manual)
  - **FEE → CRU → readout → sTFbuilder**
  - **FEE → CRU → readout → sTFbuilder → sTFsender → TFbuilder**
- Part 2 (use of ECS and use of QC)
  - ECS to control the FLP part
  - ECS to control QC on FLP (some residual problem)
- This exceeded the minimal goals as stated in Jira
  - **Congrats to all parties!!!**



Data

- About 300 data files (45 GB) on each of the 5 EPNs
  - ~1500 files in total corresponding to 15,000 TFs (10 TFs in a file)
    - 225GB in total
  - About 350 s acquisition
    - 22ms TF
    - 600 MB/s (300 MB/s per FLP; 2.5 Gb/s to be compared with the 70+ Gb/s measured qualifying the nodes in the FLP EDR/PRR.
- File moved to EOS
  - Asynchronously via external script
  - DIrs structure being standardised (important for detector commissioning)

Sample files given to TOF

- Understand the format
- Verify the absence of data corruption (TOF team)
- Access to the entire repository prepared (as for TPC)

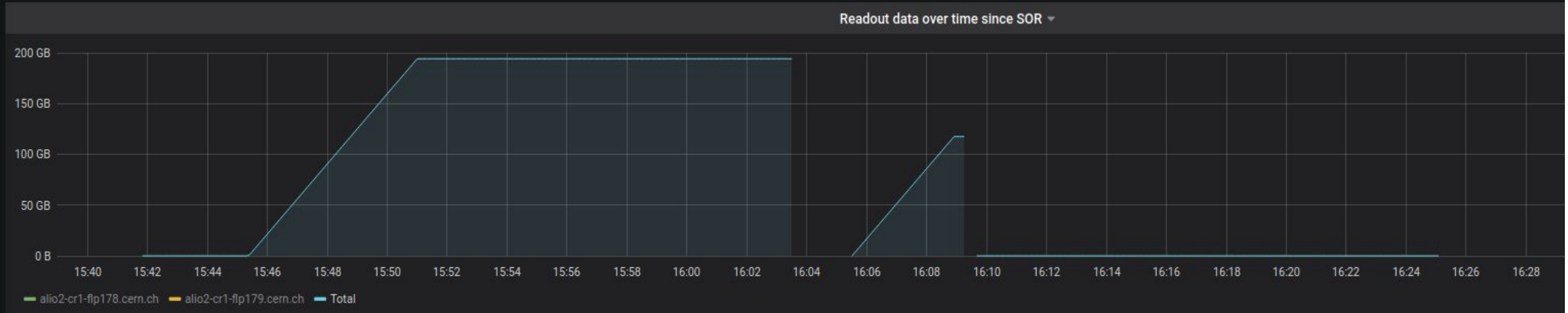
hostname alio2-cr1-flp178.cern.ch

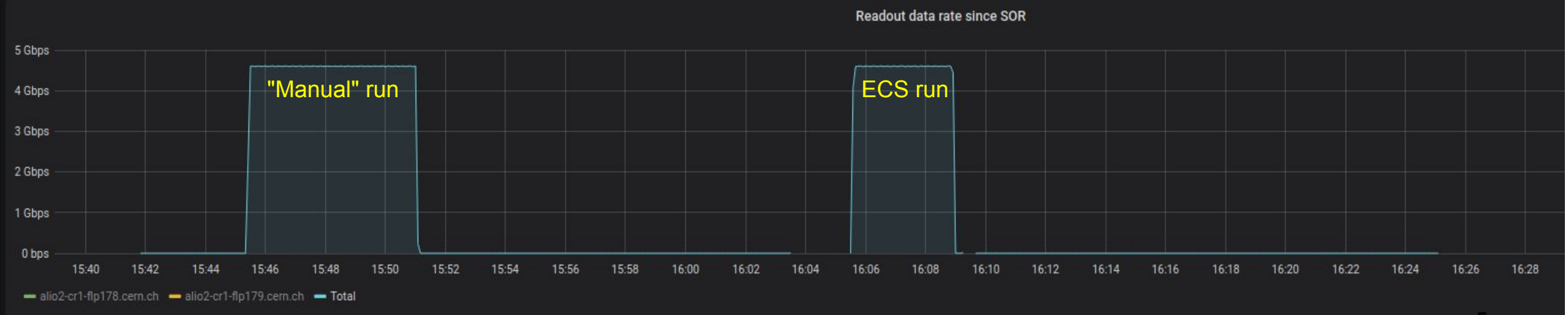
Readout data since SOR

193 kB

Readout current data rate

0 bps





MCH

- 2 FLPs
- 41 EPNs
- Data:
  - 5000 files
  - 7TB

Next steps (March-beginning of April)

- Week **10**
  - First TOF test (two-click run)
- Week **11**
  - MCH test: focus on QC/DPL; EPN controls?
- Week **12**
  - VS tests (12 FLPs + 90 EPNs?)
  - Sources: CRUs (no detectors)
- Week **13**
  - HMPID tests: CRORC detector
- *Week **14***
  - *TOF tests reloaded*
  - *Compressor? QC?*

Lessons learned

- **Informal post-mortem meetings being organised**
  - Write down observed problems
- **Integration glitches more than principle problems**: e.g.
  - QC could start but we could not retrieve data
    - Plus high CPU usage
  - In a start/stop/start sequence sTFbuilder crashed
    - To be investigated
- **Simple instructions needed**
  - Avoid **all** experts on-line even when everything is smooth
    - Part of the growth process
  - N.B. exceptional commitment and responsiveness from all the teams