

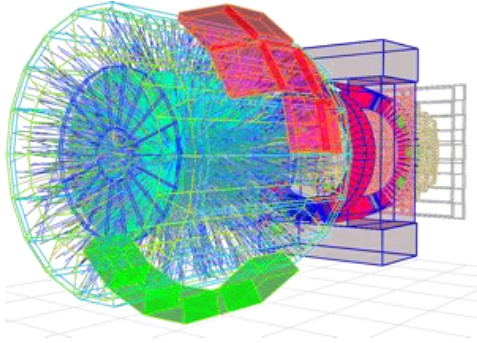


The detector read-out in ALICE during Run 3 and 4

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**CHEP 2016 Conference, San
Francisco, October 8-14, 2016**

ALICE UPGRADE



O² computing farm:

- ~ 100 k CPU cores
- ~ 5000 GPUs and ~500 FPGAs
- ~ 60 PB of storage



3.6 TByte/s into PC farm

O² (Online Offline) System

Partial calibration and reconstruction online, replacing the original raw data with compressed data



STORAGE

90 GB/s

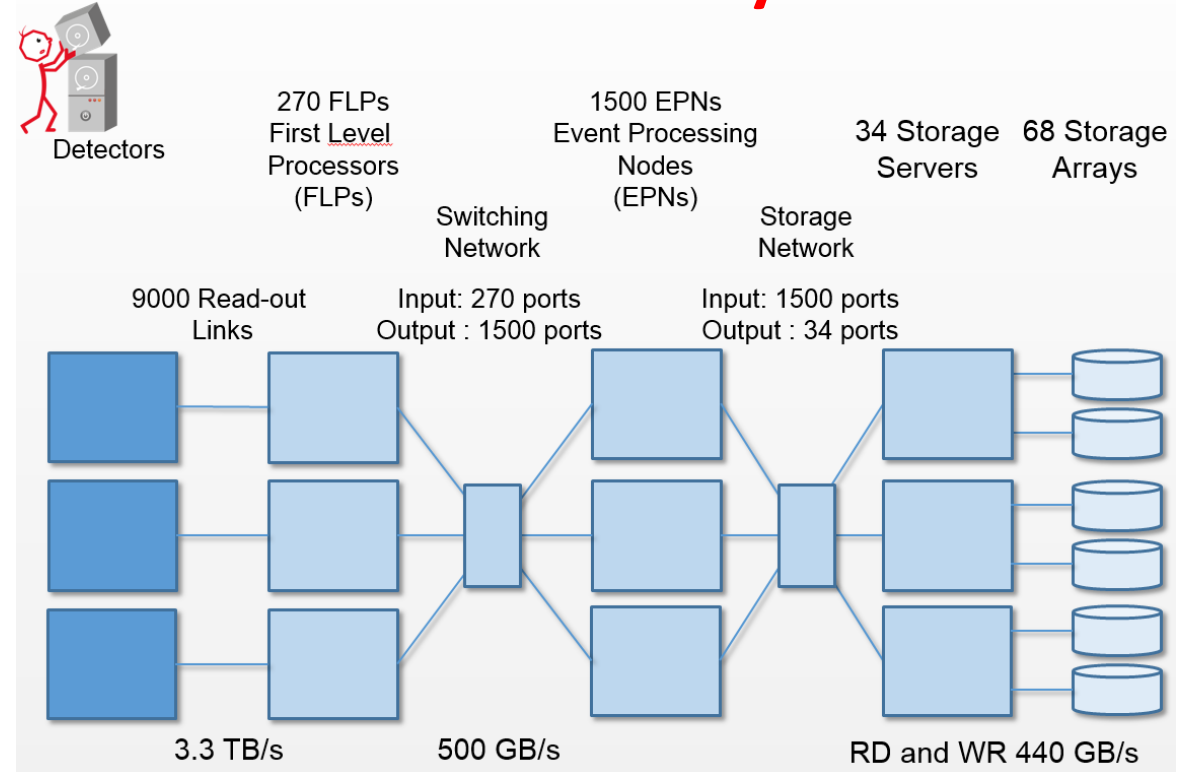
Acq rate:
Pb-Pb 50 kHz
pp and p-Pb up to 200 kHz

Complete change in detector readout

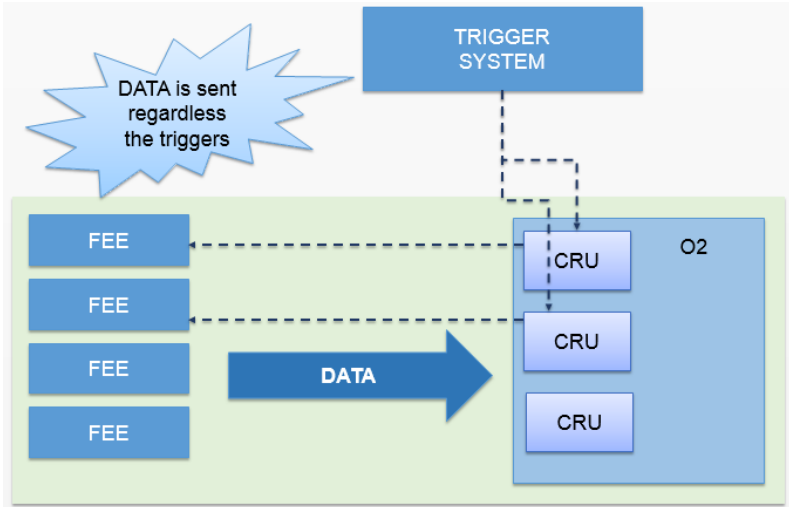
- continuous
- triggered

New DAQ - HLT - OFFLINE systems.

The hardware facility



Detectors readout in continuous mode



Heart Beat (HB)

issued in continuous & triggered modes to all detectors

Physics trigger

can be sent to upgraded detectors will be sent to non-upgraded detectors

HB and TF rates programmable
Typical values:

- HB: 1 per orbit, 89.4 μ s: \sim 10 kHz
- TF: 1 every \sim 20 ms: \sim 50 Hz
- \rightarrow 1 TF = \sim 256 HBF

Triggered read-out

