

The ALICE Data-Acquisition Software Framework DATE V5

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The data-acquisition software framework DATE for the ALICE experiment at the LHC has evolved over a period of several years. The latest version DATE V5 is geared for deployment during the test and commissioning phase. The DATE software is designed to runs on several hundred machines being installed with Scientific Linux CERN (SLC) to handle the data streams of approximately 400 optical Detector Data Links (DDLs) from the ALICE sub-detectors and to write full events onto transient/permanent data storage at a rate of up to 1.25 GB/s.

DATE V5 consists of a collection of software packages that are responsible for the data flow and its formatting to carry out the readout, the event-building, and the recording. Additional software packages are in charge of the control, the system configuration, the status and error message reporting, the electronic logbook, the data quality and performance monitoring, and the memory management. The interfaces to the Experiment Control System (ECS) and to the High-Level Trigger (HLT) are implemented, whereas the interfaces to the Detector Control System (DCS) and to the Trigger System (TRG) are in design status.

This paper will present the software architecture of DATE V5, the practical experience acquired at various detector integration setup, and future extensions.

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