HDB++, the new TANGO event-driven archiving system is being developed as a collaboration between the ESRF and Elettra.

Specific libraries have been developed, giving the possibility to store HDB++ data into Apache Cassandra, the widely used and popular NoSQL database.

Using Cassandra adds high-availability with no single point of failure and scalability to the new TANGO archiving system.

**HDB++ Design**

HDB++ (see WED3O04) was designed in a modular way, using TANGO device servers to handle the configuration and the events subscribing/archiving process. These device servers can be compiled with C++ libraries inheriting from the libhdb++ library and implementing access to the database of your choice.

Up to now libraries for MySQL (developed by Elettra) and Apache Cassandra have been implemented.

**HDB++ Tools for free**

Implementing specific Cassandra HDB++ libraries inheriting from the HDB++ C++ abstract libraries or implementing the Java HDB++ interfaces was enough to be able to create and manage a Cassandra-based HDB++ system.

All the already developed HDB++ tools (device servers, configurator GUI, diagnostics GUI, extractor GUIs) could be reused directly.

**HDB++ Cassandra @ ESRF**

At the ESRF, 3 Cassandra nodes with a replication factor of 3 are in operation since October 2014, in parallel with the old HDB system and the HDB++ MySQL version. It is planned to add a new datacentre composed of 3 Cassandra nodes soon. This datacentre will be dedicated to analytics and will be using Apache Spark to compute statistics and fill in decimation tables.