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## Microservices framework and configuration database for ATLAS ITk

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To operate ATLAS ITk system tests and later the final detector, a graphical operation and configuration system is needed. For this a flexible and scalable framework based on distributed microservices has been introduced. Different microservices are responsible for configuration or operation of all parts of the readout chain.

The configuration database microservice provides the configuration files needed to configure the hardware components of the readout chain and perform scans using the DAQ software. It saves the connectivity information and configuration files for the operation of the system in so called runkeys. These runkeys are stored in a flexible, tree-based data structure. This flexible structure allows the storage of specialized runkeys made up of different objects for each of the ITk subdetectors within the same database.

It is investigated whether a single-instance database is sufficient to efficiently serve these files to the subdetectors or if a distributed system of local ConfigDB caches is needed. These caches would each provide only a subset of the runkeys depending on the elements of the readout chain that the specific cache serves.

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