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Oracle has introduced native support for Javascript Object Notation (JSON) data in its 12c release with relational database features, including transactions, indexing, declarative querying and views. The requirements for the CMS WMArchive project, whose goal is to reliably store its Workflow and Data Management framework job report (FWJR) documents, include storing deep nested JSON structures, running queries over them and aggregating data in an effective way. The objective of this project is to assess, evaluate and test the capabilities and performance of Oracle JSON with respect to the currently used solution, MongoDB. The comparison is based on functionality, read/write rates and indexing. Initially, JSON documents are created by randomizing a sample CMS FWJR document and inserted into both MongoDB and Oracle to evaluate the performance. Then, the data stored in these databases is queried with and without indexes. Performance is then evaluated and a comparison is made. Other performance metrics such as CPU Usage, data and index size are also compared.

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