

Cloudera Runtime 7.0.1

Apache Spark Overview

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CLOUdera

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Apache Spark Overview

Apache Spark is a distributed, in-memory data processing engine designed for large-scale data processing and analytics.

Apache Spark is a general framework for distributed computing that offers high performance for both batch and interactive processing. It exposes APIs for Java, Python, and Scala and consists of Spark core and several related projects.

You can run Spark applications locally or distributed across a cluster, either by using an interactive shell or by submitting an application. Running Spark applications interactively is commonly performed during the data-exploration phase and for ad hoc analysis.

To run applications distributed across a cluster, Spark requires a cluster manager. Cloudera Data Platform (CDP) supports only the YARN cluster manager. When run on YARN, Spark application processes are managed by the YARN ResourceManager and NodeManager roles. Spark Standalone is not supported.

For detailed API information, see the Apache Spark project site.



Note: Although this document makes some references to the external Spark site, not all the features, components, recommendations, and so on are applicable to Spark when used on CDH. Always cross-check the Cloudera documentation before building a reliance on some aspect of Spark that might not be supported or recommended by Cloudera.

CDP supports Apache Spark, Apache Livy for local and remote access to Spark through the Livy REST API, and Apache Zeppelin for browser-based notebook access to Spark. The Spark LLAP connector is not supported.

Unsupported Apache Spark Features

The following Apache Spark features are not supported in Cloudera Data Platform.

- Apache Spark experimental features/APIs are not supported unless stated otherwise.
- Using the JDBC Datasource API to access Hive or Impala is not supported
- ADLS not supported for All Spark Components. Microsoft Azure Data Lake Store (ADLS) is a cloud-based filesystem that you can access through Spark applications. Spark with Kudu is not currently supported for ADLS data. (Hive on Spark is available for ADLS in CDH 5.12 and higher.)
- IPython / Jupyter notebooks is not supported. The IPython notebook system (renamed to Jupyter as of IPython 4.0) is not supported.
- Certain Spark Streaming features are not supported. The mapWithState method is unsupported because it is a nascent unstable API.
- Thrift JDBC/ODBC server is not supported
- Spark SQL CLI is not supported
- GraphX is not supported
- SparkR is not supported
- GraphFrames is not supported
- Structured Streaming is supported, but the following features of it are not:
 - Continuous processing, which is still experimental, is not supported.
 - Stream static joins with HBase have not been tested and therefore are not supported.
- Spark cost-based optimizer (CBO) not supported.