

Cloudera Runtime 7.2.6

## Release Notes

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# CLOUdera

<https://docs.cloudera.com/>

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## Overview

You can review the Release Notes of Cloudera Runtime 7.2.6 for release-specific information related to new features and improvements, bug fixes, deprecated features and components, known issues, and changed features that can affect product behavior.

## Cloudera Runtime Component Versions

You must be familiar with the versions of all the components in the Cloudera Runtime 7.2.6 distribution to ensure compatibility of these components with other applications. You must also be aware of the available Technical Preview components and use them only in a testing environment.

### Apache Components

Component	Version
Apache Arrow	0.8.0.7.2.6.0-71
Apache Atlas	2.1.0.7.2.6.0-71
Apache Calcite	1.21.0.7.2.6.0-71
Apache Avro	1.8.2.7.2.6.0-71
Apache Hadoop (Includes YARN and HDFS)	3.1.1.7.2.6.0-71
Apache HBase	2.2.6.7.2.6.0-71
Apache Hive	3.1.3000.7.2.6.0-71
Apache Impala	3.4.0.7.2.6.0-71
Apache Kafka	2.5.0.7.2.6.0-71
Apache Knox	1.3.0.7.2.6.0-71
Apache Kudu	1.13.0.7.2.6.0-71
Apache Livy	0.6.0.7.2.6.0-71
Apache MapReduce	3.1.1.7.2.6.0-71
Apache NiFi	1.11.4.7.2.6.0-71
Apache NiFi Registry	0.6.0.7.2.6.0-71
Apache Oozie	5.1.0.7.2.6.0-71
Apache ORC	1.5.1.7.2.6.0-71
Apache Parquet	1.10.99.7.2.6.0-71
Apache Phoenix	5.0.0.7.2.6.0-71
Apache Ranger	2.1.0.7.2.6.0-71
Apache Solr	8.4.1.7.2.6.0-71
Apache Spark	2.4.5.7.2.6.0-71
Apache Sqoop	1.4.7.7.2.6.0-71
Apache Tez	0.9.1.7.2.6.0-71
Apache Zeppelin	0.8.2.7.2.6.0-71
Apache ZooKeeper	3.5.5.7.2.6.0-71

### Other Components

Component	Version
Data Analytics Studio	1.4.2.7.2.6.0-71
GCS Connector	1.9.10.7.2.6.0-71
Hbase Indexer	1.5.0.7.2.6.0-71
Hue	4.5.0.7.2.6.0-71
Search	1.0.0.7.2.6.0-71
Schema Registry	0.9.1.7.2.6.0-71
Streams Messaging Manager	2.1.0.7.2.6.0-71
Streams Replication Manager	1.0.0.7.2.6.0-71

### Connectors and Encryption Components

Component	Version
HBase connectors	1.0.0
Hive Meta Store (HMS)	1.0.0
Hive on Tez	1.0.0
Hive Warehouse Connector	1.0.0
Spark Atlas Connector	0.1.0
Spark Schema Registry	1.1.0

## Using the Cloudera Runtime Maven repository

Information about using Maven to build applications with Cloudera Runtime components.

If you want to build applications or tools for use with Cloudera Runtime components and you are using Maven or Ivy for dependency management, you can pull the Cloudera Runtime artifacts from the Cloudera Maven repository. The repository is available at [repository.cloudera.com](https://repository.cloudera.com).



**Important:** When you build an application JAR, do not include CDH JARs, because they are already provided. If you do, upgrading CDH can break your application. To avoid this situation, set the Maven dependency scope to provided. If you have already built applications which include the CDH JARs, update the dependency to set scope to provided and recompile.

The following is a sample POM (pom.xml) file:

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <repositories>
    <repository>
      <id>cloudera</id>
      <url>https://repository.cloudera.com/artifactory/cloudera-repos/</url>
    </repository>
  </repositories>
</project>
```

## Maven Artifacts for Cloudera Runtime 7.2.6.0

The following table lists the project name, groupId, artifactId, and version required to access each runtime artifact.

Project	groupId	artifactId	version
Apache Accumulo	org.apache.accumulo	accumulo-core	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-examples-simple	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-fate	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-gc	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-master	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-minicluster	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-monitor	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-proxy	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-server-base	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-shell	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-start	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-test	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-trace	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-tracer	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-tserver	1.7.0.7.2.6.0-71
Apache Atlas	org.apache.atlas	atlas-authorization	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-aws-s3-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-classification-updater	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-common	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-v1	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-v2	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-common	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-distro	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-docs	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-api	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-common	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-janus	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-index-repair-tool	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-intg	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-janusgraph-hbase2	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-notification	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-plugin-classloader	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-repository	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-server-api	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-testtools	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-testing-util	2.1.0.7.2.6.0-71
	org.apache.atlas	hdfs-model	2.1.0.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.atlas	hive-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	hive-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-hook-api	2.1.0.7.2.6.0-71
	org.apache.atlas	kafka-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	navigator-to-atlas	2.1.0.7.2.6.0-71
	org.apache.atlas	sample-app	2.1.0.7.2.6.0-71
	org.apache.atlas	sqoop-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	sqoop-bridge-shim	2.1.0.7.2.6.0-71
Apache Avro	org.apache.avro	avro	1.8.2.7.2.6.0-71
	org.apache.avro	avro-compiler	1.8.2.7.2.6.0-71
	org.apache.avro	avro-ipc	1.8.2.7.2.6.0-71
	org.apache.avro	avro-mapred	1.8.2.7.2.6.0-71
	org.apache.avro	avro-maven-plugin	1.8.2.7.2.6.0-71
	org.apache.avro	avro-protobuf	1.8.2.7.2.6.0-71
	org.apache.avro	avro-service-archetype	1.8.2.7.2.6.0-71
	org.apache.avro	avro-thrift	1.8.2.7.2.6.0-71
	org.apache.avro	avro-tools	1.8.2.7.2.6.0-71
	org.apache.avro	trevni-avro	1.8.2.7.2.6.0-71
	org.apache.avro	trevni-core	1.8.2.7.2.6.0-71
Apache Calcite	org.apache.calcite	calcite-babel	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-core	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-druid	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-kafka	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-linq4j	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-server	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-ubenchmark	1.21.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-core	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-metrics	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-metrics-dropwizardmetrics	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-noop-driver	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-server	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-standalone-server	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-tck	1.16.0.7.2.6.0-71
Apache Crunch	org.apache.crunch	crunch-archetype	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-contrib	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-core	0.11.0.7.2.6.0-71



Project	groupId	artifactId	version
	org.apache.crunch	crunch-examples	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-hbase	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-hive	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-scrunch	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-spark	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-test	0.11.0.7.2.6.0-71
Apache Druid	org.apache.druid	druid-aws-common	0.17.1.7.2.6.0-71
	org.apache.druid	druid-benchmarks	0.17.1.7.2.6.0-71
	org.apache.druid	druid-console	0.17.1.7.2.6.0-71
	org.apache.druid	druid-core	0.17.1.7.2.6.0-71
	org.apache.druid	druid-gcp-common	0.17.1.7.2.6.0-71
	org.apache.druid	druid-hll	0.17.1.7.2.6.0-71
	org.apache.druid	druid-indexing-hadoop	0.17.1.7.2.6.0-71
	org.apache.druid	druid-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid	druid-integration-tests	0.17.1.7.2.6.0-71
	org.apache.druid	druid-processing	0.17.1.7.2.6.0-71
	org.apache.druid	druid-server	0.17.1.7.2.6.0-71
	org.apache.druid	druid-services	0.17.1.7.2.6.0-71
	org.apache.druid	druid-sql	0.17.1.7.2.6.0-71
	org.apache.druid	extendedset	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hadoop-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-basic-security	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-bloom-filter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-datasketches	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hc2-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-google-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hdfs-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-histogram	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kafka-extraction-namespace	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kafka-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kerberos	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kinesis-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-lookups-cached-global	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-lookups-cached-single	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-morc-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-parquet-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-protobuf-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-rs3-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-stats	0.17.1.7.2.6.0-71

[illegible]

Project	groupId	artifactId	version
	org.apache.hadoop	hadoop-build-tools	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-api	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-integration-tests	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-minicluster	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-runtime	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-cloud-storage	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-datajoin	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-distcp	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-extras	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-fs2img	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-gridmix	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-common	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-config	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-container-service	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-docs	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-server	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-test	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-interface-admin	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-interface-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-interface-server	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-server-framework	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-server-scm	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-test-utils	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-tools	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-httpfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-native-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-nfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-rbf	3.1.1.7.2.6.0-71
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	org.apache.knox	gateway-service-hive	1.3.0.7.2.6.0-71
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Project	groupId	artifactId	version
	org.apache.knox	gateway-service-impala	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-jkg	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxsso	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxssout	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxtoken	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-livy	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-metadata	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-nifi	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-nifi-registry	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-remoteconfig	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-rm	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-session	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-storm	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-test	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-tgs	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-vault	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-webhdfs	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-release	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-samples	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-spi	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-idbroker	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-release-utils	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-utils	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-topology-hadoop-xml	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-topology-simple	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-common	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-configinjector	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-urltemplate	1.3.0.7.2.6.0-71
	org.apache.knox	hadoop-examples	1.3.0.7.2.6.0-71
	org.apache.knox	knox-cli-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	knox-homepage-ui	1.3.0.7.2.6.0-71
	org.apache.knox	webhdfs-kerb-test	1.3.0.7.2.6.0-71
	org.apache.knox	webhdfs-test	1.3.0.7.2.6.0-71
Apache Kudu	org.apache.kudu	kudu-backup-tools	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-backup2_2.11	1.13.0.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.kudu	kudu-backup3_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-client	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-client-tools	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-hive	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-mapreduce	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark2-tools_2.11	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark2_2.11	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark3-tools_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark3_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-test-utils	1.13.0.7.2.6.0-71
Apache Livy	org.apache.livy	livy-api	0.6.0.7.2.6.0-71
	org.apache.livy	livy-client-common	0.6.0.7.2.6.0-71
	org.apache.livy	livy-client-http	0.6.0.7.2.6.0-71
	org.apache.livy	livy-core_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-examples	0.6.0.7.2.6.0-71
	org.apache.livy	livy-integration-test	0.6.0.7.2.6.0-71
	org.apache.livy	livy-repl_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-rsc	0.6.0.7.2.6.0-71
	org.apache.livy	livy-scala-api_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-server	0.6.0.7.2.6.0-71
	org.apache.livy	livy-test-lib	0.6.0.7.2.6.0-71
	org.apache.livy	livy-thriftserver	0.6.0.7.2.6.0-71
	org.apache.livy	livy-thriftserver-session	0.6.0.7.2.6.0-71
Apache Lucene	org.apache.lucene	lucene-analyzers-common	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-icu	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-kuromoji	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-morfologik	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-nori	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-openssl	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-phonetic	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-smartcn	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-stempel	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-backward-codecs	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-benchmark	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-classification	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-codecs	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-core	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-demo	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-expressions	8.4.1.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.lucene	lucene-facet	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-grouping	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-highlighter	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-join	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-memory	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-misc	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-monitor	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-queries	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-queryparser	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-replicator	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-sandbox	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial-extras	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial3d	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-suggest	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-test-framework	8.4.1.7.2.6.0-71
Apache Oozie	org.apache.oozie	oozie-client	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-core	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-distro	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-examples	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-fluent-job-api	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-fluent-job-client	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-server	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-distcp	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-git	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hcatalog	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hive	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hive2	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-oozie	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-spark	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-sqoop	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-streaming	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-tools	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-zookeeper-security-tests	5.1.0.7.2.6.0-71
	org.apache.oozie.test	toozie-mini	5.1.0.7.2.6.0-71
Apache ORC	org.apache.orc	orc-core	1.5.1.7.2.6.0-71
	org.apache.orc	orc-examples	1.5.1.7.2.6.0-71
	org.apache.orc	orc-mapreduce	1.5.1.7.2.6.0-71
	org.apache.orc	orc-shims	1.5.1.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.orc	orc-tools	1.5.1.7.2.6.0-71
Apache Phoenix	org.apache.phoenix	phoenix-client	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-core	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-hive	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-load-balancer	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-pherf	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-queryserver	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-queryserver-client	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-server	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-spark	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-tracing-webapp	5.0.0.7.2.6.0-71
Apache Ranger	org.apache.ranger	conditions-enrichers	2.1.0.7.2.6.0-71
	org.apache.ranger	credentialbuilder	2.1.0.7.2.6.0-71
	org.apache.ranger	embeddedwebserver	2.1.0.7.2.6.0-71
	org.apache.ranger	jisql	2.1.0.7.2.6.0-71
	org.apache.ranger	ldapconfigcheck	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-adls-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-atlas-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-atlas-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-distro	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-examples-distro	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hbase-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hbase-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hdfs-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hdfs-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hive-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hive-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-intg	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kafka-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kafka-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-knox-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-knox-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kudu-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kylin-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kylin-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-nifi-plugin	2.1.0.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.ranger	ranger-nifi-registry-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-ozone-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-ozone-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugin-classloader	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-audit	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-cred	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-installer	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-adls	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-hook-abfs	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-hook-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-intg	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-processor	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-s3-lib	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-hive	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-plugins-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-webapp	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-s3-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sampleapp-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-schema-registry-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-solr-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-solr-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sqoop-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sqoop-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-storm-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-storm-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-tagsync	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-tools	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-util	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-yarn-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-yarn-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	sample-client	2.1.0.7.2.6.0-71
	org.apache.ranger	sampleapp	2.1.0.7.2.6.0-71
	org.apache.ranger	shaded-raz-hook-abfs	2.1.0.7.2.6.0-71
	org.apache.ranger	shaded-raz-hook-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	unixauthclient	2.1.0.7.2.6.0-71
	org.apache.ranger	unixauthservice	2.1.0.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.ranger	unixusersync	2.1.0.7.2.6.0-71
Apache Solr	org.apache.solr	solr-analysis-extras	8.4.1.7.2.6.0-71
	org.apache.solr	solr-analytics	8.4.1.7.2.6.0-71
	org.apache.solr	solr-cell	8.4.1.7.2.6.0-71
	org.apache.solr	solr-clustering	8.4.1.7.2.6.0-71
	org.apache.solr	solr-core	8.4.1.7.2.6.0-71
	org.apache.solr	solr-dataimporthandler	8.4.1.7.2.6.0-71
	org.apache.solr	solr-dataimporthandler-extras	8.4.1.7.2.6.0-71
	org.apache.solr	solr-jaegertracer-configurator	8.4.1.7.2.6.0-71
	org.apache.solr	solr-langid	8.4.1.7.2.6.0-71
	org.apache.solr	solr-ltr	8.4.1.7.2.6.0-71
	org.apache.solr	solr-prometheus-exporter	8.4.1.7.2.6.0-71
	org.apache.solr	solr-security-util	8.4.1.7.2.6.0-71
	org.apache.solr	solr-solrj	8.4.1.7.2.6.0-71
	org.apache.solr	solr-test-framework	8.4.1.7.2.6.0-71
	org.apache.solr	solr-velocity	8.4.1.7.2.6.0-71
Apache Spark	org.apache.spark	spark-avro_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-catalyst_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-core_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-graphx_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-hadoop-cloud_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-hive_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-kubernetes_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-kvstore_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-launcher_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-mllib-local_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-mllib_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-common_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-shuffle_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-yarn_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-repl_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-shaded-raz	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sketch_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sql-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sql_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming-kafka-0-10-assembly_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-tags_2.11	2.4.5.7.2.6.0-71

Project	groupId	artifactId	version
	org.apache.spark	spark-token-provider-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-unsafe_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-yarn_2.11	2.4.5.7.2.6.0-71
Apache Sqoop	org.apache.sqoop	sqoop	1.4.7.7.2.6.0-71
	org.apache.sqoop	sqoop-test	1.4.7.7.2.6.0-71
Apache Tez	org.apache.tez	hadoop-shim	0.9.1.7.2.6.0-71
	org.apache.tez	hadoop-shim-2.8	0.9.1.7.2.6.0-71
	org.apache.tez	tez-api	0.9.1.7.2.6.0-71
	org.apache.tez	tez-aux-services	0.9.1.7.2.6.0-71
	org.apache.tez	tez-common	0.9.1.7.2.6.0-71
	org.apache.tez	tez-dag	0.9.1.7.2.6.0-71
	org.apache.tez	tez-examples	0.9.1.7.2.6.0-71
	org.apache.tez	tez-ext-service-tests	0.9.1.7.2.6.0-71
	org.apache.tez	tez-history-parser	0.9.1.7.2.6.0-71
	org.apache.tez	tez-javadoc-tools	0.9.1.7.2.6.0-71
	org.apache.tez	tez-job-analyzer	0.9.1.7.2.6.0-71
	org.apache.tez	tez-mapreduce	0.9.1.7.2.6.0-71
	org.apache.tez	tez-protobuf-history-plugin	0.9.1.7.2.6.0-71
	org.apache.tez	tez-runtime-internals	0.9.1.7.2.6.0-71
	org.apache.tez	tez-runtime-library	0.9.1.7.2.6.0-71
	org.apache.tez	tez-tests	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-cache-plugin	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-history	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-history-with-acls	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-history-with-fs	0.9.1.7.2.6.0-71
Apache Zeppelin	org.apache.zeppelin	zeppelin-angular	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-display	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-interpreter	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-jdbc	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-jupyter	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-livy	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-markdown	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-server	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-shaded-raz	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-shell	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-zengine	0.8.2.7.2.6.0-71
Apache ZooKeeper	org.apache.zookeeper	zookeeper	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-client-c	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-contrib-loggraph	3.5.5.7.2.6.0-71



Project	groupId	artifactId	version
	org.apache.zookeeper	zookeeper-contrib-rest	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-contrib-zooinspector	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-docs	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-jute	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-election	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-lock	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-queue	3.5.5.7.2.6.0-71

## What's New In Cloudera Runtime 7.2.6

You must be aware of the additional functionalities and improvements to features of components in Cloudera Runtime 7.2.6. Learn how the new features and improvements benefit you.

### What's New in Apache Atlas

There are no new features for Atlas in Cloudera Runtime 7.2.6.

### What's new in Data Analytics Studio

There are no new features for Data Analytics Studio in Cloudera Runtime 7.2.6.

### What's New in Apache HBase

There are no new features for HBase in Cloudera Runtime 7.2.6.

### What's New in Apache Hadoop HDFS

There are no new features for Hadoop HDFS in Cloudera Runtime 7.2.6.

### What's New in Apache Hive

There are no new features for Hive in Cloudera Runtime 7.2.6.

### What's New in Hue

There are no new features for Hue in Cloudera Runtime 7.2.6.

### What's New in Apache Impala

Learn about the new features of Impala in Cloudera Runtime 7.2.6.

### Transparent retry in Impala

If a SELECT query fails due to a cluster membership change, the Coordinator will cancel and unregister the running query and then launch a retry of the query. For e.g., if one of the executor nodes fails during query execution, the query fails but is transparently re-executed, either with the executor node immediately replaced, or with a temporarily reduced number of executor nodes. This feature will support retrying the entire query and NOT the individual query fragments. INSERT and DDL queries will NOT be retried.

This is done through the query option “RETRY\_FAILED\_QUERIES”. From this release, this option is enabled by default.

Note that query retry will be skipped if the query has returned any results to the client. To avoid this, enable Result Spooling and `spool_all_results_for_retries`.

See [Query Options](#) for more information.

### Datasketches in Impala

This release introduces two Datasketch algorithms, HLL and KLL:

- Datasketch algorithm HLL for queries that take too long to calculate exact results due to very large data sets (e.g. number of distinct values).
- Streaming algorithm (KLL) that uses the percentile/quantile functions to statistically analyze the approximate distribution of comparable data from a very large stream.

See [Using HLL Datasketch Algorithms in Impala](#) and [Using KLL Datasketch Algorithms in Impala](#) for more information.

### Hive UDF support in Impala

Changes in Hive UDF implemented through "GenericUDF" supports a lot more features. Even though Impala users can call Hive UDFs, Impala does not yet support new Hive UDFs based on the GenericUDF class.

For more information on Using Hive UDFs with Impala, see [Using Hive UDFs with Impala](#)

### ROLE-related statements in Impala

Impala doesn't currently support ROLE-related DDL statements for Ranger. However if you are migrating your workload from CDH to CDP or upgrading from CDH to CDP, you can migrate the role-based authentication rules and manage them using the Ranger admin UI.

### Blacklisting Faulty Executors

An Impala cluster typically consists of one or more executors, one or more coordinators, an instance of Catalog and an instance of Statestore. Each of these components can unexpectedly hang or exit due to various reasons. Until this release, if an executor fails to run a query an error status will be issued to the client issuing the query. This renders the entire cluster unusable because queries will continuously fail whenever impala tries to run any query on the faulty node. To avoid any query failures due to the transient unavailability of executors a new feature to "Blacklist faulty executors" has been added for Private Cloud Base and DataHub Cloud users. It handles the scenario where an executor still responds to heartbeats from the statestore but fails to successfully run queries by temporarily blacklisting any executors failing a query. This triggers the coordinator to reschedule a safe-to-retry query on the list of healthy executors rather than rendering the entire cluster unusable. The new feature helps Impala recover from transient issues with the executors.

## What's New in Apache Kafka

Learn about the new features of Kafka in Cloudera Runtime 7.2.6.

### Kafka no longer uses non-FIPS compatible algorithms by default

Murmur3 hashing is introduced for the log cleaner when it builds offset maps. In addition, to the introduction of the new hashing algorithm, the default algorithm used is also changed to Murmur3. The previous default was MD5. If required, MD5 can still be used by adding `cloudera.log.cleaner.hashing.algorithm=MD5` to the Kafka Broker Advanced Configuration Snippet (Safety Valve) for `kafka.properties` property in Cloudera Manager.

## What's New in Apache Knox

There are no new features for Knox in Cloudera Runtime 7.2.6.

## What's New in Apache Kudu

Learn about the new features of Kudu in Cloudera Runtime 7.2.6.

### Unique cluster ID

This feature adds a unique cluster ID to the cluster. The ID is a UUID that is automatically generated and stored in the `sys_catalog` if missing (on fresh startup or upgrade). This cluster ID is exposed through the master web-ui and the kudu master list tool.

### Optimizations and improvements

- Stop blocking op registration on MM mutex. This optimization buffers calls to `RegisterOp()` into a separate op map protected by a separate spinlock, and periodically merging the separate map into 'opt\_'.
- Add table owner to web UI and CLI outputs.
- Parallelize download blocks in `tablet-copy-client`.
- Add `LogThrottler` that implements a simple log throttler by logging at most one message per a time period that can be set at the call-site.
- Enhance the HMS plugin to check if synchronization is enabled.
- Add support for HMS notification messages encoded by the `GzipJSONMessageEncoder` that was added in [HIVE-20679](#)

## What's New in Apache Oozie

There are no new features for Oozie in Cloudera Runtime 7.2.6.

## What's New in Apache Phoenix

There are no new features for Phoenix in Cloudera Runtime 7.2.6.

## What's New in Apache Ranger

There are no new features for Ranger in Cloudera Runtime 7.2.6.

## What's New in Schema Registry

There are no new features for Schema Registry in Cloudera Runtime 7.2.6.

## What's New in Cloudera Search

There are no new features of Cloudera Search in Cloudera Runtime 7.2.6.

## What's New in Apache Solr

There are no new features for Solr in Cloudera Runtime 7.2.6.

## What's New in Apache Spark

Learn about the new features of Spark in Cloudera Runtime 7.2.6.

### Data engineering cluster

You can create a data engineering cluster in Amazon AWS from within CDP by selecting the Data Engineering cluster template. A data engineering includes Spark, Livy, Hive, Zeppelin, and Oozie, along with supporting services (HDFS, YARN, and Zookeeper).

See [Creating a Cluster on AWS](#).

## What's New in Sqoop

Learn what's new in the Apache Sqoop client in Cloudera Runtime 7.2.6.

To access the latest Sqoop documentation on Cloudera's documentation web site, go to [Sqoop Documentation 1.4.7.7.1.6.0](#).

### Discontinued maintenance of direct mode

The Sqoop direct mode feature is no longer maintained. This feature was primarily designed to import data from an abandoned database, which is no longer updated. Using direct mode has several drawbacks:

- Imports can cause an intermittent and overlapping input split.
- Imports can generate duplicate data.
- Many problems, such as intermittent failures, can occur.
- Additional configuration is required.

Do not use the `--direct` option in Sqoop import or export commands.

## What's new in Streams Messaging Manager

Learn about the new features of Streams Messaging Manager in Cloudera Runtime 7.2.6.

### SMM automatically configures SRM in Cloudera Manager

SMM automatically configures the SRM connection based on a service dependency. Manual configuration options are removed. This feature affects Cloudera Manager versions 7.2.3 and higher and CDH versions 7.2.3 and higher, Cloudera Manager versions 7.3.0 and higher and CDH versions 7.1.6 and higher.

### CSD support to configure caching in SMM authorizer

SMM request processing is sped up by introducing an authorization cache. The default TTL of the cache is 30 seconds and it is configurable in Cloudera Manager. Setting the TTL to 0 disables the cache entirely. The affected versions are Cloudera Manager 7.2.4 and higher and CDH 7.2.1 and higher, Cloudera Manager 7.3.0 and higher and CDH 7.1.6 and higher.

## What's New in Streams Replication Manager

Learn about the new features of Streams Replication Manager in Cloudera Runtime 7.2.6.

### SRM is available in Data Hub and CDP Public Cloud

SRM can now be provisioned in CDP Public Cloud with Data Hub. The default Streams Messaging cluster definitions are updated to include SRM. For more information, see [Streams Messaging cluster layout](#) and [Creating your first Streams Messaging cluster](#).

### SRM high availability mode

You can now deploy SRM in high availability mode. For more information, see [Enable high availability for Streams Replication Manager](#).

### Replication specific Kafka Connect REST servers

SRM can now run multiple drivers in the same cluster (high availability). To make this possible, the SRM driver role now deploys a Kafka Connect REST server for each replication that you set up and configure. These REST servers ensure communication between the different instances of the driver role and make replication with multiple drivers in a single cluster possible.

If required, you can configure these REST servers in Cloudera Manager with the Streams Replication Manager's Replication Configs property and two specific prefixes. For more information, see [Configuring replication specific Kafka Connect REST servers](#).

### The grace and retention period as well as the collection frequency of SRM Service role metrics are configurable

Configuration properties related to the SRM Service role's metric processing are added. These properties give users the ability to configure the grace and retention periods as well as the collection frequency of SRM Service role metrics.

The grace and retention periods can be configured directly with the following Cloudera Manager properties:

- SRM Service Metrics Grace Period (streams.replication.manager.service.streams.metrics.grace)
- SRM Service Metrics Retention Period (streams.replication.manager.service.streams.metrics.retention)

Metric collection frequency can be configured through Streams Replication Manager's Replication Configs with the metrics.period property. The metrics.period property can only be configured on a replication level. For example:

```
primary->secondary.metrics.period=60
```

## What's New in Apache Hadoop YARN

There is no new features for Apache Hadoop YARN in Cloudera Runtime 7.2.6.

## What's New in Apache ZooKeeper

There are no new features for ZooKeeper in Cloudera Runtime 7.2.6.

## Fixed Issues In Cloudera Runtime 7.2.6

You can review the list of reported issues and their fixes in Cloudera Runtime 7.2.6.

## Fixed Issues in Atlas

Review the list of Apache Atlas issues that are resolved in Cloudera Runtime 7.2.6.

### **OPSAPS-58847: Atlas TLS protocol excludes changed to TLSv1 and TLSv1.1 instead of earlier TLSv1.2**

This issue is now resolved.

### **CDPD-1138: Spark Atlas Connector tracks column-level lineage**

This issue is now resolved.

### **CDPD-11790: Shell entity is not resolved to the Complete entity under certain conditions.**

Shell entities with duplicate qualifiedName are no longer created when processing message from Spark Atlas Connector. This issue is now resolved.

### **CDPD-14031: In the Spark Atlas Connector, few S3 entities are created using the V1 S3 model instead of the updated V2 S3 model.**

Use Atlas S3 v2 models in Spark Atlas Connector. This issue is now resolved.

### **OPSAPS-57947: Kafka Broker SSL configuration is not correct in High Availability mode.**

When deploying the DataHub in High Availability mode, some of the Ranger and Atlas configurations are not computed correctly. In particular atlas.kafka.security.protocol in Atlas, the SSL properties and the REST URL services depending on Ranger.

### **CDPD-13645: Contains sortBy=name, 'name' attribute is not in hive\_storagedesc definition. Also if sortBy is not passed, default attribute is name**

Validated if sortBy attribute passed in the request is present in relationship end definition, if not present, ignore sorting.

Validated if sortBy attribute is not passed, default attribute name is present in relationship end definition, if not present, ignore sorting.

### **CDPD-10873**

- 1) Fixed quick search aggregation metrics when filtered with System Attributes
- 2) Fixed quick search aggregation metrics when filtering with more than one filter
- 3) Fixed quick search aggregation metrics when filtering with negation operator

### **CDPD-13805: Relationship api request will have provision to specify attributes to be present in search result.**

Example Request: /v2/search/relationship?guid=ac9e04cc-f927-4334-af08-c83bc3733f5b&relation=columns&sortBy=name&sortOrder=ASCENDING&attributes=dcProfiledData

### **CDPD-11681:**

1. Filter Search Results with multiple entity type by 'comma' separated string of typeName in the request Eg. "typeName": "hive\_table,hive\_db".
2. Filter Search Results with multiple tag by 'comma' separated string of tags in the request Eg. "classification": "tag1,tag2".

### **CDPD-13199: Incorrect attribute values in bulk import**

When importing Business Metadata attribute assignments, Atlas used only the last assigned attribute value instead of individual values for each entity in the import list.

### **CDPD-372: All Spark Queries from the Same Spark Session were included in a Single Atlas Process**

A Spark session can include multiple queries. When Atlas reports the Spark metadata, it creates a single process entity to correspond to the Spark session. The result was that an Atlas lineage picture showed multiple input entities or multiple output entities for a process, but the inputs and outputs were only related by the fact that they were included in operations in the same Spark session. In this release, the Spark Atlas Connector produces a spark\_application entity for each Spark job. Each data flow produced by the job creates a spark\_process entity in Atlas, which tracks the actual input and output data sets for that process. For more information, see [Spark metadata collection](#).

**CDPD-12620: Migration progress bar not refreshed**

During the import stage of Cloudera Navigator to Apache Atlas migration, the migration progress bar does not correctly refresh the migration status. The Statistics page in the Atlas UI displays the correct details of the migration.

This issue is resolved.

**CDPD-10151: Short Spark job processes may be lost**

In rare occasions, it is possible for events captured for Atlas by the Spark Atlas Connector to be dropped before the metadata reaches Atlas. It is more likely that an event is lost in very short running jobs.

This issue is resolved.

**CDPD-6042: Hive Default Database Location Incorrect in Atlas Metadata**

The location of the default Hive database as reported through the HMS-Atlas plugin does not match the actual location of the database. This problem does not affect non-default databases.

This issue is resolved.

**CDPD-4662: Lineage graph links not working**

Atlas lineage graphs do not include hyperlinks from assets to the assets' detail pages and clicking an asset does not provide an error in the log. Clicking an edge in a graph still provides access to edge behavior options such as controlling how classifications propagate.

This issue is resolved.

**CDPD-3700: Missing Impala and Spark lineage between tables and their data files**

Atlas does not create lineage between Hive tables and their backing HDFS files for CTAS processes run in Impala or Spark.

This issue is resolved.

Additional Cloudera JIRAs: CDP-5027, CDPD-3700, and IMPALA-9070

**CDPD-19798: Atlas /v2/search/basic API does not retrieve results when the search text mentioned in the entity filter criteria has special characters**

After the update, the `/v2/search/basic` API returns the correct results when the search text mentioned in the entity filter criteria has special characters such as: `+`, `-`, `&`, `|`, `!`, `(`, `)`, `{`, `}`, `[`, `]`, `^`, `"`, `~`, `*`, `?`

**Apache patch information**

Apache patches in this release. These patches do not have an associated Cloudera bug ID.

- ATLAS-4055: Basic search doesn't work if the search text has special characters
- ATLAS-3984: Add UI Date Timezone and UI Date Format in Session api
- ATLAS-3935: Use Audit framework to capture audit entries for Import/Export operations
- ATLAS-3957: Use Audit framework to capture audit entries for Server Start and Server In Active mode (HA)
- ATLAS-3954: UI: Type system property table improvement ATLAS-3991: UI: Handlebar helper number format issue ATLAS-3990: UI: When user clicks to view hive-table details, shown some wrong tabs ATLAS-3943: UI: Show Import/Export operations in administration audit. ATLAS-3986: UI Allow user to update the date format from JAVA property file ATLAS-3986: UI Allow user to update the date format from JAVA property file.
- ATLAS-3992: UI: Upgrade to JQuery 3.5.1 (Classic UI JQuery-UI issue)
- ATLAS-4000: updated jetty version to 9.4.31.v20200723
- ATLAS-3999: updated build to remove copying of dist artifacts into directories
- ATLAS-3427: Atlas Hook Enhancements for improved resiliency.
- ATLAS-3938: Deletion of non existing hive entities (CDPD-17225)
- ATLAS-3995: Atlas should support additional keystore/truststores beside JKS
- ATLAS-3989: Updated Export-Import Audits Writer to use metadata.namespace.

- ATLAS-3978: In Administration, Audits filter for 'OR' condition does not work
- ATLAS-3977: Patch handler for addressing deleted entities after migration.
- ATLAS-3981: UI: Create Entity button is shown for a user without create entity permission in rangeri (CDPD-13925) ATLAS-3979: Beta UI : Removing one of the filters with an attribute name removes all of the filters with that attribute name. (CDPD-7259)
- ATLAS-3983: solr index query escape character handling
- ATLAS-3971: Move authorization check for Business Metadata before type exist check.
- ATLAS-3964: Atlas UI displays large numbers incorrectly
- ATLAS-3953: Export: ZipSink: Specify character encoding when writing to ZIP file.
- ATLAS-3968: Refactor the typedef API authoriation error msg from type Name to type guid
- ATLAS-3962: Include business metadata def header in typedefs headers API
- ATLAS-3955: Read Type Auth, UI : detailsPage doesn't load for user who has read permission for entity but no read auth for entity's type
- ATLAS-3949: Relationship search API, add parameter to get classification attributes in search results (CDPD-16124)
- ATLAS-3952: Authorize SuperTypes and depend entityType for type-read access while creating Classificationdef.
- ATLAS-3911: UI: Type system managment
- ATLAS-3827: UI: Use moment date format instead of default date format.
- ATLAS-3945: UI: Entity details page, Show N/A for date if date value is 0 or null(CDPD-17206)
- ATLAS-3947: Skip authorization for read of `_ALL_ENTITY_TYPES` and `_ALL_CLASSIFICATION_TYPES` types
- ATLAS-3946: Filter TypeDefs in Metrics API and show types data accordingly
- ATLAS-3934: docker scripts to build and run Apache Atlas in containers
- ATLAS-3939: added profile berkeley-solr
- ATLAS-3875: updated sample client to improve logging
- ATLAS-3948: Entity Creation: Index Consistency: Java Patch Handler: Provide Option to Disable
- ATLAS-3944: Logs of import scripts should go to Atlas default log directory
- ATLAS-3583: Use Audit framework to generate audit entries for TypeDefs CREATE, UPDATE and DELETE
- ATLAS-3942: delete-type fails if the user doesn't have permission for type-read
- ATLAS-3920: Update joda-time to version 2.10.latest.
- ATLAS-3925: UI: (Regression) Properties with value Null not showing N/A
- ATLAS-3898: authorization updates to require `TYPE_READ` permission for type-def read

## Fixed issues in Data Analytics Studio

There are no fixed issues for Data Analytics Studio in Cloudera Runtime 7.2.6.

## Fixed Issues in Apache Hadoop

Review the list of Hadoop issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-7383: The ABFS and ADL connectors compatible with Alpine Linux and other platforms which have libssl1.1-1.1.1b-r1 as their native OpenSSL implementation**

See [HADOOP-16460](#) and [HADOOP-16438](#)

**CDPD-15133: HADOOP-17130: Configuration.getValByRegex() should not update the results while fetching as it can cause ConcurrentModificationException.**

This issue is now resolved.



## Fixed Issues in HBase

Review the list of HBase issues that are resolved in Cloudera Runtime 7.2.6.

### **OPSAPS-57394: Create new Cloudera Manager metrics for HBase 2.0 JMX RIT metrics**

The following HBase metrics are available in Cloudera Manager now:

- regions\_in\_transition\_duration\_num\_ops
- regions\_in\_transition\_duration\_min
- regions\_in\_transition\_duration\_max
- regions\_in\_transition\_duration\_mean
- regions\_in\_transition\_duration\_25th\_percentile
- regions\_in\_transition\_duration\_median
- regions\_in\_transition\_duration\_75th\_percentile
- regions\_in\_transition\_duration\_90th\_percentile
- regions\_in\_transition\_duration\_95th\_percentile
- regions\_in\_transition\_duration\_98th\_percentile
- regions\_in\_transition\_duration\_99th\_percentile
- regions\_in\_transition\_duration\_99\_9th\_percentile

### **Apache patch information**

No additional Apache patches.

### **Technical Service Bulletins**

#### **TSB-453: Snapshot and cloned table corruption when original table is deleted**

For more information about this issue, see the corresponding Knowledge article: [TSB 2021-453: HBASE-25206 "snapshot and cloned table corruption when original table is deleted"](#)

## Fixed Issues in HDFS

Review the list of HDFS issues that are resolved in Cloudera Runtime 7.2.6.

### **CDPD-6100**

This improvement makes HDFS NameNode leave safemode immediately if all blocks have reported in, reducing the cluster startup time.

### **CDPD-2946: Slow reading and writing of erasure-coded files**

The ISA-L library is not packaged with HDFS as a result of which HDFS erasure coding falls back to the Java implementation which is much slower than the native Hadoop implementation. This slows down the reading and writing of erasure-coded files.

### **OPSAPS-43909: Execution filter is not applied to Delete Policy.**

Execution filter is now applied to Delete Policy also. This issue is now resolved.

### **Technical Service Bulletins**

#### **TSB 2021-406: CVE-2020-9492 Hadoop filesystem bindings (ie: webhdfs) allows credential stealing**

For the latest update on this issue see the corresponding Knowledge article: [TSB-2021 406: CVE-2020-9492 Hadoop filesystem bindings \(ie: webhdfs\) allows credential stealing](#)

## Fixed Issues in Apache Hive

Review the list of Hive issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-16986: `hive.table("table_name").show` results in null pointer exception.**

Dataframe obtained by `hive.table("table_name")` is usable now. This issue is now resolved.

**CDPD-14820: Fixed `probeDecode` issue. `TezCompiler` pushes down `MapJoin` Operators with Key expressions.**

Now, only `MapJoins` with simple keys is supported by the Hive `probeDecode` feature.

**OPSAPS-57720: DH cluster creation fails post CDH upgrade.**

Cloudera Manager had no upgrade handler for Hive Metastore. This issue is now resolved.

**OPSAPS-49148: "Update Hive Metastore NameNodes" invokes `metatool` for each database.**

Removed unnecessary executions of the `metatool` with `updateLocation` to lower the total execution time and usage of resources for 'Update Hive Metastore NameNodes'. This issue is now resolved.

**OPSAPS-43909: Execution filter is not applied to Delete Policy.**

Execution filter is now applied to Delete Policy also. This issue is now resolved.

## Fixed Issues in Hue

There are no fixed issues for Hue in Cloudera Runtime 7.2.6.

## Fixed Issues in Apache Impala

Review the list of Impala issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-14548: Upgrades a library - PostgreSQL JDBC Driver (`pgjdbc`) bundled with Impala. The previous version 42.2.5 was affected with vulnerability CVE-2020-13692. It is upgraded to version 42.2.14.**

This issue is now resolved.

**CDPD-10444: Update the version of Atlas used by Impala**

Resolves the inconsistency between the versions of `jackson-databind` used by Atlas and Impala so that you no longer see the exception `NoClassDefFoundError` after the call to `QueryEventHookManager#executeQueryCompleteHooks()` in Impala.

## Fixed Issues in Apache Kafka

Review the list of Kafka issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-16683: Support consumer offset sync across clusters in MM 2.0 (KAFKA-9076 backport)**

This is a backported improvement, see [KIP-545](#) and [KAFKA-9076](#) for more information.

**CDPD-17921: `advertised.listeners` should allow duplicated ports (KAFKA-10478 backport)**

This is a backported fix. The `advertised.listeners` Kafka property now accepts duplicated ports.

**OPSAPS-57907: The Cloudera Manager Agent no longer generates a high CPU load when fetching Kafka metrics.**

This issue is now resolved.

**OPSAPS-58319: Kafka metrics can be wiped after Kafka cluster restart**

This issue is now resolved.

## Fixed Issues in Apache Knox

Review the list of Knox issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-19110: Prevent Knox from passing `hadoop.auth` cookie to browser.**

This issue is now resolved.

#### **OPSAPS-57448: IDBroker does not export correct RDC configuration in HA.**

The RDC configs is now correctly exported when IDBroker is in HA mode. This issue is now resolved.

#### **Apache patch information**

Apache patches in this release. These patches do not have an associated Cloudera bug ID.

- KNOX-2406 Use dependency bom for dependency management
- KNOX-2392 Simple file-based TokenStateService implementation
- KNOX-2389 AliasBasedTokenStateService stops processing persisted journal entries if one is malformed
- KNOX-2377 Address potential loss of token state
- KNOX-2384 Token Service should return expiration from token when renewal disabled
- KNOX-2381 racking UI of flink session is broken in YARNUIV2
- KNOX-2378 AliasBasedTokenStateService log message is misleading
- KNOX-2376 Ensure all HBASEJARS IN rules are for /hbase/jars and not /hbase/maven
- KNOX-2368 CM Cluster Configuration Monitor Does Not Support Rolling Restart Events
- KNOX-2351 Catching any errors while monitoring CM configuration changes
- KNOX-2367 Fix rewrite rules for HDFS UI fonts and bootstrap.min.css.map
- KNOX-2348 Fix KnoxCLI when kerberos auth is used
- KNOX-2357 Descriptor handler should not default discovery type to Ambari unless there is discovery configuration
- ODX-107 KNOX-2354 An HBASEJARS service which can proxy HBase jars hosted by t€
- KNOX-1998 WebHDFS rewrite.xml does not have rewrite rule for Location field in json
- KNOX-2352 Knox Token State Eviction Should Be Based on Expiration and Extended Default Grace Period
- KNOX-2355:Update Atlas rewrite.xml for new UI changes
- KNOX-2304 CM discovery cluster config monitor needs to be aware of €
- KNOX-2316 Knox Token State Eviction Must Consider Maximum Token Lifetime
- KNOX-2314 NPE from topology Service equals implementation when no URLs
- KNOX-2301 and KNOX-2302 Trigger discovery for descriptors at gateway start time
- KNOX-2287 KnoxCLI convert topology to provider and descriptor
- KNOX-2298 ClouderaManager cluster config monitor should stop monitoring unreferenced clusters
- KNOX-2266 Tokens Should Include a Unique Identifier
- KNOX-2212 Token permissiveness validation
- KNOX-2230 Token State Service should throw UnknownTokenException instead of IllegalArgumentException
- KNOX-2237 CM service discovery should default the http path of Hive URLs when the associated property is not set
- KNOX-2233 DefaultKeystoreService getCredentialForCluster uses cache without synchronization
- KNOX-2214 Reaping of expired Knox tokens
- KNOX-2228 JWTFilter should handle unknown token exception from token state service
- KNOX-2210 Gateway-level configuration for server-managed Knox token state
- KNOX-2215 Token service should return a 403 response when the renewer is not white-listed
- KNOX-2209 Improve logging for Knox token handling
- KNOX-2153 CM discovery € Monitor Cloudera Manager
- KNOX-2156 CM discovery € KUDUI discovery
- KNOX-2152 Disable Ambari cluster configuration monitoring by default
- KNOX-2151 HIVE\_ON\_TEZ HS2 Discovery doesn't work
- KNOX-1970 CM discovery € Add Impala HS2 to auto discovery
- KNOX-1932 CM discovery € WEBHCAT URLs not discovered
- KNOX-1921 CM discovery € Hue Load balancer HTTP/HTTPS scheme

- KNOX-1935 CM discovery â€œ Hue should not have both LB and non LB
- KNOX-1962 CM discovery â€œ Avoid reading krb5 login config multiple times
- KNOX-2144 Alias API KnoxShell support should provide response types better than raw JSON
- KNOX-1410 Knox Shell support for remote Alias management
- KNOX-2127 ZooKeeperAliasService mishandles mixed-case alias keys properly
- KNOX-2105 KnoxShell support for token renewal and revocation
- KNOX-2071 Configurable maximum token lifetime for TokenStateService
- KNOX-2066 Composite Authz Provider
- KNOX-2067 KnoxToken service support for renewal and revocation

## Fixed Issues in Apache Kudu

Review the list of Kudu issues that are resolved in Cloudera Runtime 7.2.6.

- [KUDU-2884](#): Improves the master address matching in the `kudu hms fix` tool
- [KUDU-3149](#): Lock contention between registering ops and computing maintenance op stats
- [KUDU-3157](#): Ensure slf4j classes are not shaded
- [KUDU-3182](#): 'last\_known\_addr' is not specified for single master Raft configuration
- [KUDU-3191](#): Fail replicas when KUDU-2233 is detected
- [KUDU-3195](#): Flush when any DMS in the tablet is older than the time threshold
- [KUDU-3198](#): Fix encodeRow() when encoding delete operations

### Apache patch information

Apache patches in this release. These patches do not have an associated Cloudera bug ID.

- KUDU-3090
- KUDU-3091

## Fixed Issues in Apache Oozie

Review the list of Oozie issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-17306: Hive-Common is added as a dependency to Sqoop and Oozie's Sqoop sharelib so that you do not have to do it manually.**

This issue is now resolved.

**CDPD-17843: Hive-JDBC is added as a dependency to Sqoop and Oozie's Sqoop sharelib so you do not have to do it manually.**

This issue is now resolved.

**OPSAPS-58298: Oozie must accept a keyStoreType and trustStoreType property in oozie-site.xml.**

This issue is now resolved.

**CDPD-14964: When a Java action called System.exit() that resulted in a misleading security exception for Sqoop actions, there was an error because of the misleading exception in the yarn logs even though the Workflow is successful.**

This issue is now resolved.

**CDPD-15735: Oozie Spark actions are failing because Spark and Kafka are using different Scala versions.**

This issue is now resolved.

**OPSAPS-57429: Zookeeper SSL/TLS support for Oozie.**

When SSL is enabled in Zookeeper, Oozie tries to connect to Zookeeper using SSL instead of a non-secure connection.

**CDPD-14600**

Apache ActiveMQ is updated to address CVE-2016-3088

**CDPD-13702**

The PostgreSQL driver is upgraded to address CVE-2020-13692

**CDPD-11967**

Fix to address CWE-693: Protection Mechanism Failure

**CDPD-12742: Oozie was not able to communicate with ID Broker and hence it failed to obtain a delegation token, because of a missing Jar**

That Jar is now deployed together with Oozie and hence the underlying issue is fixed.

**CDPD-12283: By Oozie did not allow to use s3a and abfs file systems and users had to manually specify the supportability of these via Safety Valve**

Since Oozie is compatible with these filesystems we changed the default Oozie configuration to allow these so users don't have to manually specify it.

**CDPD-10746: Fix to address CVE-2019-17571****CDPD-9895: Various errors when trying to use an S3 filesystem**

Oozie is now fully compatible with S3.

**CDPD-9761: There is a sub workflow run in independent mode that runs a fork action which contains two (or more) actions**

These actions inside the fork action run in parallel mode, and they have some seconds delay in between them. If a parameter is passed to one of these actions, that cannot be resolved, then it changes its status to FAILED, and also the workflow's state to FAILED. The other actions state which are not started yet will be stuck in PREP state forever. The correct behaviour would be to KILL the remaining actions as well as the workflow. Note: this bug only occurs when it is run in independent mode. If it has a parent workflow, then the parent workflow will kill this workflow after 10 minutes because of the callback process.

**CDPD-9721: Upgrade built-in spark-hive in Oozie**

Oozie is using the Spark-Hive library from the stack.

**CDPD-9220: Oozie spark actions using --keytab fail due to duplicate dist. cache**

Oozie spark actions add everything in the distributed cache of the launcher job to the distributed cache of the spark job, meaning the keytab is already there, then the --keytab argument tries to add it again causing the failure.

**CDPD-9189: Apache Pig support was completely removed from Oozie****CDPD-7108: In case we have a workflow which has, let's say, 80 actions after each other, then the validator code "never" finishes****CDPD-7107: The following were added to the spark opts section of the spark action: --conf spark****CDPD-7106: query tag is not functional for Hive2 action node in oozie**

Workflow is intended to create a hive table using Hive2 action node. Though workflow runs successfully, table is not created.

**CDPD-7105: Oozie workflow processing becomes slow after the increase of rows in WF\_JOBS and WF\_ACTIONS tables when running against SQL Server****CDPD-6877: When you create a MapReduce action which then creates more than 120 counters, an exception was thrown****CDPD-6630: Oozie by default gathers delegation tokens for the nodes defined in MapReduce****CDPD-5168: Logging enhancements in CoordElFunctions for better supportability**

**CDPD-4826: Oozies web server does not work when TLS is enabled and Open JDK 11 is in use**

This issue is now fixed.

**Apache patch information**

No additional Apache patches.

**Fixed Issues in Phoenix**

There are no fixed issues for Phoenix in Cloudera Runtime 7.2.6.

**Fixed Issues in Apache Ranger**

Review the list of Ranger issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-16888: Ranger and Atlas services should have recommended heap size configured while deploying a cluster.**

Default minimum heap size for Ranger services is now set as 1 GB and for Atlas 2GB. This issue is now resolved.

**CDPD-16888: Solr client connection used for communication is not closed and this results in resource leak.**

This issue is now resolved.

**OPSAPS-58711: ODB cannot deploy against Datalake HA**

This issue is now resolved.

**CDPD-15401: When you enable Hive Metastore lookup in Ranger admin, resource lookup returns nothing and displays an error.**

This issue is now resolved. You must use this step as a solution: `sudo ln -s /opt/cloudera/parcels/*&lt;CDH-version>*/jars/libfb303-0.9.3.jar /opt/cloudera/parcels/*&lt;CDH-version>*/lib/ranger-admin/ews/webapp/WEB-INF/lib/libfb303-0.9.3.jar`

**CDPD-14269 and CDPD-14289: Failed resource filtering in Ranger Policy Export.**

Exporting tag policies result in a 204 error when the `polResource` query parameter is used.

**CDPD-12848: When you try to create multiple policies using the API having same non-existing group, the group creation fails due to multiple threads trying to create the same group at once.**

Separate threads are now created for retry group creation and checks if the group is previously created and associate it with policy.

**CDPD-10072: Ranger Ozone plugin unable to write to solr audits in SSL enabled cluster**

This issue is now resolved. A separate folder `libext` is added under the Ozone library path and all the ranger plugin jars are added under this new folder.

**OPSAPS-57495: The Ranger role-level principal for Ranger Admin, Ranger Usersync, and Ranger Tagsync can now be customized from the Cloudera Manager UI.****Fixed Issues in Schema Registry**

Review the list of Schema Registry issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-11076: Schema Registry API swagger doc is incorrect/not up to date**

Schema Registry API swagger documentation has been updated, descriptions completed to have better understanding about endpoints and parameters have been also completed and this way more accurate searches can be implemented.

**CDPD-16812: Read boolean properties from Kafka configs**

Schema Registry can now read and cast String values as Boolean values.

**CDPD-16851: updateSchemaMetadata() allows changing schema type to an invalid value which breaks adding new versions to a schema**

When updating a SchemaMetadata, the Type parameter is now validated.

**CDPD-17849: Remove usage of non-FIPS compatible algorithms in Schema Registry**

Added configuration option in both client and server to change the hashing algorithm used for generating schema fingerprints. The default value is MD5 but can be changed to SHA-2 or other algorithms.

**CDPD-17969: Cannot fork schemas**

Previously, schema versions could not be forked when Ranger authorization was enabled. This fixes the bug and allows creating branches and forks.

**CDPD-18345: Schema Registry fails to start on a cluster with TLS enabled and multiple SANs in the certificate**

Schema Registry can now start on a cluster when TLS is enabled and there are multiple Subject Alternative Names in the certificate.

**OPSAPS-58153: Schema Registry role log is not visible through CM UI**

In versions before Cloudera Manager 7.2.3, Schema Registry logs were not displayed in the Cloudera Manager UI. Now, the Schema Registry log format was changed to make it consistent with the log format of other CDP components. Schema Registry Server role logs are now correctly displayed in Cloudera Manager.

**OPSAPS-58157: The Schema Registry Swagger page does not work due to CSP violation**

Schema Registry's swagger page now correctly renders and the browser does not report a Content Security Policy violation error.

**OPSAPS-58397: Make the Schema Registry hashing algorithm configurable**

Added new option to Schema Registry configuration where the users can change the hashing algorithm used to generate schema fingerprints. The default value is MD5.

## Fixed Issues in Spark

Review the list of Spark issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-16748: Improve LeftSemi SortMergeJoin right side buffering.**

This issue is now resolved.

**CDPD-17422: Improve null-safe equi-join key extraction.**

This issue is now resolved.

**CDPD-18458: When pyspark.sql.functions.lit() function is used with dataframe cache, it returns wrong result.**

This issue is now resolved.

**CDPD-1138: Spark Atlas Connector tracks column-level lineage**

This issue is now resolved.

**CDPD-14906: Spark reads or writes TIMESTAMP data for values before the start of the Gregorian calendar. This happens when Spark is:**

- Using dynamic partition inserts.
- Reading or writing from an ORC table when spark.sql.hive.convertMetastoreOrc=false (the default is true).
- Reading or writing from an Orc table when spark.sql.hive.convertMetastoreOrc=true but spark.sql.orc.impl=hive (the default is native).

- Reading or writing from a Parquet table when `spark.sql.hive.convertMetastoreParquet=false` (the default is true).

This issue is now resolved.

**CDPD-15385: Currently, delegation token support for Spark DStreams is not available.**

Added Kafka delegation token support for DStreams in the Spark 2.4.5. This issue is now resolved.

**CDPD-15735: Oozie Spark actions are failing because Spark and Kafka are using different Scala versions.**

This issue is now resolved.

**CDPD-10532: Update log4j to address CVE-2019-17571**

Replaced log4j with an internal version to fix CVE-2019-17571.

**CDPD-10515: Incorrect version of jackson-mapper-asl**

Use an internal version of jackson-mapper-asl to address CVE-2017-7525.

**CDPD-7882: If an insert statement specifies partitions both statically and dynamically, there is a potential for data loss**

To prevent data loss, this fix throws an exception if partitions are specified both statically and dynamically. You can follow the workarounds provided in the error message.

**CDPD-15773: In the previous versions, applications that share a Spark Session across multiple threads was experiencing a deadlock accessing the HMS.**

This issue is now resolved.

## Fixed Issues in Apache Sqoop

Review the list of Sqoop issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-17306: Hive-Common is added as a dependency to Sqoop and Oozie's Sqoop sharelib so that you do not have to do it manually.**

This issue is now resolved.

**CDPD-17843: Hive-JDBC is added as a dependency to Sqoop and Oozie's Sqoop sharelib so you do not have to do it manually.**

This issue is now resolved.

**CDPD-12646: Sqoop does not close the open database connection before submitting the MapReduce Job. The open connection utilizes resources and displays an error message in the log when the connection times out.**

This issue is resolved.

### Apache patch information

No additional Apache patches.

## Fixed Issues in Streams Messaging Manager

Review the list of Streams Messaging Manager issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-16215: SMM showing inaccurate Producer Messages Count in multiple places.**

If a producer was inactive for a few minutes it would be emptied from the Kafka broker cache. In that case, the producer's messages count entity would start from 0 in ServiceMonitor's database and show incorrect values for the "Messages" fields where that producer is shown.

**CDPD-16438: SMM does not handle sum() metrics correctly.**



Single Point metrics (metrics that are a single timeSpan - Value pair such as sums, avgs etc) were showing data that might have been related to another timeSpan. So for instance when querying for 30 minutes that 6-hourly data was shown. The problematic queried timespans and the corresponding shown timespans were the following:

- 6 hours -> 6 hours, 1 hour, 30 mins
- 2 days -> 24 hours, 2 days

**CDPD-17889: SMM UI uses the "latestOutMessagesCount" field from the response for showing the number of messages at the ProducerDetail page.**

If a producer is inactive for a few minutes, and gets evicted from the Kafka broker cache, the metrics will restart from 0 in ServiceMontior's database and will show inaccurate data at the messages field at the ProducerDetail page.

**OPSAPS-58488: SMM is missing from Ranger users for SchemaRegistry.**

SMM cannot complete Schema Registry related API operations because it is not whitelisted for access in ranger.

## Fixed Issues in Streams Replication Manager

Review the list of Streams Replication Manager issues that are resolved in Cloudera Runtime 7.2.6.

**CSP-956: Topics or groups added to white or blacklists are not returned when using srm-control --list**

The srm-control tool and the SRM driver are now able to read the full white and blacklist from the srm-control.<alias>.internal configuration topic.

**CSP-462: Replication failing when SRM driver is present on multiple nodes**

Replication no longer fails when the driver is present on multiple nodes. Running SRM in high availability mode is now possible

**CDPD-18300: SRM resolves configuration provider references in its internal configuration topic**

Configuration provider references are no longer resolved. Sensitive information is no longer exposed this way.

## Fixed Issues in Apache Hadoop YARN

There is no fixed issues for Apache Hadoop YARN in Cloudera Runtime 7.2.6.

## Fixed Issues in Zeppelin

Review the list of Zeppelin issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-10187: Incorrect version of jackson-mapper-asl.**

Use internal version of jackson-mapper-asl to handle CVE-2017-7525.

**CDPD-1683: Zeppelin demo users have been removed**

Use cluster users to access Zeppelin. For information on provisioning users in CDP, see [Onboarding users](#).

**CDPD-880, CDPD-1685: Shell, JDBC, and Spark interpreters have been removed**

Use an available interpreter. For Spark functionality, use the Livy interpreter.

**CDPD-3047: Markdown interpreter does not handle certain numbered list syntax correctly**

Using the plus sign (+) or asterisk (\*) to continue a numbered list using the %md interpreter results in bullet point entries instead.

### Apache patch information

Apache patches in this release. These patches do not have an associated Cloudera bug ID.

- ZEP-97: [ZEPPELIN-3690] display all column with the same name in ui-grid
- ZEP-79: Disable fs.file.impl cache to ensure RawLocalFS is used

## Fixed Issues in Apache ZooKeeper

Review the list of ZooKeeper issues that are resolved in Cloudera Runtime 7.2.6.

**CDPD-15702: Zookeeper clients fail to connect to a secure ZooKeeper if TLS certificate contains SAN entries that are not of type DNS or IP.**

ZKHostnameVerifier now does not reject valid certificates with subjectAltNames anymore. This issue is now resolved.

## Known Issues In Cloudera Runtime 7.2.6

You must be aware of the known issues and limitations, the areas of impact, and workaround in Cloudera Runtime 7.2.6.

### Known Issues in Apache Atlas

Learn about the known issues in Apache Atlas, the impact or changes to the functionality, and the workaround.

**ATLAS-3921: Currently there is no migration path from AWS S3 version 1 to AWS S3 version 2.**

None

**CDPD-12668: Navigator Spark lineage can fail to render in Atlas**

As part of content conversion from Navigator to Atlas, the conversion of some spark applications created a cyclic lineage reference in Atlas, which the Atlas UI fails to render. The cases occur when a Spark application uses data from a table and updates the same table.

None

**CDPD-11941: Table creation events missed when multiple tables are created in the same Hive command**

When multiple Hive tables are created in the same database in a single command, the Atlas audit log for the database may not capture all the table creation events. When there is a delay between creation commands, audits are created as expected.

None

**CDPD-11940: Database audit record misses table delete**

When a hive\_table entity is created, the Atlas audit list for the parent database includes an update audit. However, at this time, the database does not show an audit when the table is deleted.

None

**CDPD-11790: Simultaneous events on the Kafka topic queue can produce duplicate Atlas entities**

In normal operation, Atlas receives metadata to create entities from multiple services on the same or separate Kafka topics. In some instances, such as for Spark jobs, metadata to create a table entity in Atlas is triggered from two separate messages: one for the Spark operation and a second for the table metadata from HMS. If the process metadata arrives before the table metadata, Atlas creates a temporary entity for any tables that are not already in Atlas and reconciles the temporary entity with the HMS metadata when the table metadata arrives.

However, in some cases such as when Spark SQL queries with the write.saveAsTable function, Atlas does not reconcile the temporary and final table metadata, resulting in two entities with the same qualified name and no lineage linking the table to the process entity.

This issue is not seen for other lineage queries from spark:

```
create table default.xx3 as select * from default.xx2
insert into yy2 select * from yy
insert overwrite table ww2 select * from ww1
```

Another case where this behavior may occur is when many REST API requests are sent at the same time.

None

#### **CDPD-11692: Navigator table creation time not converted to Atlas**

In converting content from Navigator to Atlas, the create time for Hive tables is not moved to Atlas.

None

#### **CDPD-11338: Cluster names with upper case letters may appear in lower case in some process names**

Atlas records the cluster name as lower case in qualifiedNames for some process names. The result is that the cluster name may appear in lower case for some processes (insert overwrite table) while it appears in upper case for other queries (ctas) performed on the same cluster.

None

#### **CDPD-10576: Deleted Business Metadata attributes appear in Search Suggestions**

Atlas search suggestions continue to show Business Metadata attributes even if the attributes have been deleted.

None

#### **CDPD-10574: Suggestion order doesn't match search weights**

At this time, the order of search suggestions does not honor the search weight for attributes.

None

#### **CDPD-9095: Duplicate audits for renaming Hive tables**

Renaming a Hive table results in duplicate ENTITY\_UPDATE events in the corresponding Atlas entity audits, both for the table and for its columns.

None

#### **CDPD-7982: HBase bridge stops at HBase table with deleted column family**

Bridge importing metadata from HBase fails when it encounters an HBase table for which a column family was previously dropped. The error indicates:

```
Metadata service API org.apache.atlas.AtlasClientV2$API_V2@58112
bc4 failed with status 404 (Not Found) Response Body
( {"errorCode":"ATLAS-404-00-007","errorMessage":"Invalid
instance creation/updation parameters passed :
hbase_column_family.table: mandatory attribute value missing in
type hbase_column_family"})
```

None

#### **CDPD-7781: TLS certificates not validated on Firefox**

Atlas is not checking for valid TLS certificates when the UI is opened in FireFox browsers.

None

#### **CDPD-6675: Irregular qualifiedName format for Azure storage**

The qualifiedName for hdfs\_path entities created from Azure blob locations (ABFS) doesn't have the clusterName appended to it as do hdfs\_path entities in other location types.

None

**CDPD-5933 and CDPD-5931: Unexpected Search Results When Using Regular Expressions in Basic Searches on Classifications**

When you include a regular expression or wildcard in the search criteria for a classification in the Basic Search, the results may differ unexpectedly from when full classification names are included. For example, the Exclude sub-classifications option is respected when using a full classification name as the search criteria; when using part of the classification name and the wildcard (\*) with Exclude sub-classifications turned off, entities marked with sub-classifications are not included in the results. Other instances of unexpected results include case-sensitivity.

None

**CDPD-4762: Spark metadata order may affect lineage**

Atlas may record unexpected lineage relationships when metadata collection from the Spark Atlas Connector occurs out of sequence from metadata collection from HMS. For example, if an ALTER TABLE operation in Spark changing a table name and is reported to Atlas before HMS has processed the change, Atlas may not show the correct lineage relationships to the altered table.

None

**CDPD-4545: Searches for Qualified Names with "@" doesn't fetch the correct results**

When searching Atlas qualifiedName values that include an "at" character (@), Atlas does not return the expected results or generate appropriate search suggestions.

Consider leaving out the portion of the search string that includes the @ sign, using the wildcard character \* instead.

**CDPD-3208: Table alias values are not found in search**

When table names are changed, Atlas keeps the old name of the table in a list of aliases. These values are not included in the search index in this release, so after a table name is changed, searching on the old table name will not return the entity for the table.

None

**CDPD-3160: Hive lineage missing for INSERT OVERWRITE queries**

Lineage is not generated for Hive INSERT OVERWRITE queries on partitioned tables. Lineage is generated as expected for CTAS queries from partitioned tables.

None

**CDPD-3125: Logging out of Atlas does not manage the external authentication**

At this time, Atlas does not communicate a log-out event with the external authentication management, Apache Knox. When you log out of Atlas, you can still open the instance of Atlas from the same web browser without re-authentication.

To prevent access to Atlas after logging out, close all browser windows and exit the browser.

**CDPD-1892: Ranking of top results in free-text search not intuitive**

The Free-text search feature ranks results based on which attributes match the search criteria. The attribute ranking is evolving and therefore the choice of top results may not be intuitive in this release.

If you don't find what you need in the top 5 results, use the full results or refine the search.

**CDPD-1884: Free text search in Atlas is case sensitive**

The free text search bar in the top of the screen allows you to search across entity types and through all text attributes for all entities. The search shows the top 5 results that match the search terms at any place in the text (\*term\* logic). It also shows suggestions that match the search terms that begin with the term (term\* logic). However, in this release, the search results are case-sensitive.

If you don't see the results you expect, repeat the search changing the case of the search terms.

**CDPD-1823: Queries with ? wildcard return unexpected results**

DSL queries in Advanced Search return incorrect results when the query text includes a question mark (?) wildcard character. This problem occurs in environments where trusted proxy for Knox is enabled, which is always the case for CDP.

None

#### **CDPD-1664: Guest users are redirected incorrectly**

Authenticated users logging in to Atlas are redirected to the CDP Knox-based login page. However, if a guest user (without Atlas privileges) attempts to log in to Atlas, the user is redirected instead to the Atlas login page.

To avoid this problem, open the Atlas Dashboard in a private or incognito browser window.

#### **CDPD-922: IsUnique relationship attribute not honored**

The Atlas model includes the ability to ensure that an attribute can be set to a specific value in only one relationship entity across the cluster metadata. For example, if you wanted to add metadata tags to relationships that you wanted to make sure were unique in the system, you could design the relationship attribute with the property "IsUnique" equal true. However, in this release, the IsUnique attribute is not enforced.

None

## Known Issues in Data Analytics Studio

Learn about the known issues in Data Analytics Studio, the impact or changes to the functionality, and the workaround.

- You may not be able to add or delete columns or change the table schema after creating a new table using the upload table feature.
- For clusters secured using Knox, you see the HTTP 401: Forbidden error message when you click the DAS quick link from Cloudera Manager and are unable to log into DAS.

Workaround: The admin user will need to provide the DAS URL from the Knox proxy topology to the users needing access to DAS.

- The download logs feature may not return the YARN application logs on a Kerberized cluster. When you download the logs, the logs contain an error-reports.json file which states that no valid Kerberos tokens are available.

Workaround: An admin user with access to the machine can use the kinit command as a hive user with hive service user keytabs and trigger the download.

- The task logs for a particular task may not be available in the task swimlane. And the zip file generated by download logs artifact may not have task logs, but instead contain an error-reports.json file with the error log of the download failures.
- You may not see any data for a report for any new queries that you run. This can happen especially for the last one day's report.

Workaround:

1. Shut down the DAS Event Processor.
2. Run the following command from the Postgres server:

```
update das.report_scheduler_run_audit set status = 'FAILED' where status = 'READING';
```

3. Start the DAS Event Processor.
- On clusters secured with Knox proxy only: You might not be able to save the changes to the JDBC URL in the DAS UI to change the server interface (HS2 or LLAP) on which you are running your queries.
  - You may be unable to upload tables or get an error while browsing files to upload tables in DAS on a cluster secured using Knox proxy.

- DAS does not parse semicolons (;) and double hyphens (--) in strings and comments.

For example, if you have a semicolon in query such as the following, the query might fail: `select * from properties where prop_value = "name1;name2";`

If a semicolon is present in a comment, then execute the query after removing the semicolon from the comment, or removing the comment altogether. For example:

```
select * from test; -- select * from test;
select * from test; /* comment; comment */
```

Queries with double hyphens (--) might also fail. For example:

```
select * from test where option = '--name';
```

- You might face UI issues on Google Chrome while using faceted search. We recommend you to use the latest version of Google Chrome (version 71.x or higher).
- Visual Explain for the same query shows different graphs on the **Compose** page and the **Query Details** page.
- While running some queries, if you restart HSI, the query execution is stopped. However, DAS does not reflect this change and the queries appear to be in the same state forever.
- After a fresh installation, when there is no data and you try to access the Reports tab, DAS displays an "HTTP 404 Not Found" error.
- Join count does not get updated for tables with partitioned columns.

## Known Issues in Apache HBase

This topic describes known issues and workarounds for using HBase in this release of Cloudera Runtime.

**HBASE-24885: If an operator uses HBCK2 to invoke multiple `assigns` operations against one Region or happens to invoke HBCK2 `assigns` while HBase is re-assigning a Region, it is possible that the Region will be abnormally assigned. For example, unassigned, stuck in transition, and doubly-assigned.**

Obtain a fix for this issue. Operators should definitely not schedule multiple assigns for a single Region at the same time, however there is still a potential race condition.

**OpDB Data Hub cluster fails to initialize if you are reusing a cloud storage location that was used by an older OpDB Data Hub cluster**

Workaround: Stop HBase using Cloudera Manager before deleting an operational database Data Hub cluster.

**IntegrationTestReplication fails if replication does not finish before the verify phase begins**

During IntegrationTestReplication, if the verify phase starts before the replication phase finishes, the test will fail because the target cluster does not contain all of the data. If the HBase services in the target cluster does not have enough memory, long garbage-collection pauses might occur.

Workaround: Use the `-t` flag to set the timeout value before starting verification.

**HDFS encryption with HBase**

Cloudera has tested the performance impact of using HDFS encryption with HBase. The overall overhead of HDFS encryption on HBase performance is in the range of 3 to 4% for both read and update workloads. Scan performance has not been thoroughly tested.

Workaround: N/A

**AccessController postOperation problems in asynchronous operations**

When security and Access Control are enabled, the following problems occur:

- If a Delete Table fails for a reason other than missing permissions, the access rights are removed but the table may still exist and may be used again.

- If `hbaseAdmin.modifyTable()` is used to delete column families, the rights are not removed from the Access Control List (ACL) table. The `portOperation` is implemented only for `postDeleteColumn()`.
- If Create Table fails, full rights for that table persist for the user who attempted to create it. If another user later succeeds in creating the table, the user who made the failed attempt still has the full rights.

Workaround: N/A

Apache Issue: [HBASE-6992](#)

### **Bulk load is not supported when the source is the local HDFS**

The bulk load feature (the `completebulkload` command) is not supported when the source is the local HDFS and the target is an object store, such as S3/ABFS.

Workaround: Use `distcp` to move the HFiles from HDFS to S3 and then run bulk load from S3 to S3.

Apache Issue: N/A

## **Technical Service Bulletins**

### **TSB 2021-463: Snapshot and cloned table corruption when original table is deleted**

The HDFS short-circuit setting `dfs.client.read.shortcircuit` is overwritten to disabled by `hbase-default.xml`. HDFS short-circuit reads bypass access to data in HDFS by using a domain socket (file) instead of a network socket. This alleviates the overhead of TCP to read data from HDFS which can have a meaningful improvement on HBase performance (as high as 30-40%).

Users can restore short-circuit reads by explicitly setting `dfs.client.read.shortcircuit` in HBase configuration via the configuration management tool for their product (e.g. Cloudera Manager or Ambari).

### **Knowledge article**

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-463: HBase Performance Issue](#).

### **TSB 2021-494: Accumulated WAL Files Cannot be Cleaned up When Using Phoenix Secondary Global Indexes**

The Write-ahead-log (WAL) files for Phoenix tables that have secondary global indexes defined on them, cannot be automatically cleaned up by HBase, leading to excess storage usage and possible error due to filling up the storage. Accumulated WAL files can lead to lengthy restart times as they must all be played back to ensure no data loss occurs on restart. This can have follow-on HDFS impact if the number of WAL files overwhelm HDFS Name Node.

### **Upstream JIRA**

- [HBASE-20781](#)
- [HBASE-25459](#)
- [PHOENIX-5250](#)

### **Knowledge article**

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-494: Accumulated WAL Files Cannot be Cleaned up When Using Phoenix Secondary Global Indexes](#)

## **Known Issues in HDFS**

Learn about the known issues in HDFS, the impact or changes to the functionality, and the workaround.

**OPSAPS-55788: WebHDFS is always enabled. The Enable WebHDFS checkbox does not take effect.**

None.

## Unsupported Features

The following HDFS features are currently not supported in Cloudera Data Platform:

- ACLs for the NFS gateway ([HADOOP-11004](#))
- Aliyun Cloud Connector ([HADOOP-12756](#))
- Allow HDFS block replicas to be provided by an external storage system ([HDFS-9806](#))
- Consistent standby Serving reads ([HDFS-12943](#))
- Cost-Based RPC FairCallQueue ([HDFS-14403](#))
- HDFS Router Based Federation ([HDFS-10467](#))
- More than two NameNodes ([HDFS-6440](#))
- NameNode Federation ([HDFS-1052](#))
- NameNode Port-based Selective Encryption ([HDFS-13541](#))
- Non-Volatile Storage Class Memory (SCM) in HDFS Cache Directives ([HDFS-13762](#))
- OpenStack Swift ([HADOOP-8545](#))
- SFTP FileSystem ([HADOOP-5732](#))
- Storage policy satisfier ([HDFS-10285](#))

## Known Issues in Apache Hive

Learn about the known issues in Hive, the impact or changes to the functionality, and the workaround.

### **OPSAPS-54299 Installing Hive on Tez and HMS in the incorrect order causes HiveServer failure**

You need to install Hive on Tez and HMS in the correct order; otherwise, HiveServer fails. You need to install additional HiveServer roles to Hive on Tez, not the Hive service; otherwise, HiveServer fails.

Workaround: Follow instructions on [Installing Hive on Tez](#).

### **CDPD-23041: DROP TABLE on a table having an index does not work**

If you migrate a Hive table to CDP having an index, DROP TABLE does not drop the table. Hive no longer supports indexes ([HIVE-18448](#)). A foreign key constraint on the indexed table prevents dropping the table. Attempting to drop such a table results in the following error:

```
java.sql.BatchUpdateException: Cannot delete or update a parent
row: a foreign key constraint fails ("hive"."IDXS", CONSTRAINT "
IDXS_FK1" FOREIGN KEY ("ORIG_TBL_ID") REFERENCES "TBLS ("TBL_ID"
))
```

There are two workarounds:

- Drop the foreign key "IDXS\_FK1" on the "IDXS" table within the metastore. You can also manually drop indexes, but do not cascade any drops because the IDXS table includes references to "TBLS".
- Launch an older version of Hive, such as Hive 2.3 that includes IDXS in the DDL, and then drop the indexes as described in [Language Manual Indexing](#).

Apache Issue: [Hive-24815](#)

### **CDPD-15518: ACID tables you write using the Hive Warehouse Connector cannot be read from an Impala virtual warehouse.**

Read the tables from a Hive virtual warehouse or using Impala queries in Data Hub.

### **CDPD-13636: Hive job fails with OutOfMemory exception in the Azure DE cluster**

Set the parameter `hive.optimize.sort.dynamic.partition.threshold=0`. Add this parameter in Cloudera Manager (Hive Service Advanced Configuration Snippet (Safety Valve) for `hive-site.xml`)

### **ENGESC-2214: Hiveserver2 and HMS service logs are not deleted**



Update Hive log4j configurations. Hive -> Configuration -> HiveServer2 Logging  
 Advanced Configuration Snippet (Safety Valve) Hive Metastore -> Configuration ->  
 Hive Metastore Server Logging Advanced Configuration Snippet (Safety Valve) Add  
 the following to the configurations: appender.DRFA.strategy.action.type=DELETE  
 appender.DRFA.strategy.action.basepath=\${log.dir} appender.DRFA.strategy.action.maxdepth=1  
 appender.DRFA.strategy.action.PathConditions.glob=\${log.file}.\*  
 appender.DRFA.strategy.action.PathConditions.type=IfFileName  
 appender.DRFA.strategy.action.PathConditions.nestedConditions.type=IfAccumulatedFileCount  
 appender.DRFA.strategy.action.PathConditions.nestedConditions.exceeds=same value as  
 appender.DRFA.strategy.max

### HiveServer Web UI displays incorrect data

If you enabled auto-TLS for TLS encryption, the HiveServer2 Web UI does not display the correct data in the following tables: Active Sessions, Open Queries, Last Max n Closed Queries

### CDPD-11890: Hive on Tez cannot run certain queries on tables stored in encryption zones

This problem occurs when the Hadoop Key Management Server (KMS) connection is SSL-encrypted and a self signed certificate is used. SSLHandshakeException might appear in Hive logs.

Use one of the workarounds:

- Install a self signed SSL certificate into cacerts file on all hosts.
- Copy ssl-client.xml to a directory that is available in all hosts. In Cloudera Manager, in Clusters Hive on Tez Configuration . In Hive Service Advanced Configuration Snippet for hive-site.xml, click +, and add the name tez.aux.uris and value path-to-ssl-client.xml.

## Technical Service Bulletins

### TSB 2021-459: Renaming managed (ACID) table shows empty records

Renaming an ACID (managed) table using ALTER TABLE <table name> RENAME causes empty records in the table. Also, the location of the new table after renaming points to the location of the old table before renaming. This can cause correctness issues, for example:

```
create table abc (id int);
insert into abc values (1);
rename table abc to def; create table abc (id int); // should be
empty
insert into abc values (2);
select * from abc ; // returns 1 and 2, the new and the old re
sults
```

### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-459: Renaming managed \(ACID\) table shows empty records](#)

### TSB 2021-480/1: Hive produces incorrect query results when skipping a header in a binary file

In CDP, setting the table property skip.header.line.count to greater than 0 in a table stored in a binary format, such as Parquet, can cause incorrect query results. The skip header property is intended for use with Text files and typically used with CSV files. The issue is not present when you run the query on a Text file that sets the skip header property to 1 or greater.

### Upstream JIRA

[Apache Jira: HIVE-24827](#)

### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-480.1: Hive produces incorrect query results when skipping a header in a binary file](#)

### TSB 2021-480/2: Hive ignores the property to skip a header or footer in a compressed file

In CDP, setting the table properties `skip.header.line.count` and `skip.footer.line.count` to greater than 0 in a table stored in a compressed format, such as `bzip2`, can cause incorrect results from `SELECT *` or `SELECT COUNT ( * )` queries.

#### Upstream JIRA

[Apache Jira: HIVE-24224](#)

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-480.2: Hive ignores the property to skip a header or footer in a compressed file](#)

#### TSB 2021-482: Race condition in subdirectory delete/rename causes hive jobs to fail

Multiple threads try to perform a rename operation on `s3`. One of the threads fails to perform a rename operation, causing an error. Hive logs will report "HiveException: Error moving ..." and the log will contain an error line starting with "Exception when loading partition " -all paths listed with `s3a://` prefixes.

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-482: Race condition in subdirectory delete/rename causes Hive jobs to fail](#)

#### TSB 2021-501: JOIN queries return wrong result for join keys with large size in Hive

JOIN queries return wrong results when performing joins on large size keys (larger than 255 bytes). This happens when the fast hash table join algorithm is enabled, which is enabled by default.

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-501: JOIN queries return wrong result for join keys with large size in Hive](#)

#### TSB 2021-518: Incorrect results returned when joining two tables with different bucketing versions

Incorrect results are returned when joining two tables with different bucketing versions, and with the following Hive configurations: `set hive.auto.convert.join = false` and `set mapreduce.job.reduces = any custom value`.

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-518: Incorrect results returned when joining two tables with different bucketing versions](#)

#### TSB 2021-524: Intermittent data duplication if direct insert enabled

If direct insert is enabled, data is written directly to the final location with an `attemptId`. At the end of the insert operation, all data written before the final attempt should be deleted. However due to a bug in HIVE-21164, this does not happen.

Example: Data is written to the final location with `attemptId=0`, but this task fails. Hive tries the task again and writes data to the final location with `attemptId=1`. At the end of the insert, Hive should remove all the files with `attemptId=0`, but it does not.

#### Upstream JIRA

- [HIVE-21164](#)
- [HIVE-24322](#)

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-524: Intermittent data duplication if direct insert enabled](#)

#### TSB 2023-627: IN/OR predicate on binary column returns wrong result

An IN or an OR predicate involving a binary datatype column may produce wrong results. The OR predicate is converted to an IN due to the setting `hive.optimize.point.lookup` which is true by default. Only binary data types are affected by this issue. See <https://issues.apache.org/jira/browse/HIVE-26235> for example queries which may be affected.

## Upstream JIRA

[HIVE-26235](#)

## Knowledge article

For the latest update on this issue, see the corresponding Knowledge article: [TSB 2023-627: IN/OR predicate on binary column returns wrong result](#)

## Known Issues in Hue

Learn about the known issues in Hue, the impact or changes to the functionality, and the workaround.

### Downloading Impala query results containing special characters in CSV format fails with ASCII codec error

In CDP, Hue is compatible with Python 2.7.x, but the Tablib library for Hue has been upgraded from 0.10.x to 0.14.x, which is generally used with the Python 3 release. If you try to download Impala query results having special characters in the result set in a CSV format, then the download may fail with the ASCII unicode decode error.

To fix this issue, downgrade the Tablib library to 0.12.x.

1. SSH into the Hue server host.
2. Change directory to the following:

```
cd /opt/cloudera/parcels/CDH-7.x/lib/
```

3. Back up the hue directory:

```
cp -R hue hue_original
```

4. Change to the hue directory:

```
cd hue
```

5. Install the Wheel package using pip:

```
./build/env/bin/pip install wheel
```

The Wheel package is used to avoid recompiling your software during every install.

6. Install the Python Setuptools package for Hue as follows:

```
./build/env/bin/pip install setuptools==44.1.0
```

7. Install Tablib version 0.12.1 as follows:

```
./build/env/bin/pip install tablib==0.12.1
```

8. Go to Cloudera Manager and restart the Hue service.

### Impala SELECT table query fails with UTF-8 codec error

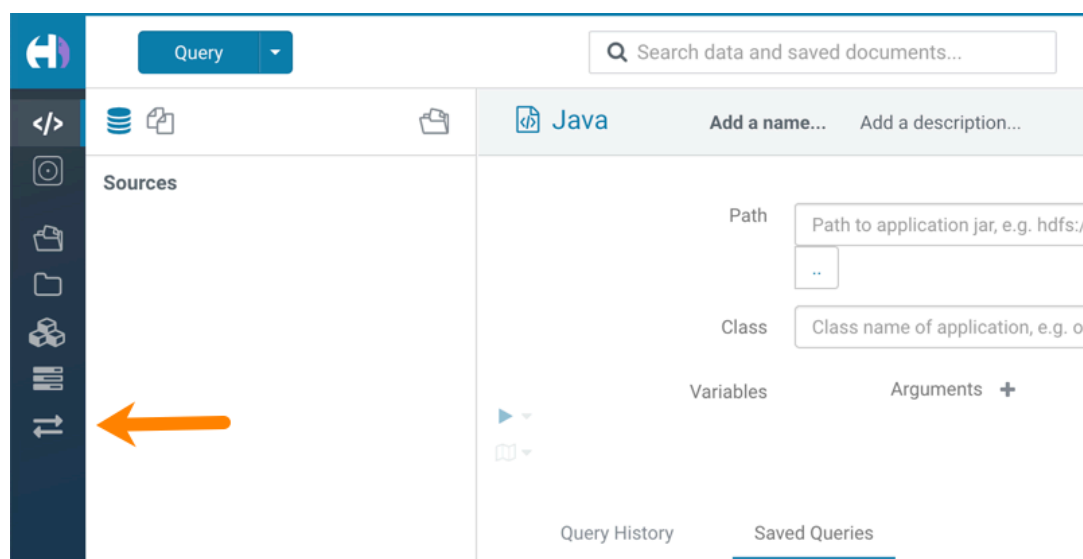
Hue cannot handle columns containing non-UTF8 data. As a result, you may see the following error while queuing tables from the Impala editor in Hue: 'utf8' codec can't decode byte 0x91 in position 6: invalid start byte.

To resolve this issue, contact Cloudera Support to apply the following software patch: ENGESC-3457.

### Hue Importer is not supported in the Data Engineering template

When you create a Data Hub cluster using the Data Engineering template, the Importer application is not supported in Hue.

**Figure 1: Hue web UI showing Importer icon on the left assist panel**



### Hue Load Balancer role fails to start after upgrade to Cloudera Runtime 7 or you get the "BalancerMember worker hostname too long" error

You may see the following error message while starting the Hue Load Balancer:

```
BalancerMember worker hostname (xxx-xxxxxxx-xxxxxxxxxx-xxxxxxx
.xxxxxx-xxxxxx-xxxxxx.example.site) too long.
```

Or, the Hue load balancer role fails to start after the upgrade, which prevents the Hue service from starting. If this failure occurs during cluster creation, cluster creation fails with the following error:

```
com.sequenceiq.cloudbreak.cm.ClouderaManagerOperationFailedException: Cluster template install failed: [Command [Start], with id [1234567890] failed:
Failed to start role., Command [Start], with id [1234567890] failed: Failed to start role., Command [Start], with id [1234567890] failed: Failed to start role.]
Unable to generate configuration for HUE_SERVER
Role failed to start due to error com.cloudera.cmf.service.config.ConfigGenException: Unable to generate config file hue.ini
```

Cloudera Manager displays this error when you create a Data Hub cluster using the Data Engineering template and the Hue Load Balancer worker node name has exceeded 64 characters. In a CDP Public Cloud deployment, the system automatically generates the Load Balancer worker node name through AWS or Azure.

For example, if you specify cdp-123456-scalecluster as the cluster name, CDP creates cdp-123456-scalecluster-master2.repro-aw.a123-4a5b.example.site as the worker node name.

Specify a shorter cluster name while creating a Data Hub cluster so that the final worker node name does not cross 64 characters.

For example, cdp-123456-scale.

### Unsupported features

#### Importing and exporting Oozie workflows across clusters and between different CDH versions is not supported

You can export Oozie workflows, schedules, and bundles from Hue and import them only within the same cluster if the cluster is unchanged. You can migrate bundle and coordinator jobs with their workflows only if their arguments have not changed between the old and the new cluster. For

example, hostnames, NameNode, Resource Manager names, YARN queue names, and all the other parameters defined in the workflow.xml and job.properties files.

Using the import-export feature to migrate data between clusters is not recommended. To migrate data between different versions of CDH, for example, from CDH 5 to CDP 7, you must take the dump of the Hue database on the old cluster, restore it on the new cluster, and set up the database in the new environment. Also, the authentication method on the old and the new cluster should be the same because the Oozie workflows are tied to a user ID, and the exact user ID needs to be present in the new environment so that when a user logs into Hue, they can access their respective workflows.



**Note:** Migrating Oozie workflows from HDP clusters is not supported.

## Technical Service Bulletins

### TSB 2021-487: Cloudera Hue is vulnerable to Cross-Site Scripting attacks

Multiple Cross-Site Scripting (XSS) vulnerabilities of Cloudera Hue have been found. They allow JavaScript code injection and execution in the application context.

- CVE-2021-29994 - The Add Description field in the Table schema browser does not sanitize user inputs as expected.
- CVE-2021-32480 - Default Home direct button in Filebrowser is also susceptible to XSS attack.
- CVE-2021-32481 - The Error snippet dialog of the Hue UI does not sanitize user inputs.

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-487: Cloudera Hue is vulnerable to Cross-Site Scripting attacks \(CVE-2021-29994, CVE-2021-32480, CVE-2021-32481\)](#)

## Known Issues in Apache Impala

Learn about the known issues in Impala, the impact or changes to the functionality, and the workaround.

### Impala known limitation when querying compacted tables

When the compaction process deletes the files for a table from the underlying HDFS location, the Impala service does not detect the changes as the compactions does not allocate new write ids. When the same table is queried from Impala it throws a 'File does not exist' exception that looks something like this:

```
Query Status: Disk I/O error on <node>:22000: Failed to open HDF
S file hdfs://nameservice1/warehouse/tablespace/managed/hive/<da
tabase>/<table>/xxxxxx
Error(2): No such file or directory Root cause: RemoteException:
File does not exist: /warehouse/tablespace/managed/hive/<data
base>/<table>/xxxx
```

Use the [REFRESH/INVALIDATE](#) statements on the affected table to overcome the 'File does not exist' exception.

### HADOOP-15720: Queries stuck on failed HDFS calls and not timing out

In Impala 3.2 and higher, if the following error appears multiple times in a short duration while running a query, it would mean that the connection between the impalad and the HDFS NameNode is in a bad state.

```
"hdfsOpenFile() for <filename> at backend <hostname:port> failed
to finish before the <hdfs_operation_timeout_sec> second timeout
"
```

In Impala 3.1 and lower, the same issue would cause Impala to wait for a long time or not respond without showing the above error message.

Restart the `impalad`.

#### **IMPALA-532: Impala should tolerate bad locale settings**

If the `LC_*` environment variables specify an unsupported locale, Impala does not start.

Add `LC_ALL="C"` to the environment settings for both the Impala daemon and the Statestore daemon.

#### **IMPALA-5605: Configuration to prevent crashes caused by thread resource limits**

Impala could encounter a serious error due to resource usage under very high concurrency. The error message is similar to:

```
F0629 08:20:02.956413 29088 llvm-codegen.cc:111] LLVM hit fatal
error: Unable to allocate section memory!
terminate called after throwing an instance of 'boost::exception_
detail::clone_impl<boost::exception_detail::error_info_injector<
boost::thread_resource_error> >'
```

To prevent such errors, configure each host running an `impalad` daemon with the following settings:

```
echo 2000000 > /proc/sys/kernel/threads-max
echo 2000000 > /proc/sys/kernel/pid_max
echo 8000000 > /proc/sys/vm/max_map_count
```

Add the following lines in `/etc/security/limits.conf`:

```
impala soft nproc 262144
impala hard nproc 262144
```

#### **IMPALA-635: Avro Scanner fails to parse some schemas**

The default value in Avro schema must match type of first union type, e.g. if the default value is null, then the first type in the UNION must be "null".

Swap the order of the fields in the schema specification. For example, use `["null", "string"]` instead of `["string", "null"]`. Note that the files written with the problematic schema must be rewritten with the new schema because Avro files have embedded schemas.

#### **IMPALA-691: Process mem limit does not account for the JVM's memory usage**

Some memory allocated by the JVM used internally by Impala is not counted against the memory limit for the `impalad` daemon.

To monitor overall memory usage, use the `top` command, or add the memory figures in the Impala web UI `/memz` tab to JVM memory usage shown on the `/metrics` tab.

#### **IMPALA-9350: Ranger audit logs for applying column masking policies missing**

Impala is not producing these logs.

None

#### **IMPALA-1024: Impala BE cannot parse Avro schema that contains a trailing semi-colon**

If an Avro table has a schema definition with a trailing semicolon, Impala encounters an error when the table is queried.

Remove trailing semicolon from the Avro schema.

### IMPALA-1652: Incorrect results with basic predicate on CHAR typed column

When comparing a CHAR column value to a string literal, the literal value is not blank-padded and so the comparison might fail when it should match.

Use the `RPAD()` function to blank-pad literals compared with `CHAR` columns to the expected length.

**IMPALA-1792: ImpalaODBC: Can not get the value in the SQLGetData(m-x th column) after the SQLBindCol(m th column)**

If the ODBC `SQLGetData` is called on a series of columns, the function calls must follow the same order as the columns. For example, if data is fetched from column 2 then column 1, the `SQLGetData` call for column 1 returns `NULL`.

Fetch columns in the same order they are defined in the table.

### IMPALA-1821: Casting scenarios with invalid/inconsistent results

Using a `CAST()` function to convert large literal values to smaller types, or to convert special values such as NaN or Inf, produces values not consistent with other database systems. This could lead to unexpected results from queries.

### IMPALA-2005: A failed CTAS does not drop the table if the insert fails

If a `CREATE TABLE AS SELECT` operation successfully creates the target table but an error occurs while querying the source table or copying the data, the new table is left behind rather than being dropped.

Drop the new table manually after a failed CREATE TABLE AS SELECT

### IMPALA-2422: % escaping does not work correctly when occurs at the end in a LIKE clause

If the final character in the RHS argument of a LIKE operator is an escaped \% character, it does not match a % final character of the LHS argument.

## IMPALA-2603: Crash: impala::Coordinator::ValidateCollectionSlots

A query could encounter a serious error if includes multiple nested levels of INNER JOIN clauses involving subqueries.

### IMPALA-3094: Incorrect result due to constant evaluation in query with outer join

An OUTER JOIN query could omit some expected result rows due to a constant such as FALSE in another join clause. For example:

```

explain SELECT 1 FROM alltypestiny a1
  INNER JOIN alltypesagg a2 ON a1.smallint_col = a2.year AND fals
e
  RIGHT JOIN alltypes a3 ON a1.year = a1.bigint_col;
+---+
| Explain String |
+---+
| Estimated Per-Host Requirements: Memory=1.00KB VCores=1 |
| 00:EMPTYSET |
+---+

```

**IMPALA-3509: Breakpad minidumps can be very large when the thread count is high**

The size of the breakpad minidump files grows linearly with the number of threads. By default, each thread adds 8 KB to the minidump size. Minidump files could consume significant disk space when the daemons have a high number of threads.

Add `-minidump_size_limit_hint_kb=size` to set a soft upper limit on the size of each minidump file. If the minidump file would exceed that limit, Impala reduces the amount of information for each thread from 8 KB to 2 KB. (Full thread information is captured for the first 20 threads, then 2 KB per thread after that.) The minidump file can still grow larger than the "hinted" size. For example, if you have 10,000 threads, the minidump file can be more than 20 MB.

**IMPALA-4978: Impala requires FQDN from hostname command on Kerberized clusters**

The method Impala uses to retrieve the host name while constructing the Kerberos principal is the `gethostname()` system call. This function might not always return the fully qualified domain name, depending on the network configuration. If the daemons cannot determine the FQDN, Impala does not start on a Kerberized cluster.

Test if a host is affected by checking whether the output of the `hostname` command includes the FQDN. On hosts where `hostname` only returns the short name, pass the command-line flag `##hostname=FULLY_QUALIFIED_DOMAIN_NAME` in the startup options of all Impala-related daemons.

**IMPALA-6671: Metadata operations block read-only operations on unrelated tables**

Metadata operations that change the state of a table, like `COMPUTE STATS` or `ALTER RECOVER PARTITIONS`, may delay metadata propagation of unrelated unloaded tables triggered by statements like `DESCRIBE` or `SELECT` queries.

Workaround: None

**IMPALA-7072: Impala does not support Heimdal Kerberos****CDPD-28139: Set `spark.hadoop.hive.stats.autogather` to false by default**

As an Impala user, if you submit a query against a table containing data ingested using Spark and you are concerned about the quality of the query plan, you must run `COMPUTE STATS` against such a table in any case after an ETL operation because `numRows` created by Spark could be incorrect. Also, use other stats computed by `COMPUTE STATS`, e.g., Number of Distinct Values (NDV) and NULL count for good selectivity estimates.

For example, when a user ingests data from a file into a partition of an existing table using Spark, if `spark.hadoop.hive.stats.autogather` is not set to false explicitly, `numRows` associated with this partition would be 0 even though there is at least one row in the file. To avoid this, the workaround is to set `"spark.hadoop.hive.stats.autogather=false"` in the "Spark Client Advanced Configuration Snippet (Safety Valve) for `spark-conf/spark-defaults.conf`" in Spark's CM Configuration section.

**Technical Service Bulletins****TSB-2021-485: Impala returns fewer rows from parquet tables on S3**

[IMPALA-10310](#) was an issue in Impala's Parquet page filtering code where the scanner did not reset state appropriately when transitioning from the first row group to subsequent row groups in a single split. This caused data from the subsequent row groups to be skipped incorrectly, leading to incorrect query results. This issue cannot occur when the Parquet page filtering is disabled by setting `PARQUET_READ_PAGE_INDEX=false`.

The issue is more likely to be encountered on S3/ADLS/ABFS/etc, because Spark is sometimes configured to write 128MB row groups and the `PARQUET_OBJECT_STORE_SPLIT_SIZE` is 256MB. This makes it more likely for Impala to process two row groups in a single split.

Parquet page filtering only works based on the min/max statistics, therefore the comparison operators it supports are `"="`, `"<"`, `">"`, `"<="`, and `">="`. These operators are impacted by this bug. Expressions such as `"!="`, `'LIKE'` or the expressions including UDF do not use parquet page filtering.



The `PARQUET_OBJECT_STORE_SPLIT_SIZE` parameter is introduced in Impala 3.3 by [IMPALA-5843](#). This means that older versions of Impala do not have this issue.

#### Upstream JIRA

- [IMPALA-5843](#)
- [IMPALA-10310](#)

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-485: Impala returns fewer rows from parquet tables on S3](#)

#### TSB 2021-502: Impala logs the session / operation secret on most RPCs at INFO level

Impala logs contain the session / operation secret. With this information a person who has access to the Impala logs might be able to hijack other users' sessions. This means the attacker is able to execute statements for which they do not have the necessary privileges otherwise. Impala deployments where Apache Sentry or Apache Ranger authorization is enabled may be vulnerable to privilege escalation. Impala deployments where audit logging is enabled may be vulnerable to incorrect audit logging.

Restricting access to the Impala logs that expose secrets will reduce the risk of an attack. Additionally, restricting access to trusted users for the Impala deployment will also reduce the risk of an attack. Log redaction techniques can be used to redact secrets from the logs. For more information, see the *Cloudera Manager documentation*.

For log redaction, users can create a rule with a search pattern: `secret \((string\) [=:].*`And the replacement could be for example: `secret=LOG-REDACTED`

#### Upstream JIRA

[IMPALA-10600](#)

#### Knowledge article

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-502: Impala logs the session / operation secret on most RPCs at INFO level](#)

#### TSB 2021-479: Impala can return incomplete results through JDBC and ODBC clients in all CDP offerings

In CDP, we introduced a timeout on queries to Impala defaulting to 10 seconds. The timeout setting is called `FETCH_ROWS_TIMEOUT_MS`. Due to this setting, JDBC, ODBC, and Beeswax clients running Impala queries believe the data returned at 10 seconds is a complete dataset and present it as the final output. However, in cases where there are still results to return after this timeout has passed, when the driver closes the connection, based on the timeout, it results in a scenario where the query results are incomplete.

#### Upstream JIRA

[IMPALA-7561](#)

#### Knowledge article

For the latest update on this issue, see the corresponding Knowledge article: [TSB-2021 479: Impala can return incomplete results through JDBC and ODBC clients in all CDP offerings](#)

#### TSB 2022-543: Impala query with predicate on analytic function may produce incorrect results

Apache Impala may produce incorrect results for a query which has all of the following conditions:

- There are two or more analytic functions (for example, `row_number()`) in an inline view
- Some of the functions have partition-by expression while the others do not
- There is a predicate on the inline view's output expression corresponding to the analytic function

#### Upstream JIRA

[IMPALA-11030](#)

**Knowledge article**

For the latest update on this issue, see the corresponding Knowledge article: [TSB 2022-543: Impala query with predicate on analytic function may produce incorrect results](#)

**Known Issues in Apache Kafka**

Learn about the known issues in Kafka, the impact or changes to the functionality, and the workaround.

**Known Issues****OPSAPS-59553: SMM's bootstrap server config should be updated based on Kafka's listeners**

SMM does not show any metrics for Kafka or Kafka Connect when multiple listeners are set in Kafka.

Workaround: SMM cannot identify multiple listeners and still points to bootstrap server using the default broker port (9093 for SASL\_SSL). You would have to override bootstrap server URL (hostname:port as set in the listeners for broker) in the following path:

Cloudera Manager > SMM > Configuration > Streams Messaging Manager Rest Admin Server Advanced Configuration Snippet (Safety Valve) for streams-messaging-manager.yaml > Save Changes > Restart SMM.

**Topics created with the kafka-topics tool are only accessible by the user who created them when the deprecated --zookeeper option is used**

By default all created topics are secured. However, when topic creation and deletion is done with the kafka-topics tool using the `--zookeeper` option, the tool talks directly to Zookeeper. Because security is the responsibility of ZooKeeper authorization and authentication, Kafka cannot prevent users from making ZooKeeper changes. As a result, if the `--zookeeper` option is used, only the user who created the topic will be able to carry out administrative actions on it. In this scenario Kafka will not have permissions to perform tasks on topics created this way.

Use kafka-topics with the `--bootstrap-server` option that does not require direct access to Zookeeper.

**Certain Kafka command line tools require direct access to Zookeeper**

The following command line tools talk directly to ZooKeeper and therefore are not secured via Kafka:

- `kafka-reassign-partitions`

None

**The `offsets.topic.replication.factor` property must be less than or equal to the number of live brokers**

The `offsets.topic.replication.factor` broker configuration is now enforced upon auto topic creation. Internal auto topic creation will fail with a `GROUP_COORDINATOR_NOT_AVAILABLE` error until the cluster size meets this replication factor requirement.

None

**Requests fail when sending to a nonexistent topic with `auto.create.topics.enable` set to true**

The first few produce requests fail when sending to a nonexistent topic with `auto.create.topics.enable` set to true.

Increase the number of retries in the producer configuration setting `retries`.

**Custom Kerberos principal names cannot be used for kerberized ZooKeeper and Kafka instances**

When using ZooKeeper authentication and a custom Kerberos principal, Kerberos-enabled Kafka does not start. You must disable ZooKeeper authentication for Kafka or use the default Kerberos principals for ZooKeeper and Kafka.

None

**KAFKA-2561: Performance degradation when SSL Is enabled**

In some configuration scenarios, significant performance degradation can occur when SSL is enabled. The impact varies depending on your CPU, JVM version, Kafka configuration, and message size. Consumers are typically more affected than producers.

Configure brokers and clients with `ssl.secure.random.implementation = SHA1PRNG`. It often reduces this degradation drastically, but its effect is CPU and JVM dependent.

#### **OPSAPS-43236: Kafka garbage collection logs are written to the process directory**

By default Kafka garbage collection logs are written to the agent process directory. Changing the default path for these log files is currently unsupported.

None

#### **OPSAPS-59031: Kafka cannot start if configuration is added to the Kafka Broker Advanced Configuration Snippet (Safety Valve) for `ssl.properties`**

The Kafka Broker Advanced Configuration Snippet (Safety Valve) for `ssl.properties` configuration snippet does not correctly override configuration. As a result, Kafka may not start if TLS/SSL related configuration overrides are added to the this configuration snippet.

Use the Kafka Broker Advanced Configuration Snippet (Safety Valve) for `kafka.properties` configuration snippet instead to override SSL related properties.

#### **OPSAPS-59032: Obsolete TLS protocols are enabled by default**

TLS v1.0 and v1.1 are considered insecure and obsolete. Therefore, these protocols are disabled by default in Kafka 2.5. However for Cloudera Manager managed Kafka, these protocols are still enabled by default.

Add the following configuration to Kafka Broker Advanced Configuration Snippet (Safety Valve) for `kafka.properties`. This overrides the default and forces TLS v1.2 to be used.

```
ssl.protocol=TLSv1.2
ssl.enabled.protocols=TLSv1.2
```

#### **OPSAPS-59124: Kafka, SMM, and SRM fail to start when there are multiple Ranger Admin roles running**

If there are multiple Ranger Admin roles configured in a cluster, Kafka cannot create the Kafka resource based services in Ranger, which are required for authorization. If the resource based services are missing, the Kafka, SMM, and SRM services will fail to start.

1. In Cloudera Manager, select the Kafka service.
2. Go to Configuration.
3. Find the Kafka Broker Environment Advanced Configuration Snippet (Safety Valve) property and add the following:

```
RANGER_REST_URL=[ ***RANGER ADMIN HOST*** ] : [ ***RANGER ADMIN PORT*** ]
```

- Replace `[ ***RANGER ADMIN HOST*** ]` with the hostname where a Ranger Admin service role is deployed. You can find the hostname by going to RangerInstances. The hostname is displayed in the **Hostname** column next to Ranger Admin. Choose one of the available Ranger Admin instances.
  - Replace `[ ***RANGER ADMIN PORT*** ]` with the port used by the Ranger Admin service role. The port is specified in the Admin HTTP Port or Admin HTTPS port Ranger property. Which port is used depends on whether SSL is enabled for Ranger Admin.
4. Click Save Changes.
  5. Restart Kafka.
  6. Restart SMM and SRM.

## **Unsupported Features**

The following Kafka features are not supported in Cloudera Data Platform:

- Only Java and .Net based clients are supported. Clients developed with C, C++, Python, and other languages are currently not supported.
- While Kafka Connect is available as part of Runtime, it is currently not supported in CDP Public Cloud. NiFi is a proven solution for batch and real time data loading that complement Kafka's message broker capability. For more information, see [Creating your first Flow Management cluster](#).
- The Kafka default authorizer is not supported. This includes setting ACLs and all related APIs, broker functionality, and command-line tools.

## Limitations

### Collection of Partition Level Metrics May Cause Cloudera Manager's Performance to Degrade

If the Kafka service operates with a large number of partitions, collection of partition level metrics may cause Cloudera Manager's performance to degrade.

If you are observing performance degradation and your cluster is operating with a high number of partitions, you can choose to disable the collection of partition level metrics.



**Important:** If you are using SMM to monitor Kafka or Cruise Control for rebalancing Kafka partitions, be aware that both SMM and Cruise Control rely on partition level metrics. If partition level metric collection is disabled, SMM will not be able to display information about partitions. In addition, Cruise Control will not operate properly.

Complete the following steps to turn off the collection of partition level metrics:

1. Obtain the Kafka service name:
  - a. In Cloudera Manager, Select the Kafka service.
  - b. Select any available chart, and select Open in Chart Builder from the configuration icon drop-down.
  - c. Find \$SERVICENAME= near the top of the display.

The Kafka service name is the value of \$SERVICENAME.

2. Turn off the collection of partition level metrics:
  - a. Go to Hosts Configuration.
  - b. Find and configure the Cloudera Manager Agent Monitoring Advanced Configuration Snippet (Safety Valve) configuration property.

Enter the following to turn off the collection of partition level metrics:

```
[KAFKA_SERVICE_NAME]_feature_send_broker_topic_partition_entity_update_enabled=false
```

Replace [KAFKA\_SERVICE\_NAME] with the service name of Kafka obtained in step 1. The service name should always be in lower case.

- c. Click Save Changes.

## Known Issues in Kerberos

Learn about the known issues in Kerberos, the impact or changes to the functionality, and the workaround.

**OPSAPS-60331: If Cloudera Manager is configured to use Active Directory as a Kerberos KDC, and is also configured to use /etc/cloudera-scm-server/cmf.keytab as the KDC admin credentials, you may encounter errors when generating Kerberos credentials.**

In the Cloudera Manager Admin Console, run the "Administration > Security > Kerberos Credentials > Import KDC Account Manager Credentials" wizard. Remove `/etc/cloudera-scm-server/cmf.keytab` on the Cloudera Manager server host.

## Known Issues in Apache Knox

Learn about the known issues in Knox, the impact or changes to the functionality, and the workaround.

### **CDPD-3125: Logging out of Atlas does not manage the external authentication**

At this time, Atlas does not communicate a log-out event with the external authentication management, Apache Knox. When you log out of Atlas, you can still open the instance of Atlas from the same web browser without re-authentication.

To prevent additional access to Atlas, close all browser windows and exit the browser.

## Known Issues in Apache Kudu

Learn about the known issues in Kudu, the impact or changes to the functionality, and the workaround.

- Kudu does not yet support integration with Atlas.
- Kudu HMS Sync is disabled and is not yet supported.

## Known Issues in Apache Oozie

Learn about the known issues in Oozie, the impact or changes to the functionality, and the workaround.

### **Oozie jobs fail (gracefully) on secure YARN clusters when JobHistory server is down**

If the JobHistory server is down on a YARN (MRv2) cluster, Oozie attempts to submit a job, by default, three times. If the job fails, Oozie automatically puts the workflow in a SUSPEND state.

When the JobHistory server is running again, use the resume command to inform Oozie to continue the workflow from the point at which it left off.

### **CDPD-5340: The resourceManager property defined in an Oozie workflow might not work properly if the workflow is submitted through Knox proxy.**

An Oozie workflow defined to use the resourceManager property might not work as expected in situations when the workflow is submitted through Knox proxy.

Define the jobTracker property with the same value as that of the resourceManager property.

### **Unsupported Feature**

The following Oozie features are currently not supported in Cloudera Data Platform:

- Non-support for Pig action (CDPD-1070)
- Conditional coordinator input logic

Cloudera does not support using Derby database with Oozie. You can use it for testing or debugging purposes, but Cloudera does not recommend using it in production environments. This could cause failures while upgrading from CDH to CDP.

### **BUG-123856: Upgrade fails while configuring Oozie server.**

None

## Known Issues in Apache Phoenix

There are no known issues for Phoenix in Cloudera Runtime 7.2.6.

## Known Issues in Apache Ranger

Learn about the known issues in Ranger, the impact or changes to the functionality, and the workaround.

### **CDPD-3296: Audit files for Ranger plugin components do not appear immediately in S3 after cluster creation**

For Ranger plugin components (Atlas, Hive, HBase, etc.), audit data is updated when the applicable audit file is rolled over. The default Ranger audit rollover time is 24 hours, so audit data appears 24 hours after cluster creation.

To see the audit logs in S3 before the default rollover time of 24 hours, use the following steps to override the default value in the Cloudera Manager safety valve for the applicable service.

1. On the Configuration tab in the applicable service, select Advanced under CATEGORY.
2. Click the + icon for the <service\_name> Advanced Configuration Snippet (Safety Valve) for ranger-<service\_name>-audit.xml property.
3. Enter the following property in the Name box:  
xasecure.audit.destination.hdfs.file.rollover.sec.
4. Enter the desired rollover interval (in seconds) in the Value box. For example, if you specify 180, the audit log data is updated every 3 minutes.
5. Click Save Changes and restart the service.

### **CDPD-12644: Ranger Key Names cannot be reused with the Ranger KMS KTS service**

Key names cannot be reused with the Ranger KMS KTS service. If the key name of a delete key is reused, the new key can be successfully created and used to create an encryption zone, but data cannot be written to that encryption zone.

Use only unique key names when creating keys.

**CDPD-17962: Ranger roles do not work when you upgrade from any CDP Private Cloud Base to CDP Private cloud base. Roles which are created prior to upgrade work as expected, issue is only for new roles created post upgrade and authorization enforced via ranger policies wont work for these new roles. This behavior is only observed with the upgraded cluster; a newly installed cluster does not show this behavior.**

There are two possible workarounds to resolve this issue:

1. Update database entries (Recommended):
  - `select * from x_ranger_global_state where state_name='RangerRole';`
  - `update x_ranger_global_state set app_data='{ "Version": "2" }' where state_name='RangerRole';`

Or
2. Add a property in safety valve under ranger-admin-site which will bypass the getAppDataVersion method:

## Known Issues in Schema Registry

There are no known issues for Schema Registry in Cloudera Runtime 7.2.6.

## Known Issues in Cloudera Search

Learn about the known issues in Cloudera Search, the impact or changes to the functionality, and the workaround.

### **Known Issues**

#### **MapreduceIndexerTool performance problem in CDP**

The reduce step of the MorphlineMapper task of the MapReduceIndexerTool (MRIT) can take very long to finish in Cloudera Runtime. The reason of the slowness is merging norms without HDFS caching.

HDFS caching can not be enabled in the affected MRIT versions. Future MRIT releases will both allow controlling HDFS caching and will turn it on by default. For existing MRIT releases, the only known workaround is omitting norms. This disables length normalization for the field, saves some memory and improves MRIT execution times. Only full-text fields can benefit from norms. Norms are omitted for primitive (non-analyzed) types by default. (Norms were formerly also used for index-time boosting but this usage has been deprecated. Index-time boosting can be achieved using doc values fields instead.)

The downside of omitting norms is that document length will not play a role in result ranking. (With norms enabled, documents with a shorter matching field would be ranked higher than matching documents with a longer field.)

You can control norms in the schema using the omitNorms attribute in the fieldType elements. To eliminate the slowdown, you must add omitNorms="true" to all fieldType elements. It is also possible to selectively set this attribute on selected fields, which allows reducing the slowdown without completely eliminating it.

### **Splitshard of HDFS index checks local filesystem and fails**

When performing a shard split on an index that is stored on HDFS, SplitShardCmd still evaluates free disk space on the local file system of the server where Solr is installed. This may cause the command to fail, perceiving that there is no adequate disk space to perform the shard split.

None

### **Lucene index handling limitation**

The Lucene index can only be upgraded by one major version. Solr 8 will not open an index that was created with Solr 6 or earlier.

There is no workaround, you need to reindex collections.

### **Solr service with no added collections causes the upgrade process to fail**

Upgrade fails while performing the bootstrap collections step of the solr-upgrade.sh script with the error message:

```
Failed to execute command Bootstrap Solr Collections on service Solr
```

if there are no collections present in Solr.

If there are no collections added to it, remove the Solr service from your cluster before you start the upgrade.

### **Collection Creation No Longer Supports Automatically Selecting A Configuration If Only One Exists**

Before CDH 5.5.0, a collection could be created without specifying a configuration. If no -c value was specified, then:

- If there was only one configuration, that configuration was chosen.
- If the collection name matched a configuration name, that configuration was chosen.

Search now includes multiple built-in configurations. As a result, there is no longer a case in which only one configuration can be chosen by default.

Explicitly specify the collection configuration to use by passing -c <configName> to solrctl collection --create.

### **CrunchIndexerTool which includes Spark indexer requires specific input file format specifications**

If the --input-file-format option is specified with CrunchIndexerTool, then its argument must be text, avro, or avroParquet, rather than a fully qualified class name.

None

**The quickstart.sh file does not validate ZooKeeper and the NameNode on some operating systems.**

The quickstart.sh file uses the timeout function to determine if ZooKeeper and the NameNode are available. To ensure this check can be complete as intended, the quickstart.sh determines if the operating system on which the script is running supports timeout. If the script detects that the operating system does not support timeout, the script continues without checking if the NameNode and ZooKeeper are available. If your environment is configured properly or you are using an operating system that supports timeout, this issue does not apply.

This issue only occurs in some operating systems. If timeout is not available, the quickstart continues and final validation is always done by the MapReduce jobs and Solr commands that are run by the quickstart.

**Field value class guessing and Automatic schema field addition are not supported with the MapReduceIndexerTool nor with the HBaseMapReduceIndexerTool.**

The MapReduceIndexerTool and the HBaseMapReduceIndexerTool can be used with a Managed Schema created via NRT indexing of documents or via the Solr Schema API. However, neither tool supports adding fields automatically to the schema during ingest.

Define the schema before running the MapReduceIndexerTool or HBaseMapReduceIndexerTool. In non-schemaless mode, define in the schema using the schema.xml file. In schemaless mode, either define the schema using the Solr Schema API or index sample documents using NRT indexing before invoking the tools. In either case, Cloudera recommends that you verify that the schema is what you expect, using the List Fields API command.

**The Browse and Spell Request Handlers are not enabled in schemaless mode**

The Browse and Spell Request Handlers require certain fields to be present in the schema. Since those fields cannot be guaranteed to exist in a Schemaless setup, the Browse and Spell Request Handlers are not enabled by default.

If you require the Browse and Spell Request Handlers, add them to the solrconfig.xml configuration file. Generate a non-schemaless configuration to see the usual settings and modify the required fields to fit your schema.

**Enabling blockcache writing may result in unusable indexes.**

It is possible to create indexes with solr.hdfs.blockcache.write.enabled set to true. Such indexes may appear corrupt to readers, and reading these indexes may irrecoverably corrupt indexes. Blockcache writing is disabled by default.

None

**Users with insufficient Solr permissions may receive a "Page Loading" message from the Solr Web Admin UI.**

Users who are not authorized to use the Solr Admin UI are not given a page explaining that access is denied to them, instead receive a web page that never finishes loading.

None

**Using MapReduceIndexerTool or HBaseMapReduceIndexerTool multiple times may produce duplicate entries in a collection.**

Repeatedly running the MapReduceIndexerTool on the same set of input files can result in duplicate entries in the Solr collection. This occurs because the tool can only insert documents and cannot update or delete existing Solr documents. This issue does not apply to the HBaseMapReduceIndexerTool unless it is run with more than zero reducers.

To avoid this issue, use HBaseMapReduceIndexerTool with zero reducers. This must be done without Kerberos.

**Deleting collections might fail if hosts are unavailable.**



It is possible to delete a collection when hosts that host some of the collection are unavailable. After such a deletion, if the previously unavailable hosts are brought back online, the deleted collection may be restored.

Ensure all hosts are online before deleting collections.

## Unsupported Features

The following Solr features are currently not supported in Cloudera Data Platform:

- [Package Management System](#)
- [HTTP/2](#)
- [Solr SQL/JDBC](#)
- [Graph Traversal](#)
- [Cross Data Center Replication \(CDCR\)](#)
- [SolrCloud Autoscaling](#)
- [HDFS Federation](#)
- [Saving search results](#)
- Solr contrib modules (Spark, MapReduce and Lily HBase indexers are not contrib modules but part of the Cloudera Search product itself, therefore they are supported).

## Known Issues in Apache Solr

This topic describes known issues and workarounds for using Solr in this release of Cloudera Runtime.

### Technical Service Bulletins

#### **TSB 2021-495: CVE-2021-29943: Apache Solr Unprivileged users may be able to perform unauthorized read/write to collections**

Using the `ConfigurableInternodeAuthHadoopPlugin` class as the authentication plugin with Ranger as the authorization module introduced a backdoor for unauthorized access to data. With this combination, when an authenticated user sends a query to a node, which does not have the data locally, the request will be forwarded in the name of the Solr service user and not in the name of the original requester. In this case, the authorization happens against the user named `solr` which may have almost full access. It may be the case that infra Solr customers were advised to switch back to `ConfigurableInternodeAuthHadoopPlugin`. Only these customers should be affected by this CVE.

#### **Knowledge article**

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-495: Apache Solr Unprivileged users may be able to perform unauthorized read/write to collections - CVE-2021-29943](#)

#### **TSB 2021-497: CVE-2021-27905: Apache Solr SSRF vulnerability with the Replication handler**

The Apache Solr `ReplicationHandler` (normally registered at `/replication` under a Solr core) has a `masterUrl` (also `leaderUrl` alias) parameter. The `masterUrl` parameter is used to designate another `ReplicationHandler` on another Solr core to replicate index data into the local core. To help prevent the CVE-2021-27905 SSRF vulnerability, Solr should check these parameters against a similar configuration used for the `shards` parameter.

#### **Knowledge article**

For the latest update on this issue see the corresponding Knowledge article: [TSB 2021-497: CVE-2021-27905: Apache Solr SSRF vulnerability with the Replication handler](#)

## Known Issues in Apache Spark

Learn about the known issues in Spark, the impact or changes to the functionality, and the workaround.

**CDPD-22670 and CDPD-23103: There are two configurations in Spark, "Atlas dependency" and "spark\_lineage\_enabled", which are conflicted. The issue is when Atlas dependency is turned off but spark\_lineage\_enabled is turned on.**

Run Spark application, Spark will log some error message and cannot continue. That can be restored by correcting the configurations and restarting Spark component with distributing client configurations.

**CDPD-217: HBase/Spark connectors are not supported**

The *Apache HBase Spark Connector* (hbase-connectors/spark) and the *Apache Spark - Apache HBase Connector* (shc) are not supported in the initial CDP release.

None

**CDPD-3038: Launching pyspark displays several HiveConf warning messages**

When pyspark starts, several Hive configuration warning messages are displayed, similar to the following:

```
19/08/09 11:48:04 WARN conf.HiveConf: HiveConf of name hive.vect
orized.use.checked.expressions does not exist
19/08/09 11:48:04 WARN conf.HiveConf: HiveConf of name hive.te
z.cartesian-product.enabled does not exist
```

These errors can be safely ignored.

**CDPD-2650: Spark cannot write ZSTD and LZ4 compressed Parquet to dynamically partitioned tables**

Use a different compression algorithm.

**CDPD-3293: Cannot create views (CREATE VIEW statement) from Spark**

Apache Ranger in CDP disallows Spark users from running CREATE VIEW statements.

Create the view using Hive or Impala.

**CDPD-3783: Cannot create databases from Spark**

Attempting to create a database using Spark results in an error similar to the following:

```
org.apache.spark.sql.AnalysisException:
  org.apache.hadoop.hive.ql.metadata.HiveException: Me
taException(message:Permission denied: user [sparkuser] does not
have [ALL] privilege on [hdfs://ip-10-1-2-3.cloudera.site:8020/
tmp/spark/warehouse/spark_database.db]);
```

Create the database using Hive or Impala, or specify the external data warehouse location in the create command. For example:

```
sql("create database spark_database location '/warehouse/tablesp
ace/external/hive/spark_database.db' ")
```

## Known Issues for Apache Sqoop

Learn about the known issues in Sqoop, the impact or changes to the functionality, and the workaround.

### Using direct mode causes problems

Using direct mode has several drawbacks:

- Imports can cause intermittent an overlapping input split.
- Imports can generate duplicate data.
- Many problems, such as intermittent failures, can occur.
- Additional configuration is required.

Stop using direct mode. Do not use the --direct option in Sqoop import or export commands.

**CDPD-3089: Avro, S3, and HCat do not work together properly**

Importing an Avro file into S3 with HCat fails with Delegation Token not available.

**Parquet columns inadvertently renamed**

Column names that start with a number are renamed when you use the `--as-parquetfile` option to import data.

Prepend column names in Parquet tables with one or more letters or underscore characters.

**Importing Parquet files might cause out-of-memory (OOM) errors**

Importing multiple megabytes per row before initial-page-run check (ColumnWriter) can cause OOM. Also, rows that vary significantly by size so that the next-page-size check is based on small rows, and is set very high, followed by many large rows can also cause OOM.

None

## Known issues in Streams Messaging Manager

Learn about the known issues in Streams Messaging Manager, the impact or changes to the functionality, and the workaround.

**CDPD-19495: SMM UI does not show producer data on topics page**

In the SMM UI, the topics page, the topic profile pages, and the broker profile pages consistently show 0 for producer messages.

Workaround: For the real producer metrics, please check the aggregated REST API responses. The real producer metrics are within the `producerIdToOutMessagesCount` field.

**OPSAPS-59553: SMM's bootstrap server config should be updated based on Kafka's listeners**

SMM does not show any metrics for Kafka or Kafka Connect when multiple listeners are set in Kafka.

Workaround: SMM cannot identify multiple listeners and still points to bootstrap server using the default broker port (9093 for SASL\_SSL). You would have to override bootstrap server URL (hostname:port as set in the listeners for broker). Add the bootstrap server details in SMM safety valve in the following path:

Cloudera Manager > SMM > Configuration > Streams Messaging Manager Rest Admin Server Advanced Configuration Snippet (Safety Valve) for `streams-messaging-manager.yaml` > Add the following value for bootstrap servers > Save Changes > Restart SMM.

```
streams.messaging.manager.kafka.bootstrap.servers=<comma-separated list of brokers>
```

**OPSAPS-59828: SMM cannot connect to Schema Registry when TLS is enabled**

When TLS is enabled, SMM by default cannot properly connect to Schema Registry.

As a result, when viewing topics in the SMM Data Explorer with the deserializer key or value set to Avro, the following error messages are shown:

- Error deserializing key/value for partition [\*\*\*PARTITION\*\*\*] at offset [\*\*\*OFFSET\*\*\*]. If needed, please seek past the record to continue consumption.
- Failed to fetch value schema versions for topic : '[\*\*\*TOPIC\*\*\*]'.

In addition, the following certificate error will also be present in the SMM log:

- `javax.net.ssl.SSLHandshakeException: PKIX path building failed:...`

Workaround: Additional security properties must be set for SMM.

1. In Cloudera Manager, select the SMM service.

2. Go to Configuration.
3. Find and configure the SMM\_JMX\_OPTS property.

Add the following JVM SSL properties:

- `Djavax.net.ssl.trustStore=[***SMM TRUSTSTORE LOCATION***]`
- `Djavax.net.ssl.trustStorePassword=[***PASSWORD***]`

#### **OPSAPS-59124: Kafka, SMM, and SRM fail to start when there are multiple Ranger Admin roles running**

If there are multiple Ranger Admin roles configured in a cluster, Kafka cannot create the Kafka resource based services in Ranger, which are required for authorization. If the resource based services are missing, the Kafka, SMM, and SRM services will fail to start.

Workaround:

1. In Cloudera Manager, select the Kafka service.
2. Go to Configuration.
3. Find the Kafka Broker Environment Advanced Configuration Snippet (Safety Valve) property and add the following:

```
RANGER_REST_URL=[ ***RANGER ADMIN HOST*** ] : [ ***RANGER ADMIN PORT*** ]
```

- Replace `[***RANGER ADMIN HOST***]` with the hostname where a Ranger Admin service role is deployed. You can find the hostname by going to RangerInstances. The hostname is displayed in the **Hostname** column next to Ranger Admin. Choose one of the available Ranger Admin instances.
  - Replace `[***RANGER ADMIN PORT***]` with the port used by the Ranger Admin service role. The port is specified in the Admin HTTP Port or Admin HTTPS port Ranger property. Which port is used depends on whether SSL is enabled for Ranger Admin.
4. Click Save Changes.
  5. Restart Kafka.
  6. Restart SMM and SRM.

## Known Issues in Streams Replication Manager

Learn about the known issues in Streams Replication Manager, the impact or changes to the functionality, and the workaround.

#### **MM2-163: SRM does not sync re-created source topics until the offsets have caught up with target topic**

Messages written to topics that were deleted and re-created are not replicated until the source topic reaches the same offset as the target topic. For example, if at the time of deletion and re-creation there are a 100 messages on the source and target clusters, new messages will only get replicated once the re-created source topic has 100 messages. This leads to messages being lost.

None

#### **CDPD-14019: SRM may automatically re-create deleted topics**

If `auto.create.topics.enable` is enabled, deleted topics are automatically recreated on source clusters.

Prior to deletion, remove the topic from the topic allowlist with the `srm-control` tool. This prevents topics from being re-created.

```
srm-control topics --source [SOURCE_CLUSTER] --target [TARGET_CLUSTER] --remove [TOPIC1][TOPIC2]
```

#### **CDPD-13864 and CDPD-15327: Replication stops after the network configuration of a source or target cluster is changed**

If the network configuration of a cluster which is taking part in a replication flow is changed, for example, port numbers are changed as a result of enabling or disabling TLS, SRM will not update its internal configuration even if SRM is reconfigured and restarted. From SRM's perspective, it is the cluster identity that has changed. SRM cannot determine whether the new identity corresponds to the same cluster or not, only the owner or administrator of that cluster can know. In this case, SRM tries to use the last known configuration of that cluster which might not be valid, resulting in the halt of replication.

There are three workarounds for this issue. Choose one of the following:

#### **Increase the driver rebalance timeout**

Increasing the rebalance timeout to 5 minutes (300000 ms) or longer can resolve the issue. In general a 5 minute timeout should be sufficient for most deployments. However, depending on your scenario, an even longer period might be required. Increasing the rebalance timeout might lead to increased latency when the SRM drivers stop. The cluster will be slower when it rebalances the load of the removed driver.

The rebalance timeout can be configured on a per cluster (alias) basis by adding the following to the Streams Replication Manager's Replication Configs Cloudera Manager property:

```
[***ALIAS***].rebalance.timeout.ms = [***VALUE***]
```

Replace [\*\*\*ALIAS\*\*\*] with a cluster alias specified in Streams Replication Manager Cluster alias. Do this for all clusters that are taking part in the replication process. When correctly configured, your configuration will have a rebalance.timeout.ms entry corresponding to each cluster (alias). For example:

```
primary.rebalance.timeout.ms = 30000
secondary.rebalance.timeout.ms = 30000
tertiary.rebalance.timeout.ms = 30000
```

After the new broker configuration is applied by SRM, the rebalance timeout can be reverted back to its original value, or removed from the configuration altogether.

#### **Decrease replication admin timeout**

Decreasing the replication admin timeout to 15 seconds (15000 ms) can resolve the issue. With higher loads, this might cause WARN messages to appear in the SRM driver log.

The admin timeout can be configured on a per replication basis by adding the following to the Streams Replication Manager's Replication Configs Cloudera Manager property:

```
[***REPLICATION***].admin.timeout.ms = [***VALUE***]
```

Replace [\*\*\*REPLICATION\*\*\*] with a replication specified in Streams Replication Manager's Replication Configs. Do this for all affected replications. When correctly configured, your configuration will have an admin.timeout.ms entry corresponding to each affected replication. For example:

```
primary->secondary.admin.timeout.ms = 15000
secondary->primary.admin.timeout.ms = 15000
```

After the new broker configuration is applied by SRM, the admin timeout can be reverted back to its original value, or removed from the configuration altogether.

#### **Upgrade the brokers incrementally**

Instead of switching over to the new configuration, open two separate listeners on the broker. One for the old configuration, and one for the new configuration. After updating SRM's configuration and restarting SRM, the old listener can be turned off. Non-inter-broker listeners can be configured

with the dynamic configuration API of Kafka, this way not every listener change has to be followed by a restart.

#### **CDPD-11709: Blacklisted topics appear in the list of replicated topics**

If a topic was originally replicated but was later disallowed (blacklisted), it will still appear as a replicated topic under the /remote-topics REST API endpoint. As a result, if a call is made to this endpoint, the disallowed topic will be included in the response. Additionally, the disallowed topic will also be visible in the SMM UI. However, its Partitions and Consumer Groups will be 0, its Throughput, Replication Latency and Checkpoint Latency will show N/A.

None

#### **CDPD-22094: The SRM service role displays as healthy, but no metrics are processed**

The SRM service role might encounter errors that make metrics processing impossible. An example of this is when the target Kafka cluster is not reachable. The SRM service role does not automatically stop or recover if such an error is encountered. It continues to run and displays as healthy in Cloudera Manager. Metrics, however, are not processed. In addition, no new data is displayed in SMM for the replications.

1. Ensure that all clusters are available and are in a healthy state.
2. Restart SRM.

#### **CDPD-22389: The SRM driver role displays as healthy, but replication fails**

During startup, the SRM driver role might encounter errors that make data replication impossible. An example of this is when one of the clusters added for replication is not reachable. The SRM driver role does not automatically stop or recover if such an error is encountered. It will start up, continue to run, and display as healthy in Cloudera Manager. Replication, however, will not happen.

1. Ensure that all clusters are available and are in a healthy state.
2. Restart SRM.

#### **CDPD-23683: The replication status reported by the SRM service role for healthy replications is flaky**

The replication status reported by the SRM service role is flaky. The replication status might change between active and inactive frequently even if the replication is healthy. This status is also reflected in SMM on the replications tab.

None

#### **OPSAPS-59124: Kafka, SMM, and SRM fail to start when there are multiple Ranger Admin roles running**

If there are multiple Ranger Admin roles configured in a cluster, Kafka cannot create the Kafka resource based services in Ranger, which are required for authorization. If the resource based services are missing, the Kafka, SMM, and SRM services will fail to start.

1. In Cloudera Manager, select the Kafka service.
2. Go to Configuration.
3. Find the Kafka Broker Environment Advanced Configuration Snippet (Safety Valve) property and add the following:

```
RANGER_REST_URL=[ ***RANGER ADMIN HOST*** ] : [ ***RANGER ADMIN PORT*** ]
```

- Replace `[ ***RANGER ADMIN HOST*** ]` with the hostname where a Ranger Admin service role is deployed. You can find the hostname by going to RangerInstances. The hostname is displayed in the **Hostname** column next to Ranger Admin. Choose one of the available Ranger Admin instances.
- Replace `[ ***RANGER ADMIN PORT*** ]` with the port used by the Ranger Admin service role. The port is specified in the Admin HTTP Port or Admin HTTPS port Ranger property. Which port is used depends on whether SSL is enabled for Ranger Admin.

4. Click Save Changes.
5. Restart Kafka.
6. Restart SMM and SRM.

#### **OPSAPS-63992: Rolling restart unavailable for SRM**

Initiating a rolling restart for the SRM service is not possible. Consequently, performing a rolling upgrade of the SRM service is also not possible.

None

#### **CDPD-31745: SRM Control fails to configure internal topic when target is earlier than Kafka 2.3**

When the target Kafka cluster of a replication is earlier than version 2.3, the srm-control internal topic is created with an incorrect configuration (cleanup.policy=compact). This causes the srm-control topic to lose the replication filter records, causing issues in the replication.

After a replication is enabled where the target Kafka cluster is earlier than 2.3, manually configure all srm-control.[\*\*\*SOURCE CLUSTER ALIAS\*\*\*].internal topics in the target cluster to use cleanup.policy=compact.

#### **CDPD-31235: Negative consumer group lag when replicating groups through SRM**

SRM checkpointing reads the offset-syncs topic to create offset mappings for committed consumer group offsets. In some corner cases, it is possible that a mapping is not available in offset-syncs. In a case like this SRM simply copies the source offset, which might not be a valid offset in the replica topic.

One possible situation is if there is an empty topic in the source cluster with a non-zero end offset (for example, retention already removed the records), and a consumer group which has a committed offset set to the end offset. If replication is configured to start replicating this topic, it will not have an offset mapping available in offset-syncs (as the topic is empty), causing SRM to copy the source offset.

This can cause issues when automatic offset synchronization is enabled, as the consumer group offset can be potentially set to a high number. SRM never rewinds these offsets, so even when there is a correct offset mapping available, the offset will not be updated correctly.

After offset mappings are created, stop the consumers of the group and set the committed offsets of the group to the end of the topic on the target cluster with this command:

```
kafka-consumer-groups --bootstrap-server [***HOST***]:[***PORT***] --group [***GROUP***] --topic [***SOURCE CLUSTER ALIAS***].[***TOPIC***] --reset-offsets --to-latest --execute
```

Alternatively, set it to the beginning of the topic with this command:

```
kafka-consumer-groups --bootstrap-server [***HOST***]:[***PORT***] --group <group> --topic [***SOURCE CLUSTER ALIAS***].[***TOPIC***] --reset-offsets --to-earliest --execute
```

## **Limitations**

### **SRM cannot replicate Ranger authorization policies to or from Kafka clusters**

Due to a limitation in the Kafka-Ranger plugin, SRM cannot replicate Ranger policies to or from clusters that are configured to use Ranger for authorization. If you are using SRM to replicate data to or from a cluster that uses Ranger, disable authorization policy synchronization in SRM. This can be achieved by clearing the Sync Topic Acls Enabled (sync.topic.acls.enabled) checkbox.

### **SRM cannot ensure the exactly-once semantics of transactional source topics**

SRM data replication uses at-least-once guarantees, and as a result cannot ensure the exactly-once semantics (EOS) of transactional topics in the backup/target cluster.



**Note:** Even though EOS is not guaranteed, you can still replicate the data of a transactional source, but you must set `isolation.level` to `read_committed` for SRM's internal consumers. This can be done by adding `[***SOURCE CLUSTER ALIAS***]->[***TARGET CLUSTER ALIAS***].consumer.isolation.level=read_committed` to the Streams Replication Manager's Replication Configs SRM service property in Cloudera Manager.

### SRM checkpointing is not supported for transactional source topics

SRM does not correctly translate checkpoints (committed consumer group offsets) for transactional topics. Checkpointing assumes that the offset mapping function is always increasing, but with transactional source topics this is violated. Transactional topics have control messages in them, which take up an offset in the log, but they are never returned on the consumer API. This causes the mappings to decrease, causing issues in the checkpointing feature. As a result of this limitation, consumer failover operations for transactional topics is not possible.

## Known Issues in MapReduce and YARN

Learn about the known issues in Mapreduce and YARN, the impact or changes to the functionality, and the workaround.

### Known Issues

#### **OPSAPS-57067: Yarn Service in Cloudera Manager reports stale configuration `yarn.cluster.scaling.recommendation.enable`.**

This issue does not affect the functionality. Restarting Yarn service will fix this issue.

#### **JobHistory URL mismatch after server relocation**

After moving the JobHistory Server to a new host, the URLs listed for the JobHistory Server on the ResourceManager web UI still point to the old JobHistory Server. This affects existing jobs only. New jobs started after the move are not affected.

For any existing jobs that have the incorrect JobHistory Server URL, there is no option other than to allow the jobs to roll off the history over time. For new jobs, make sure that all clients have the updated `mapred-site.xml` that references the correct JobHistory Server.

#### **CDH-49165: History link in ResourceManager web UI broken for killed Spark applications**

When a Spark application is killed, the history link in the ResourceManager web UI does not work. To view the history for a killed Spark application, see the Spark HistoryServer web UI instead.

#### **CDH-6808: Routable IP address required by ResourceManager**

ResourceManager requires routable host:port addresses for `yarn.resourcemanager.scheduler.address`, and does not support using the wildcard `0.0.0.0` address.

Set the address, in the form `host:port`, either in the client-side configuration, or on the command line when you submit the job.

#### **OPSAPS-52066: Stacks under Logs Directory for Hadoop daemons are not accessible from Knox Gateway.**

Stacks under the Logs directory for Hadoop daemons, such as NameNode, DataNode, ResourceManager, NodeManager, and JobHistoryServer are not accessible from Knox Gateway.

Administrators can SSH directly to the Hadoop Daemon machine to collect stacks under the Logs directory.

#### **CDPD-2936: Application logs are not accessible in WebUI2 or Cloudera Manager**



Running Containers Logs from NodeManager local directory cannot be accessed either in Cloudera Manager or in WebUI2 due to log aggregation.

Use the YARN log CLI to access application logs. For example:

```
yarn logs -applicationId <APPLICATION ID>
```

Apache Issue: [YARN-9725](#)

#### **OPSAPS-50291: Environment variables HADOOP\_HOME, PATH, LANG, and TZ are not getting whitelisted**

It is possible to whitelist the environment variables HADOOP\_HOME, PATH, LANG, and TZ, but the container launch environments do not have these variables set up automatically.

You can manually add the required environment variables to the whitelist using Cloudera Manager.

1. In Cloudera Manager, select the YARN service.
2. Click the Configuration tab.
3. Search for Containers Environment Variable Whitelist.
4. Add the environment variables (HADOOP\_HOME, PATH, LANG, TZ) which are required to the list.
5. Click Save Changes.
6. Restart all NodeManagers.
7. Check the YARN aggregated logs to ensure that newly whitelisted environment variables are set up for container launch.

#### **COMPX-3181: Application logs does not work for AZURE and AWS cluster**

Yarn Application Log Aggregation will fail for any YARN job (MR, Tez, Spark, etc) which do not use cloud storage, or use a cloud storage location other than the one configured for YARN logs (`yarn.nodemanager.remote-app-log-dir`).

Configure the following:

- For MapReduce job, set `mapreduce.job.hdfs-servers` in the `mapred-site.xml` file with all filesystems required for the job including the one set in `yarn.nodemanager.remote-app-log-dir` such as `hdfs://nn1/`, `hdfs://nn2/`.
- For Spark job, set the job level with all filesystems required for the job including the one set in `yarn.nodemanager.remote-app-log-dir` such as `hdfs://nn1/`, `hdfs://nn2/` in `spark.yarn.access.hadoopFileSystems` and pass it through the `--config` option in `spark-submit`.
- For jobs submitted using the `hadoop` command, place a separate `core-site.xml` file with `fs.defaultFS` set to the filesystem set in `yarn.nodemanager.remote-app-log-dir` in a path. Add that directory path in `--config` when executing the `hadoop` command.

#### **COMPX-1445: Queue Manager operations are failing when Queue Manager is installed separately from YARN**

If Queue Manager is not selected during YARN installation, Queue Manager operation are failing. Queue Manager says 0 queues are configured and several failures are present. That is because ZooKeeper configuration store is not enabled.

1. In Cloudera Manager, select the YARN service.
2. Click the Configuration tab.
3. Find the Queue Manager Service property.
4. Select the Queue Manager service that the YARN service instance depends on.
5. Click Save Changes.
6. Restart all services that are marked stale in Cloudera Manager.

#### **COMPX-1451: Queue Manager does not support multiple Resource**

When YARN High Availability is enabled there are multiple Resource Managers. Queue Manager receives multiple ResourceManager URLs for a High Availability cluster. It picks the active ResourceManager URL only when Queue Manager page is loaded. Queue Manager cannot handle it gracefully when the currently active ResourceManager goes down while the user is still using the Queue Manager UI.

Reload the Queue Manager page manually.

**COMPX-3329: Autorestart is not enabled for Queue Manager in Data Hub**

In a Data Hub cluster, Queue Manager is installed with autorestart disabled. Hence, if Queue Manager goes down, it will not restart automatically.

If Queue Manager goes down in a Data Hub cluster, you must go to the Cloudera Manager Dashboard and restart the Queue Manager service.

**Third party applications do not launch if MapReduce framework path is not included in the client configuration**

MapReduce application framework is loaded from HDFS instead of being present on the NodeManagers. By default the `mapreduce.application.framework.path` property is set to the appropriate value, but third party applications with their own configurations will not launch.

Set the `mapreduce.application.framework.path` property to the appropriate configuration for third party applications.

**YARN cannot start if Kerberos principal name is changed**

If the Kerberos principal name is changed in Cloudera Manager after launch, YARN will not be able to start. In such case the keytabs can be correctly generated but YARN cannot access ZooKeeper with the new Kerberos principal name and old ACLs.

There are two possible workarounds:

- Delete the `znode` and restart the YARN service.
- Use the `reset ZK ACLs` command. This also sets the `znodes` below `/rmstore/ZKRMStateRoot` to `world:anyone:cdw` which is less secure.

**COMPX-8687: Missing access check for getAppAttempts**

When the Job ACL feature is enabled using Cloudera Manager (YARN Configuration Enable JOB ACL property), the `mapreduce.cluster.acls.enabled` property is not generated to all configuration files, including the `yarn-site.xml` configuration file. As a result the ResourceManager process will use the default value of this property. The default property of `mapreduce.cluster.acls.enabled` is `false`.

Workaround: Enable the Job ACL feature using an advanced configuration snippet:

1. In Cloudera Manager select the YARN service.
2. Click Configuration.
3. Find the YARN Service MapReduce Advanced Configuration Snippet (Safety Valve) property.
4. Click the plus icon and add the following:
  - Name: `mapreduce.cluster.acls.enabled`
  - Value: `true`
5. Click Save Changes.

**Unsupported Features**

The following YARN features are currently not supported in Cloudera Data Platform:

- GPU support for Docker
- Hadoop Pipes
- Fair Scheduler

- Application Timeline Server (ATS 2 and ATS 1.5)
- Container Resizing
- Distributed or Centralized Allocation of Opportunistic Containers
- Distributed Scheduling
- Native Services
- Pluggable Scheduler Configuration
- Queue Priority Support
- Reservation REST APIs
- Resource Estimator Service
- Resource Profiles
- (non-Zookeeper) ResourceManager State Store
- Shared Cache
- YARN Federation
- Rolling Log Aggregation
- Docker on YARN (DockerContainerExecutor) on Data Hub clusters
- Moving jobs between queues
- Dynamic Resource Pools

## Known Issues in Apache Zeppelin

Learn about the known issues in Zeppelin, the impact or changes to the functionality, and the workaround.

### CDPD-3090: Due to a configuration typo, functionality involving notebook repositories does not work

Due to a missing closing brace, access to the notebook repositories API is blocked by default.

From the CDP Management Console, go to Cloudera Manager for the cluster running Zeppelin. On the Zeppelin configuration page (Zeppelin serviceConfiguration), enter shiro urls in the Search field, and then add the missing closing brace to the notebook-repositories URL, as follows:

```
/api/notebook-repositories/** = authc, roles[{{zeppelin_admin_group}}]
```

Click Save Changes, and restart the Zeppelin service.

### CDPD-2406: Logout button does not work

Clicking the Logout button in the Zeppelin UI logs you out, but then immediately logs you back in using SSO.

Close the browser.

## Known Issues in Apache ZooKeeper

Learn about the known issues in Zookeeper, the impact or changes to the functionality, and the workaround.

### Zookeeper-client does not use ZooKeeper TLS/SSL automatically

The command-line tool ‘zookeeper-client’ is installed to all Cloudera Nodes and it can be used to start the default Java command line ZooKeeper client. However even when ZooKeeper TLS/SSL is enabled, the zookeeper-client command connects to localhost:2181, without using TLS/SSL.

Manually configure the 2182 port, when zookeeper-client connects to a ZooKeeper cluster. The following is an example of connecting to a specific three-node ZooKeeper cluster using TLS/SSL:

```
CLIENT_JVMFLAGS="-Dzookeeper.clientCnxnSocket=org.apache.zookeeper.ClientCnxnSocketNetty -Dzookeeper.ssl.keyStore.location=<PATH TO YOUR CONFIGURED KEYSTORE> -Dzookeeper.ssl.keyStore.password=<THE PASSWORD YOU CONFIGURED FOR THE KEYSTORE> -Dzookeeper.ssl.trustStore.location=<PATH TO YOUR CONFIGURED
```

```
TRUSTSTORE> -Dzookeeper.ssl.trustStore.password=<THE PASSWORD  
YOU CONFIGURED FOR THE TRUSTSTORE> -Dzookeeper.client.secure=true" zookeeper-client -server <YOUR.ZOOKEEPER.SERVER-1>:2182,<YOUR.ZOOKEEPER.SERVER-2>:2182,<YOUR.ZOOKEEPER.SERVER-3>:2182
```

## Behavioral Changes In Cloudera Runtime 7.2.6

You can review the changes in certain features or functionalities of components that have resulted in a change in behavior from the previously released version to this version of Cloudera Runtime 7.2.6.

### Behavioral Changes in Apache Kafka

Learn about the change in certain functionality of Kafka that has resulted in a change in behavior from the previously released version to this version of Cloudera Runtime.

**Summary:**

The default hashing algorithm of the log cleaner for building offset maps has changed to Murmur3.

Previous behavior:

The default hashing algorithm used was MD5.

New behavior:

The default hashing algorithm used is Murmur3.

**Summary:**

The Ranger Kafka Plugin no longer communicates with Zookeeper through secure channels even if secure communication between Kafka and Zookeeper is enabled.

Previous behavior:

If the Enable Secure Connection to ZooKeeper property was set to true, the Ranger Kafka Plugin communicated with Zookeeper through secure channels.

New behavior:

The Ranger Kafka Plugin no longer communicates with Zookeeper through secure channels even if the Enable Secure Connection to ZooKeeper property is enabled.

### Behavioral Changes in Streams Replication Manager

Learn about the change in certain functionality of Streams Replication Manager that has resulted in a change in behavior from the previously released version to this version of Cloudera Runtime.

**Summary:**

The SRM service role no longer offers an HTTP port when SSL is enabled for the service. Only the HTTPS port is used.

Previous behavior:

If SSL was enabled for the service, both HTTP and HTTPS ports were available for use.

New behavior:

If SSL is enabled for the service, only the HTTPS port is used.

## Behavioral Changes in Apache Hadoop YARN

Learn about the change in certain functionality of Hadoop YARN that has resulted in a change in behavior from the previously released version to this version of Cloudera Runtime.

### Summary:

The default value of the `yarn.nodemanager.resource.memory-mb` and the `yarn.scheduler.maximum-allocation-mb` changed.

Previous behavior:

Default value of the `yarn.nodemanager.resource.memory-mb` and the `yarn.scheduler.maximum-allocation-mb` properties used to be 3GB.

New behavior:

Default value of the `yarn.nodemanager.resource.memory-mb` and the `yarn.scheduler.maximum-allocation-mb` properties are 9.64GB.

## Behavioral Changes in Apache Phoenix

Learn about the change in certain functionality of Apache Phoenix that has resulted in a change in behavior from the previously released version to this version of Cloudera Runtime.

### Summary:

As a consequence of including the Apache Phoenix fix PHOENIX-5213, some libraries that are in the old shaded phoenix-client JARs are included in the new JAR without relocation. These libraries are shaded in the new JAR. For example, `com.google.protobuf` package is shaded in the new JAR.

New behavior:

If you use any of these JARs in your current deployment, you must explicitly add the newly shaded dependencies to your applications.

## Deprecation Notices In Cloudera Runtime 7.2.6

Certain features and functionalities have been removed or deprecated in Cloudera Runtime 7.2.6. You must review these items to understand whether you must modify your existing configuration. You can also learn about the features that will be removed or deprecated in the future release to plan for the required changes.

### Terminology

Items in this section are designated as follows:

#### Deprecated

Technology that Cloudera is removing in a future CDP release. Marking an item as deprecated gives you time to plan for removal in a future CDP release.

#### Moving

Technology that Cloudera is moving from a future CDP release and is making available through an alternative Cloudera offering or subscription. Marking an item as moving gives you time to plan for removal in a future CDP release and plan for the alternative Cloudera offering or subscription for the technology.

#### Removed

Technology that Cloudera has removed from CDP and is no longer available or supported as of this release. Take note of technology marked as removed since it can potentially affect your upgrade plans.

### Removed Components and Product Capabilities

No components are deprecated or removed in this Cloudera Runtime release.

Please contact Cloudera Support or your Cloudera Account Team if you have any questions.

## Deprecation notices in Apache Kudu

Certain features and functionality in Kudu are deprecated or removed in Cloudera Runtime 7.2.6. You must review these changes along with the information about the features in Kudu that will be removed or deprecated in a future release.

- The Flume sink has been migrated to the Apache Flume project and removed from Kudu. Users depending on the Flume integration can use the old kudu-flume jars or migrate to the Flume jars containing the Kudu sink.
- Support for Apache Sentry authorization has been deprecated and may be removed in the next release. Users depending on the Sentry integration should migrate to the Apache Ranger integration for authorization.
- Support for Python 2 has been deprecated and may be removed in the next release.
- Support for CentOS/RHEL 6, Debian 8, Ubuntu 14 has been deprecated and may be removed in the next release.

## Deprecation Notices for Apache Kafka

Certain features and functionality in Kafka are deprecated or removed in Cloudera Runtime 7.2.6. You must review these changes along with the information about the features in Kafka that will be removed or deprecated in a future release.

### Deprecated

#### kafka-preferred-replica-election

The kafka-preferred-replica-election.sh command line tool has been deprecated in upstream Apache Kafka 2.4.0. Its alternative in CDP, kafka-preferred.replica-election, is also deprecated.

#### --zookeeper

The --zookeeper option has been deprecated for all Kafka command line tools except for kafka-reassign-partitions. Cloudera recommends that you use the --bootstrap-server option instead.

## Deprecation Notices in Apache HBase

Certain features and functionality in HBase are deprecated or removed in Cloudera Runtime 7.2.6. You must review these changes along with the information about the features in HBase that will be removed or deprecated in a future release.

Use this list to understand some of the deprecated items and incompatibilities if you are upgrading from HDP 2.x or CDH 5.x to CDP.

### Known Incompatibilities when Upgrading from CDH and HDP

Cloudera Runtime uses Apache HBase 2.x.x whereas CDH 5.x and HDP 2.x uses Apache HBase 1.x.



**Important:** Some APIs that are listed as deprecated, but these APIs do not block your upgrade. You must stop using the deprecated APIs in your existing applications after upgrade, and not use these APIs in new development.

## List of Major Changes

- HBASE-16189 and HBASE-18945: You cannot open the Cloudera Runtime HFiles in CDH or HDP.
- HBASE-18240: Changed the ReplicationEndpoint Interface.
- The Dynamic Jars Directory property `hbase.dynamic.jars.dir` is disabled by default. If you want to enable dynamic classloading, you can use the `hbase.dynamic.jars.dir` property in Cloudera Manager to change the default `{hbase.rootdir}/lib` directory to some other location, preferably a location on HDFS. This property is flagged by Cloudera Manager as deprecated when you upgrade to CDP because the property is incompatible with HBase on cloud deployments. If you are using HBase with HDFS storage, you can ignore this warning, and keep using the `hbase.use.dynamic.jars` feature.

## Co-processor API changes

- HBASE-16769: Deprecated Protocol Buffers references from `MasterObserver` and `RegionServerObserver`.
- HBASE-17312: [JDK8] Use default method for Observer Coprocessors. The interface classes of `BaseMasterAndRegionObserver`, `BaseMasterObserver`, `BaseRegionObserver`, `BaseRegionServerObserver` and `BaseWALObserver` uses JDK8's 'default' keyword to provide empty and no-op implementations.
- Interface `HTableInterface` introduces following changes to the methods listed below:

[#] interface `CoprocessorEnvironment`

Change	Result
Abstract method <code>getTable ( TableName )</code> has been removed.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>getTable ( TableName, ExecutorService )</code> has been removed.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.

- Public Audience

The following tables describes the coprocessor changes:

[#] class `CoprocessorRpcChannel` (1)

Change	Result
This class has become interface.	A client program may be interrupted by <code>IncompatibleClassChangeError</code> or <code>InstantiationException</code> exception depending on the usage of this class.

Class `CoprocessorHost<E>`

Classes that were Audience Private but were removed:

Change	Result
Type of field <code>coprocessors</code> has been changed from <code>java.util.SortedSet&lt;E&gt;</code> to <code>org.apache.hadoop.hbase.util.SortedList&lt;E&gt;</code> .	A client program may be interrupted by <code>NoSuchFieldError</code> exception.

## MasterObserver changes

The following changes are introduced to the `MasterObserver` interface:

[#] interface `MasterObserver` (14)

Change	Result
Abstract method <code>void postCloneSnapshot ( ObserverContext&lt;MasterCoprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postCreateTable ( ObserverContext&lt;MasterCoprocessorEnvironment&gt;, HTableDescriptor, HRegionInfo[] )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.

Abstract method <code>void postDeleteSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postGetTableDescriptors (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, List&lt;HTableDescriptor&gt;)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postModifyTable (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, TableName, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postRestoreSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preCloneSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preCreateTable (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HTableDescriptor, HRegionInfo[])</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preDeleteSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preGetTableDescriptors (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, List&lt;TableName&gt;, List&lt;HTableDescriptor&gt;)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preModifyTable (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, TableName, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preRestoreSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void preSnapshot (ObserverContext&lt;MasterCoproprocessorEnvironment&gt;, HBaseProtos.SnapshotDescription, HTableDescriptor)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.

## RegionObserver interface changes

The following changes are introduced to the `RegionObserver` interface.

[#] interface `RegionObserver` (13)

Change	Result
Abstract method <code>void postCloseRegionOperation (ObserverContext&lt;RegionCoproprocessorEnvironment&gt;, HRegion.Operation)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postCompactSelection (ObserverContext&lt;RegionCoproprocessorEnvironment&gt;, Store, ImmutableList&lt;StoreFile&gt;)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postCompactSelection (ObserverContext&lt;RegionCoproprocessorEnvironment&gt;, Store, ImmutableList&lt;StoreFile&gt;, CompactionRequest)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>void postGetClosestRowBefore (ObserverContext&lt;RegionCoproprocessorEnvironment&gt;, byte[], byte[], Result)</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.



Abstract method DeleteTrackerpostInstantiateDeleteTracker ( ObserverContext<RegionCoproprocessorEnvironment>, DeleteTracker) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method voidpostSplit ( ObserverContext<RegionCoproprocessorEnvironment>, HRegion, HRegion) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method voidpostStartRegionOperation ( ObserverContext<RegionCoproprocessorEnvironment>, HRegion.Operation) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method StoreFile.ReaderpostStoreFileReaderOpen ( ObserverContext<RegionCoproprocessorEnvironment>, FileSystem, Path, FSDataInputStreamWrapper, long, CacheConfig, Reference, StoreFile.Reader) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method voidpostWALRestore ( ObserverContext<RegionCoproprocessorEnvironment>, HRegionInfo, HLogKey, WALEdit) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method InternalScannerpreFlushScannerOpen ( ObserverContext<RegionCoproprocessorEnvironment>, Store, KeyValueScanner, InternalScanner) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method voidpreGetClosestRowBefore ( ObserverContext<RegionCoproprocessorEnvironment>, byte[], byte[], Result) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method StoreFile.ReaderpreStoreFileReaderOpen ( ObserverContext<RegionCoproprocessorEnvironment>, FileSystem, Path, FSDataInputStreamWrapper, long, CacheConfig, Reference, StoreFile.Reader) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method voidpreWALRestore ( ObserverContext<RegionCoproprocessorEnvironment>, HRegionInfo, HLogKey, WALEdit) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

### WALObserver interface changes

The following changes are introduced to the WALObserver interface:

[#] interface WALObserver

Change	Result
Abstract method voidpostWALWrite ( ObserverContext<WALCoproprocessorEnvironment>, HRegionInfo, HLogKey, WALEdit) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method booleanpreWALWrite ( ObserverContext<WALCoproprocessorEnvironment>, HRegionInfo, HLogKey, WALEdit) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

### Scheduler changes

Following methods are now changed to abstract:

[#]class RpcScheduler (1)

Change	Result
Abstract method void dispatch ( CallRunner ) has been removed from this class.	A client program may be interrupted by NoSuchMethodError exception.

[#] RpcScheduler.dispatch ( CallRunner p1 ) [abstract] : void 1

org/apache/hadoop/hbase/ipc/RpcScheduler.dispatch:(Lorg/apache/hadoop/hbase/ipc/CallRunner;)V

Change	Result
--------	--------

Return value type has been changed from void to boolean.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.
--	---

The following abstract methods have been removed:

[#]interface PriorityFunction (2)

Change	Result
Abstract method longgetDeadline ( RPCProtos.RequestHeader, Message ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method int getPriority ( RPCProtos.RequestHeader, Message ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

## Server API changes

[#] class RpcServer (12)

Change	Result
Type of field CurCall has been changed from java.lang.ThreadLocal<RpcServer.Call> to java.lang.ThreadLocal<RpcCall>.	A client program may be interrupted by NoSuchFieldError exception.
Abstract method int getNumOpenConnections ( ) has been added to this class.	This class became abstract and a client program may be interrupted by InstantiationException exception.
Field callQueueSize of type org.apache.hadoop.hbase.util.Counter has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field connectionList of type java.util.List<RpcServer.Connection> has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field maxIdleTime of type int has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field numConnections of type int has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field port of type int has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field purgeTimeout of type long has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field responder of type RpcServer.Responder has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field socketSendBufferSize of type int has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field thresholdIdleConnections of type int has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.

Following abstract methods are removed:

Change	Result
Abstract method Pair<Message,CellScanner>call ( BlockingService, Descriptors.MethodDescriptor, Message, CellScanner, long, MonitoredRPCHandler ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

## Replication and WAL changes

HBASE-18733: WALKey has been purged completely. Following are the changes to the WALKey:

[#] classWALKey (8)

Change	Result
Access level of field clusterIds has been changed from protected to private.	A client program may be interrupted by IllegalAccessException exception.

Access level of field compressionContext has been changed from protected to private.	A client program may be interrupted by IllegalAccessError exception.
Access level of field encodedRegionName has been changed from protected to private.	A client program may be interrupted by IllegalAccessError exception.
Access level of field tablename has been changed from protected to private.	A client program may be interrupted by IllegalAccessError exception.
Access level of field writeTime has been changed from protected to private.	A client program may be interrupted by IllegalAccessError exception.

Following fields have been removed:

Change	Result
Field LOG of type org.apache.commons.logging.Log has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field VERSION of type WALKey.Version has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field logSeqNum of type long has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.

### Admin Interface API changes

You cannot administer a CDP Runtime Data Hub cluster using a client that includes RelocationAdmin, ACC, Thrift and REST usage of Admin ops. Methods returning protobufs have been changed to return POJOs instead. Returns have changed from void to Future for async methods. HBASE-18106 - Admin.listProcedures and Admin.listLocks were renamed to getProcedures and getLocks. MapReduce makes use of Admin doing following admin.getClusterStatus() to calculate Splits.

- Thrift usage of Admin API:

```
compact(ByteBuffer) createTable(ByteBuffer, List<ColumnDescriptor>) deleteTable(ByteBuffer) disableTable(ByteBuffer) enableTable(ByteBuffer) getTableNames() majorCompact(ByteBuffer)
```

- REST usage of Admin API:

```
hbase-rest org.apache.hadoop.hbase.rest RootResource getTableList() TableName[] tableNames = servlet.getAdmin().listTableNames(); SchemaResource delete(UriInfo) Admin admin = servlet.getAdmin(); update(TableSchemaModel, boolean, UriInfo) Admin admin = servlet.getAdmin(); StorageClusterStatusResource get(UriInfo) ClusterStatus status = servlet.getAdmin().getClusterStatus(); StorageClusterVersionResource get(UriInfo) model.setVersion(servlet.getAdmin().getClusterStatus().getHBaseVersion()); TableResource exists() return servlet.getAdmin().tableExists(TableName.valueOf(table));
```

[#] interface Admin (9)

Following are the changes to the Admin interface:

Change	Result
Abstract method createTableAsync ( HTableDescriptor, byte[] [] ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method disableTableAsync ( TableName ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method enableTableAsync ( TableName ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getCompactionState ( TableName ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

Abstract method <code>getCompactionStateForRegion ( byte[ ] )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>isSnapshotFinished ( HBaseProtos.SnapshotDescription )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>snapshot ( String, TableName, HBaseProtos.SnapshotDescription.Type )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>snapshot ( HBaseProtos.SnapshotDescription )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.
Abstract method <code>takeSnapshotAsync ( HBaseProtos.SnapshotDescription )</code> has been removed from this interface.	A client program may be interrupted by <code>NoSuchMethodError</code> exception.

[#] `Admin.createTableAsync ( HTableDescriptor p1, byte[ ][ ] p2 ) [abstract] : void 1`

`org/apache/hadoop/hbase/client/Admin.createTableAsync:(Lorg/apache/hadoop/hbase/HTableDescriptor;[[B)V`

Change	Result
Return value type has been changed from <code>void</code> to <code>java.util.concurrent.Future&lt;java.lang.Void&gt;</code> .	This method has been removed because the return type is part of the method signature. A client program may be interrupted by <code>NoSuchMethodError</code> exception.

[#] `Admin.disableTableAsync ( TableName p1 ) [abstract] : void 1`

`org/apache/hadoop/hbase/client/Admin.disableTableAsync:(Lorg/apache/hadoop/hbase/TableName;)V`

Change	Result
Return value type has been changed from <code>void</code> to <code>java.util.concurrent.Future&lt;java.lang.Void&gt;</code> .	This method has been removed because the return type is part of the method signature. A client program may be interrupted by <code>NoSuchMethodError</code> exception.

`Admin.enableTableAsync ( TableName p1 ) [abstract] : void 1`

`org/apache/hadoop/hbase/client/Admin.enableTableAsync:(Lorg/apache/hadoop/hbase/TableName;)V`

Change	Result
Return value type has been changed from <code>void</code> to <code>java.util.concurrent.Future&lt;java.lang.Void&gt;</code> .	This method has been removed because the return type is part of the method signature. A client program may be interrupted by <code>NoSuchMethodError</code> exception.

`Admin.enableTableAsync ( TableName p1 ) [abstract] : void 1`

`org/apache/hadoop/hbase/client/Admin.getCompactionState:(Lorg/apache/hadoop/hbase/TableName;)Lorg/apache/hadoop/hbase/protobuf/generated/AdminProtos$GetRegionInfoResponse$CompactionState;`

Change	Result
Return value type has been changed from <code>org.apache.hadoop.hbase.protobuf.generated.AdminProtos.GetRegionInfoResponse.CompactionState</code> to <code>CompactionState</code> .	This method has been removed because the return type is part of the method signature. A client program may be interrupted by <code>NoSuchMethodError</code> exception.

[#] `Admin.getCompactionStateForRegion ( byte[ ] p1 ) [abstract] : AdminProtos.GetRegionInfoResponse.CompactionState 1`

`org/apache/hadoop/hbase/client/Admin.getCompactionStateForRegion:([B)Lorg/apache/hadoop/hbase/protobuf/generated/AdminProtos$GetRegionInfoResponse$CompactionState;`

Change	Result
Return value type has been changed from <code>org.apache.hadoop.hbase.protobuf.generated.AdminProtos.GetRegionInfoResponse.CompactionState</code> to <code>CompactionState</code> .	This method has been removed because the return type is part of the method signature. A client program may be interrupted by <code>NoSuchMethodError</code> exception.

## HTableDescriptor and HColumnDescriptor changes

HTableDescriptor and HColumnDescriptor has become interfaces and you can create it through Builders. HCD has become CFD. It no longer implements writable interface. package org.apache.hadoop.hbase.

[#] class HColumnDescriptor (1)

Change	Result
Removed super-interface org.apache.hadoop.io.WritableComparable<HColumnDescriptor>.	A client program may be interrupted by NoSuchMethodError exception.

class HTableDescriptor (3)

Change	Result
Removed super-interface org.apache.hadoop.io.WritableComparable<HTableDescriptor>.	A client program may be interrupted by NoSuchMethodError exception.
Field META_TABLEDESC of type HTableDescriptor has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.

[#] HTableDescriptor.getColumnFamilies ( ) : HColumnDescriptor[ ] (1)

org/apache/hadoop/hbase/HTableDescriptor.getColumnFamilies():[Lorg/apache/hadoop/hbase/HColumnDescriptor;

[#] class HColumnDescriptor (1)

Change	Result
Return value type has been changed from HColumnDescriptor[] to client.ColumnFamilyDescriptor[].	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

[#] interface Table (4)

Change	Result
Abstract method batch ( List<?> ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method batchCallback ( List<?>, Batch.Callback<R> ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getWriteBufferSize ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method setWriteBufferSize ( long ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

## Deprecated buffer methods

- LockTimeoutException and OperationConflictException classes have been removed.

class OperationConflictException (1)

Result	Result
This class has been removed.	A client program may be interrupted by NoClassDefFoundError exception.

class LockTimeoutException (1)

Change Result This class has been removed. A client program may be interrupted by NoClassDefFoundError exception.

## Filter API changes

Following methods have been removed: package org.apache.hadoop.hbase.filter

## [#] class Filter (2)

Result	Result
Abstract method getNextKeyHint ( KeyValue ) has been removed from this class.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method transform ( KeyValue ) has been removed from this class.	A client program may be interrupted by NoSuchMethodError exception.

- HBASE-12296: Filters should work with ByteBufferedCell.
- HConnection is removed in Cloudera Runtime.
- RegionLoad and ServerLoad internally moved to shaded Protocol Buffers.

## [#] class RegionLoad (1)

Result	Result
Type of field regionLoadPB has been changed from protobuf.generated.ClusterStatusProtos.RegionLoad to shaded.protobuf.generated.ClusterStatusProtos.RegionLoad.	A client program may be interrupted by NoSuchFieldError exception.

## [#] interface AccessControlConstants (3)

Result	Result
Field OP_ATTRIBUTE_ACL_STRATEGY of type java.lang.String has been removed from this interface.	A client program may be interrupted by NoSuchFieldError exception.
Field OP_ATTRIBUTE_ACL_STRATEGY_CELL_FIRST of type byte[] has been removed from this interface.	A client program may be interrupted by NoSuchFieldError exception.
Field OP_ATTRIBUTE_ACL_STRATEGY_DEFAULT of type byte[] has been removed from this interface.	A client program may be interrupted by NoSuchFieldError exception.

## [#] ServerLoad.getNumberOfRequests ( ) : int 1

org/apache/hadoop/hbase/ServerLoad.getNumberOfRequests():I

Result	Result
Return value type has been changed from int to long.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

## [#] ServerLoad.getNumberOfRequests ( ) : int 1

org/apache/hadoop/hbase/ServerLoad.getReadRequestsCount():I

Result	Result
Return value type has been changed from int to long.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

## [#] ServerLoad.getTotalNumberOfRequests ( ) : int 1

org/apache/hadoop/hbase/ServerLoad.getTotalNumberOfRequests():I

Result	Result
Return value type has been changed from int to long.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

## [#]ServerLoad.getWriteRequestsCount ( ) : int 1

org/apache/hadoop/hbase/ServerLoad.getWriteRequestsCount():I

Result	Result
Return value type has been changed from int to long.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

## [#]class HConstants (6)

Result	Result
Field DEFAULT_HBASE_CONFIG_READ_ZOOKEEPER_CONFIG of type boolean has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field HBASE_CONFIG_READ_ZOOKEEPER_CONFIG of type java.lang.String has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field REPLICATION_ENABLE_DEFAULT of type boolean has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field REPLICATION_ENABLE_KEY of type java.lang.String has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field ZOOKEEPER_CONFIG_NAME of type java.lang.String has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.
Field ZOOKEEPER_USEMULTI of type java.lang.String has been removed from this class.	A client program may be interrupted by NoSuchFieldError exception.

HBASE-18732: [compat 1-2] HBASE-14047 removed Cell methods without deprecation cycle.

## [#]interface Cell 5

Result	Result
Abstract method getFamily ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getMvccVersion ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getQualifier ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getRow ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.
Abstract method getValue ( ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

HBASE-18795:Expose KeyValue.getBuffer() for tests alone. Allows KV#getBuffer in tests only that was deprecated previously.

**Region scanner changes**

## [#]interface RegionScanner (1)

Result	Result
Abstract method boolean nextRaw ( List<Cell>, int ) has been removed from this interface.	A client program may be interrupted by NoSuchMethodError exception.

**StoreFile changes**

## [#] class StoreFile (1)

Result	Result
This class became interface.	A client program may be interrupted by IncompatibleClassChangeError or InstantiationException exception dependent on the usage of this class.

## MapReduce changes

HFile\*Format has been removed.

## ClusterStatus changes

[#] ClusterStatus.getRegionsInTransition ( ) : Map<String,RegionState> 1

org/apache/hadoop/hbase/ClusterStatus.getRegionsInTransition:()Ljava/util/Map;

Result	Result
Return value type has been changed from java.util.Map<java.lang.String, master.RegionState> to java.util.List<master.RegionState>.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

Other changes in ClusterStatus include removal of convert methods that were no longer necessary after purge of Protocol Buffers from API.

## Purge of Protocol Buffers from API

Protocol Buffers (PB) has been deprecated in APIs.

[#] HBaseSnapshotException.getSnapshotDescription ( ) : HBaseProtos.SnapshotDescription 1

org/apache/hadoop/hbase/snapshot/HBaseSnapshotException.getSnapshotDescription:()Lorg/apache/hadoop/hbase/protobuf/generated/HBaseProtos\$SnapshotDescription;

Result	Result
Return value type has been changed from org.apache.hadoop.hbase.protobuf.generated.HBaseProtos.SnapshotDescription to org.apache.hadoop.hbase.client.SnapshotDescription.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

HBASE-15609: Remove PB references from Result, DoubleColumnInterpreter and any such public facing class for 2.0. hbase-client-1.0.0.jar, Result.class package org.apache.hadoop.hbase.client

[#] Result.getStats ( ) : ClientProtos.RegionLoadStats 1

org/apache/hadoop/hbase/client/Result.getStats:()Lorg/apache/hadoop/hbase/protobuf/generated/ClientProtos\$RegionLoadStats;

Result	Result
Return value type has been changed from org.apache.hadoop.hbase.protobuf.generated.ClientProtos.RegionLoadStats to RegionLoadStats.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

## PrettyPrinter changes

hbase-server-1.0.0.jar, HFilePrettyPrinter.class package org.apache.hadoop.hbase.io.hfile

Result	Result
Return value type has been changed from void to int.	This method has been removed because the return type is part of the method signature. A client program may be interrupted by NoSuchMethodError exception.

# Using the Cloudera Runtime Maven repository

Information about using Maven to build applications with Cloudera Runtime components.



If you want to build applications or tools for use with Cloudera Runtime components and you are using Maven or Ivy for dependency management, you can pull the Cloudera Runtime artifacts from the Cloudera Maven repository. The repository is available at [repository.cloudera.com](https://repository.cloudera.com).



**Important:** When you build an application JAR, do not include CDH JARs, because they are already provided. If you do, upgrading CDH can break your application. To avoid this situation, set the Maven dependency scope to provided. If you have already built applications which include the CDH JARs, update the dependency to set scope to provided and recompile.

The following is a sample POM (pom.xml) file:

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <repositories>
    <repository>
      <id>cloudera</id>
      <url>https://repository.cloudera.com/artifactory/cloudera-repos/</url>
    </repository>
  </repositories>
</project>
```

## Maven Artifacts for Cloudera Runtime 7.2.6.0

The following table lists the project name, groupId, artifactId, and version required to access each runtime artifact.

Project	groupId	artifactId	version
Apache Accumulo	org.apache.accumulo	accumulo-core	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-examples-simple	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-fate	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-gc	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-master	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-minicluster	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-monitor	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-proxy	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-server-base	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-shell	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-start	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-test	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-trace	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-tracer	1.7.0.7.2.6.0-71
	org.apache.accumulo	accumulo-tserver	1.7.0.7.2.6.0-71
Apache Atlas	org.apache.atlas	atlas-authorization	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-aws-s3-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-classification-updater	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-common	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-v1	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-client-v2	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-common	2.1.0.7.2.6.0-71

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	org.apache.atlas	atlas-distro	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-docs	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-api	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-common	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-graphdb-janus	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-index-repair-tool	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-intg	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-janusgraph-hbase2	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-notification	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-plugin-classloader	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-repository	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-server-api	2.1.0.7.2.6.0-71
	org.apache.atlas	atlas-testtools	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	hbase-testing-util	2.1.0.7.2.6.0-71
	org.apache.atlas	hdfs-model	2.1.0.7.2.6.0-71
	org.apache.atlas	hive-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	hive-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-bridge-shim	2.1.0.7.2.6.0-71
	org.apache.atlas	impala-hook-api	2.1.0.7.2.6.0-71
	org.apache.atlas	kafka-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	navigator-to-atlas	2.1.0.7.2.6.0-71
	org.apache.atlas	sample-app	2.1.0.7.2.6.0-71
	org.apache.atlas	sqoop-bridge	2.1.0.7.2.6.0-71
	org.apache.atlas	sqoop-bridge-shim	2.1.0.7.2.6.0-71
Apache Avro	org.apache.avro	avro	1.8.2.7.2.6.0-71
	org.apache.avro	avro-compiler	1.8.2.7.2.6.0-71
	org.apache.avro	avro-ipc	1.8.2.7.2.6.0-71
	org.apache.avro	avro-mapred	1.8.2.7.2.6.0-71
	org.apache.avro	avro-maven-plugin	1.8.2.7.2.6.0-71
	org.apache.avro	avro-protobuf	1.8.2.7.2.6.0-71
	org.apache.avro	avro-service-archetype	1.8.2.7.2.6.0-71
	org.apache.avro	avro-thrift	1.8.2.7.2.6.0-71
	org.apache.avro	avro-tools	1.8.2.7.2.6.0-71
	org.apache.avro	trevni-avro	1.8.2.7.2.6.0-71
	org.apache.avro	trevni-core	1.8.2.7.2.6.0-71
Apache Calcite	org.apache.calcite	calcite-babel	1.21.0.7.2.6.0-71

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	org.apache.calcite	calcite-core	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-druid	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-kafka	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-linq4j	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-server	1.21.0.7.2.6.0-71
	org.apache.calcite	calcite-ubenchmark	1.21.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-core	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-metrics	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-metrics-dropwizardmetrics	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-noop-driver	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-server	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-standalone-server	1.16.0.7.2.6.0-71
	org.apache.calcite.avatica	avatica-tck	1.16.0.7.2.6.0-71
Apache Crunch	org.apache.crunch	crunch-archetype	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-contrib	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-core	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-examples	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-hbase	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-hive	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-scrunch	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-spark	0.11.0.7.2.6.0-71
	org.apache.crunch	crunch-test	0.11.0.7.2.6.0-71
Apache Druid	org.apache.druid	druid-aws-common	0.17.1.7.2.6.0-71
	org.apache.druid	druid-benchmarks	0.17.1.7.2.6.0-71
	org.apache.druid	druid-console	0.17.1.7.2.6.0-71
	org.apache.druid	druid-core	0.17.1.7.2.6.0-71
	org.apache.druid	druid-gcp-common	0.17.1.7.2.6.0-71
	org.apache.druid	druid-hll	0.17.1.7.2.6.0-71
	org.apache.druid	druid-indexing-hadoop	0.17.1.7.2.6.0-71
	org.apache.druid	druid-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid	druid-integration-tests	0.17.1.7.2.6.0-71
	org.apache.druid	druid-processing	0.17.1.7.2.6.0-71
	org.apache.druid	druid-server	0.17.1.7.2.6.0-71
	org.apache.druid	druid-services	0.17.1.7.2.6.0-71
	org.apache.druid	druid-sql	0.17.1.7.2.6.0-71
	org.apache.druid	extendedset	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hadoop-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hbase	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hbase-security	0.17.1.7.2.6.0-71

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	org.apache.druid.extensions	druid-bloom-filter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-datasketches	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ec2-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-google-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-hdfs-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-histogram	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kafka-extraction-namespace	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kafka-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kerberos	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-kinesis-indexing-service	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-lookups-cached-global	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-lookups-cached-single	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-morc-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-parquet-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-protobuf-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-s3-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-stats	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-sql-metadata-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-sql-metadata-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ssl-client-sslcontext	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ssl-context-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ssl-context-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ssl-context-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-ssl-context-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-bount	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-sketch	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-average-query	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-cache	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-sketch	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-extensions	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-min-max	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-columns	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-emitter	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	druid-snowflake-view-maintenance	0.17.1.7.2.6.0-71

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	org.apache.druid.extensions	visualization-view-selection	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	supersync-data-storage	0.17.1.7.2.6.0-71
	org.apache.druid.extensions	stats-contrib	0.17.1.7.2.6.0-71
GCS Connector	com.google.cloud.bigtable	gcs-connector	2.1.2.7.2.6.0-71
	com.google.cloud.bigtable	gcs-connector	2.1.2.7.2.6.0-71
	com.google.cloud.bigtable	gcs-connector	2.1.2.7.2.6.0-71
	com.google.cloud.bigtable	gcs-connector	2.1.2.7.2.6.0-71
	com.google.cloud.bigtable	gcs-connector	2.1.2.7.2.6.0-71
Apache Hadoop	org.apache.hadoop	hadoop-aliyun	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-annotations	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-archive-logs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-archives	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-assemblies	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-auth	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-aws	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-azure	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-azure-datalake	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-build-tools	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-api	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-integration-tests	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-minicluster	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-client-runtime	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-cloud-storage	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-datajoin	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-distcp	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-extras	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-fs2img	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-gridmix	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-common	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-config	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-container-service	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-docs	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-server	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-hadoop-dependency-test	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-interface-admin	1.0.0.7.2.6.0-71

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	org.apache.hadoop	hadoop-hdds-interface-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-interface-server	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-server-framework	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-server-scm	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-test-utils	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdds-tools	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-httpfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-native-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-nfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-hdfs-rbf	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-kafka	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-kms	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-app	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-core	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-hs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-hs-plugins	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-jobclient	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-nativetask	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-shuffle	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-client-uploader	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-mapreduce-examples	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-maven-plugins	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-minicluster	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-minikdc	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-nfs	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-openstack	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-common	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-csi	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-datanode	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-dist	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-filesystem	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-filesystem-common	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-filesystem-hadoop2	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-filesystem-hadoop3	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-filesystem-shaded	1.0.0.7.2.6.0-71

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	org.apache.hadoop	hadoop-ozone-insight	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-integration-test	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-interface-client	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-interface-storage	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-network-tests	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-ozone-manager	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-recon	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-reconcodegen	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-s3gateway	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-ozone-tools	1.0.0.7.2.6.0-71
	org.apache.hadoop	hadoop-resourceestimator	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-rumen	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-sls	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-streaming	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-tools-dist	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-api	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-applications-distributedshell	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-applications-unmanaged-am-launcher	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-registry	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-applicationhistoryservice	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-nodemanager	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-resourcemanager	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-router	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-sharedcachemanager	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-tests	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timeline-pluginstorage	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timelineservice	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timelineservice-hbase-client	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timelineservice-hbase-common	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timelineservice-hbase-server-2	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-timelineservice-hbase-tests	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-server-web-proxy	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-services-api	3.1.1.7.2.6.0-71
	org.apache.hadoop	hadoop-yarn-services-core	3.1.1.7.2.6.0-71
	org.apache.hadoop	mini-chaos-tests	1.0.0.7.2.6.0-71
Apache HBase	org.apache.hbase	hbase-annotations	2.2.6.7.2.6.0-71

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	org.apache.hbase	hbase-checkstyle	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-client	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-client-project	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-common	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-endpoint	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-examples	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-external-blockcache	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-hadoop-compat	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-hadoop2-compat	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-hbtop	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-http	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-it	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-mapreduce	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-metrics	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-metrics-api	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-procedure	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-protocol	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-protocol-shaded	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-replication	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-resource-bundle	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-rest	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-rsgroup	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-server	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-shaded-client	2.2.6.7.2.6.0-71
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	org.apache.hbase	hbase-shaded-client-project	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-shaded-mapreduce	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-shaded-testing-util	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-shaded-testing-util-tester	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-shell	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-testing-util	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-thrift	2.2.6.7.2.6.0-71
	org.apache.hbase	hbase-zookeeper	2.2.6.7.2.6.0-71
	org.apache.hbase.contrib	hbase-akkamai-model	1.0.0.7.2.6.0-71
	org.apache.hbase.contrib	hbase-akkamai-proxy	1.0.0.7.2.6.0-71
	org.apache.hbase.contrib	hbase-spark	1.0.0.7.2.6.0-71
	org.apache.hbase.contrib	hbase-spark-it	1.0.0.7.2.6.0-71
	org.apache.hbase.contrib	hbase-spark-protocol	1.0.0.7.2.6.0-71
	org.apache.hbase.contrib	hbase-spark-protocol-shaded	1.0.0.7.2.6.0-71



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	org.apache.hbase.filecache	hbase-filecache-impl	1.0.0.7.2.6.0-71
	org.apache.hbase.filecache	hbase-filecache-cross	1.0.0.7.2.6.0-71
	org.apache.hbase.thirdparty	hbase-thirdparty-shaded-gson	3.3.0.7.2.6.0-71
	org.apache.hbase.thirdparty	hbase-thirdparty-shaded-miscellaneous	3.3.0.7.2.6.0-71
	org.apache.hbase.thirdparty	hbase-thirdparty-shaded-netty	3.3.0.7.2.6.0-71
	org.apache.hbase.thirdparty	hbase-thirdparty-shaded-protobuf	3.3.0.7.2.6.0-71
Apache Hive	org.apache.hive	hive-accumulo-handler	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-beeline	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-classification	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-cli	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-common	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-contrib	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-druid-handler	3.1.3000.7.2.6.0-71
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	org.apache.hive	hive-hbase-handler	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-hplsql	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-jdbc	3.1.3000.7.2.6.0-71
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	org.apache.hive	hive-kryo-registrator	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-kudu-handler	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-llap-client	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-llap-common	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-llap-ext-client	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-llap-server	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-llap-tez	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-metastore	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-pre-upgrade	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-serde	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-service	3.1.3000.7.2.6.0-71
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	org.apache.hive	hive-shims	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-spark-client	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-standalone-metastore	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-storage-api	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-streaming	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-testutils	3.1.3000.7.2.6.0-71
	org.apache.hive	hive-vector-code-gen	3.1.3000.7.2.6.0-71
	org.apache.hive	kafka-handler	3.1.3000.7.2.6.0-71
	org.apache.hive.hcatalog	hive-hcatalog-core	3.1.3000.7.2.6.0-71

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	org.apache.hive.hcatalog	hive-hcatalog-pig-adapter	3.1.3000.7.2.6.0-71
	org.apache.hive.hcatalog	hive-hcatalog-server-extensions	3.1.3000.7.2.6.0-71
	org.apache.hive.hcatalog	hive-hcatalog-streaming	3.1.3000.7.2.6.0-71
	org.apache.hive.hcatalog	hive-webhcat	3.1.3000.7.2.6.0-71
	org.apache.hive.hcatalog	hive-webhcat-java-client	3.1.3000.7.2.6.0-71
	org.apache.hive.shims	hive-shims-0.20	3.1.3000.7.2.6.0-71
	org.apache.hive.shims	hive-shims-0.23	3.1.3000.7.2.6.0-71
	org.apache.hive.shims	hive-shims-common	3.1.3000.7.2.6.0-71
	org.apache.hive.shims	hive-shims-scheduler	3.1.3000.7.2.6.0-71
Apache Hive Warehouse Connector	com.hortonworks.hive	hive-warehouse-connector_2.11	1.0.0.7.2.6.0-71
Apache Kafka	org.apache.kafka	connect	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-api	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-basic-auth-extension	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-file	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-json	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-mirror	2.5.0.7.2.6.0-71
	org.apache.kafka	connect-mirror-client	2.5.0.7.2.6.0-71
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	org.apache.kafka	connect-transforms	2.5.0.7.2.6.0-71
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	org.apache.kafka	jmh-benchmarks	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-clients	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-cloudera-plugins	2.5.0.7.2.6.0-71
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	org.apache.kafka	kafka-log4j-appender	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-examples	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-scala_2.12	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-scala_2.13	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-test-utils	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-0100	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-0101	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-0102	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-0110	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-10	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-11	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-20	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-21	2.5.0.7.2.6.0-71

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	org.apache.kafka	kafka-streams-upgrade-system-tests-22	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-23	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-streams-upgrade-system-tests-24	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka-tools	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka_2.12	2.5.0.7.2.6.0-71
	org.apache.kafka	kafka_2.13	2.5.0.7.2.6.0-71
Apache Knox	org.apache.knox	gateway-adapter	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-admin-ui	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-applications	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-cloud-bindings	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-demo-ldap	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-demo-ldap-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-discovery-ambari	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-discovery-cm	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-docker	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-i18n	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-i18n-logging-log4j	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-i18n-logging-sl4j	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-performance-test	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-ha	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-common	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-concat	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-hadoop-groups	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-pseudo	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-regex	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-identity-assertion-switchcase	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-jersey	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-common	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-func-hostmap-static	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-func-inbound-query-param	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-func-service-registry	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-step-encrypt-uri	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-rewrite-step-secure-query	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-authc-anon	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-authz-acls	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-authz-composite	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-clientcert	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-hadoopauth	1.3.0.7.2.6.0-71

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	org.apache.knox	gateway-provider-security-jwt	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-pac4j	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-preauth	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-shiro	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-provider-security-webappsec	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-release	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-server	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-server-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-server-xforwarded-filter	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-admin	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-as	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-definitions	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-hashicorp-vault	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-hbase	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-health	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-hive	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-idbroker	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-impala	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-jkg	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxsso	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxssout	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-knoxtoken	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-livy	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-metadata	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-nifi	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-nifi-registry	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-remoteconfig	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-rm	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-session	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-storm	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-test	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-tgs	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-vault	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-service-webhdfs	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-release	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-shell-samples	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-spi	1.3.0.7.2.6.0-71

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	org.apache.knox	gateway-test	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-idbroker	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-release-utils	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-test-utils	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-topology-hadoop-xml	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-topology-simple	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-common	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-configinjector	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	gateway-util-urltemplate	1.3.0.7.2.6.0-71
	org.apache.knox	hadoop-examples	1.3.0.7.2.6.0-71
	org.apache.knox	knox-cli-launcher	1.3.0.7.2.6.0-71
	org.apache.knox	knox-homepage-ui	1.3.0.7.2.6.0-71
	org.apache.knox	webhdfs-kerb-test	1.3.0.7.2.6.0-71
	org.apache.knox	webhdfs-test	1.3.0.7.2.6.0-71
Apache Kudu	org.apache.kudu	kudu-backup-tools	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-backup2_2.11	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-backup3_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-client	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-client-tools	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-hive	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-mapreduce	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark2-tools_2.11	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark2_2.11	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark3-tools_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-spark3_2.12	1.13.0.7.2.6.0-71
	org.apache.kudu	kudu-test-utils	1.13.0.7.2.6.0-71
Apache Livy	org.apache.livy	livy-api	0.6.0.7.2.6.0-71
	org.apache.livy	livy-client-common	0.6.0.7.2.6.0-71
	org.apache.livy	livy-client-http	0.6.0.7.2.6.0-71
	org.apache.livy	livy-core_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-examples	0.6.0.7.2.6.0-71
	org.apache.livy	livy-integration-test	0.6.0.7.2.6.0-71
	org.apache.livy	livy-repl_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-rsc	0.6.0.7.2.6.0-71
	org.apache.livy	livy-scala-api_2.11	0.6.0.7.2.6.0-71
	org.apache.livy	livy-server	0.6.0.7.2.6.0-71
	org.apache.livy	livy-test-lib	0.6.0.7.2.6.0-71
	org.apache.livy	livy-thriftserver	0.6.0.7.2.6.0-71

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	org.apache.livy	livy-thriftserver-session	0.6.0.7.2.6.0-71
Apache Lucene	org.apache.lucene	lucene-analyzers-common	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-icu	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-kuromoji	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-morfologik	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-nori	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-openslp	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-phonetic	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-smartcn	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-analyzers-stempel	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-backward-codecs	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-benchmark	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-classification	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-codecs	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-core	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-demo	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-expressions	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-facet	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-grouping	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-highlighter	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-join	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-memory	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-misc	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-monitor	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-queries	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-queryparser	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-replicator	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-sandbox	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial-extras	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-spatial3d	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-suggest	8.4.1.7.2.6.0-71
	org.apache.lucene	lucene-test-framework	8.4.1.7.2.6.0-71
Apache Oozie	org.apache.oozie	oozie-client	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-core	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-distro	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-examples	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-fluent-job-api	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-fluent-job-client	5.1.0.7.2.6.0-71

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	org.apache.oozie	oozie-server	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-distcp	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-git	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hcatalog	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hive	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-hive2	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-oozie	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-spark	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-sqoop	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-sharelib-streaming	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-tools	5.1.0.7.2.6.0-71
	org.apache.oozie	oozie-zookeeper-security-tests	5.1.0.7.2.6.0-71
	org.apache.oozie.test	oozie-mini	5.1.0.7.2.6.0-71
Apache ORC	org.apache.orc	orc-core	1.5.1.7.2.6.0-71
	org.apache.orc	orc-examples	1.5.1.7.2.6.0-71
	org.apache.orc	orc-mapreduce	1.5.1.7.2.6.0-71
	org.apache.orc	orc-shims	1.5.1.7.2.6.0-71
	org.apache.orc	orc-tools	1.5.1.7.2.6.0-71
Apache Phoenix	org.apache.phoenix	phoenix-client	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-core	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-hive	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-load-balancer	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-pherrf	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-queryserver	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-queryserver-client	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-server	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-spark	5.0.0.7.2.6.0-71
	org.apache.phoenix	phoenix-tracing-webapp	5.0.0.7.2.6.0-71
Apache Ranger	org.apache.ranger	conditions-enrichers	2.1.0.7.2.6.0-71
	org.apache.ranger	credentialbuilder	2.1.0.7.2.6.0-71
	org.apache.ranger	embeddedwebserver	2.1.0.7.2.6.0-71
	org.apache.ranger	jisql	2.1.0.7.2.6.0-71
	org.apache.ranger	ldapconfigcheck	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-adls-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-atlas-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-atlas-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-distro	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-examples-distro	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hbase-plugin	2.1.0.7.2.6.0-71

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	org.apache.ranger	ranger-hbase-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hdfs-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hdfs-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hive-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-hive-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-intg	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kafka-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kafka-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kms-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-knox-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-knox-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kudu-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kylin-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-kylin-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-nifi-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-nifi-registry-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-ozone-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-ozone-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugin-classloader	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-audit	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-cred	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-plugins-installer	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-adls	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-hook-abfs	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-hook-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-intg	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-processor	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-raz-s3-lib	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-hive	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-plugins-common	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-rms-webapp	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-s3-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sampleapp-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-schema-registry-plugin	2.1.0.7.2.6.0-71



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	org.apache.ranger	ranger-solr-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-solr-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sqoop-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-sqoop-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-storm-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-storm-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-tagsync	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-tools	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-util	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-yarn-plugin	2.1.0.7.2.6.0-71
	org.apache.ranger	ranger-yarn-plugin-shim	2.1.0.7.2.6.0-71
	org.apache.ranger	sample-client	2.1.0.7.2.6.0-71
	org.apache.ranger	sampleapp	2.1.0.7.2.6.0-71
	org.apache.ranger	shaded-raz-hook-abfs	2.1.0.7.2.6.0-71
	org.apache.ranger	shaded-raz-hook-s3	2.1.0.7.2.6.0-71
	org.apache.ranger	unixauthclient	2.1.0.7.2.6.0-71
	org.apache.ranger	unixauthservice	2.1.0.7.2.6.0-71
	org.apache.ranger	unixusersync	2.1.0.7.2.6.0-71
Apache Solr	org.apache.solr	solr-analysis-extras	8.4.1.7.2.6.0-71
	org.apache.solr	solr-analytics	8.4.1.7.2.6.0-71
	org.apache.solr	solr-cell	8.4.1.7.2.6.0-71
	org.apache.solr	solr-clustering	8.4.1.7.2.6.0-71
	org.apache.solr	solr-core	8.4.1.7.2.6.0-71
	org.apache.solr	solr-dataimporthandler	8.4.1.7.2.6.0-71
	org.apache.solr	solr-dataimporthandler-extras	8.4.1.7.2.6.0-71
	org.apache.solr	solr-jaegertracer-configurator	8.4.1.7.2.6.0-71
	org.apache.solr	solr-langid	8.4.1.7.2.6.0-71
	org.apache.solr	solr-ltr	8.4.1.7.2.6.0-71
	org.apache.solr	solr-prometheus-exporter	8.4.1.7.2.6.0-71
	org.apache.solr	solr-security-util	8.4.1.7.2.6.0-71
	org.apache.solr	solr-solrj	8.4.1.7.2.6.0-71
	org.apache.solr	solr-test-framework	8.4.1.7.2.6.0-71
	org.apache.solr	solr-velocity	8.4.1.7.2.6.0-71
Apache Spark	org.apache.spark	spark-avro_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-catalyst_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-core_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-graphx_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-hadoop-cloud_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-hive_2.11	2.4.5.7.2.6.0-71

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	org.apache.spark	spark-kubernetes_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-kvstore_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-launcher_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-mllib-local_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-mllib_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-common_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-shuffle_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-network-yarn_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-repl_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-shaded-raz	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sketch_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sql-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-sql_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming-kafka-0-10-assembly_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-streaming_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-tags_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-token-provider-kafka-0-10_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-unsafe_2.11	2.4.5.7.2.6.0-71
	org.apache.spark	spark-yarn_2.11	2.4.5.7.2.6.0-71
Apache Sqoop	org.apache.sqoop	sqoop	1.4.7.7.2.6.0-71
	org.apache.sqoop	sqoop-test	1.4.7.7.2.6.0-71
Apache Tez	org.apache.tez	hadoop-shim	0.9.1.7.2.6.0-71
	org.apache.tez	hadoop-shim-2.8	0.9.1.7.2.6.0-71
	org.apache.tez	tez-api	0.9.1.7.2.6.0-71
	org.apache.tez	tez-aux-services	0.9.1.7.2.6.0-71
	org.apache.tez	tez-common	0.9.1.7.2.6.0-71
	org.apache.tez	tez-dag	0.9.1.7.2.6.0-71
	org.apache.tez	tez-examples	0.9.1.7.2.6.0-71
	org.apache.tez	tez-ext-service-tests	0.9.1.7.2.6.0-71
	org.apache.tez	tez-history-parser	0.9.1.7.2.6.0-71
	org.apache.tez	tez-javadoc-tools	0.9.1.7.2.6.0-71
	org.apache.tez	tez-job-analyzer	0.9.1.7.2.6.0-71
	org.apache.tez	tez-mapreduce	0.9.1.7.2.6.0-71
	org.apache.tez	tez-protobuf-history-plugin	0.9.1.7.2.6.0-71
	org.apache.tez	tez-runtime-internals	0.9.1.7.2.6.0-71
	org.apache.tez	tez-runtime-library	0.9.1.7.2.6.0-71
	org.apache.tez	tez-tests	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-cache-plugin	0.9.1.7.2.6.0-71

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	org.apache.tez	tez-yarn-timeline-history	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-history-with-acls	0.9.1.7.2.6.0-71
	org.apache.tez	tez-yarn-timeline-history-with-fs	0.9.1.7.2.6.0-71
Apache Zeppelin	org.apache.zeppelin	zeppelin-angular	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-display	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-interpreter	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-jdbc	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-jupyter	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-livy	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-markdown	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-server	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-shaded-raz	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-shell	0.8.2.7.2.6.0-71
	org.apache.zeppelin	zeppelin-zengine	0.8.2.7.2.6.0-71
Apache ZooKeeper	org.apache.zookeeper	zookeeper	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-client-c	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-contrib-loggraph	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-contrib-rest	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-contrib-zooinspector	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-docs	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-jute	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-election	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-lock	3.5.5.7.2.6.0-71
	org.apache.zookeeper	zookeeper-recipes-queue	3.5.5.7.2.6.0-71