

Cloudera Runtime 7.2.17

Streams Replication Manager Reference

Date published: 2019-08-22

Date modified: 2023-06-27

The Cloudera logo is displayed in a bold, orange, sans-serif font. The word "CLOUDERA" is written in all caps, with the letter 'E' in "CLouDERA" featuring a unique design where the top bar is a horizontal line and the bottom part is a vertical line, creating a stylized 'E'.

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

Legal Notice

© Cloudera Inc. 2024. All rights reserved.

The documentation is and contains Cloudera proprietary information protected by copyright and other intellectual property rights. No license under copyright or any other intellectual property right is granted herein.

Unless otherwise noted, scripts and sample code are licensed under the Apache License, Version 2.0.

Copyright information for Cloudera software may be found within the documentation accompanying each component in a particular release.

Cloudera software includes software from various open source or other third party projects, and may be released under the Apache Software License 2.0 (“ASLv2”), the Affero General Public License version 3 (AGPLv3), or other license terms. Other software included may be released under the terms of alternative open source licenses. Please review the license and notice files accompanying the software for additional licensing information.

Please visit the Cloudera software product page for more information on Cloudera software. For more information on Cloudera support services, please visit either the Support or Sales page. Feel free to contact us directly to discuss your specific needs.

Cloudera reserves the right to change any products at any time, and without notice. Cloudera assumes no responsibility nor liability arising from the use of products, except as expressly agreed to in writing by Cloudera.

Cloudera, Cloudera Altus, HUE, Impala, Cloudera Impala, and other Cloudera marks are registered or unregistered trademarks in the United States and other countries. All other trademarks are the property of their respective owners.

Disclaimer: EXCEPT AS EXPRESSLY PROVIDED IN A WRITTEN AGREEMENT WITH CLOUDERA, CLOUDERA DOES NOT MAKE NOR GIVE ANY REPRESENTATION, WARRANTY, NOR COVENANT OF ANY KIND, WHETHER EXPRESS OR IMPLIED, IN CONNECTION WITH CLOUDERA TECHNOLOGY OR RELATED SUPPORT PROVIDED IN CONNECTION THEREWITH. CLOUDERA DOES NOT WARRANT THAT CLOUDERA PRODUCTS NOR SOFTWARE WILL OPERATE UNINTERRUPTED NOR THAT IT WILL BE FREE FROM DEFECTS NOR ERRORS, THAT IT WILL PROTECT YOUR DATA FROM LOSS, CORRUPTION NOR UNAVAILABILITY, NOR THAT IT WILL MEET ALL OF CUSTOMER’S BUSINESS REQUIREMENTS. WITHOUT LIMITING THE FOREGOING, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, CLOUDERA EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, NON-INFRINGEMENT, TITLE, AND FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION, WARRANTY, OR COVENANT BASED ON COURSE OF DEALING OR USAGE IN TRADE.

Contents

srm-control Options Reference.....	4
Configuration Properties Reference for Properties not Available in Cloudera Manager.....	4
Kafka credentials property reference.....	5
SRM Service data traffic reference.....	7

srm-control Options Reference

A collection of all options and their descriptions for the srm-control command line tool.

Table 1: Topics and groups subcommand properties

Options	Description
-h, --help	Shows the help message.
--source	Specifies the source cluster
--target	Specifies the target cluster
--config	Specifies the SRM configuration file to use.
--add	Specifies topics or groups to add to the allowlist
--remove	Specifies topics or groups to remove from the allowlist
--add-blacklist	Specifies topics or groups to add to the denylist
--remove-blacklist	Specifies topics or groups to remove from the denylist
--list	Lists current allowlist and denylist
--bootstrap-servers	Specifies the bootstraps servers
--producer-props	Specifies producer configuration properties
--consumer-props	Specifies consumer configuration properties
--props	Specifies client configuration properties

Table 2: Offsets subcommand properties

Option	Description
-h, --help	Shows the help message.
--source	Specifies the source cluster
--target	Specifies the target cluster
--config	Specifies the SRM configuration file to use.
--export	Export translated offsets
--group	Specifies the groups translated offsets should be exported for
--bootstrap-servers	Specifies the bootstraps servers
--props	Specifies client configuration properties

Configuration Properties Reference for Properties not Available in Cloudera Manager

A collection of SRM configuration properties not available in Cloudera Manager

The following table lists all SRM specific configuration properties that are not available directly for configuration via Cloudera Manager.

Property	Default Value	Description
checkpoints.topic.replication.factor	3	Replication factor used for internal checkpoints topics.
emit.checkpoints.enabled	true	Enables periodic emission of consumer offset information.
emit.heartbeats.enabled	true	Enables periodic emission of heartbeats.
emit.heartbeats.interval.seconds	5 (seconds)	The interval at which SRM emits heartbeats.
heartbeats.topic.replication.factor	3	Replication factor used for internal heartbeat topics.
offset-syncs.topic.replication.factor	3	Replication factor used for internal offset-syncs topics.
refresh.groups.enabled	true	Enables a periodical check for new consumer groups on source clusters.
refresh.topics.enabled	true	Enables a periodical check for new topics on source clusters.
replication.factor	2	Replication factor used for remote topics.
replication.policy.class	org.apache.kafka.connect.mirror.DefaultReplicationPolicy	Replication policy to use. Use org.apache.kafka.connect.mirror.IdentityReplicationPolicy to mimic legacy MirrorMaker behavior.
sync.topic.configs.enabled	true	Enables the monitoring of the source cluster for configuration changes.

Kafka credentials property reference

A Kafka credential allows services and Cloudera tools to securely connect to Kafka clusters that are external to a particular Cloudera Manager instance. Review the Kafka credentials property reference to better understand what options you have when configuring and setting up a Kafka credential.

Name

Description

Specifies the name of the Kafka credential. For SRM, the name you specify here is equivalent to the cluster alias. As a result, this name is used to refer to the cluster that the credential defines when configuring SRM properties and when using the srm-control tool. Cloudera recommends that you specify unique and easily identifiable names.

Bootstrap servers

Description

Specifies the addresses of the Kafka brokers. Add a comma-separated list of host and port pairs. The host can be specified as an IP address or an FQDN.

Example

```
my-kafka-cluster-host-1.com:9093, my-kafka-cluster-host-2.com:9093
```

JAAS secret [1-3]

Description

There are three JAAS Secret properties, numbered 1-3. All three properties can be used to specify sensitive JAAS configuration values. Values set in these properties can be referenced with placeholders in the JAAS configuration you add to the JAAS template property.

JAAS template

Description

Specifies the JAAS configuration that SRM uses when connecting to this cluster. The configuration you add to this property can contain placeholders. These placeholders can be used to hide sensitive information. The property accepts and resolves the following placeholders:

- `##JAAS_SECRET_1##`
Used to refer to the value set in the JAAS Secret 1 property.
- `##JAAS_SECRET_2##`
Used to refer to the value set in the JAAS Secret 2 property.
- `##JAAS_SECRET_3##`
Used to refer to the value set in the JAAS Secret 3 property.

Example

```
org.apache.kafka.common.security.plain.PlainLoginModule required username="##JAAS_SECRET_1##" password="##JAAS_SECRET_2##";
```

In this example `##JAAS_SECRET_1##` and `##JAAS_SECRET_2##` are used to hide sensitive information. The values of the username and password are defined in the JAAS Secret 1 and JAAS Secret 2 properties.

If for example the JAAS Secret 1 and JAAS Secret 2 properties were set to “username” and “password”, the resolved JAAS configuration would be the following:

```
org.apache.kafka.common.security.plain.PlainLoginModule required username="username" password="password";
```

Kerberos Service Name

Description

Specifies the name of the Kafka kerberos principal. Only required if the SASL Mechanism property is set to GSSAPI.

Key Password

Description

Specifies the password used to access the keys stored in the keystore configured in the Keystore Path property.

Keystore Password

Description

Specifies the password used to access the keystore configured in the Keystore Path property.

Keystore Path

Description

Specifies the path to the keystore containing the authorized client’s certificates or keys

Keystore Type

Description

Specifies the type of the keystore configured in the Keystore Path property

SASL Mechanism

Description

Specifies the SASL mechanism used for authentication by the Kafka cluster that the client is connecting to.

Accepted values

- GSSAPI
- PLAIN
- SCRAM-SHA-256
- SCRAM-SHA-512
- OAUTHBEARER

Security Protocol**Description**

Specifies the security protocol used by the Kafka cluster that the client is connecting to.

Accepted values

- PLAINTEXT
- SSL
- SASL_PLAINTEXT
- SASL_SSL

Truststore Password**Description**

Specifies the password used to access the truststore specified in the Truststore Path property

Truststore Path**Description**

Specifies the path to the truststore containing the certificates or keys belonging to the Kafka cluster that the client is connecting to.

Truststore Type**Description**

Specifies the type of the truststore configured in the Truststore Path property.

SRM Service data traffic reference

The SRM Service generates data traffic when it collects replication related metrics. Data traffic is generated between the SRM Service and its target Kafka cluster. Additionally, if Remote Querying is set up, data traffic is also generated between different SRM Services that are remote to each other. Review these examples to gain a better understanding of how much data traffic you should expect in your deployment.

Data transferred between the SRM Service and Kafka

The SRM service generates data traffic between itself and its target Kafka cluster. This data traffic is generated as a result of the SRM Service collecting the raw metrics from the target Kafka cluster. In the case of:

- A single replication.
- A single replicated topic with 1000 partitions and 100 messages published per second.
- A single consumer group.

The amount of data traffic generated is approximately 280 kB per second.

Data transferred between SRM Services by Remote Querying

When Remote Querying is enabled, the SRM Service acting as the designated monitoring gateway generates additional data traffic. This data traffic is generated as a result of the gateway

communicating with other, remote SRM Services and receiving data on remote replications. In the case of:

- A single replication flow.
- A single replicated topic with 1000 partitions.
- A single consumer group.
- One hour retention time set for the Streams application.

The maximum amount of data traffic generated by Remote Querying (the data returned by other SRM Services) is around 70 kB.