

## Source, Sink, and Processor Configuration Values

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## Source, Processor, and Sink Configuration Values

As you build your streaming applications, use this reference material to help configure the source, processor, and sink Stream Builder components.

### Source Configuration Values

**Table 1: Kafka**

Configuration Field	Description, requirements, tips for configuration
Cluster Name	Mandatory. Service pool defined in SAM to get metadata information about Kafka cluster
Security Protocol	Mandatory. Protocol to be used to communicate with kafka brokers. E.g. PLAINTEXT. Auto suggest with a list of protocols supported by Kafka service based on cluster name selected. If you select a protocol with SSL or SASL make sure to fill out the related config fields
Bootstrap Servers	Mandatory. A comma separated string of host:port representing Kafka broker listeners. Auto suggest with a list of options based on security protocol selected above
Kafka topic	Mandatory. Kafka topic to read data from. Make sure that corresponding schema for topic is defined in Schema Registry
Consumer Group Id	Mandatory. A unique string that identifies the consumer group it belongs to. Used to keep track of consumer offsets
Reader schema version	Optional. Version of schema for topic to read from. Default value is the version used by producer to write data to topic
Kerberos client principal	Optional(Mandatory for SASL). Client principal to use to connect to brokers while using SASL GSSAPI mechanism for Kerberos(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Kerberos keytab file	Optional(Mandatory for SASL). Keytab file location on worker node containing the secret key for client principal while using SASL GSSAPI mechanism for Kerberos(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Kafka service name	Optional(Mandatory for SASL). Service name that Kafka broker is running as(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Fetch minimum bytes	Optional. The minimum number of bytes the broker should return for a fetch request. Default value is 1
Maximum fetch bytes per partition	Optional. The maximum amount of data per-partition the broker will return. Default value is 1048576
Maximum records per poll	Optional. The maximum number of records a poll will return. Default value is 500
Poll timeout(ms)	Optional. Time in milliseconds spent waiting in poll if data is not available. Default value is 200
Offset commit period(ms)	Optional. Period in milliseconds at which offsets are committed. Default value is 30000
Maximum uncommitted offsets	Optional. Defines the max number of polled records that can be pending commit, before another poll can take place. Default value is 10000000. This value should depend on the size of each message in Kafka and the memory available to the worker jvm process

First poll offset strategy	Optional. Offset used by the Kafka spout in the first poll to Kafka broker. Pick one from enum values. ["EARLIEST", "LATEST", "UNCOMMITTED_EARLIEST", "UNCOMMITTED_LATEST"]. Default value is EARLIEST_UNCOMMITTED. It means that by default it will start from the earliest uncommitted offset for the consumer group id provided above
Partition refresh period(ms)	Optional. Period in milliseconds at which Kafka will be polled for new topics and/or partitions. Default value is 2000
Emit null tuples?	Optional. A flag to indicate if null tuples should be emitted to downstream components or not. Default value is false
First retry delay(ms)	Optional. Interval delay in milliseconds for first retry for a failed Kafka spout message. Default value is 0
Retry delay period(ms)	Optional. Retry delay period(geometric progression) in milliseconds for second and subsequent retries for a failed Kafka spout message. Default value is 2
Maximum retries	Optional. Maximum number of times a failed message is retried before it is acked and committed. Default value is 2147483647
Maximum retry delay(ms)	Optional. Maximum interval in milliseconds to wait before successive retries for a failed Kafka spout message. Default value is 10000
Consumer startup delay(ms)	Optional. Delay in milliseconds after which Kafka will be polled for records. This value is to make sure all executors come up before first poll from each executor happens so that partitions are well balanced among executors and onPartitionsRevoked and onPartitionsAssigned is not called later causing duplicate tuples to be emitted. Default value is 60000
SSL keystore location	Optional. The location of the key store file. Used when Kafka client connectivity is over SSL
SSL keystore password	Optional. The store password for the key store file
SSL key password	Optional. The password of the private key in the key store file
SSL truststore location	Optional(Mandatory for SSL). The location of the trust store file
SSL truststore password	Optional(Mandatory for SSL). The password for the trust store file
SSL enabled protocols	Optional. Comma separated list of protocols enabled for SSL connections
SSL keystore type	Optional. File format of keystore file. Default value is JKS
SSL truststore type	Optional. File format of truststore file. Default value is JKS
SSL protocol	Optional. SSL protocol used to generate SSLContext. Default value is TLS
SSL provider	Optional. Security provider used for SSL connections. Default value is default security provider for JVM
SSL cipher suites	Optional. Comma separated list of cipher suites. This is a named combination of authentication, encryption, MAC and key exchange algorithm used to negotiate the security settings for a network connection using TLS or SSL network protocol. By default all the available cipher suites are supported
SSL endpoint identification algorithm	Optional. The endpoint identification algorithm to validate server hostname using server certificate
SSL key manager algorithm	Optional. The algorithm used by key manager factory for SSL connections. Default value is SunX509
SSL secure random implementation	Optional. The SecureRandom PRNG implementation to use for SSL cryptographic operations
SSL trust manager algorithm	Optional. The algorithm used by trust manager factory for SSL connections. Default value is the trust manager factory algorithm configured for the Java Virtual Machine. Default value is PKIX

**Table 2: Event Hubs**

Configuration Field	Description, requirements, tips for configuration
Username	The Event Hubs user name (policy name in Event Hubs Portal)
Password	The Event Hubs password (shared access key in Event Hubs Portal)
Namespace	The Event Hubs namespace
Entity Path	The Event Hubs entity path
Partition Count	The number of partitions in the Event Hubs
ZooKeeper Connection String	The ZooKeeper connection string
Checkpoint Interval	The frequency at which offsets are checkpointed
Receiver Credits	Receiver credits
Max Pending Messages Per Partition	The max pending messages per partition
Enqueue Time Filter	The enqueue time filter
Consumer Group Name	The consumer group name

**Table 3: HDFS**

Configuration Field	Description, requirements, tips for configuration
Cluster Name	Service pool defined in SAM to get metadata information about HDFS cluster
HDFS URL	HDFS namenode URL
Input File Format	The format of the file being consumed dictates the type of reader used to read the file. Currently only 'com.hortonworks.streamline.streams.runtime.storm.spout.JsonFileReader' is supported
Source Dir	The HDFS directory from which to read the files.
Archive Dir	Files from source dir will be moved to this HDFS location after being completely read.
Bad Files Dir	Files from Source Dir will be moved to this HDFS location if there is an error encountered while processing them.
Lock Dir	Lock files (used to synchronize multiple reader instances) will be created in this location. Defaults to a '.lock' subdirectory under the source directory.
Commit Frequency Count	Records progress in the lock file after specified number of records are processed. Setting it to 0 disables this.
Commit Frequency Secs	Records progress in the lock file after specified secs have elapsed. Must be greater than 0.
Max Outstanding	Limits the number of unACKed tuples by pausing tuple generation (if ACKers are used in the topology).
Lock Timeout Seconds	Duration of inactivity after which a lock file is considered to be abandoned and ready for another spout to take ownership.
Ignore Suffix	File names with this suffix in the source dir will not be processed.

## Processor Configuration Values

**Table 4: Aggregate**

Configuration Field	Description, requirements, tips for configuration
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General Processor description	Performs aggregate operations on a stream of events within a window.
Select Keys	These are the keys to “group by” for computing the aggregate.
Window Interval Type	Time - for time based windows. Count - for count based windows.
Window Interval	The length or duration of the window
Sliding Interval	The interval at which the window slides
Timestamp Field	A field in the event that represents the event timestamp as a long value. If specified the timestamp at which the event occurred will be used for the window computations.
Output Fields -- Input	The field on which to apply aggregate function
Output Fields -- Aggregate Function	The aggregate function to apply
Output Fields -- Output	The output field name

**Table 5: Branch**

Configuration Field	Description, requirements, tips for configuration
General processor description	Conditionally redirects tuples from one incoming stream to one or more outbound streams.
Process all checkbox	If disabled, stops processing further rules after a rule evaluates successfully.
Rule Name	Rule name. Must be unique within the Branch processor.
Rule Description	Description of rule
Field Name	Field name used in the condition for the rule
Rule Operation	The comparison operator for the condition

**Table 6: Join**

Configuration Field	Description, requirements, tips for configuration
General Processor Description	Joins one or more event streams into one output stream, based on user defined join criteria
Select Stream	Name of stream to join
Select Field	Name of field to use for join
Window Interval Type	Determines the type of windowing (count/time based) to use for buffering streams to be joined
Window Interval	The window size.
Sliding Interval	The interval between the start of two consecutive windows
Output Fields	Select which of the fields to include in the resulting event

**Table 7: PMML**

Configuration Field	Description, requirements, tips for configuration
General Processor Description	Allows users to score tuples according to a choice of PMML model registered in the model registry. The scored results are put in the predicted fields as defined in the PMML XML descriptor file. Predicted fields are available to send downstream, in addition to input fields
Model Name	Name of the PMML model in model registry to use

**Table 8: Projection Bolt**

Configuration Field	Description, requirements, tips for configuration
General Processor Description	This allows user to choose specific fields from the input events to be passed to output event and apply a transformation using UDF on chosen fields and add result as a field in the output event.
Projection Fields	Input event fields to be projected into output event.
Function	UDF to be applied on the given input fields and output is added as a new field in the output event.
Arguments	Field names to be passed as arguments to the chosen function
Fields Name	Name of the inu
Plus icon	Add a new transformation

**Table 9: Rule**

Configuration Field	Description, requirements, tips for configuration
General Processor Description	Design time definition of a rule whose scope is the input fields. The condition of the rule is defined in the Create Query section. Only runtime values whose rule condition evaluates to true will be sent downstream.
Rule Name	Name of the rule. It must be unique only within a Rule processor. Can be reused across rule processors.
Description	Documentation detailing the purpose of the rule. For user reference only.
Create Query	The condition of the rule is a composition of boolean expressions built with operators on input fields. These boolean expressions are parsed as SQL like query.

## Sink Configuration Values

**Table 10: Cassandra**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	This allows users to send events into given cassandra table.
Table Name	Name of the table into which events should be written to.
Column Name	Column name to which a respective field is mapped.
Field Name	Field name to be mapped as respective column name.
Cassandra Configurations- User Name	User name to connect to Cassandra cluster.
Password	Password to connect to Cassandra cluster.
Keyspace	Keyspace in which table exists
Nodes	Cassandra nodes configuration to be passed
Port	Port number for Cassandra cluster
Row Batch Size	Maximum number of rows to be taken in a batch
Retry Policy	Class name of the retry policy to be applied. Default value is "DefaultRetryPolicy". Valid options are "DowngradingConsistencyRetryPolicy", "FallthroughRetryPolicy" and "DefaultRetryPolicy"

Consistency Level	Consistency level at which data is inserted. Default value is: QUORUM, valid values are ["ANY", "ONE", "TWO", "THREE", "QUORUM", "ALL", "LOCAL_QUORUM", "EACH_QUORUM", "SERIAL", "LOCAL_SERIAL", "LOCAL_ONE" ]
Reconnection Base Delay	Base delay (in milliseconds) while reconnecting to target.
Reconnection Maximum Delay	Maximum delay (in milliseconds) while reconnecting to target.

**Table 11: Druid**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Druid sink is used to push data Druid data store. This sink uses Druid's Tranquility library to push data. More details : <a href="http://druid.io/docs/latest/ingestion/stream-push.html">http://druid.io/docs/latest/ingestion/stream-push.html</a>
Name of the Indexing Service	The druid.service name of the indexing service overlord node. It is mandatory parameter.
Service Discovery path	Curator service discovery path. It is mandatory parameter.
ZooKeeper Connect String	ZooKeeper connect string. It is mandatory parameter.
Datasource name	The name of the ingested data source. Datasources can be thought of as tables. It is mandatory parameter.
Dimensions	Specifies the dimensions(columns) of the data. It is mandatory parameter.
TimeStamp Field Name	Specifies the column and format of the timestamp.It is mandatory parameter.
Window Period	Window Period takes ISO 8601 Period format ( <a href="https://en.wikipedia.org/wiki/ISO_8601">https://en.wikipedia.org/wiki/ISO_8601</a> ). It is mandatory parameter.
Index Retry Period	If an indexing service overlord call fails for some apparently-transient reason, retry for this long before giving up. It takes ISO 8601 Period format ( <a href="https://en.wikipedia.org/wiki/ISO_8601">https://en.wikipedia.org/wiki/ISO_8601</a> ). It is mandatory parameter.
Segment Granularity	The granularity to create segments.
Query Granularity	The minimum granularity to be able to query results at and the granularity of the data inside the segment.
Batch Size	Maximum number of messages to send at once
Max Pending Batches	Maximum number of batches that may be in flight
Linger millis	Wait this long for batches to collect more messages (up to maxBatchSize) before sending them.
Block On Full	Whether send will block (true) or throw an exception (false) when called while the outgoing queue is full
Druid partitions	Number of Druid partitions to create.
Partition Replication	Number of instances of each Druid partition to create.
Aggregator Info	A list of aggregators. Currently we support Count Aggregator, Double Sum Aggregator, Double Max Aggregator, Double Min Aggregator, Long Sum Aggregator, Long Max Aggregator, Long Min Aggregators.

**Table 12: Hive**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Hive sink is used to write data to Hive tables
Metastore URI	URI of the metastore to connect to e.g.: thrift://localhost:9083



Database Name	Name of the Hive database
Table name	Name of table to stream to
Fields	The event fields to stream to hive
Partition fields	The event fields on which to partition the data
Flush Interval	The interval (in seconds) at which a transaction batch is committed
Transactions per batch	The number of transactions per batch
Max open connections	The maximum number of open connections to Hive
Batch size	The number of events per batch
Idle timeout	The idle timeout
Call timeout	The call timeout
Heartbeat Interval	The heart beat interval
Auto create partitions	If true, the partition specified in the endpoint will be auto created if it does not exist
Kerberos keytab	Kerberos keytab file path
Kerberos principal	Kerberos principal name

**Table 13: HBase**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Writes to events to HBase
HBase table	Hbase table to write to
Column Family	Hbase table column family
Batch Size	Number of records in the batch to trigger flushing. Note that every batch needs to be full before it can be flushed as tick tuple is not supported currently due to the fact that all bolts in topology receive a tick tuple if enabled
Row Key Field	Field to be used as row key for table

**Table 14: HDFS**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Writes events to HDFS
Hdfs URL	Hdfs Namenode URL
Path	Directory to which the files will be written
Flush Count	Number of records to wait for before flushing to Hdfs
Rotation Policy	Strategy to rotate files in Hdfs
Rotation Interval Multiplier	Rotation interval multiplier for timed rotation policy
Rotation Interval Unit	Rotation interval unit for timed rotation policy
Output fields	Specify the output fields, in the desired order
Prefix	Prefix for default file name format
Extension	Extension for default file name format

**Table 15: JDBC**

Configuration Field	Description, requirements, tips for configuration
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General Sink Description	Writes events to a database using JDBC.
Driver Class Name	The driver class name. E.g. com.mysql.jdbc.Driver
JDBC URL	JDBC Url, E.g. jdbc:mysql://localhost:3306/test
User Name	Database username.
Password	Database password.
Table Name	Table to write to.
Column Names	Names of the database columns

**Table 16: Kafka**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Kafka sink to write SAM events to a kafka topic
Cluster Name	Mandatory. Service pool defined in SAM to get metadata information about Kafka cluster
Kafka Topic	Mandatory. Kafka topic to write data to. Make sure that the schema for the corresponding topic exists in SR. The incoming SAM event into Kafka sink should adhere to the version of schema selected
Security Protocol	Mandatory. Protocol to be used to communicate with kafka brokers. E.g. PLAINTEXT. Auto suggest with a list of protocols supported by Kafka service based on cluster name selected. If you select a protocol with SSL or SASL make sure to fill out the related config fields
Bootstrap Servers	Mandatory. A comma separated string of host:port representing Kafka broker listeners. Auto suggest with a list of options based on security protocol selected above
Fire And Forget?	Optional. A flag to indicate if kafka producer should wait for ack or not. Default value is false
Async?	Optional. A flag to indicate whether to use async kafka producer or not. Default value is true
Key serializer	Optional. Type of key serializer to use. Options are ["String", "Integer", "Long", "ByteArray"]. Default value is ByteArray. Note that this field does not save any key in the kafka message. Incoming SAM event is stored as value in Kafka message with key being null
Key field	Optional. Name of the key field. One of the fields from incoming event schema
Writer schema version	Optional. Version of schema for topic to use for serializing the message. Default is the latest version for the schema
Ack mode	Optional. Ack mode used in producer request for a record sent to server(None Leader Min in-sync replicas). Options are ["None", "Leader", "All"]. Default value is "Leader"
Buffer memory	Optional. The total bytes of memory the producer can use to buffer records waiting to be sent to the server. Default value is 33554432
Compression type	Optional. The compression type for all data generated by the producer. Options are ["none", "gzip", "snappy", "lz4"]. Default value is "none"
Retries	Optional. Number of retry attempts for a record send failure. Default value is 0
Batch size	Optional. Producer batch size in bytes for records sent to same partition. Default value is 16384
Client id	Optional. Id sent to server in producer request for tracking in server logs
Max connection idle	Optional. Time in milliseconds for which connections can be idle before getting closed. Default value is 540000

Linger time	Optional. Time in milliseconds to wait before sending a record out when batch is not full. Default value is 0
Max block	Optional. Time in milliseconds that send and partitionsFor methods will block for. Default value is 60000
Max request size	Optional. Maximum size of a request in bytes. Default value is 1048576
Receive buffer size	Optional. Size in bytes of TCP receive buffer (SO_RCVBUF) to use when reading data. Default value is 32768
Request timeout	Optional. Maximum amount of time in milliseconds the producer will wait for the response of a request. Default value is 30000
Kerberos client principal	Optional(Mandatory for SASL). Client principal to use to connect to brokers while using SASL GSSAPI mechanism for Kerberos(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Kerberos keytab file	Optional(Mandatory for SASL). Keytab file location on worker node containing the secret key for client principal while using SASL GSSAPI mechanism for Kerberos(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Kafka service name	Optional(Mandatory for SASL). Service name that Kafka broker is running as(used in case of security protocol being SASL_PLAINTEXT or SASL_SSL)
Send buffer size	Optional. Size in bytes of TCP send buffer (SO_SNDBUF) to use when sending data. Default value is 131072
Timeout	Optional. Maximum amount of time in milliseconds server will wait for acks from followers. Default value is 30000
Block on buffer full?	Optional. Boolean to indicate whether to block on a full buffer or throw an exception.Default value is true
Max in-flight requests	Optional. Maximum number of unacknowledged requests producer will send per connection before blocking. Default value is 5
Metadata fetch timeout	Optional. Timeout in milliseconds for a topic metadata fetch request. Default value is 60000
Metadata max age	Optional. Time in milliseconds after which a metadata fetch request is forced. Default value is 300000
Reconnect backoff	Optional. Amount of time in milliseconds to wait before attempting to reconnect to a host. Default value is 50
Retry backoff	Optional. Amount of time in milliseconds to wait before attempting to retry a failed fetch request. Default value is 100
SSL keystore location	Optional. The location of the key store file. Used when Kafka client connectivity is over SSL
SSL keystore location	Optional. The store password for the key store file
SSL key password	Optional. The password of the private key in the key store file
SSL truststore location	Optional(Mandatory for SSL). The location of the trust store file
SSL truststore password	Optional(Mandatory for SSL). The password for the trust store file
SSL enabled protocols	Optional. Comma separated list of protocols enabled for SSL connections
SSL keystore type	Optional. File format of keystore file. Default value is JKS
SSL truststore type	Optional. File format of truststore file. Default value is JKS
SSL protocol	Optional. SSL protocol used to generate SSLContext. Default value is TLS
SSL provider	Optional. Security provider used for SSL connections. Default value is default security provider for JVM

SSL cipher suites	Optional. Comma separated list of cipher suites. This is a named combination of authentication, encryption, MAC and key exchange algorithm used to negotiate the security settings for a network connection using TLS or SSL network protocol. By default all the available cipher suites are supported
SSL endpoint identification algorithm	Optional. The endpoint identification algorithm to validate server hostname using server certificate
SSL key manager algorithm	Optional. The algorithm used by key manager factory for SSL connections. Default value is SunX509
SSL secure random implementation	Optional. The SecureRandom PRNG implementation to use for SSL cryptographic operations
SSL trust manager algorithm	Optional. The algorithm used by trust manager factory for SSL connections. Default value is the trust manager factory algorithm configured for the Java Virtual Machine. Default value is PKIX

**Table 17: Notification**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Can be used to send out notifications (currently supports email)
Username	The username for the mail server
Password	The password for the mail server
Host	Mail server host name
Port	Mail server port
SSL?	If the connection should be over SSL
Start TLS	Flag to indicate the TLS setting
Debug?	Whether to log debug messages
Email Server Protocol	The email server protocol. E.g. smtp
Authenticate	Flag to indicate if authentication is to be performed

**Table 18: Open TSDB**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Sink to which events can be written given OpenTSDB cluster.
REST API URL	The URL of the REST API (ex: http://localhost:4242)
Metric Field Name	Field name of the metric
Timestamp Field Name	Field name of the timestamp
Tags Field Name	Field name of tags.
Value Field Name	Field name of the value
Fail Tuple for Failed Metrics?	Whether to fail tuple for any failed metrics to OpenTSDB
Sync?	Flag to indicate whether to sync or not.
Sync Timeout	Sync timeout in (milliseconds), this is taken into account only when Sync is true.
Return Summary?	Whether to return summary or not
Return Details?	Whether to return details or not.
Enable Chunked Encoding?	Whether to enable chunked encoding or not for REST API calls to OpenTSDB

**Table 19: Solr**

Configuration Field	Description, requirements, tips for configuration
General Sink Description	Enables indexing of live input data into Apache Solr collections
Apache Solr ZooKeeper Host String	Info about the zookeeper ensemble used to coordinate the Solr cluster. This string is specified in a comma separated value as follows: zk1.host.com:2181,zk2.host.com:2181,zk3.example.com:2181
Apache Solr Collection Name	The name of the Apache Solr collection where to index live data
Commit Batch Size	Defines how often the indexed data is committed into Apache Solr. It is specified using an integral number. For instance, if set to 100, every 100 tuples Apache Solr will commit the data