



pubsubplus-connector-couchbase

User Guide

Solace Corporation

Version 2.3.2



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Preface

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Management and Monitoring Micro Integration

Managing and Deploying Your Self-Managed Micro-Integration

Configuration

- [Configuring Self-Managed Micro-Integrations](#)
- [Workflow Configuration](#)

include::.../.../snippets/attributes/common.adoc

Couchbase Source Configuration Options

These configuration options are all prefixed by `solace-persistence.`:

Config Option	Type	Valid Values	Default Value	Description
<code>datasource.couchbase.dcpSeedNodes</code>	map	<code><IP>:<PORT></code> or <code><DOMAIN>:<PORT></code>		couchbase connection seeds
<code>datasource.couchbase.couchbaseUsername</code>	string			couchbase connection username
<code>datasource.couchbase.couchbasePassword</code>	string			couchbase connection password
<code>datasource.couchbase.bucket</code>	string			couchbase connection bucket
<code>datasource.couchbase.bootstrapTimeout</code>	int		30	couchbase connectTimeout, in seconds
<code>datasource.couchbase.persistencePollingInterval</code>	int		2	couchbase rollback mitigation interval, in seconds
<code>datasource.couchbase.flowControlBufferInBytes</code>	long		2	bytes of couchbase flow control buffer size
<code>datasource.couchbase.enable-tls</code>	boolean	true or false	false	boolean value of enable-tls
<code>datasource.couchbase.trustCertificatePath</code>	string			the path of couchbase TrustStore file, must be provided when enable-tls as true
<code>source.batchBufferSize</code>	int		100	the batch buffer size of events send to solace
<code>source.pollingInterval</code>	int		2000	the interval milliseconds of polling from couchbase
<code>source.bindings</code>	map			map of embedding configurations of bindings

Config Option	Type	Valid Values	Default Value	Description
<code>source.bindings.<input-x>.scope</code>	string			the scope polling from couchbase
<code>source.bindings.<input-x>.collections</code>	string			the collections polling from couchbase
<code>source.bindings.<input-x>.topicPattern</code>	string			customize topic by pattern, available pattern keys: <code>BUCKET,DOCUMENT_ID,PARTITION,OFFSET_UUID,SEQ_NO,CAS,SCOPE,SCOPE_ID,COLLECTION,COLLECTION_ID</code>
<code>source.bindings.<input-x>.lvq</code>	string			the lvq to hold offset status of polling
<code>source.bindings.<input-x>.lvqTopic</code>	string			the topic of lvq
<code>source.bindings.<input-x>.couchbaseMetaData</code>	embedding			embedding configuration of couchbase metadata usage

These configuration options are all prefixed by `solace-persistence.source.bindings.<input-x>.couchbaseMetaData`:

Config Option	Type	Valid Values	Default Value	Description
<code>enabled</code>	boolean	true or false	false	if true, couchbase metadata would be extracted to solace message
<code>documentId</code>	string			document id of couchbase document will be presented to specified json node of payload
<code>metaIncorporateIn</code>	string	header or payload	header	where to place the extracted metadata
<code>customMeta</code>	list			list of KV pairs of extracted metadata
<code>customMeta.headerKeyName</code>	string			header name

Config Option	Type	Valid Values	Default Value	Description
<code>customMeta.headerKeyValue</code>	string			metadata key of couchbase document, available meta key: <code>qualifiedKey</code> , <code>key</code> , <code>cas</code> , <code>revision</code> , <code>tracingToken</code> , <code>timestamp</code> , <code>vbucket</code> , <code>isMutation</code> , <code>offset.seqno</code> , <code>offset.vbuuid</code> , <code>collection.id</code> , <code>collection.name</code> , <code>scope.id</code> , <code>scope.name</code>

Couchbase Sink Configuration Options

These configuration options are all prefixed by `solace-persistence.`:

Config Option	Type	Valid Values	Default Value	Description
<code>datasource.couchbase.dcpSeeds</code>	map	<code><IP>:<PORT></code> or <code><DOMAIN>:<PORT></code>		couchbase connection seeds
<code>datasource.couchbase.couchbaseUsername</code>	string			couchbase connection username
<code>datasource.couchbase.couchbasePassword</code>	string			couchbase connection password
<code>datasource.couchbase.bucket</code>	string			couchbase connection bucket
<code>datasource.couchbase.bootstrapTimeout</code>	int		30	couchbase connectTimeout, in seconds
<code>datasource.couchbase.kvTimeout</code>	int		30	couchbase kvTimeout, in seconds
<code>datasource.couchbase.numKvConnections</code>	int		1	couchbase kv connection number
<code>datasource.couchbase.maxRetries</code>	int		3	couchbase maxRetries
<code>datasource.couchbase.retryInterval</code>	int		1000	couchbase retryInterval, in milliseconds
<code>datasource.couchbase.persistencePollingInterval</code>	int		2	couchbase rollback mitigation interval, in seconds

Config Option	Type	Valid Values	Default Value	Description
<code>datasource.couchbase.flowControlBufferInBytes</code>	long		2	bytes of couchbase flow control buffer size
<code>datasource.couchbase.enable-tls</code>	boolean	true or false	false	boolean value of enable-tls
<code>datasource.couchbase.trustCertificatePath</code>	string			the path of couchbase TrustStore file, must be provided when enable-tls as true
<code>datasource.couchbase.durabilityLevel</code>	string	majority,majorityAndPersistActive,persistToMajority	NONE	couchbase durability level ,refer to Durability
<code>sink.bindings</code>	map			map of embedding configurations of bindings
<code>sink.bindings.<output-x>.topic2Collection</code>	string	<topic>:<scope>.<collection>,...		mappings of <code>solace topic</code> and <code>couchbase scope & collection</code> relationship, bucket.scope.collection is also supported
<code>sink.bindings.<output-x>.enableJsonSchemaValidation</code>	boolean	true or false	false	whether to enable json schema validation
<code>sink.bindings.<output-x>.upsert.topic</code>	string			the topics for upsert to couchbase collection
<code>sink.bindings.<output-x>.upsert.payloadNode</code>	string			the json node prefix of payload, starts with / and begins from payload json root
<code>sink.bindings.<output-x>.upsert.skipNullNode</code>	boolean	true or false	false	if true, the json node null value which payloadNode specified will be skipped
<code>sink.bindings.<output-x>.upsert.documentId</code>	string			node of documentId in payload, starts with "/"
<code>sink.bindings.<output-x>.upsert.documentIdPattern</code>	string			expression of dynamic documentId, using json values with format \${}
<code>sink.bindings.<output-x>.upsert.useOriginalDocumentId</code>	boolean	true or false	true	if true, documentId or documentIdPattern should be configured, otherwise an uuid will be generated as document id

Config Option	Type	Valid Values	Default Value	Description
<code>sink.bindings.<output-x>.upsert.removeDocumentId</code>	boolean	true or false	true	when true, the node of <code>documentId</code> will not be presented in couchbase content
<code>sink.bindings.<output-x>.upsert.removeBeforeNodeFromPayload</code>	boolean	true or false	false	when true, the node of <code>before</code> will not be removed in couchbase content
<code>sink.bindings.<output-x>.upsert.expireSeconds</code>	int			couchbase content expire time, in seconds
<code>sink.bindings.<output-x>.delete.topic</code>	string			the topics for delete from couchbase collection
<code>sink.bindings.<output-x>.delete.documentId</code>	string			node of <code>documentId</code> in payload, starts with "/", document with specified <code>documentId</code> will be removed
<code>sink.bindings.<output-x>.delete.documentIdPattern</code>	string			expression of dynamic <code>documentId</code> , using json values with format <code>\${}</code> , document with specified <code>documentId</code> will be removed

More information

Solace Pubsub Connector For Database Sink

1 Introduction

The Solace Pubsub+ Connector For Couchbase Source provides integration between PubSub+ event brokers/mesh and Couchbase, it helps to read the Couchbase Scope/collection data and make it available as an event in the Solace Event Mesh for enterprise applications to consume.

The Solace Pubsub+ Connector For Couchbase Sink will consume the event from Solace Broker/mesh and insert/update to the Couchbase Scope/collection.

The Solace Pubsub+ Connector For Couchbase is based on the new common architecture of the Solace Framework Connectors

1.1 Pre-requisites

1.1.1 Couchbase

- Couchbase cluster 7.2.3

1.1.2 Java

- Solace Pubsub+ Connector For Couchbase required java runtime.
- Install jdk/jre 17.0.8.

1.1.3 Maven

- Apache Maven 3.9+

2 Resource Requirement

Below given is the minimum viable production deployment resource numbers. Solution can be scaled horizontally with clustered mechanism and resources can be allocated accordingly.

- 4 Core CPU 4 GB.
- Solace 10 GB.

3 Broker detail

The Solace Broker manager address: <http://SolaceIP:8080/>.

In the application.yml file, it is configured to this Broker.

```
solace:
  java:
    host: tcp://SolaceIP:Port
```

```

msgVpn: default
clientUsername: username
clientPassword: password
connectRetries: -1
reconnectRetries: -1
apiProperties:
  pub_ack_window_size: 50
  pub_ack_time: 200

```

4 Couchbase Connection Detail

The Couchbase connection is configured as below in the application.yml

```

solace-persistence:
  datasource:
    couchbase:
      dcpSeedNodes:
        - IP:PORT
      username: username
      password: password
      bucket: bucket-name
      bootstrapTimeout: 30 # seconds
      persistencePollingInterval: 2 # seconds
      flowControlBufferInBytes: 10485760 # 10M
      enable-tls: true
      trustCertificatePath: path-to-tuststore-file

```

5 Scenarios

5.1 Couchbase to Solace Topic/Queue

- Couchbase connection, bucket, scope and collection.

```

solace-persistence:
  datasource:
    couchbase:
      dcpSeedNodes:
        - IP:PORT
      username: username
      password: password
      bucket: bucket-name
      bootstrapTimeout: 30 # seconds
      persistencePollingInterval: 2 # seconds
      flowControlBufferInBytes: 10485760 # 10M
      enable-tls: true
      trustCertificatePath: path-to-tuststore-file
  source:
    bindings:

```

```
input-0: # workflow 0
scope: scope
collections: collections
```

- Queue name: q.data.inventory.1, it has subscription to topic inv1/>, the connector will read the couchbase data as payload and send to this topic/Queue.

< Queues | q.data.inventory.1

Summary Settings **Subscriptions** Consumers Messages Queued Stats

1 Subscriptions

☐ Topic

☐ inv1/>

- Queue name: q.lvq.inventory.1, it has subscription to topic lvq/inventory, the connector will send the offset data this topic/Queue.

< Queues | q.lvq.inventory.1

Summary Settings **Subscriptions** Consumers Messages Queued Stats

1 Subscriptions

☐ Topic

☐ lvq/inventory1

- Please see the configuration of the data topic, LVQ topic and LVQ

```

203 input-1:          #workflow 1
204     scope: inventory
205     collections: hotel
206     couchbaseMetaData:
207         enabled: true          #if ture, it will add metadata to the header or payload of the Solace message
208         documentId: _id_      #add documentId in Payload, in the payloade it use _id_ as the element name
209         metaIncorporateIn: payload # header or payload
210         customMeta:
211             # available meta key :
212             # qualifiedKey, key, cas, revision, tracingToken, timestamp, vbucket, isMutation,
213             # offset.seqno, offset.vbuuid, collection.id, collection.name, scope.id, scope.name
214             - headerKeyName: MESSAGE_HEADER_KEY
215               headerKeyValue: key
216             - headerKeyName: MESSAGE_HEADER_COLLECTION_NAME
217               headerKeyValue: collection.name
218             - headerKeyName: MESSAGE_HEADER_COLLECTION_ID
219               headerKeyValue: collection.id
220         topicPattern: inv1/{SCOPE}/{COLLECTION}/{BUCKET}/{DOCUMENT_ID}
221         lvq: q.lvq.inventory.1
222         lvqTopic: lvq/inventory1

```

- Metadata configuration—see the details

```

209 input-1:          #workflow 1
210     scope: inventory
211     collections: hotel
212     couchbaseMetaData:
213         enabled: true          #if ture, it will add metadata to the header or payload of the Solace message
214         documentId: _id_      #add documentId in Payload, in the payloade it use _id_ as the element name
215         metaIncorporateIn: payload # header or payload
216         customMeta:
217             # available meta key :
218             # qualifiedKey, key, cas, revision, tracingToken, timestamp, vbucket, isMutation,
219             # offset.seqno, offset.vbuuid, collection.id, collection.name, scope.id, scope.name
220             - headerKeyName: MESSAGE_HEADER_KEY
221               headerKeyValue: key
222             - headerKeyName: MESSAGE_HEADER_COLLECTION_NAME
223               headerKeyValue: collection.name
224             - headerKeyName: MESSAGE_HEADER_COLLECTION_ID
225               headerKeyValue: collection.id
226         topicPattern: inv1/{SCOPE}/{COLLECTION}/{BUCKET}/{DOCUMENT_ID}
227         lvq: q.lvq.inventory.1
228         lvqTopic: lvq/inventory1

```

- In this configuration, workflow 0 is disabled and it will not work, workflow 1 is enabled and will read data from Couchbase bucket/inventory/collection

```

46 solace:
47     connector:
48         workflows: # Workflow configuration
49             0:
50                 enabled: false # If true, the workflow is enabled.
51             1:
52                 enabled: true # If true, the workflow is enabled.

```

5.2 Solace Queue to Couchbase

- The Source Data queue is q.data.inventory.1, see the sample configuration of Solace Queue.

```

stream:
  bindings: # Workflow bindings
    input-0:
      destination: q.data.inventory.1 # Queue name
      binder: solace
      consumer:
        concurrency: 1
        batchMode: true
    output-0:
      destination: scope.collection # SolaceCouchbaseConnector producer destination
      binder: solace-couchbase

```

- The Couchbase configuration, see the sample configuration.

```

solace-persistence:
  datasource:
    couchbase:
      dcpSeedNodes:
        - IP:PORT
      username: username
      password: password
      bucket: bucket-name
      bootstrapTimeout: 30 # seconds
      persistencePollingInterval: 2 # seconds
      flowControlBufferInBytes: 10485760 # 10M
      enable-tls: true
      trustCertificatePath: path-to-tuststore-file
  sink:
    topic2Collection: topic1:tenant_agent_00.bookings,
    bindings:
      output-0:
        payloadNode:
          documentId: /_id_
          removeDocumentId: true
          expireSeconds: 30

```

Configure the topic to scope/collection mapping, it read all the data with topic name start with inv1 to the tenant_agent_00.bookings1

`documentId` is set to `/_id_`, the connector will use the element `_id_` of the payload as the documentId in Couchbase collection. `removeDocumentId: true`, it will remove it from the payload in the collection.

- configure the workflows and enable it

```

46  solace:
47    connector:
48      workflows: # Workflow configuration
49      0:
50        enabled: false # If true, the workflow is enabled.
51      1:
52        enabled: true # If true, the workflow is enabled.

```

6 Run Connector

6.1 Solace Connector for Couchbase Source

```

java -cp ./target/pubsubplus-connector-couchbase-1.0.0-SNAPSHOT.jar
org.springframework.boot.loader.PropertiesLauncher --spring.config.additional-
location=./src/main/resources/couchbase-source/

```

6.2 Solace Connector for Couchbase Sink

```

java -cp ./target/pubsubplus-connector-couchbase-1.0.0-SNAPSHOT.jar
org.springframework.boot.loader.PropertiesLauncher --spring.config.additional-
location=./src/main/resources/couchbase-sink/

```

7 Tools

7.1 JMSToolbox

JMSToolBox is a JMS client based on the Eclipse platform, it is a Free Open Source Software (FOSS).

You can add a session to Solace:

Update Session

Connection

Properties

Definition

Session Name

54.157.145.242

Queue Manager

Solace

Folder

Session Type

Production

Clear

Servers

Host / Port

54.157.145.242

55555

Host / Port (2)

Host / Port (3)

Security

User id

cbuser

Password

●●●●●●

☐

Prompt for userid/password



If the userid/password are NOT saved in the session, the 'REST' and 'scripts' features of JMSToolBox will not work

Update Session

Connection

Properties

	Name	Kind	Value
*	VPN	STRING	couchbaseVPN
*	browser_timeout	INT	250
*	mgmt_password	STRING	cbuser
*	mgmt_url	STRING	http://54.157.145.242:8080
*	mgmt_username	STRING	cbuser
	ssl_cipher_suite	STRING	
	ssl_connection_downgrade_to	STRING	
	ssl_excluded_protocols	STRING	
	ssl_key_store	STRING	
	ssl_key_store_format	STRING	
	ssl_key_store_password	STRING	
	ssl_private_key_alias	STRING	
	ssl_private_key_password	STRING	
	ssl_protocol	STRING	
	ssl_trust_store	STRING	
	ssl_trust_store_format	STRING	
	ssl_trust_store_password	STRING	
	ssl_trusted_common_name_list	STRING	
	ssl_validate_certificate	BOOLEAN	
	ssl_validate_certificate_date	BOOLEAN	



Update

Cancel

Browse the queue message information using jmstoolbox.

#	JMS Timestamp	ID	JMS Correlation ID	Type	JMS Type	Delivery Mode	Priority
1				Text		PERSISTENT (2)	4
2				Text		PERSISTENT (2)	4
3				Text		PERSISTENT (2)	4
4				Text		PERSISTENT (2)	4
5				Text		PERSISTENT (2)	4
6				Text		PERSISTENT (2)	4
7				Text		PERSISTENT (2)	4
8				Text		PERSISTENT (2)	4
9				Text		PERSISTENT (2)	4
10				Text		PERSISTENT (2)	4
11				Text		PERSISTENT (2)	4
12				Text		PERSISTENT (2)	4
13				Text		PERSISTENT (2)	4
14				Text		PERSISTENT (2)	4
15				Text		PERSISTENT (2)	4
16				Text		PERSISTENT (2)	4
17				Text		PERSISTENT (2)	4
18				Text		PERSISTENT (2)	4
19				Text		PERSISTENT (2)	4

```
{
  "metadata":{
    "MESSAGE_HEADER_KEY":"hotel_16447",
    "MESSAGE_HEADER_COLLECTION_NAME":"hotel",
    "MESSAGE_HEADER_COLLECTION_ID":"20"
  },
  "payload":{
    "country":"United Kingdom",
    "free_parking":true,
    "city":"London",
    "description":"4 Star hotel near Kensington High Street with 906 rooms offering the usual Holiday Inn services",
    "_id_":"hotel_16447",
    "title":"London/South Kensington-Chelsea",
    "type":"hotel",
    "geo":{
      "lat":51.4942,
      "lon":0.1851
    }
  }
}
```

Please check the details in <https://github.com/jmstoolbox/jmstoolbox>

7.2 SDKperf

Another option for browsing queues in Solace, if you want something really basic (i.e. command-line text dump) is to use the SdkPerf test tool, which you download in different flavours from our solace.com/downloads page.

Run it like so (C for Linux example given, but Java/JMS/C# similar):

This makes the messages appear every 5 seconds. Just delete this if you want thing to scroll quickly.

```
./sdkperf_c -cip= 54.157.145.242 -cu=cbuser@couchabseVPN -cp=cbuser -sql=
q.data.inventory.1 -qb -md
```

```
-cip = broker hostname/IP address
-cu = client-username @ message-vpn (optional, will be default@default if omitted)
```

```
-cp = password (optional)
-sql = which queue to subscribe/connect to
-qb = enable queue browsing (rather than consuming!)
-md = message dump to console
-sd = subscriber delay, per message (optional).
```



be very careful to ensure you have the `-qb` option enabled, otherwise your `SdkPerf` instance will consume the messages, rather than browsing them. Which means they get removed from the queue. As always, the `SdkPerf` command line options `-h` (help) and `-hm` (help more) are very useful.

License

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