

# SAS ESP Confluent connector

Leverage the Confluent Connector to stream data directly from your Confluent Cloud cluster into SAS Event Stream Processing (ESP). Operationalize your streaming data with ESP by harnessing advanced analytics, enabling instant insights and AI-driven actions to drive smarter, faster decisions across your business.

#### Step 1

#### **Access Confluent Cloud**

Go to <u>http://confluent.io</u> and provide your credentials or create your account. Follow the instructions in the environment.

You will need to access these parameters in your Confluent Cloud environment to initialize a connection from SAS ESP to a Confluent cluster:

- Bootstrap Server
- API Key
- API Secret
- Topic Name

Additional Confluent documentation can be found at the URL: https://docs.confluent.io/cloud/current/get-started/free-trial.html?ajs\_aid=5a6b4b1c-88da-43b5-90a2-9a5932734e41&ajs\_uid=2992693

#### Step 2

#### **Obtain Bootstrap Server Information**

Perform the following steps to retrieve the Bootstrap server:

- 1. Log in to your Confluent Cloud account.
- 2. In the left navigation pane, click **Environments** and then click your environment.

Environments	Environments	
Data portal		
Stream processing		
Cluster links		
🕑 Stream shares		
	default	ESP
	O clusters   0 compute pools	

3. On the selected environments page, select the **Clusters** tab and click your Cluster.

ESP				
Clusters Flink	Network ma	nagement	Data contracts	New
Q Search cluster	name or id			
Live (1)				
Y	cluster_0 Running			÷
Metrics				
Production 144B/s	Consump <b>46B/s</b>	tion	Storage <b>7.09MB</b>	
Resources				
<u>ksqIDB</u> <b>O</b>	Connectors 1	Clients 4		

4. In the left navigation pane, under **Cluster Overview**, click **Cluster Settings**.



5. On the **Cluster settings** page, copy the **Bootstrap server endpoint** and save it securely like any other password. You will use this later in configuring your connector in ESP.

uster settings			
eral Capacity			
Identificatio	n		
Name	cluster 0		
Cluster ID	cubici_o		
C			
Endpoints			
Bootstrap serve	ar		
bootstrap serve			

#### Step 2

#### Create the API Key and Secret

1. In the left navigation pane, in Environments, under **Cluster Overview**, click **API Keys**.



- 2. On the API Keys page, click Create key.
- 3. On the Create key page, do the following:

1. Select My Account and click Next.

÷	૾ૢૻ૽
My account	Service account
Create an API key for your user	Create an API key for the specified
credential has all of your access	this service account only the
permissions.	minimally required permissions.
*Recommended for development.	*Recommended for production.
A 1 of 10 available API keys for cluster	rs have been used for your account.

4. In the Get your API key section, click the **Copy icon** corresponding to the Key and Secret to copy them, and save them securely. <u>You will use these credentials for</u> configuration of the connector in ESP.

Create	key	
1. Access control	2. Get your API key	
Use this API key to somewhere safe. 1	o connect with the cluster. Store the This is the only time you'll see the se	API key and secret below cret.
These credentials	can take up to one minute to propa	gate.
Secret		Ō
Description		

1. Note: Once you exit this screen, you cannot see the same API key and secret.

#### Step 3

#### Create or identify a Topic

- 1. On the left pane click **Environments** and then select your **Cluster**.
- 2. On the left pane click **Topics**.

Hom	e $ ightarrow$ Environments $ ightarrow$ ESP $ ightarrow$ clu	ster_0 >
6) (@)	Cluster cluster_0	Topics
Ē		
2	🗄 Cluster Overview	Q Search topics
(And the set of the se	Networking	
Ē	API Keys	Topic name
	Cluster Settings	kafkaSubPubGlobalConfigSSLxml1 🛛 🖹
	式 Stream Lineage	sample data users
	🗲 Stream Designer	solace03.unx.sas.com.M
	Topics	topic 1
	🐼 ksqlDB	
	() Connectors	topic 2
	🛱 Clients	topic 3 🕅

a. If you don't have an existing Topic, create one by clicking the **Add Topic** button on the **right side of screen**. You can also add a **Connector** to get data flowing by following the prompts in the environment.

Now that you have data flowing in Confluent Cloud environment, navigate to your ESP environment.

#### Step 4

#### SAS ESP Confluent Connector configuration

To configure an ESP source window to connect to Confluent Cloud follow the steps below. Note that these steps may change as the Confluent connector evolves.

1. Create a new **source window** within your **ESP project** by selecting **Input Source** on the left pane, selecting **Source**, and dragging it to the right to the center pane.

			SAS® Event Stream Pro	cessing Studio				?		8
Projects	ESP Servers Confl	uent_Connector ×								1
oject type:	Project package			2 9 4	🗄 🗸 Enter Test Mo	ode ESP server:	\$ d19417	۲	Ø	
<pre>voject type: Win &gt; In &gt; Tr &gt; U &gt; A </pre>	Project package ndows nput Streams Iransformations Julities Analytics		Source	<u>8</u> 0 4	Enter Test Mo	ESPserver:     Source window     Source window     Source window     Source window     State and f     Retention     Input Data     (* * 1 - Name     Source     Source window     Source window	d19417  e" window has no outgoing edges.  Event Type (Publisher) Connectors ①      d      Connector Type  No items are available.  les · Connectors ①	Active	9	

2. Click on the new **Source** window, select **Input Data (Publisher) Connectors** on the right pane, and select the **New Publisher icon**.

×

Connector Configuration
Name: *
Confluent
Description:
Connector type: *
Confluent Connector
Connection name:
□ Use property values from the file "connectors.config" ⑦
Bootstrapserver: *
This field is required.
Topic: *
This field is required.
Topicformat: *
json 🔻
Confluentapikey: *
This field is required
This field is required.
Requires schema registry
All properties
OK Cancel

- 3. Name the connector and select **Confluent** from the **Connector Type** drop-down.
- 4. Insert the following fields using the information obtained from the Confluent Cloud environment prior work.
- Bootstrapserver:
- Topic:
- Topicformat:
- Confluentapikey
- Confluentapisecret
- 5. Be sure to select the correct **Topic Format** for your specified topic (json, avro).
  - a. If using Avro, select the **schema registry checkbox** and Enter the Schema Registry URL, username, and password.

Use property values from the file "connectors.config" 🕐	
Bootstrapserver: *	
This field is required.	
Topic: *	
This field is required.	
Topicformat: *	
json	•
Confluentapikey: *	
This field is required.	
Confluentapisecret: *	
This field is required.	
Requires schema registry	
Schemaregistry: *	
Schemaregistryapikey: *	
Schemaregistryapisecret: *	
All properties	
	OK Cance

6. Click **OK**.

Step 5

Match Schema

- 1. You will need to match the output schema of the source window to the value produced by your Confluent cluster.
- 2. In your Confluent environment your topic output format can be found here.

$\odot$	CONFLUENT					Q. Search
Hom	e > Environments > ESP > c	luster_0 > Topics >				
6) ®	Cluster cluster_0	sample_o	data_us	ers		
	8 Cluster Overview	Overview Mess	ages Data co	ntracts New	Configuration	
R: É	Networking API Keys	Production in messages	last hour		Consumption i O messages	n last hour Total messages Retenti _ 34,671 1 wee
	Cluster Settings	Q. Filter by timesta	mp. offset, key or v	Al	ll partitions	▼     Latest     ▼     Max 50 results     ▼
	Topics	50 messages shown	•	Auto-refresh	on	
	<ul> <li>ksqlDB</li> <li>Connectors</li> </ul>	Timestamp 🗸	Offset	Partition	Key	Value
	🛱 Clients	1733940210916	3915	5	"User_6"	("registertime":1491820824817,"userid":"User_6", "regionid": "Region_9", "gender": "FEMALE")
		1733940210523	7639	0	"User_4"	("registertime":1496717862188,"userid":"User_4", "regionid":"Region_7", "gender":"FEMALE")
		1733940209913	7636	1	"User_1"	("registertime";1515085083204,"userid";"User_1","regionid";"Region_9","gender";"FEMALE")
	R Schema Registry	1733940209709	7638	0	"User_2"	("registertime":1503650409222,"userid":"User_2","regionid":"Region_7","gender":"MALE")
Î	CLI and Tools	1733940209017	11470	4	"User_5"	("registertime":1503960419526,"userid":"User_5", "regionid":"Region_8", "gender":"OTHER")

3. In your ESP environment, select the **Source window**, then select the **Output Schema** icon on the right pane.

Sou	irce	0	>>
A m	indow		E
1 The	"Source" wi	ndow has no outgoing edges.	
r Key i	Type :	Field :	6
Ŷ	#	registertime	
	۲	userid	
	۲	regionid	
	۵	gender	

- 4. Click the **edit fields** icon to modify and set the schema.
  - a. This should match the schema above in the confluent environment.

Key i	Field Name :	Туре :
<b>√</b>	registertime	double
	userid	string
	regionid	string
	gender	string
		1 - 4 of 4 items

## Step 6

## Test your project and observe output

5. Click the save project icon and then click Enter Test Mode.

SAS® Event Stream Processing Studio	?	8						
		1						
🐻 🕲 😂 🔓 🗸 Enter Test Mode ESP server: 🗟 d19417	• Ø	11						
Source window  A The "Source" window has no outgoing edges.								
						Key : Type : Field :	ı I	6
						Image: Second	11	
						🔊 userid		
le regionid								
le gender								
Source								
e: 🔮								

### 6. Click **Run Test** and observe output.

		SAS® Event Stream Processing Studio						
Projects ESP Servers Test: Conflue	ent ×				0			
Status: Started 😘	us: Started 😘 🔹 Dr. Run Test 💌 🖬 Stop 📭 Publish 🐻 Performance (ESP server: 🤗 d19417							
Ø Refre	() Refresh schema Seure							
💟 🕨 🔲 Source (5 fields)	Contin	Continuous query: cq1 Currently retained events: 12933						
	regist	tertime i	userid	regionid :	gender :			
	1,515	5,085,083,204	User_1	Region_9	FEMALE			
	1,501	1,318,967,590	User_3	Region_9	FEMALE			
	1,507	7,584,178,006	User_3	Region_5	OTHER			
	1,499	9,730,888,205	User_3	Region_1	OTHER			
	1,503	3,986,900,302	User_3	Region_1	FEMALE			
	1,510	0,952,337,572	User_1	Region_5	MALE			
	1,511	1,169,469,433	User_3	Region_3	MALE			
	1,499	9,908,160,796	User_3	Region_1	FEMALE			
	4 1 2 3 * 1-25 of 1000							

Log: ESP server •