CLOUD MACHINE LEARNING

The cloud makes intelligent capabilities accessible without any requirements of advanced skills in artificial intelligence or data science. Cloud services like AWS, Microsoft Azure, and Google Cloud Platform offer many machine learning options that don't require deep knowledge of AI, or machine learning theory.

For example: The data or information like posts, tweets & comments of the different people acquired from social media using scripts or any tool, can be used to analyze and understand the behaviour, sentiments of people & opinion mining. This could be really helpful in business, understanding the sentiments or feedback of the customers, their interests, needs & requirements. Cloud Machine Learning is really feasible and scalable. It could also be applied to understand the behaviour & online activity of an employee or a people who have applied for the job. Understanding their employees would be beneficial for the company or organizational growth.

Social media sentiment analysis in real time using Azure Cloud

Identifying trending topics in real time on Twitter, and analyzing the tweet volume and sentiment for key topics.

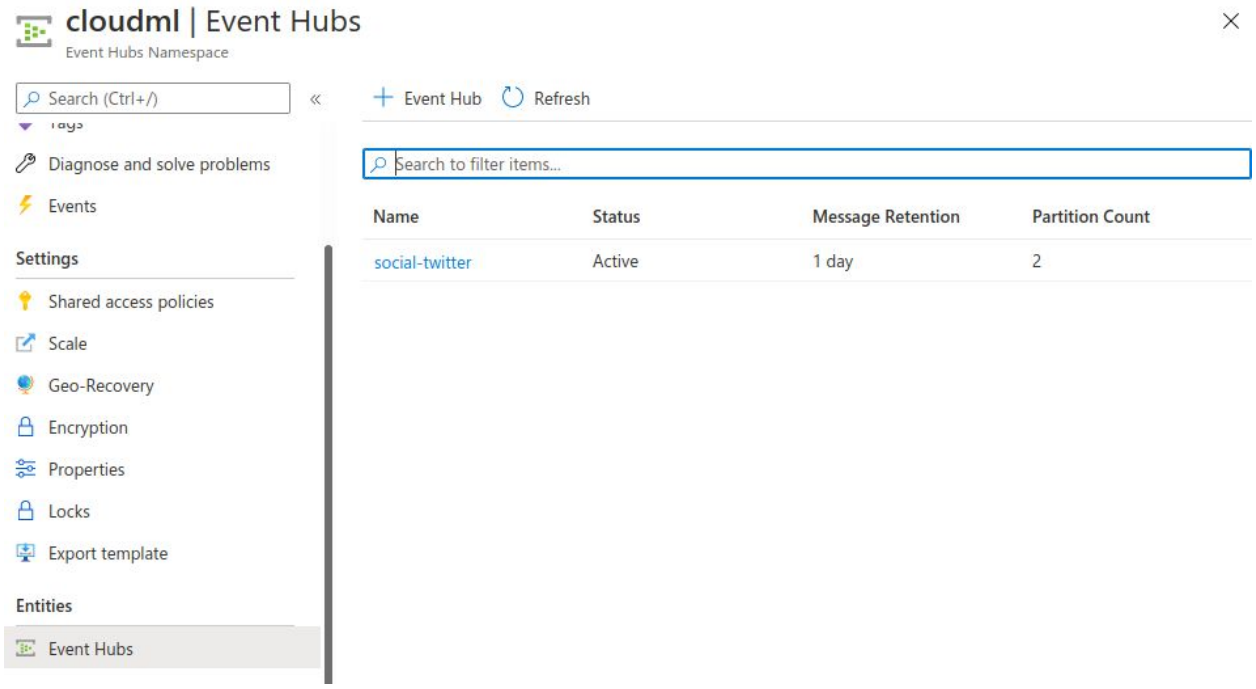
Prerequisites

- Azure subscription
- Twitter account
- TwitterClientCore application, which reads the Twitter feed
- Install the .NET Core CLI version 2.1.0.

Create an event hub for streaming input

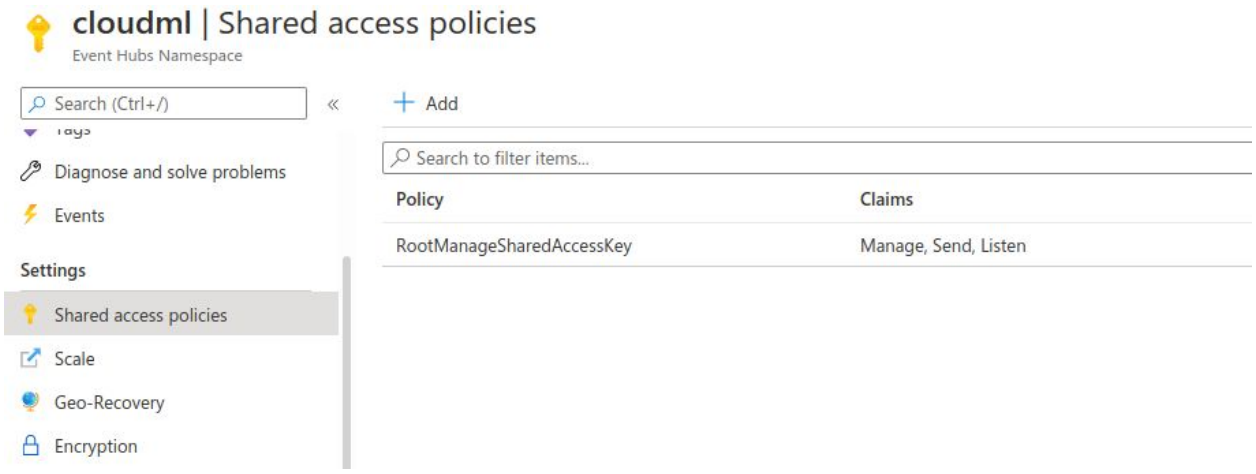
1. Log in to Azure Portal, select “Create a resource”. Then search for “Event hubs” and click “create”.
2. Create Namespace and fill name -> “cloudml”, select pricing tier and subscription, choose a resource group. Then choose a location and select “create”.

3. After deployment, go to your resource group and find the event hub namespace. In the new namespace, select + Event Hub.
4. Name the event hub “social-twitter” and hit “Create”.



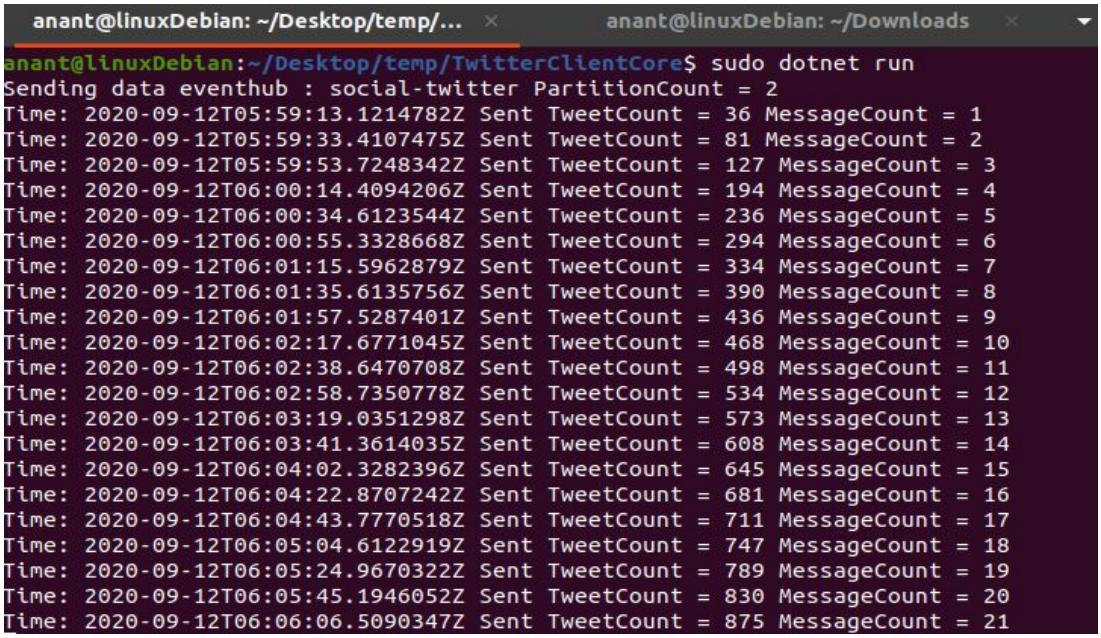
Grant access to the event hub

1. In the Left pane, select Event Hubs under the Entities section. Then select the event hub we just created.
2. Under settings, select Shared access policies.
3. Select +Add, name the policy and check “Manage” checkbox. Create.
4. Select the policy and copy the Primary Key.



Configure and start the Twitter client application

1. Create a Twitter account and then create an app in “Twitter for Developers”.
2. From that app, copy the Consumer API Key, Consumer API Secret Key, Access Token and Access Token Secret.
3. CONFIGURE TwitterClientCore application. Edit App.config file.
4. Paste the Consumer API Key, Consumer API Secret Key, Access Token and Access Token Secret accordingly. And Set EventHubNameConnectionString to the connection string. Then Set EventHubName to the event hub name (‘social-twitter’).
5. On the terminal, run **$ dotnet build,** then **$ dotnet run.**

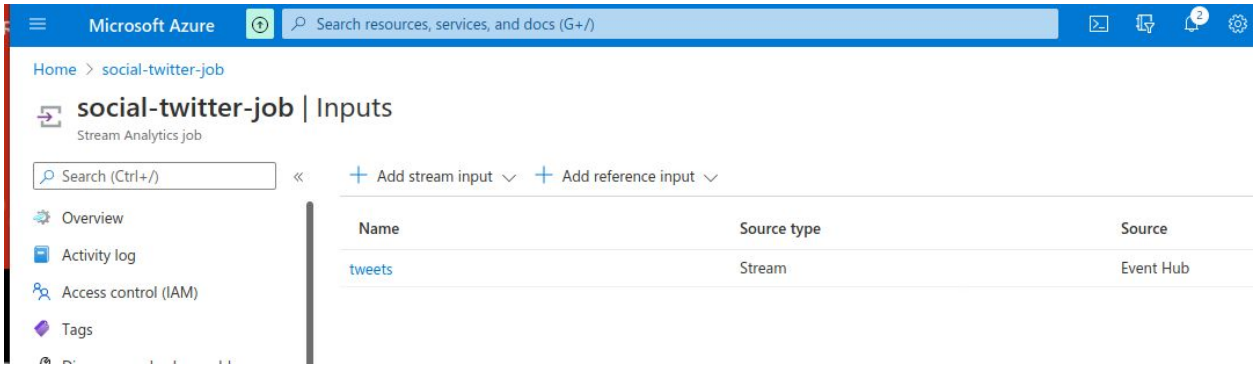


Create a Stream Analytics job (to analyze the events in realtime)

1. In the Azure portal, navigate to the resource group and select + Add. Then search for “Stream Analytics job” and hit Create.
2. Name the job socialtwitter-job and specify a subscription, resource group, and location.
3. Select Create. Then navigate to your job when the deployment is finished.

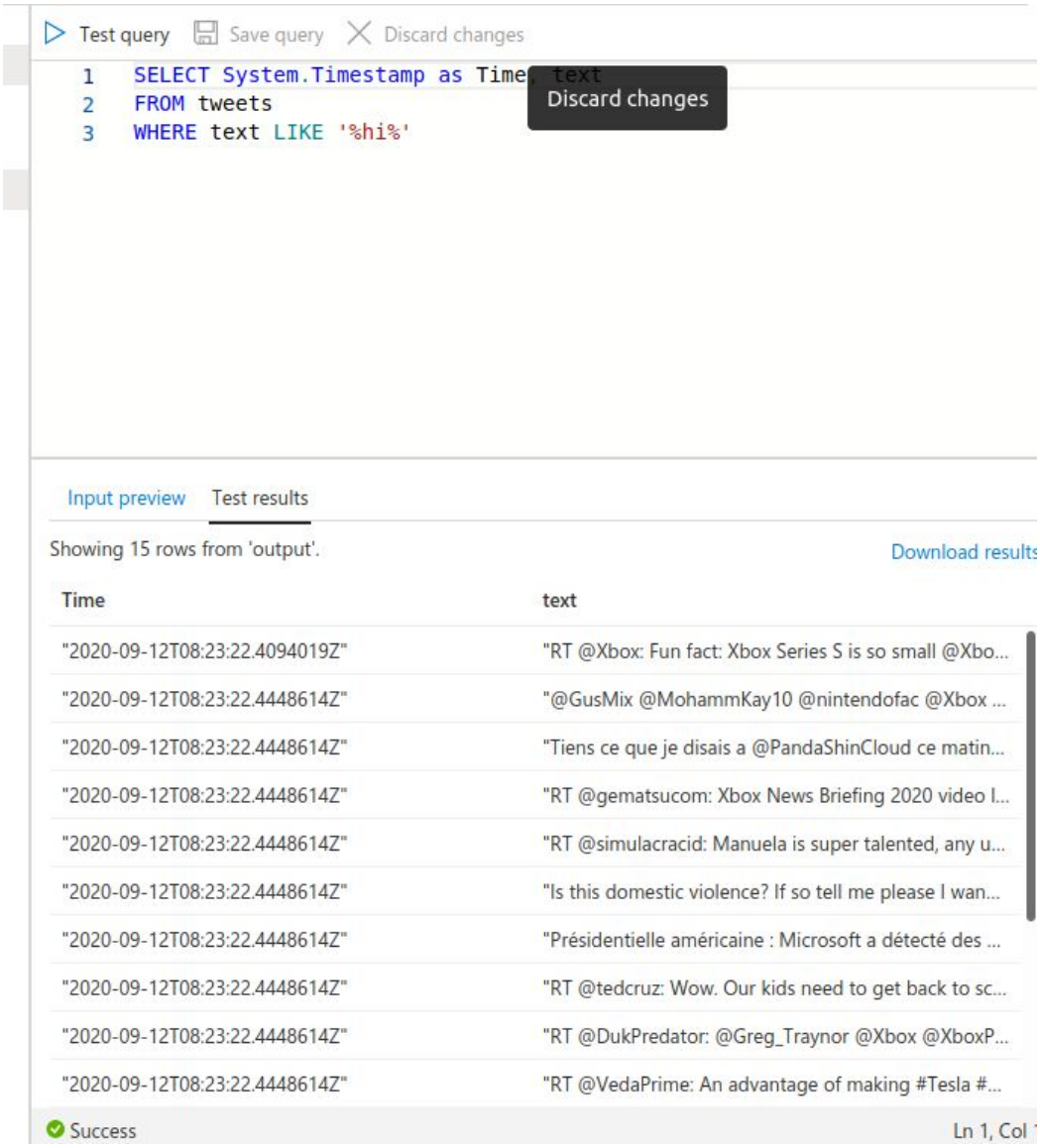
Specify the job input (to start the job, we need to add the input)

1. In the Stream Analytics job, select “Inputs” from the left pane under Job topology.
2. Select +Add Stream input > Event Hub.
3. Fill Input alias -> tweets; subscription -> <your-subscription>; Event hub namespace -> cloudml; Event Hub name -> social-twitter; Event Hub policy name -> RootManageSharedAccessKey; Event compression type -> GZip.
4. Select save.



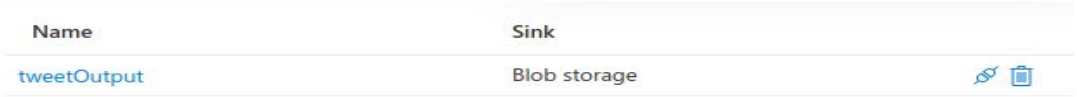
Specify the job query

1. In the job Overview, select “Edit Query”. It lets you create a query to transform the input stream as it is sent to the output.
2. SELECT * FROM tweets
3. Event data from the messages should appear in the Input preview window below your query.
4. Select Test query to see the Test results.
5. Now change the query.
6. SELECT System.Timestamp as Time, text FROM tweets WHERE test LIKE ‘%hi%’
7. It will return all tweets that include the keyword “hi”.



Specify the job output

1. Under Job Topology, select Outputs.
2. Click +Add and Blob storage/Data Lake Storage Gen2:
    a. Output alias: tweetOutput
    b. Import options: Select storage from your subscriptions
    c. Storage account: Select your storage account
    d. Container: Create new and enter “socialtwittercontainer”
3. Save



Start the Job

1. Make sure the TwitterClientCore application is running.
2. In the job overview, select start.
3. On the Start Job page, for “Job output start time”, select “Now” and then select “Start”.