

## 04 | Activación Servicio de Azure Data Lake

<https://portal.azure.com/>



Creación del servicio

1. Buscar “Data Lake Storage” en el portal de Azure.

2. Seleccionar “add”

3. Llenar los campos con la información solicitada:

- Name
- Subscription
- Resource group
- Location

y seleccionar “create”.

Search: Data Lake Storage

Services All 29 results

Data Lake Storage Gen1

Home > Data Lake Storage Gen1

### Data Lake Storage Gen1

**+ Add** Edit columns Refresh Export to CSV

#### New Data Lake Storage G... ☐

Azure Data Lake Storage Gen2 is now GA. Click here to read more about how you can speed up your time to insight. →

Name \*  
aiunamdatalake ✓  
aiunamdatalake.azuredatastore.net

Subscription \*  
Azure for Students

Resource group \*  
clase\_azure\_unam  
[Create new](#)

Location \*  
Central US

Pricing package ⓘ  
☒ Pay-as-You-Go  
☐ Monthly commitment

**Create** Automation options

4. Esperar a que finalice el despliegue del servicio y seleccionar el servicio recién creado.

Home > Data Lake Storage Gen1

### Data Lake Storage Gen1

+ Add   Edit columns   Refresh   Export to CSV   Assign tags   Feedback   Leave preview


Filter by name...   Subscription == all   Resource group == all   Location == all   Add filter

Showing 1 to 1 of 1 records.

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> <b>aiunamdatalake</b>	Data Lake Storage Gen1	clase_azure_unam	Central US	Azure for Students

5. Seleccionar “Data Explorer”

Home > Data Lake Storage Gen1 > aiunamdatalake

 **aiunamdatalake**  
Data Lake Storage Gen1

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Events

**Data explorer**   Delete

Azure Data Lake Storage Gen2 is now GA. Click here to read more

Essentials

aiunamdatalake

Pay-as-You-Go ⓘ

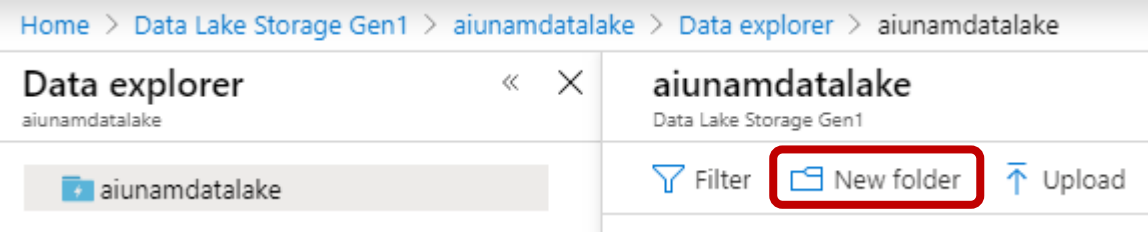
October 2019

[Pricing tier info](#)

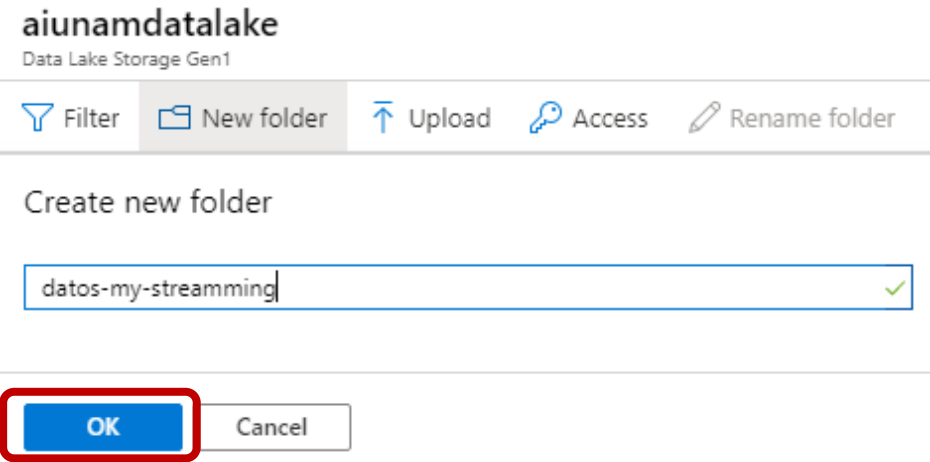
Estimated cost to date ⓘ

**USD 0.00**

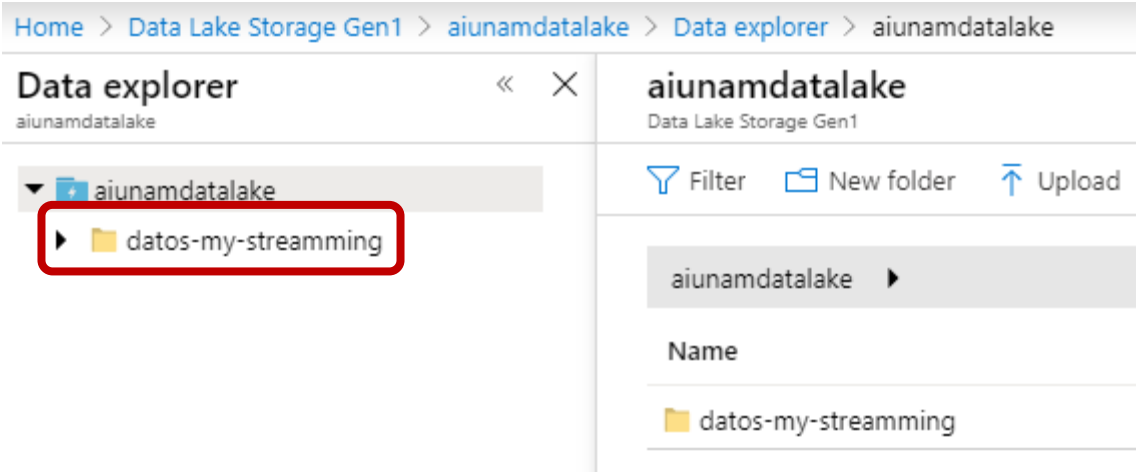
6. Seleccionar “New folder”.



7. Ingresar el nombre y seleccionar “Ok”



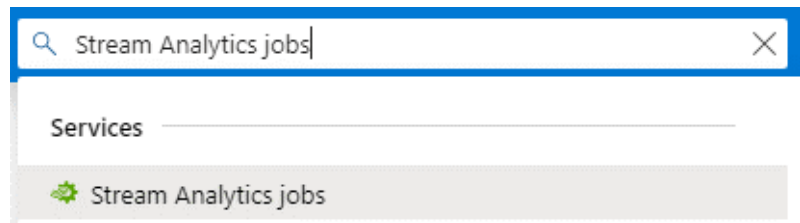
8. Acceder al nuevo folder.



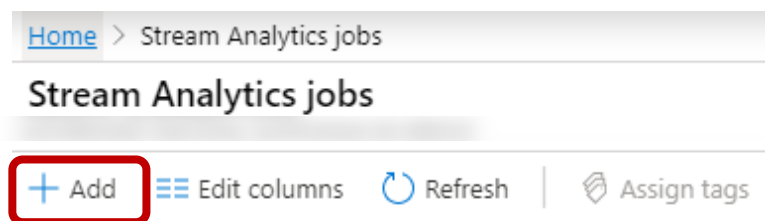


# Creación de Analytics Job

1. Buscar “Stream analytics jobs” en el portal de Azure.



2. Seleccionar “add”



3. Llenar los campos con la información solicitada:

- Job name
- Subscription
- Resource group
- Location
- Hosting environment
- Streaming units

y seleccionar “create”.

A screenshot of the 'New Stream Analytics job' form in the Azure portal. The breadcrumb navigation shows 'Home > Stream Analytics jobs > New Stream Analytics job'. The form title is 'New Stream Analytics job'. The form contains several fields: 'Job name' (text input with 'IoT-job' and a green checkmark), 'Subscription' (dropdown menu with 'Azure for Students'), 'Resource group' (dropdown menu with 'clase\_azure\_unam'), 'Location' (dropdown menu with 'West US 2'), 'Hosting environment' (radio buttons for 'Cloud' and 'Edge', with 'Cloud' selected), and 'Streaming units (1 to 192)' (range selector with a value of 3). At the bottom of the form, there is a 'Create' button (highlighted with a red box) and a link for 'Automation options'.



4. Esperar a que finalice el despliegue del servicio y seleccionar el servicio recién creado.

[Home](#) > Stream Analytics jobs

### Stream Analytics jobs

[+ Add](#)

[Edit columns](#)

[Refresh](#)

[Assign tags](#)

**Subscriptions:** Azure for Students


All resource groups

All locations

All tags

No grouping

1 items

<input type="checkbox"/>	Name ↑↓	Status	Created	Subscription ↑↓	Type ↑↓
<input type="checkbox"/>	 IoT-job	Created	2019-10-22T04:44:59.31...	<a href="#">Azure for Students</a>	Stream Analytics job

## 5. Seleccionar “Inputs”

Home > Stream Analytics jobs > IoT-job

**IoT-job**  
Stream Analytics job

Search (Ctrl+ /)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Locks

Job topology

**Inputs**

Functions

Query

Outputs

Start Stop

To start your job, you must first create an input.

Resource group (change)

Status

Location

Subscription (change)

Subscription ID

Inputs  
0

Outputs  
0

## 6. Seleccionar “Add stream input” y buscar el servicio “IoT hub”

Home > Stream Analytics jobs > IoT-job - Inputs

**IoT-job - Inputs**  
Stream Analytics job

Search (Ctrl+ /)

+ Add stream input + Add reference input

Overview

Activity log

Access control (IAM)

Event Hub

**IoT Hub**

Blob storage

## 7. Llenar los campos con la información solicitada:

- Input alias
- Subscription
- IoT Hub
- Endpoint
- Shared Access policy name
- Consumer group
- Event serialization format
- Encoding
- Event compression type

Y seleccionar “save”.

IoT Hub

New input

Input alias \*

IoT-raspberry

☐ Provide IoT Hub settings manually

☒ Select IoT Hub from your subscriptions

Subscription

Azure for Students

IoT Hub ⓘ

my-streamming

Endpoint ⓘ

Messaging

Shared access policy name ⓘ

iothubowner

Shared access policy key ⓘ

.....

Consumer group ⓘ

\$Default

Event serialization format \* ⓘ

JSON

You can implement a deserializer in C# that can read events in any format. You can try this out by [signing up for the preview program](#).

Encoding ⓘ

UTF-8

Event compression type ⓘ

None

Save

## 8. Deben poder visualizar el nuevo input generado. Ahora seleccionamos “Outputs”.

Home > IoT-job - Inputs

IoT-job - Inputs

Stream Analytics job

Search (Ctrl+ /)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Locks

Job topology

Inputs

Functions

Query

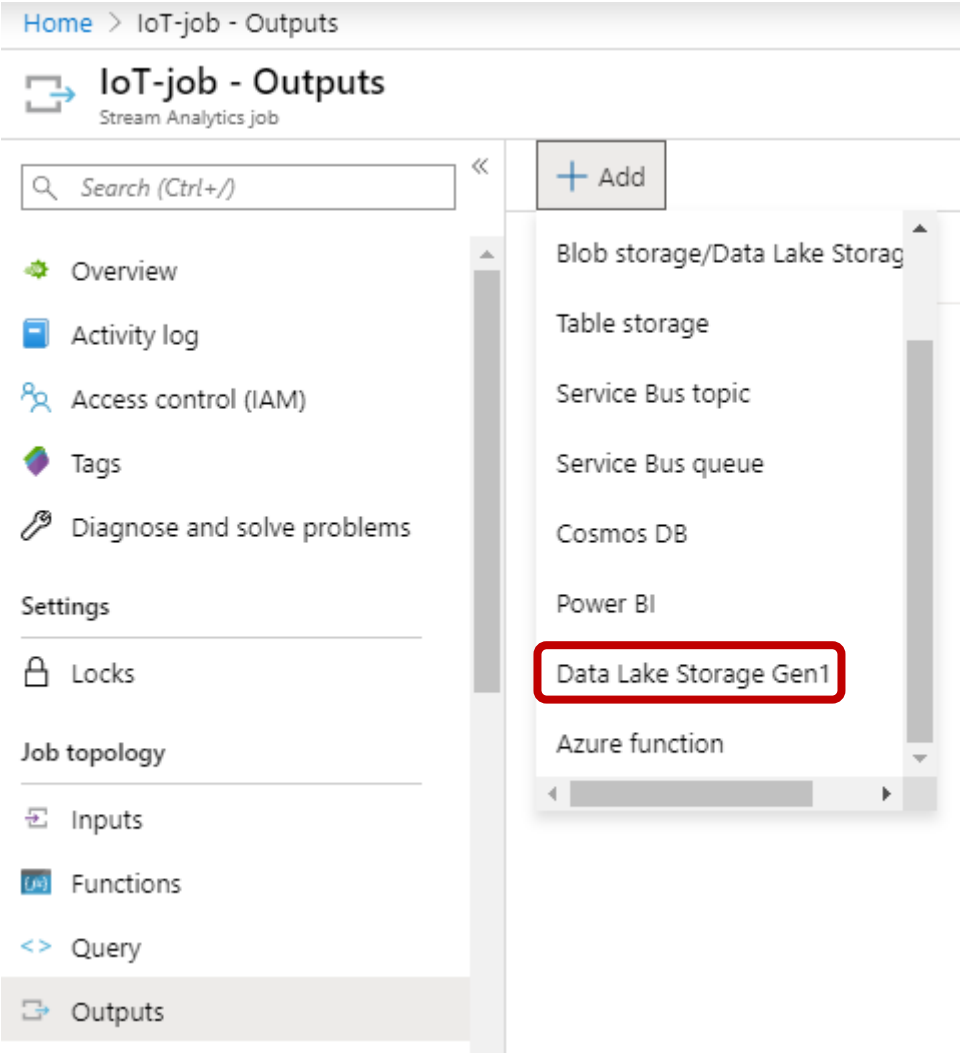
Outputs

+ Add stream input

+ Add reference input

Name	Source type
IoT-raspberry	Stream

9. Seleccionamos “Add” y buscamos el servicio “Data Lake Storage Gen 1”.



**Data Lake Storage Gen1**  
New output

Output alias \*  
raspberry-data-lake ✓

☐ Provide Data Lake Storage Gen1 settings manually  
☒ Select Data Lake Storage Gen1 from your subscriptions

Subscription  
Azure for Students ▼

Account name  
aiunamdatalake ▼

Path prefix pattern \* ⓘ  
datos-my-streamming/{date}/{time} ✓  
Example: cluster1/logs/{date}/{time}

Date format  
YYYY/MM/DD ▼

Time format  
HH ▼

Event serialization format \* ⓘ  
JSON ▼

Encoding ⓘ  
UTF-8 ▼

Format ⓘ  
Line separated ▼

**Authentication mode**  
Managed Identity ▼  
✗ This resource now supports Managed Identity based authentication. Please enable it [here](#) for this job in order to use it.

Save

10. En la sección de “Authentication mode”, desplegar la lista y seleccionar “User token”

**Authentication mode**  
Managed Identity ^  
Managed Identity  
User token

11. Aparecerá el siguiente recuadro, seleccionamos “Authorize”

Authentication mode  
User token

**Authorize connection**  
You'll need to authorize with Data Lake Storage Gen1 to configure your output settings.

**Authorize**

Don't have a Microsoft Azure Data Lake Storage Gen1 account yet?  
[Sign up](#)

Note: You are granting this output permanent access to your Data Lake Storage Gen1 account. Should you need to revoke this access in the future you can do one of the following:

1. Change the user account password.
2. Delete this output.
3. Delete this job.

12. Aparecerá una pestaña de login y después deben generarse la siguiente información:

Authentication mode  
User token

Currently authorized as

**Authorize connection**  
You'll need to authorize with Data Lake Storage Gen1 to configure your output settings.

Authorize

13. Llenar los campos con la información solicitada:

Data Lake Storage Gen1  
New output

Output alias \*  
raspberry-data-lake

☐ Provide Data Lake Storage Gen1 settings manually  
☒ Select Data Lake Storage Gen1 from your subscriptions

Subscription  
Azure for Students

Account name  
aiunamdatalake

Path prefix pattern \* ⓘ  
datos-my-streamming/{date}/{time} ✓  
Example: cluster1/logs/{date}/{time}

Date format  
YYYY/MM/DD

Time format  
HH

Event serialization format \* ⓘ  
JSON

Encoding ⓘ  
UTF-8

Format ⓘ  
Line separated

Authentication mode  
User token


Save

Ya no deben observarse el letrero previo.

- Output alias
- Subscription
- Account name
- Path prefix pattern
- Date format
- Time format
- Event serialization format
- Encoding
- Format
- Authentication mode

14. Confirmamos la creación del servicio “Output” y seleccionamos “Overview”.

Home > IoT-job - Outputs

 IoT-job - Outputs  
Stream Analytics job

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Locks

Job topology

Inputs

Functions

Query


Outputs

+ Add

Name	Sink
raspberry-data-lake	Data Lake Storage Gen1

15. Seleccionamos “Edit query” para definir la consulta a que realizaremos al streamming.

Home > IoT-job

IoT-job

Stream Analytics job

Search (Ctrl+ /)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Locks

Job topology

Inputs


Functions

Query

Outputs

▶ Start

☐ Stop

 Delete

Resource group [\(change\)](#)

[clase\\_azure\\_unam](#)

Status

Created

Location

West US 2

Subscription [\(change\)](#)

[Azure for Students](#)

Subscription ID

Send feedback

[UserVoice](#)

Created

Monday, October 21, 2019, 11:44:59 PM

Started

-

Output watermark

-

Hosting environment

Cloud

Inputs

1

[IoT-raspberry](#)

IoT Hub

Outputs

Query

Edit query

1 SELECT

2 \*

3 INTO

4 [YourOutputAlias]

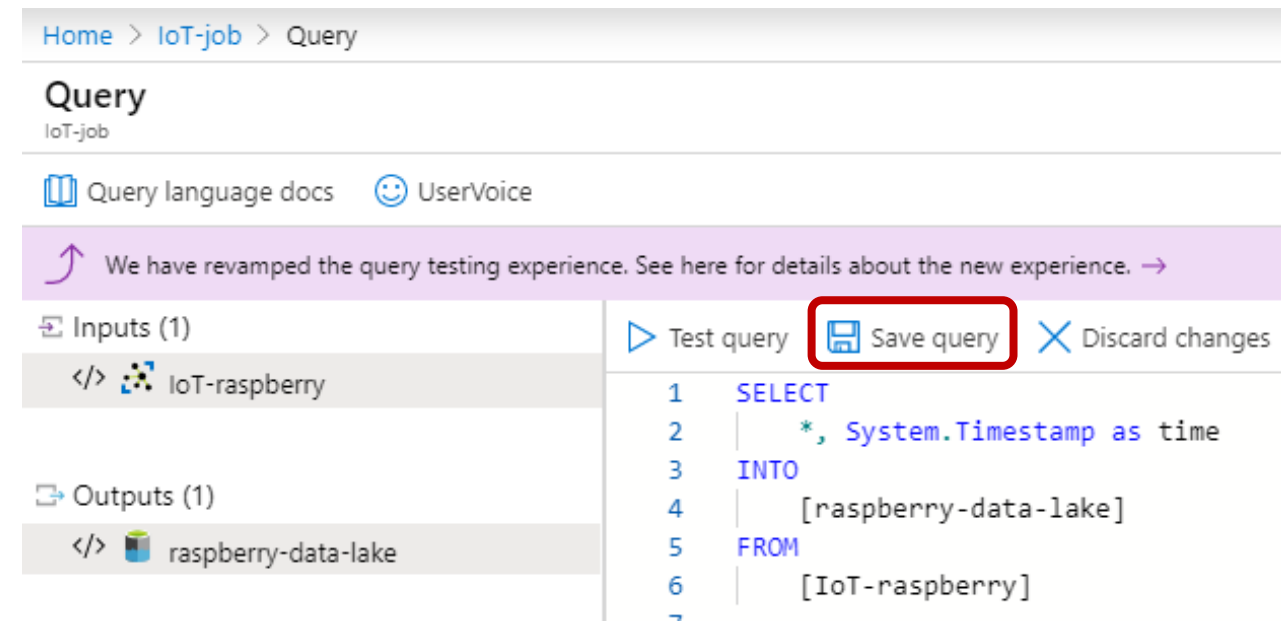
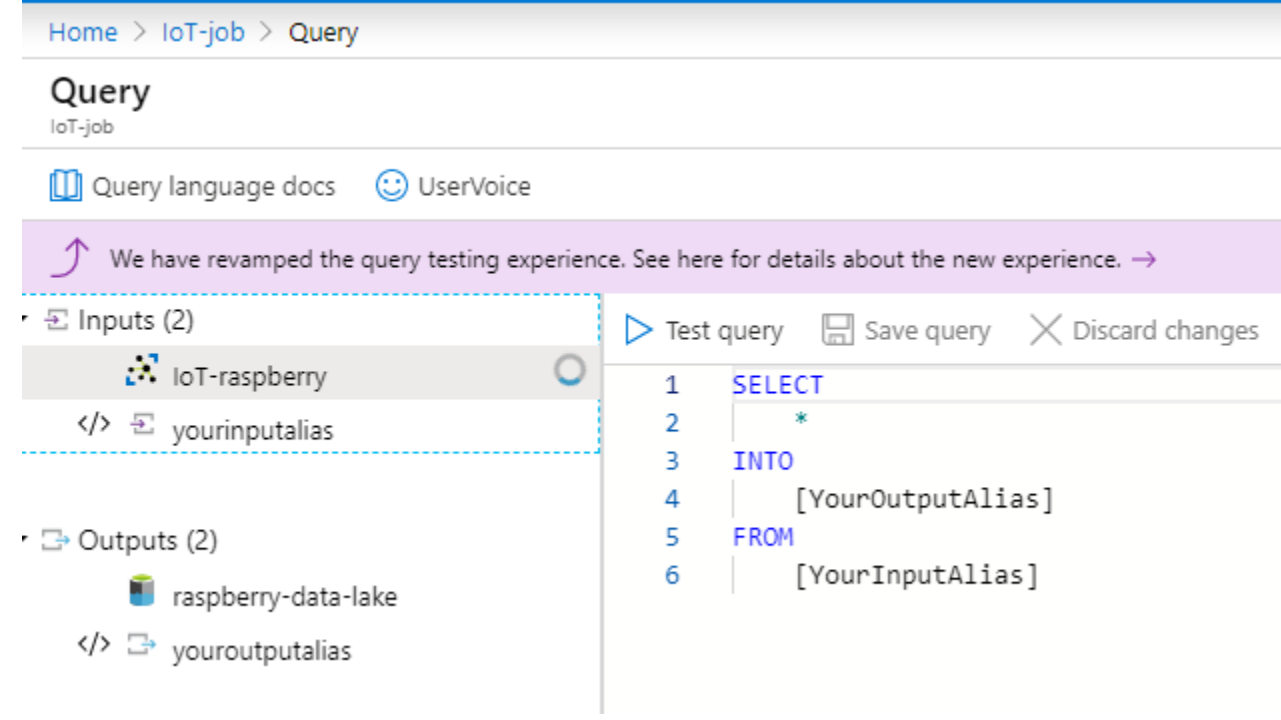
5 FROM

6 [YourInputAlias]

16. En esta sección se crea la consulta (query) que utilizaremos para extraer información del IoT Hub y que se guardará en el data lake.

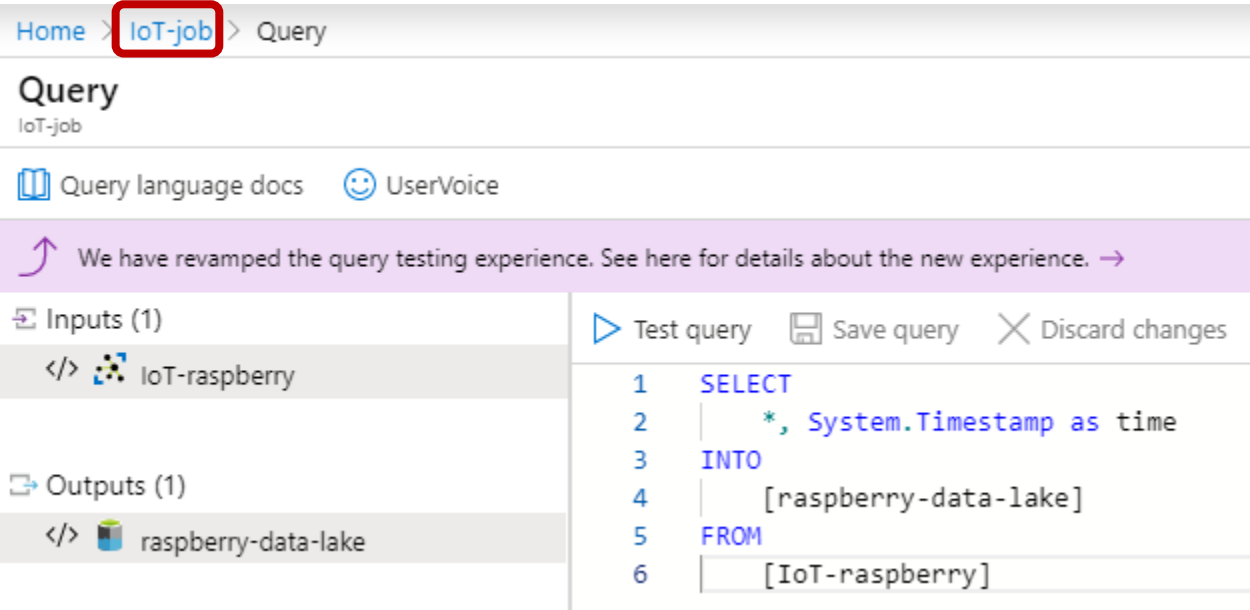
- **SELECT:** Hace referencia a las columnas y/o transformaciones que vamos a realizar. En este caso particular vamos a traer todas las columnas de IoT Hub y además vamos a incorporar un timestamp el cual se llamará “time”.
- **INTO:** Hace referencia al “output”. En nuestro caso particular es el nombre definido previamente como “raspberry-data-lake”.
- **FROM:** Hace referencia al “input”. En nuestro caso particular es el nombre definido previamente como “IoT-raspberry”.

Una vez tenemos la consulta, le damos “save query”.

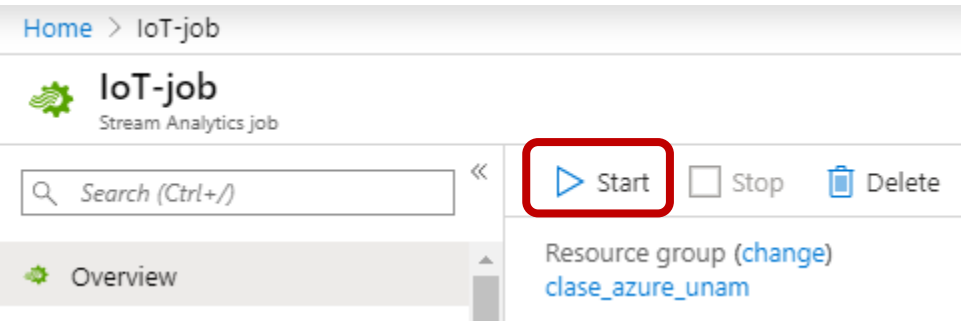




17. Una vez está guardada nuestra consulta, regresamos a la sección anterior seleccionando el nombre del servicio. En este caso “IoT-job”.

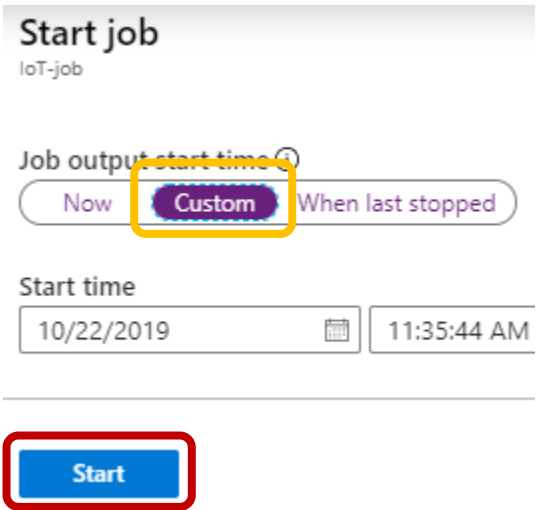
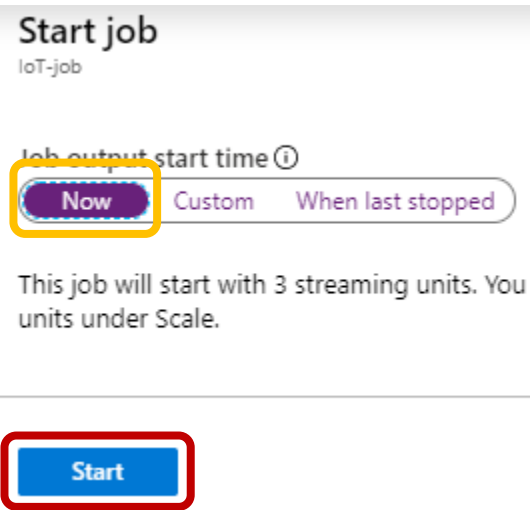


18. Seleccionamos “Start”.

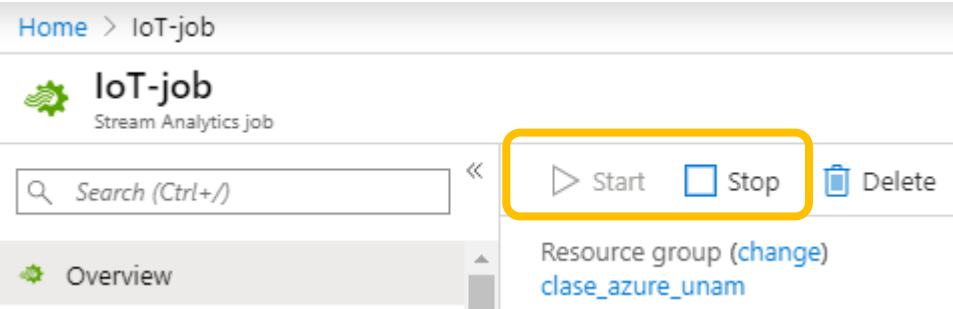


18. Seleccionamos si queremos que el “job” comience con datos desde:

- **Now:** Hace referencia a “este momento”. Solamente guardará los datos en el data lake que vayan ingresando al IoT Hub desde el momento que den “start”.
- **Custom:** Es posible seleccionar una fecha y hora previa de tal forma que se recuperé información del IoT Hub desde que inició el dispositivo (siempre y cuando este dentro del tiempo que almacena el IoT Hub los datos)



19. Observamos que el proceso está ejecutándose:



20. Nos vamos a la carpeta del Data Lake y observamos que se crearon carpetas que contienen archivos JSON.

The screenshot shows the Azure Data Explorer interface. The breadcrumb navigation is 'Home > All resources > aiunamdatalake > Data explorer > aiunamdatalake'. The left pane shows the folder structure with 'aiunamdatalake' selected, and a sub-folder 'datos-my-streaming' is visible. The right pane shows the file list for 'aiunamdatalake' (Data Lake Storage Gen1). The file list has columns 'Name', 'Size', and 'Last modified'. Below the file list, there is a 'File preview' section showing a JSON file. The JSON file content is as follows:

0	1	2	3	4	5	6	7	8	9
{"messageId":1	deviceId	:"Raspberry Pi Web Clie...	temperature	:23.182240181723...	humidity	:70.701318490184...	EventProcessedUtcT...	:"2019-10-22T17:12:25.8485...	Pa
{"messageId":2	deviceId	:"Raspberry Pi Web Clie...	temperature	:22.998280974618...	humidity	:74.731794335228...	EventProcessedUtcT...	:"2019-10-22T17:12:25.8485...	Pa
{"messageId":3	deviceId	:"Raspberry Pi Web Clie...	temperature	:20.60971109689353	humidity	:79.812130219392...	EventProcessedUtcT...	:"2019-10-22T17:12:25.8485...	Pa
{"messageId":1	deviceId	:"Raspberry Pi Web Clie...	temperature	:25.324970285850...	humidity	:70.127016610139...	EventProcessedUtcT...	:"2019-10-22T17:12:25.7547...	Pa



Actividades

- Modificar la consulta para que realicé alguna transformación o aplique algún filtro a los datos
- Repetir el proceso para otros dispositivos IoT hub.



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