

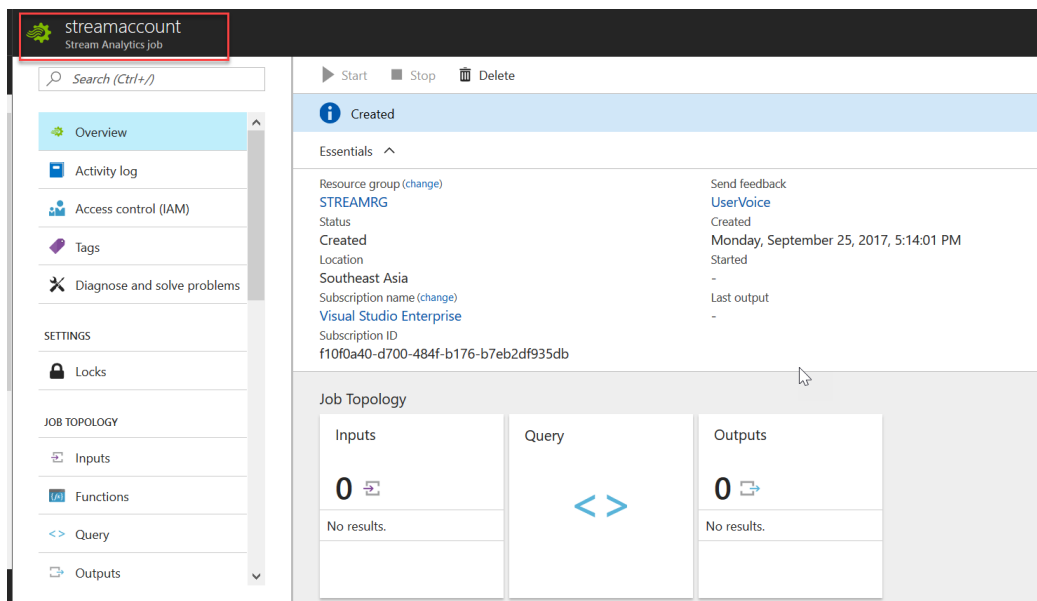
## Azure Stream Analytics – Event Hub – Service Bus – Storage

Step – Create Stream Analytics Service in Azure Portal.

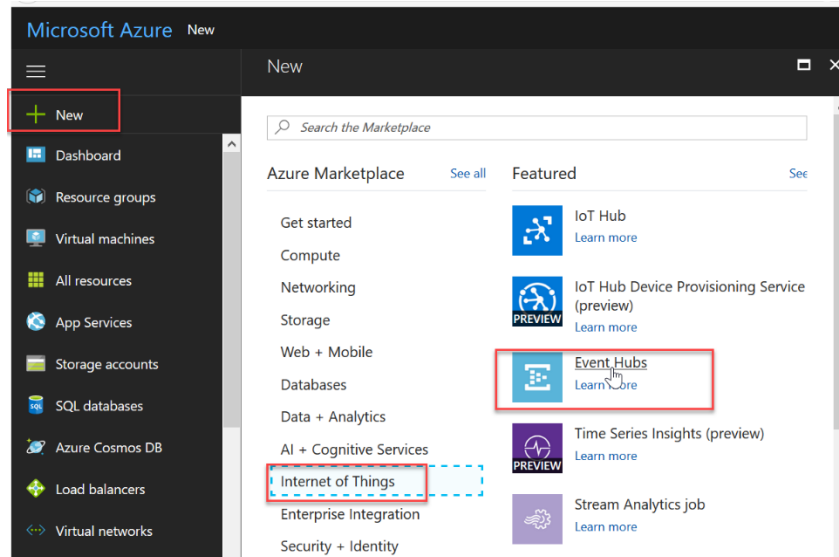
The screenshot shows the Azure Portal interface. The top navigation bar includes the 'New' button, which is highlighted with a red box. The left sidebar lists various Azure services, with 'Data + Analytics' highlighted by a red dashed box. The main content area displays the 'Azure Marketplace' with a search bar and a list of featured services. 'Stream Analytics job' is highlighted with a red box. Below this, the 'New Stream Analytics Job' form is shown with the following fields:

- Job name:** streamaccount (highlighted with a red box)
- Subscription:** Visual Studio Enterprise
- Resource group:** Create new (selected), STREAMRG (highlighted with a red box)
- Location:** Southeast Asia

At the bottom of the form, there is a 'Pin to dashboard' checkbox and a 'Create' button (highlighted with a red box) next to the 'Automation options' link.



Now Create Event Hub for Data Input



Create Event Hub and Select Pricing Tier - Standard

Create Namespace

Event Hubs

\* Name

eventhubinput

✓

\* Pricing tier

Standard

>

\* Subscription

Visual Studio Enterprise

▼

\* Resource group

Create new

Use existing

STREAMRG

▼

\* Location

Southeast Asia

▼

Throughput Units

1

☐ Pin to dashboard

Create

Automation options

## Add Event Hub

eventhubinput

Event Hub

Search (Ctrl+ /)

Overview

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Shared access policies

Scale

Properties

Locks

Automation script

+ Event Hub

Delete

Essentials ^

Resource group (change)

STREAMRG

Status

Active

Location

Southeast Asia

Subscription name (change)

Visual Studio Enterprise

Subscription ID

f10f0a40-d700-484f-b176-b7eb2df935db

NAMESPACE CONTENTS

LOADING

PRICING TIER

LOADING

NAMESPACE STATUS

ACTIVE

THROUGHPUT UNITS

LOADING

Metrics

Create Event Hub

eventhubinput

\* Name  
eventhub1 ✓

Partition Count ①  
2

Message Retention ②  
1

Capture  
On Off

Time window (minutes)  
5

Size window (MB)  
300

Create

eventhubinput - Event Hubs

Event Hub

Search (Ctrl+/)

Overview  
Access control (IAM)  
Tags  
Diagnose and solve problems

SETTINGS  
Shared access policies  
Scale  
Properties  
Locks  
Automation script

ENTITIES  
Event Hubs

+ Event Hub

Search to filter items...

NAME	STATUS	MESSAGE RETENTION	PARTITION COUNT
eventhub1	Active	1	2

Open Shared Access Policies -> RootManageSharedAccessKey -> Copy and Paste Connection String in Notepad, Now We need to create Console Application of Event Hub to send Messages to Stream Analytics. Open Visual Studio and Click File -> New Project -> Console Application and Copy and Paste below code and in that Code change Connection String of Event hub with your connection string.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Threading;
using Microsoft.ServiceBus.Messaging;
using Newtonsoft.Json;

namespace EHubSender
{
    class Program
```

```

{
    static string eventHubName = "eventhub1";
    static string connectionString =
"Endpoint=sb://eventhubinput.servicebus.windows.net/;SharedAccessKeyName=RootManageSha
redAccessKey;SharedAccessKey=blfYZqefLsCw0kN1J/xIn3m+LTNwarrtn8atgCGLqCA=";

    static void Main(string[] args)
    {
        Console.WriteLine("Press Ctrl-C to stop the sender process");
        Console.WriteLine("Press Enter to start now");
        Console.ReadLine();
        SendingRandomMessages();
    }

    static void SendingRandomMessages()
    {
        double temp;

        var eventHubClient =
EventHubClient.CreateFromConnectionString(connectionString, eventHubName);
        while (true)
        {
            try
            {
                // Simulate reading Temperature
                var rand = new Random();
                double humi = 45 + rand.NextDouble() * 4 - 2;

                if (rand.NextDouble() > 0.8)
                {
                    temp = 22 + rand.NextDouble() * 4 + 10;
                }
                else
                {
                    temp = 22 + rand.NextDouble() * 4 - 2;
                }

                var messageInfo = new
                {
                    temperature = temp
                };

                var serialJson = JsonConvert.SerializeObject(messageInfo);

               EventData data = new
EventData(Encoding.UTF8.GetBytes(serialJson));

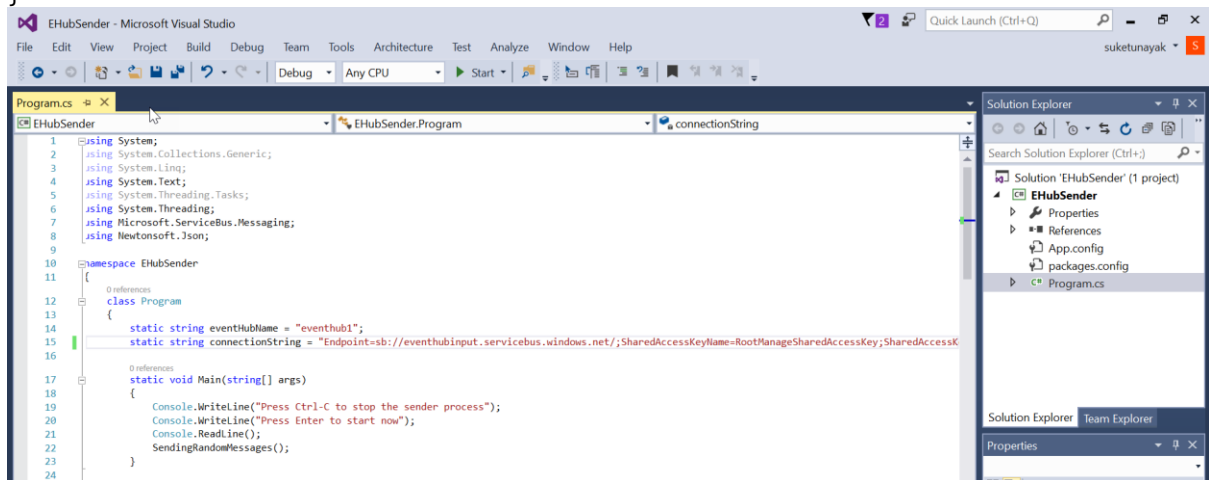
                Console.WriteLine("{0} > Sending Temperature value: {1}",
DateTime.Now, messageInfo);
                eventHubClient.Send(data);
            }
            catch (Exception exception)
            {
                Console.ForegroundColor = ConsoleColor.Red;
                Console.WriteLine("{0} > Exception: {1}", DateTime.Now,
exception.Message);
                Console.ResetColor();
            }
        }
    }
}

```

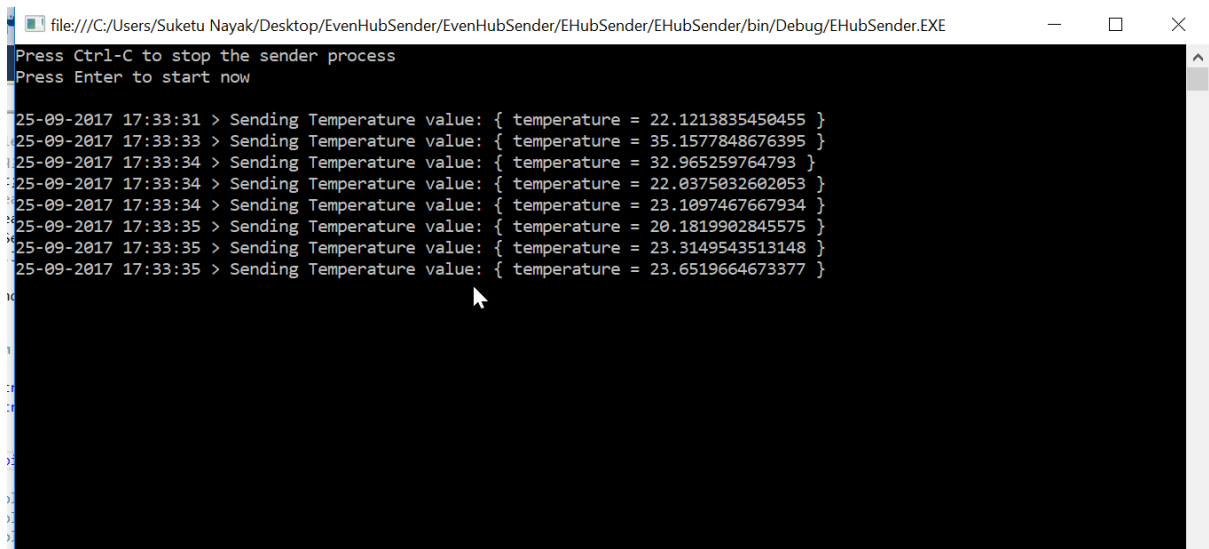
```

        Thread.Sleep(200);
    }
}
}
}
}

```



This Console Application will keep sending random temperature to Stream Analytics.



Now Add Event Hub as a Input of Stream Analytics Service in Azure Portal

streamaccount  
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

Created

Essentials

Resource group (change)  
STREAMRG

Status  
Created

Location  
Southeast Asia

Subscription name (change)  
Visual Studio Enterprise

Subscription ID  
f10f0a40-d700-484f-b176-b7eb2df935db

Send feedback  
UserVoice

Created  
Monday, September 25, 2017, 5:14:

Started  
-

Last output  
-

Inputs

0

No results.

Query

Outputs

0

No results.

## Add Event Hub

Inputs streamaccount

+ Add

NAME	SOURCE TYPE	SOURCE
Empty		

New input

\* Input alias  
INPUT

\* Source Type  
Data stream

\* Source  
Event hub

\* Import option  
Use event hub from current subscription

Service bus namespace  
eventhubinput

Event hub name  
eventhub1

Event hub policy name  
RootManageSharedAccessKey

Event hub consumer group

Create

## Now Create a Storage Account

Create storage account

The cost of your storage account depends on the usage and the options you choose below. [Learn more](#)

\* Name ⓘ  
coldstorage01 ✓  
.core.windows.net

Deployment model ⓘ  
Resource manager Classic

Account kind ⓘ  
General purpose ▼

Performance ⓘ  
Standard Premium

Replication ⓘ  
Locally-redundant storage (LRS) ▼

\* Secure transfer required ⓘ  
Disabled Enabled

☐ Pin to dashboard

Create Automation options

## Create Service Bus for another output of Stream Analytics

New

Search the Marketplace

Azure Marketplace See all Featured See

Get started

Compute

Networking

Storage

Web + Mobile

Databases

Data + Analytics

AI + Cognitive Services

Internet of Things

Enterprise Integration

Security + Identity

Developer tools

Monitoring + Management

Logic App  
[Learn more](#)

API management  
[Learn more](#)

On-premises data gateway  
[Learn more](#)

Integration Account  
[Learn more](#)

Service Bus  
[Learn more](#)

Data Factory  
[Learn more](#)

Data Catalog



Create namespace

Service Bus

\* Name

outputservicebus

✓

.servicebus.windows.net

\* Pricing tier

Standard

>

\* Subscription

Visual Studio Enterprise

▼

\* Resource group ⓘ

☐ Create new ☒ Use existing

STREAMRG

▼

\* Location

Southeast Asia

▼

☐ Pin to dashboard

Create

Automation options

## Add Queue in Service Bus

outputservicebus

Service Bus

Search (Ctrl+/)

Overview

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Shared access policies

Scale

Properties

Locks

Automation script

+ Queue

+ Topic

Delete

Convert

Essentials ^

Resource group (change)

STREAMRG

Status

Active

Location

Southeast Asia

Subscription name (change)

Visual Studio Enterprise

Subscription ID

f10f0a40-d700-484f-b176-b7eb2df935db

Pricing tier

---

Search to filter items...

X

NAME	TYPE	STATUS	LOCATION
No Queues or Topics found.			

Create queue

outputservicebus

\*

Name

sbqueue

✓

Max size

1 MB

▼

Message time to live (default)

14

✓

days

▼

Lock duration

30

seconds

▼

☐ Move expired messages to the dead-letter subqueue

☐ Enable duplicate detection

☐ Enable sessions

☐ Enable partitioning

Create

Copy and Paste Connection String of Service Bus in Notepad

outputservicebus - Shared access policies

Service Bus

Search (Ctrl+/)

Overview

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Shared access policies

Scale

Properties

Locks

Automation script

+ Add

Search to filter items...

POLICY

RootManageSharedAccessKey

SAS Policy: RootManageSharedAccessKey

Save Discard Delete More

☒ Manage

☒ Send

☒ Listen

Primary Key

wxZUCia0Pw4n7R00ko3mfZ5qkYRmF4m1CkjunV ...

Secondary Key

CXEhQu0NFnr1N98sPfFMVK7+PkUPo6y/PYdcss ...

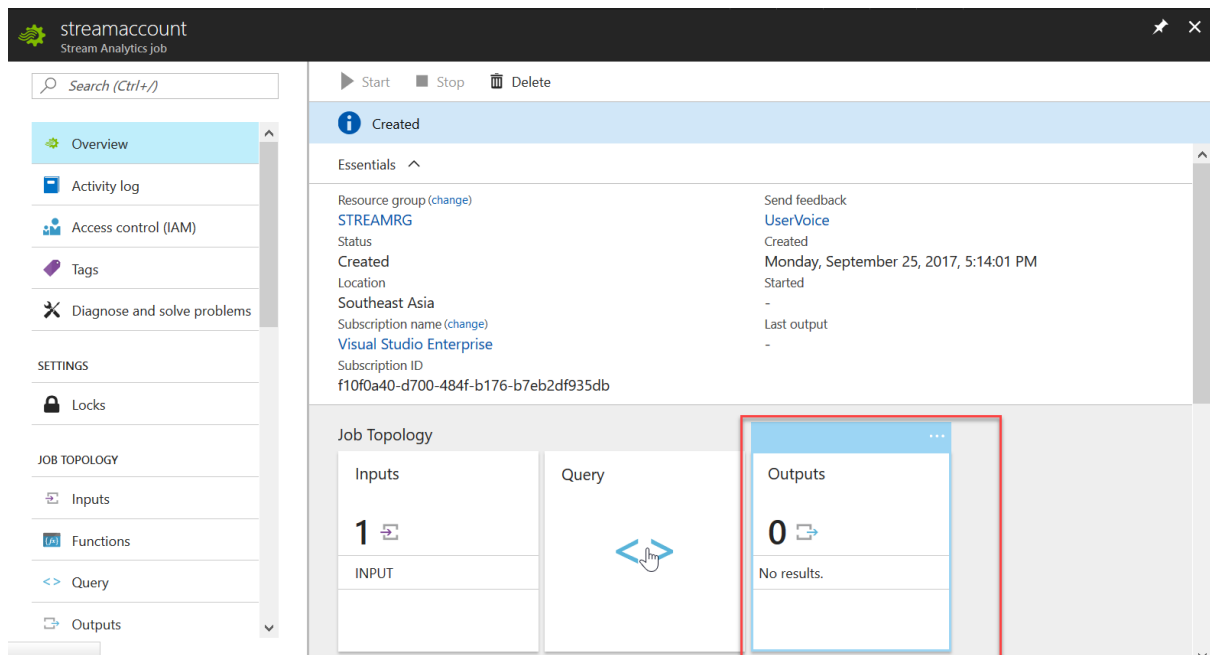
Primary Connection String

Endpoint=sb://outputservicebus.servicebus.wind ...

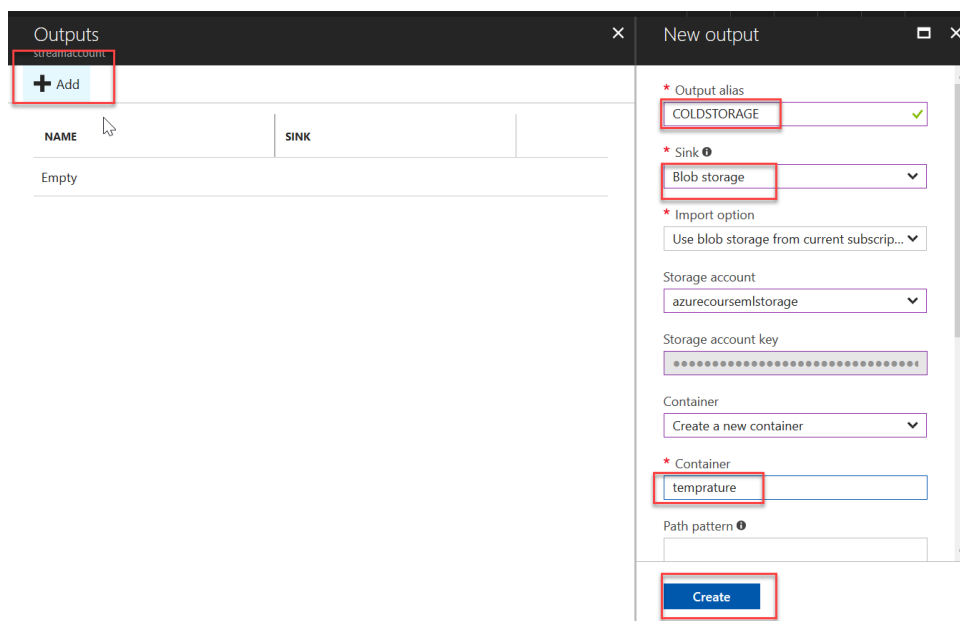
Secondary Connection String

Endpoint=sb://outputservicebus.servicebus.wind ...

Now Add Output of Stream Analytics 1. Storage and 2. Service Bus Queue two Output one for cold storage another for hot storage.



Add Cold Storage as a Azure Storage



Now Add Hot Storage as a Service Bus

Outputs

streamaccount

+ Add

NAME	SINK
COLDSTORAGE	Blob storage

New output

\* Output alias

HOTSTORAGE

\* Sink

Service bus Queue

\* Import option

Use queue from current subscription

Service bus namespace

outputservicebus

Queue name

sbqueue

Queue policy name

RootManageSharedAccessKey

\* Event serialization format

JSON

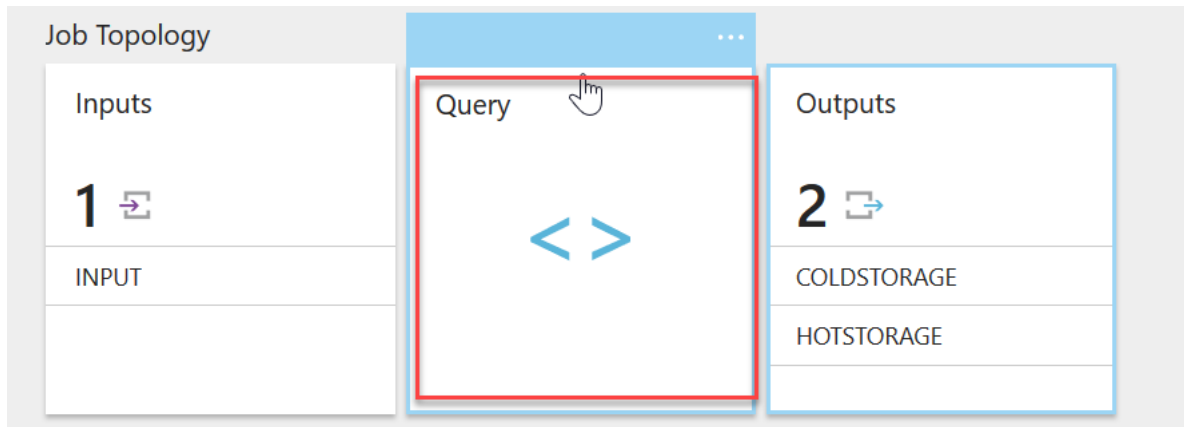
Encoding

UTF-8

Create

Outputs		
streamaccount		
+ Add		
NAME	SINK	
COLDSTORAGE	Blob storage	...
HOTSTORAGE	Service bus Queue	...

Now add Query in Stream Analytics



Type Query

SELECT

\*

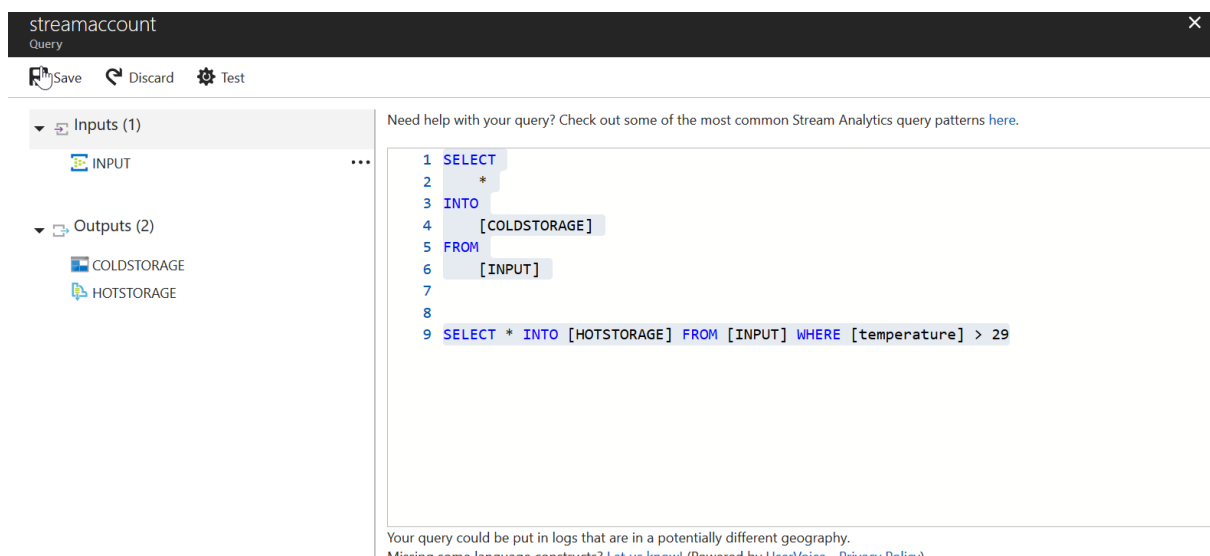
INTO

[COLDSTORAGE]

FROM

[INPUT]

SELECT \* INTO [HOTSTORAGE] FROM [INPUT] WHERE [temperature] > 29



All Temperature Data will go to Azure Storage but Temperature > 29 data will go to Service Bus Queue.

Click on SAVE

Now Create Visual Studio Console Application for Service Bus Queue to read Service Bus Hot Temperature Data.

In VS 2015 -> File -> New Project -> Console Application

Add Below Code and replace your service bus connection string

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

using Microsoft.ServiceBus.Messaging;

namespace ServiceBusRECEIVER
{
    class Program
    {
```

```

        static string ConnectionString =
"Endpoint=sb://outputservicebus1.servicebus.windows.net/;SharedAccessKeyName=RootManag
eSharedAccessKey;SharedAccessKey=HFxNhHapH6Or819wFW4iP0bJ7AmEeiYJ4jneqJCaTxY=";
        static string QueuePath = "sbqueue";

        static void Main(string[] args)
        {
            //Service Bus Queue Receiver
            var queueClient = QueueClient.CreateFromConnectionString(ConnectionString,
QueuePath);

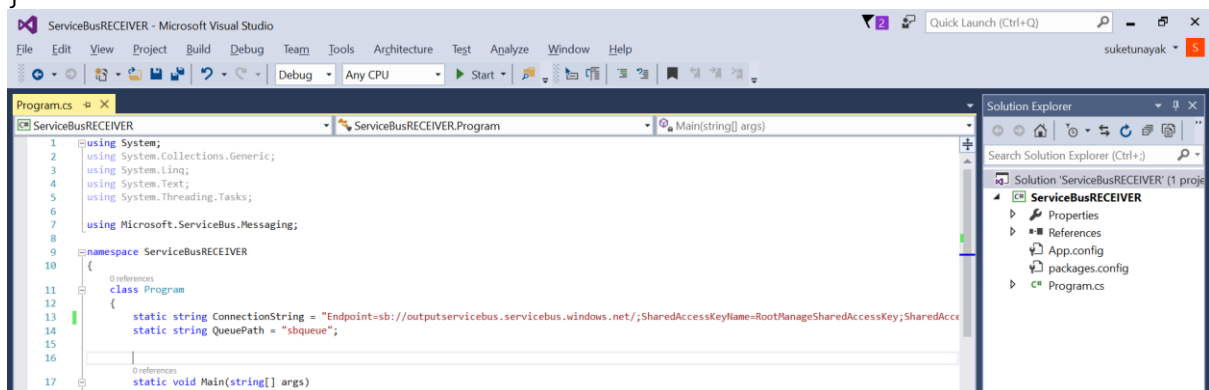
            queueClient.OnMessage(msg => ProcessMessage(msg));

            Console.WriteLine("Press Enter to Exit...");
            Console.ReadLine();

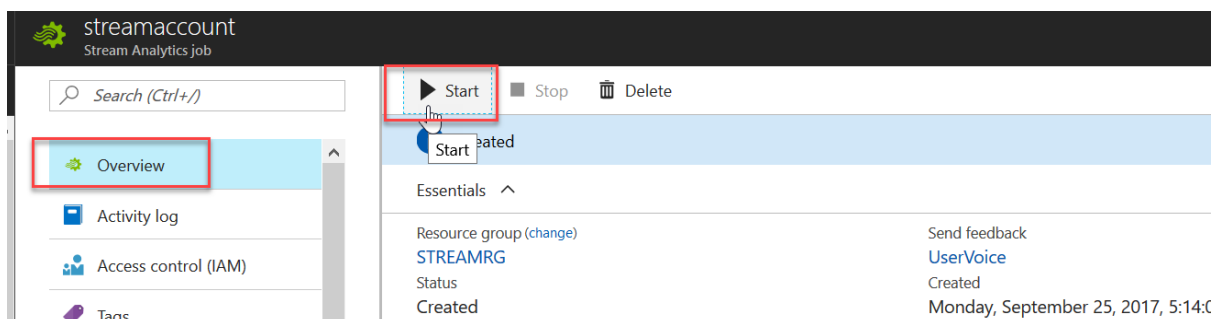
            queueClient.Close();
        }

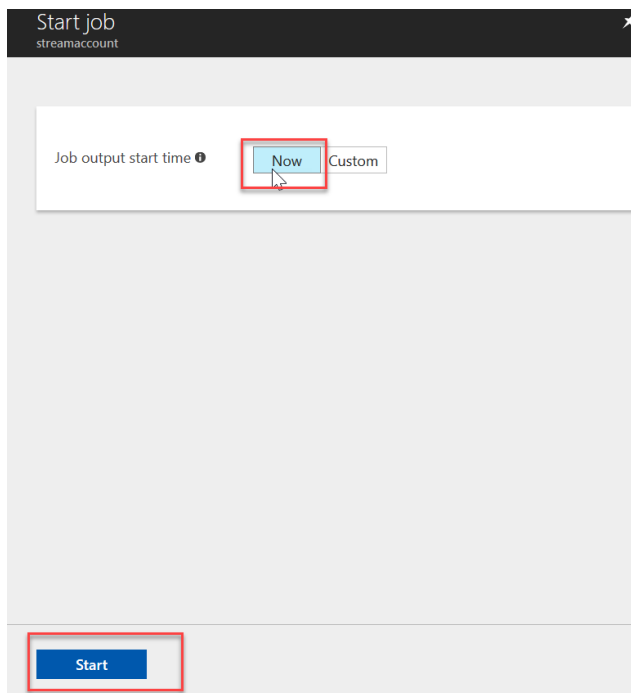
        private static void ProcessMessage(BrokeredMessage msg)
        {
            var text = msg.GetBody<string>();
            Console.WriteLine("\nReceived Messages : " + text);
        }
    }
}

```



Now Click Start Button of Stream Analytics Service in Portal





Now Start Event Hub Console App to produce Temperature Data and it will keep sending that data to stream analytics and stream analytics will keep store data in storage blob and Temperature value > 29 data will be stored in Service Bus Queue. And also start service bus console application to read that Hot Temperature values.

