



BUSINESS
ANALYTICS
Master of Science



Data Management and Business Intelligence

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09/01/2024

In this assignment, we will do a comprehensive exploration of Azure Stream Analytics, an advanced cloud-based platform designed for real-time data stream processing. Our objective is to utilize this technology to analyze a continuous flow of ATM transaction data. This task involves setting up and configuring various Azure services, including Event Hub for event ingestion, Blob Storage for data output, and Stream Analytics for real-time data processing. The core of our project lies in executing a series of complex queries on the streaming data to extract meaningful insights. These queries are designed to demonstrate the power and flexibility of Azure Stream Analytics in handling real-time data from various sources. We will integrate and analyze different data sets, including transactional data from ATMs, geographical information, and customer demographics. The ultimate goal is to showcase our proficiency in modern data management and business intelligence tools by effectively setting up the necessary environment, executing the queries, and interpreting the results. This assignment will be documented thoroughly through a series of screenshots, capturing each step of the process from account setup to query execution, thus providing a detailed roadmap of our journey through the intricacies of Azure Stream Analytics.

The screenshot displays the Microsoft Azure portal interface for creating a new Event Hubs namespace. The top navigation bar shows the Microsoft Azure logo and a search bar. The breadcrumb trail indicates the user is in the 'Event Hubs' section. The main heading is 'Create Namespace' with a subheading 'Event Hubs'. Below this, there are tabs for 'Basics', 'Advanced', 'Networking', 'Tags', and 'Review + create'. The 'Basics' tab is selected, and the 'Project Details' section is active. This section prompts the user to select a subscription and resource group. The 'Subscription' dropdown is set to 'Azure for Students', and the 'Resource group' dropdown is set to '(New) evtsgr1997'. Below these, there is a 'Create new' link. The 'Instance Details' section follows, prompting the user to enter required settings for the namespace, including a price tier and configuring the number of units (capacity). The 'Namespace name' field is filled with 'myevtdemonmsp1997', and the 'Location' dropdown is set to 'West Europe'. A note indicates that the selected region supports Availability zones. The 'Pricing tier' dropdown is empty, and a link 'Browse the available plans and their features' is provided. The 'Throughput Units' field is set to 1. At the bottom, there are three buttons: 'Review + create', '< Previous', and 'Next: Advanced >'. The 'Review + create' button is highlighted in blue.

Microsoft Azure

Search resources, services, and docs (Ctrl)

en.rafi@azab.gr
ALB 00 000000 00000000

Home > Event Hubs >

Create Namespace

Event Hubs

Basics

Advanced

Networking

Tags

Review + create

Project Details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Azure for Students

Resource group *

(New) extesgr1997

Create new

Instance Details

Enter required settings for this namespace, including a price tier and configuring the number of units (capacity).

Namespace name *

myevdemonsp1997

.servicebus.windows.net

Location *

West Europe

The region selected supports Availability zones. Your namespace will have Availability Zones enabled. [Learn more.](#)

Pricing tier *

Standard (~\$22 USD per Tu per Month)

Browse the available plans and their features

Throughput Units *

1

Enable Auto-Inflate

Review + create

< Previous

Next: Advanced >

Microsoft Azure

Search resources, services, and docs (Ctrl-F)

etc.ralf@azabp.gr
AZURE LAB (AMERICA) CHAMBERLAIN

Home > Event Hubs >

Create Namespace

Event Hubs

Basics

Advanced

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Tags

Review + create

Security

Minimum TLS version

Version 1.2

Increasing the minimum TLS version will prevent connections using a lower TLS version from connecting to this namespace. [Learn more](#)

Local Authentication

Enabled

Disabled

Review + create

< Previous

Next: Networking >

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AZURE LAB (AMERICA) CHAMBERLAIN

Home > Event Hubs >

Create Namespace

Event Hubs

Basics

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Review + create

Validation succeeded.

Event Hubs Namespace by Microsoft

Basics

Namespace name

myevtdemonmsp1997

Subscription

Azure for Students

Resource group

evtsgr1997

Location

West Europe

Pricing tier

Standard

Throughput Units

1

Availability Zones (Zone Redundancy)

Enabled

Auto-inflate Maximum Throughput Units

Disabled

Networking

Connectivity method

Public access

Security

Minimum TLS version

1.2

Local Authentication

Enabled

Create

< Previous

Next >

Microsoft Azure

Search resources, services, and docs (Ctrl-F)

etc.ralf@azabp.gr
AZURE LAB (AMERICA) CHAMBERLAIN

Home >

myevtdemonmsp1997 | Overview

Deployment

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Cancel

Redeploy

Download

Refresh

Overview

Inputs

Outputs

Template

Deployment is in progress

Deployment name : myevtdemonmsp1997

Subscription : Azure for Students

Resource group : evtsgr1997

Start time : 12/22/2023, 5:50:10 PM

Correlation ID : a9b0d606-c70a-412b-a966-986e0f338f4

Deployment details

Resource	Type	Status	Operation details
myevtdemonmsp1997	Event Hubs Namespace	OK	Operation details

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Microsoft Azure

Search resources, services, and docs (G+)

Home > myevtdemonmsp1997 | Overview

Deployment

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Template

✓ Your deployment is complete

Deployment name : myevtdemonmsp1997

Subscription : Azure for Students

Resource group : evksgp1997

Start time : 12/22/2023, 5:50:10 PM

Correlation ID : a2b0d806-c73a-4128-8db6-986e0f338f4

Deployment details

Next steps

Go to resource

Cost management

Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

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Search resources, services, and docs (G+)

Home > myevtdemonmsp1997 | Overview

myevtdemonmsp1997

Event Hubs Namespace

Search

+ Event Hub

Delete

Refresh

Give feedback

You can start generating test data with the new Azure Event Hubs Data Generator. Click on this message to try the feature!

Essentials

Resource group (most) : evksgp1997

Status : Active

Location : West Europe

Subscription (most) : Azure for Students

Subscription ID : 4ae70b05-7971-4ca5-be2f-56ca15fb3taf

Host name : myevtdemonmsp1997.servicebus.windows.net

Created : Friday, December 22, 2023 at 17:50:17 GMT+2

Updated : Friday, December 22, 2023 at 17:51:07 GMT+2

Zone Redundancy : Enabled

Pricing tier : Standard

Throughput Units : 1 unit

Auto-inflate throughput ... : Disabled

Local Authentication : Enabled

Tags (edit) : Add tags

NAMESPACE CONTENTS

0 EVENT HUBS

DATA SURVEILLANCE

ENABLED

ZONE REDUNDANCY

ENABLED

Show data for the last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

Requests

Messages

Throughput

1/2 ✓

1

0

0

0

0

0

0s

0s

0s

Microsoft Azure

Search resources, services, and docs (G+)

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997 | Event Hubs >

Create Event Hub

Event Hubs

Basics

Capture

Review + create

Event Hub Details

Enter required settings for this event hub, including partition count and message retention.

Name * : demoeventhub1997

Partition count : 1

Retention

Configure retention settings for this Event Hub. Learn more

Cleanup policy : Delete

Retention time (hrs) : 1

min: 1 hour, max: 168 hours (7 days)

Review + create

Previous

Next: Capture >

Microsoft Azure

Search resources, services, and docs (5+)

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ALLES GR (AUEB)GZ ONAMCTOZO

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997 | Event Hubs >

Create Event Hub ...

Event Hubs

Basics

Capture

Review + create

Event Hub Details

Enter required settings for this event hub, including partition count and message retention.

Name *

demoeventhubassignment1997

✓

Partition count

1

Retention

Configure retention settings for this Event Hub. [Learn more](#)

Cleanup policy

Delete

▼

Retention time (hrs) *

1

min. 1 hour, max. 168 hours (7days)

Review + create

< Previous

Next: Capture >

Microsoft Azure

Search resources, services, and docs (5+)

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ALLES GR (AUEB)GZ ONAMCTOZO

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997 | Event Hubs >

Create Event Hub ...

Event Hubs

✓ Validation succeeded.

Basics

Capture

Review + create

Event Hubs instance by Microsoft

Basics

Name

demoeventhubassignment1997

Partition count

1

Retention

Cleanup policy

Delete

Retention time (hrs)

1

Capture

Capture Status

Off

Create

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Next >

Microsoft Azure

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997

myevtdemonmsp1997 | Event Hubs

Event Hubs Namespace

Search

+ Event Hub Refresh Give feedback

Search to filter items by name...

Name	Status	Message retention	Partition count
demoeventhubassignment1997	Active	1 hour	1

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Generate data (preview)

Events

Settings

Shared access policies

Scale

Geo-Recovery

Networking

Encryption

Identity

Configuration

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Locks

Entities

Event Hubs

Schema Registry

Monitoring

Alerts

Metrics

Microsoft Azure

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997

myevtdemonmsp1997 | Shared access policies

Event Hubs Namespace

Search

+ Add

Search to filter items...

Policy	Claims
RootManageSharedAccessKey	Manage, Send, Listen

Add SAS Policy

Event Hubs

Policy name *

sendpolicy997

☐ Manage

☒ Send

☐ Listen

Create

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Diagnostic settings

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myevtdemonmsp1997 | Shared access policies

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Diagnose and solve problems

Search to filter items...

Policy

RootManageSharedAccessKey

sendpic1997

Claims

Manage, Send, Listen

Send

Creating SAS Policy: sendpic1997

Successfully created SAS policy "sendpic1997".

Microsoft Azure

Home > myevtdemonmsp1997 | Overview > myevtdemonmsp1997

myevtdemonmsp1997 | Shared access policies

Search

Overview

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Diagnose and solve problems

Search to filter items...

Policy

RootManageSharedAccessKey

sendpic1997

Claims

Manage, Send, Listen

Send

SAS Policy: sendpic1997

Save

Delete

Regenerate Primary Key

Manage

Send

Listen

Primary key

Secondary key

Connection string-primary key

Connection string-secondary key

SAS Policy ARM ID

Send Data

Send: { "ATMCode": 18, "CardNumber": 604513436397576, "Type": 0, "Amount": 49 }

Name	Status	Type	Initiator	Size	Time	Waterfall
messages	201	xhr	Generator.html	291 B	118 ms	
messages	200	preflight	Preflight	0 B	61 ms	
messages	201	xhr	Generator.html	291 B	96 ms	
messages	200	preflight	Preflight	0 B	64 ms	
messages	201	xhr	Generator.html	291 B	87 ms	
messages	200	preflight	Preflight	0 B	61 ms	
messages	201	xhr	Generator.html	291 B	95 ms	
messages	200	preflight	Preflight	0 B	61 ms	
messages	201	xhr	Generator.html	291 B	85 ms	
messages	200	preflight	Preflight	0 B	62 ms	
messages	201	xhr	Generator.html	291 B	78 ms	
messages	200	preflight	Preflight	0 B	61 ms	
messages	201	xhr	Generator.html	291 B	84 ms	
messages	200	preflight	Preflight	0 B	64 ms	
messages	201	xhr	Generator.html	291 B	80 ms	

Microsoft Azure

Search resources, services, and docs (5+)

Home > myevtdemonmsp1997 > Overview > myevtdemonmsp1997

myevtdemonmsp1997 | Shared access policies

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Search to filter items...

Policy	Claims
RootManageSharedAccessKey	Manage, Send, Listen
sendpic1997	Send
reepic1997	Listen

Microsoft Azure

Search resources, services, and docs (5+)

Home > Stream Analytics jobs >

New Stream Analytics job

Basics

Storage

Tags

Review + create

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Azure for Students

Resource group *

evtesgr1997

Create new

Instance details

Name *

myevtdemonmsp1997

Region *

(Europe) West Europe

Hosting environment *

Cloud

Edge

Streaming unit details

Streaming units (SU) represents the computing resources that are allocated to execute a Stream Analytics job. The higher the number of SUs, the more CPU and memory resources are allocated for your job. The number of SUs can be modified once you create the job. You will be charged for the job's Streaming Units only when the job runs. [Learn more about streaming units](#)

All new Stream Analytics jobs created through the portal use Standard V2 pricing. Visit [Stream Analytics's pricing page](#) to learn more.

For more options, visit [here](#)

Streaming units *

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Microsoft Azure

Search resources, services, and docs (G+)

Home > Stream Analytics jobs >

New Stream Analytics job

✕

BasicsStorageTagsReview + create

[View automation template](#)

Basics

Subscription

Resource group

Name

Location

Hosting environment

Streaming units

Azure for Students

evtegr1997

myevtdemonisp1997

West Europe

Cloud

3

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Microsoft Azure

Search resources, services, and docs (G+)

Home >

StreamAnalyticsJob | Overview

✕

Deployment

Search

DeleteCancelRedeployDownloadRefresh

Overview

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Template

Deployment is in progress

Deployment name : StreamAnalyticsJob

Subscription : Azure for Students

Resource group : evtegr1997

Start time : 12/22/2023, 8:06:01 PM

Correlation ID : 3b49d5f0-64e8-4135-948e-623a757e5168

Deployment details

Resource	Type	Status	Operation details
There are no resources to display.			

Give feedback

Tell us about your experience with deployment

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StreamAnalyticsJob | Overview

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Deployment

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Your deployment is complete

Deployment name : StreamAnalyticsJob

Subscription : Azure for Students

Resource group : evtegr1997

Start time : 12/22/2023, 8:06:01 PM

Correlation ID : 3b49d5f0-64e8-4135-948e-623a757e5168

Deployment details

Next steps

Go to resource

Give feedback

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Microsoft Azure

Home > StreamAnalyticsJob | Overview

myevtdemonmsp1997

Stream Analytics job

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Event ordering

Networking (preview)

Error policy

Compatibility level

Managed identity

Created

Resource group (move) : [eastus1997](#)

Location : West Europe

Status : Created

Subscription (move) : [Azure for Students](#)

Subscription ID : 4ae70b05-7971-4ca5-b2f1-56ca15fb3ba1

Pricing plan : StandardV2 (manage)

Tags (edit) :

Created : Friday, December 22, 2023 8:06 PM

Started :

Output watermark :

Cluster : Shared

Hosting environment : Cloud

Virtual network : Disabled

Get started Properties Monitoring Tutorials

Which best describes your needs?

I want to build my job using a query

Query editor

Build your job using Azure Stream Analytics Query Language to transform or analyze your real-time data.

Get started

I want to build my job without code

No-code editor

Use Azure Stream Analytics no-code editor to build your job without a single line of code.

Get started

Microsoft Azure

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myevtdemonmsp1997 | Inputs

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Properties

Locks

Alias 1

Source type

Type

Authentication mode

Event Hub

New input

Input alias *

streaming1997

Provide Event Hub settings manually

Select Event Hub from your subscriptions

Subscription

Azure for Students

Event Hub namespace *

myevtdemonmsp1997

Event Hub name *

Create new Use existing

demoeventhubassignment1997

Event Hub consumer group *

Create new Use existing

streamanalytics1997_streaming1997_ccv

Authentication mode

Connection string

Event Hub policy name *

Create new Use existing

myevtdemonmsp1997_streaming1997

Event Hub policy key

Partition key

Event serialization format *

Save

Microsoft Azure

Home > myevtdemonmsp1997

myevtdemonmsp1997 | Inputs

Stream Analytics job

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Schema registry (preview)

Properties

Locks

Alias 1

Source type

Type

Auth

Event Hub

enabling Managed identity for job

The job now has a system assigned identity to use for authorization with resources

Subscription

Azure for Students

Event Hub namespace *

myevtdemonmsp1997

Event Hub name *

Create new Use existing

demoeventhubassignment1997

Event Hub consumer group *

Create new Use existing

streamanalytics1997_streaming1997_consumer_group

Authentication mode

Create system assigned managed identity

The Azure Event Hubs Data Receiver role will be granted to the Managed identity for this Stream Analytics job when you click Save. If grant fails, follow the manual grant steps here.

Partition key

Event serialization format *

JSON

Encoding

UTF-8

Event compression type

None

Schema registry (preview)

None

Saving...

Microsoft Azure

Search resources, services, and docs (G+)

Home > myevtdemonmsp1997

myevtdemonmsp1997 | Inputs

Stream Analytics job

Search

+ Add input

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No-code editor (preview)

Alias 1	Source type	Type	Authentication mode	Resource
streaminput1997	Stream	Event Hub	Managed identity	myevtdemonmsp1997

Microsoft Azure

Search resources, services, and docs (G+)

Home > Storage accounts >

Create a storage account

Basics Advanced Networking Data protection Encryption Tags Review

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription *

Azure for Students

Resource group *

evtesgr1997

Create new

Instance details

Storage account name ⓘ *

evtdemstorageaccount1997

Region ⓘ *

(Europe) West Europe

Deploy to an edge zone

Performance ⓘ *

☒ Standard: Recommended for most scenarios (general-purpose v2 account)

☐ Premium: Recommended for scenarios that require low latency.

Redundancy ⓘ *

Geo-redundant storage (GRS)

☒ Make read access to data available in the event of regional unavailability.

Review

< Previous

Next : Advanced >

Give feedback

Home > Storage accounts >

Create a storage account

×

- Basics
- Advanced
- Networking
- Data protection
- Encryption
- Tags
- Review

Basics

Subscription	Azure for Students
Resource Group	evtesgr1997
Location	westeurope
Storage account name	evtdemstorageaccount1997
Deployment model	Resource manager
Performance	Standard
Replication	Read-access geo-redundant storage (RA-GRS)

Advanced

Enable hierarchical namespace	Disabled
Enable network file system v3	Disabled
Allow cross-tenant replication	Disabled
Access tier	Hot
Enable SFTP	Disabled
Large file shares	Disabled

Networking

Network connectivity	Public endpoint (all networks)
Default routing tier	Microsoft network routing
Endpoint type	Standard

Security

Secure transfer	Enabled
-----------------	---------

Create a storage account

×

- Basics
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Security

Secure transfer	Enabled
Allow storage account key access	Enabled
Default to Microsoft Entra authorization in the Azure portal	Disabled
Blob anonymous access	Enabled
Minimum TLS version	Version 1.2
Permitted scope for copy operations (preview)	From any storage account

Data protection

Point-in-time restore	Disabled
Blob soft delete	Enabled
Blob retainment period in days	7
Container soft delete	Enabled
Container retainment period in days	7
File share soft delete	Enabled
File share retainment period in days	7
Versioning	Disabled
Blob change feed	Disabled
Version-level immutability support	Disabled

Encryption

Encryption type	Microsoft-managed keys (MMK)
-----------------	------------------------------

Microsoft Azure

Search resources, services, and docs (G+/I)

...

Home > Storage accounts >

Create a storage account ...

BasicsAdvancedNetworkingData protectionEncryptionTagsReview

the Azure portal

Blob anonymous access	Enabled
Minimum TLS version	Version 1.2
Permitted scope for copy operations (preview)	From any storage account

Data protection

Point-in-time restore	Disabled
Blob soft delete	Enabled
Blob retainment period in days	7
Container soft delete	Enabled
Container retainment period in days	7
File share soft delete	Enabled
File share retainment period in days	7
Versioning	Disabled
Blob change feed	Disabled
Version-level immutability support	Disabled

Encryption

Encryption type	Microsoft-managed keys (MMK)
Enable support for customer-managed keys	Blobs and files only
Enable infrastructure encryption	Disabled

Create< PreviousNext >Download a template for automationGive feedback

8:31 μ22/12/20

Home >

evtdemstorageaccount1997_1703269915404 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview

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Your deployment is complete

Deployment name: evtdemstorageaccount1997... Start time: 12/22/2023, 8:32:01 PM
Subscription: Azure for Students Correlation ID: b3c3d6ce-27a3-4713-91f4-3643c5
Resource group: evtesgr1997

Deployment details

Next steps

Go to resource

Give feedback

Tell us about your experience with deployment



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Home > All resources > myevtdemonmsp1997

All resources

Filter for any field...

- evtdemstorageaccount1997
- myevtdemonmsp1997
- myevtdemonmsp1997

myevtdemonmsp1997 | Outputs

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Blob storage/ADLS Gen2

New output

Output alias * strgoutput1997

Provide Blob storage/ADLS Gen2 settings manually
Select Blob storage/ADLS Gen2 from your subscriptions

Subscription Azure for Students

Storage account * evtdemstorageaccount1997

Container *
Create new Use existing
No containers available

Authentication mode
Managed identity: System assigned
Managed identity authentication requires additional steps to work for Blob storage/ADLS Gen2. Learn more >

Event serialization format * JSON

Format Line separated

Encoding UTF-8

Write mode *
Once, when all results for the time partition are available. Ensures exactly once delivery (preview)
Append, as results arrive

Save

0b05-7971-4c...

A

ele.ralli@aueb.gr
AUEB.GR (AUEBGR.ONMICROSO...

Blob storage/ADLS Gen2

×

New output

Authentication mode

Managed Identity: System assigned

The Storage Blob Data Contributor role will be granted to the Managed Identity for this Stream Analytics job when you click Save. If grant fails follow the manual grant steps [here](#).

Event serialization format *

JSON

Format

Line separated

Encoding

UTF-8

Write mode *

☐ Once, when all results for the time partition are available.
Ensures exactly once delivery (preview)

☒ Append, as results arrive

Path pattern

Date format

YYYY/MM/DD

Time format

HH

Minimum rows

Maximum time

Hours

Minutes

Seconds

Save

Blob storage/ADLS Gen2

New output

Output alias *

strgoutput1997

- ☐ Provide Blob storage/ADLS Gen2 settings manually
- ☒ Select Blob storage/ADLS Gen2 from your subscriptions

Subscription

Azure for Students

Storage account *

evtdemstorageaccount1997

Container * ⓘ

- ☒ Create new ☐ Use existing

myoutpytcontainer1997

Authentication mode

Managed Identity: System assigned

The Storage Blob Data Contributor role will be granted to the Managed Identity for this Stream Analytics job when you click Save. If grant fails follow the manual grant steps [here](#).

Event serialization format * ⓘ

JSON

Format ⓘ

Line separated

Encoding ⓘ

UTF-8

Write mode * ⓘ

- ☐ Once, when all results for the time partition are available.
Ensures exactly once delivery (preview)
- ☒ Append, as results arrive

Save

Microsoft Azure

Search resources, services, and docs (G+ /)

ele.ralli@aub.gr
AUB.GR (AUB.GR.CNMACKROD...)

Home > All resources > myevtdemonmsp1997

myevtdemonmsp1997 | Outputs

Stream Analytics job

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+ Add output

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Alias 1

strgoutput1997

BL...

Man...

Notifications

More events in the activity log →

Dismiss all

Successful connection test

Connection to output 'strgoutput1997' succeeded.

a few seconds ago

Waiting for permissions to propagate

If testing connection fails please try again in a few minutes.

a minute ago

Added output

Added output 'strgoutput1997' to Stream Analytics job 'myevtdemonmsp1997'.

2 minutes ago

Deployment succeeded

Deployment 'evtdemstorageaccount1997_1703269915404' to resource group 'evtesgr1997' was successful.

Go to resource

Pin to dashboard

9 minutes ago

Successful connection test

Connection to input 'streaminp1997' succeeded.

20 minutes ago

Waiting for permissions to propagate

If testing connection fails please try again in a few minutes.

21 minutes ago

Waiting for identity to propagate

If granting permissions fails due to identity not found please try again in a few minutes.

21 minutes ago

Refresh

Microsoft Azure

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myevtdemonmsp1997

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evtesgr1997

Location

West Europe

Status

Running

Subscription (move)

Azure for Students

Subscription ID

4ae70b05-7971-4ca5-be2f-56ca15fb3baf

Pricing plan

StandardV2 (manage)

Created

Friday, December 22, 2023 8:06 PM

Started

Saturday, December 23, 2023 6:28 PM

Output watermark

Cluster

Shared

Hosting environment

Cloud

Virtual Network

Disabled

Tags (edit)

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Errors and warnings

No recent errors and warnings

Job diagram (preview)

Visualize job parallelism and gain insights into job performance

View all activity logs

View all the errors, warnings and operation logs.

Enable diagnostics

Turning on diagnostic settings to Log Analytics will allow you to easily troubleshoot any errors your job may encounter.

Key metrics

See all metrics

Show data for : Last 24 hours

Resource utilization

Events count

Notifications

More events in the activity log →

Dismiss all

Stream Analytics job started successfully

Started Stream Analytics job 'myevtdemonmsp1997' successfully.

a few seconds ago

Resource 'myevtdemonmsp1997' updated

Successfully updated configuration for 'myevtdemonmsp1997'.

2 minutes ago

Failed to start Stream Analytics job 'myevtdemonmsp1997'

Stream Analytics job 'myevtdemonmsp1997' is only able to use up to 10 Streaming Units based on the provided query. Please adjust the number of Streaming Units or check the number of input partitions and update your query and restart the job. [SessionID: e268d398cbeb4d988f8e1b546fca83d2]

7 minutes ago

Resource 'myevtdemonmsp1997' updated

Successfully updated configuration for 'myevtdemonmsp1997'.

8 minutes ago

Stream Analytics job stopped successfully

Stopped Stream Analytics job 'myevtdemonmsp1997' successfully.

8 minutes ago

Stream Analytics job started successfully

Started Stream Analytics job 'myevtdemonmsp1997' successfully.

10 minutes ago

Resource 'myevtdemonmsp1997' updated

Successfully updated configuration for 'myevtdemonmsp1997'.

15 minutes ago

Refresh

Microsoft Azure

Search resources, services, and docs (5+)

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myevtdemonmsp1997

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See all metrics

Show data for : Last 24 hours

Resource utilization

Events count

Notifications

More events in the activity log

Dismiss all

Stream Analytics job started successfully

Started Stream Analytics job 'myevtdemonmsp1997' successfully.

a few seconds ago

File Edit View Git Project Debug Test Analyze Tools Extensions Window Help

Search Solution

0.9312ec442...J16460.1.jon

```
{ "ATMCode": 15, "COUNT": 1 }
{ "ATMCode": 19, "COUNT": 2 }
{ "ATMCode": 18, "COUNT": 2 }
{ "ATMCode": 10, "COUNT": 1 }
{ "ATMCode": 21, "COUNT": 1 }
{ "ATMCode": 20, "COUNT": 1 }
{ "ATMCode": 17, "COUNT": 1 }
{ "ATMCode": 12, "COUNT": 1 }
{ "ATMCode": 15, "COUNT": 4 }
{ "ATMCode": 18, "COUNT": 1 }
{ "ATMCode": 19, "COUNT": 1 }
{ "ATMCode": 10, "COUNT": 1 }
{ "ATMCode": 21, "COUNT": 2 }
{ "ATMCode": 20, "COUNT": 1 }
{ "ATMCode": 15, "COUNT": 2 }
{ "ATMCode": 18, "COUNT": 1 }
{ "ATMCode": 10, "COUNT": 3 }
{ "ATMCode": 12, "COUNT": 2 }
{ "ATMCode": 20, "COUNT": 1 }
{ "ATMCode": 17, "COUNT": 1 }
{ "ATMCode": 15, "COUNT": 5 }
{ "ATMCode": 8, "COUNT": 1 }
{ "ATMCode": 19, "COUNT": 1 }
{ "ATMCode": 12, "COUNT": 1 }
{ "ATMCode": 20, "COUNT": 2 }
{ "ATMCode": 17, "COUNT": 1 }
{ "ATMCode": 13, "COUNT": 1 }
{ "ATMCode": 10, "COUNT": 1 }
{ "ATMCode": 10, "COUNT": 1 }
{ "ATMCode": 15, "COUNT": 5 }
{ "ATMCode": 19, "COUNT": 5 }
{ "ATMCode": 16, "COUNT": 1 }
{ "ATMCode": 12, "COUNT": 1 }
{ "ATMCode": 20, "COUNT": 1 }
{ "ATMCode": 17, "COUNT": 1 }
{ "ATMCode": 18, "COUNT": 1 }
{ "ATMCode": 10, "COUNT": 5 }
{ "ATMCode": 15, "COUNT": 4 }
{ "ATMCode": 19, "COUNT": 2 }
{ "ATMCode": 16, "COUNT": 1 }
```

Microsoft Azure

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All resources

myevtdemonmsp1997 | Query

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Test query

Save query

Discard changes

```
1 /*
2 Here are links to help you get started with Stream Analytics Query Language:
3 Common query patterns - https://go.microsoft.com/fwlink/?linkid=431913
4 Query language - https://docs.microsoft.com/stream-analytics-query/query-language-elements-azure-stream-analytics
5 */
6 SELECT
7   [ATMCode], COUNT([CardNumber])
8 INTO
9   [strgoutput1997]
10 FROM
11   [streaminput1997]
12 GROUP BY [ATMCode], TumblingWindow(second, 10)
```

Input preview

Test results

Job simulation (preview)

Showing sample events from 'streaminput1997'.

Table

Raw

Refresh

Select time range

Upload sample input

Download sample data

ATMCode	CardNumber	Type	Amount	EventProcessedUtcTime	PartitionId	EventTime
13	5610627137784218	0	38	"2024-01-01T15:31:56..."	0	"2024-01-01T15:31:56..."
15	2016346014354657	0	43	"2024-01-01T15:31:56..."	0	"2024-01-01T15:31:56..."
10	5446210381593272	0	44	"2024-01-01T15:31:56..."	0	"2024-01-01T15:31:56..."
21	50383945289330136	1	12	"2024-01-01T15:31:56..."	0	"2024-01-01T15:31:56..."
18	604513436397376	1	13	"2024-01-01T15:31:56..."	0	"2024-01-01T15:31:56..."

Microsoft Azure

Home > All resources > myevtdemonmsp1997

All resources

myevtdemonmsp1997 | Query

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1 /*
2 Here are links to help you get started with Stream Analytics Query Language:
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4 Query language - https://docs.microsoft.com/stream-analytics-query/query-language-elements-azure-stream-analytics
5 */
6 SELECT
7   [ATMCode], COUNT([CardNumber])
8 INTO
9   [strgoutput1997]
10 FROM
11   [streaminput1997]
12 GROUP BY [ATMCode], TumblingWindow(second, 10)
13
14 /*
15 SELECT SUM(Amount) AS TotalAmount
16 FROM streaminput1997
17 WHERE Type = 0 AND ATMCode = 21
18 GROUP BY HoppingWindow(minute, 10, 10)
19 */
20
21 SELECT SUM(Amount) AS TotalAmount
22 FROM streaminput1997
23 WHERE Type = 1 AND ATMCode = 21
24 GROUP BY TumblingWindow(hour, 1)
25
```

Input preview

Test results

Job simulation (preview)

Download results

TotalAmount
bigint
11

Microsoft Azure

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Start job

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Query language docs

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Tutorial

Job ready to start

Test query

Save query

Discard changes

```
10 FROM
11   [streaminput1997]
12 GROUP BY [ATMCode], TumblingWindow(second, 10)
13
14 /*
15 SELECT SUM(Amount) AS TotalAmount
16 FROM streaminput1997
17 WHERE Type = 0 AND ATMCode = 21
18 GROUP BY HoppingWindow(minute, 10, 10)
19 */
20
21 SELECT SUM(Amount) AS TotalAmount
22 FROM streaminput1997
23 WHERE Type = 1 AND ATMCode = 21
24 GROUP BY TumblingWindow(hour, 1)
25
```

Input preview

Test results

Job simulation (preview)

Download results

TotalAmount
bigint
39

```
File Edit View Git Project Debug Test Analyze Tools Extensions Window Help Search Solution1
strgoutput1997.json - X
[{"TotalAmount":39}, {"TotalAmount":39}]
```

```
File Edit View Git Project Debug Test Analyze Tools Extensions Window Help Search Solution1
strgoutput1997 (1).json - X
[{"ATMCode":21,"TotalAmount":39}, {"ATMCode":18,"TotalAmount":59}, {"ATMCode":15,"TotalAmount":153}, {"ATMCode":20,"TotalAmount":134}, {"ATMCode":9,"TotalAmount":45}, {"ATMCode":13,"TotalAmount":41}, {"ATMCode":10,"TotalAmount":138}, {"ATMCode":19,"TotalAmount":40}, {"ATMCode":12,"TotalAmount":39}, {"ATMCode":17,"TotalAmount":86}]
```

Microsoft Azure

Home > All resources > myevtdemonmsp1997

All resources

myevtdemonmsp1997 | Query

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Test query Save query Discard changes

```
20
21 SELECT SUM(amount) AS TotalAmount
22 FROM streamingt1997
23 WHERE Type = 1 AND ATMCode = 21
24 GROUP BY TumblingWindow(hour, 1)
25
26
27 SELECT SUM(amount) AS TotalAmount
28 FROM streamingt1997
29 WHERE Type = 1 AND ATMCode = 21
30 GROUP BY HoppingWindow(minute, 60, 30)
31 /
32 SELECT ATMCode, SUM(amount) AS TotalAmount
33 FROM streamingt1997
34 WHERE Type = 1
35 GROUP BY ATMCode, SlidingWindow(hour, 1)
```

Input preview Test results Job simulation (preview)

Download results

ATMCode	TotalAmount
9	45
13	41
10	138
19	40
12	39
17	86

Showing 0 rows from 'strgoutput1997'.

```
File Edit View Git Project Debug Test Analyze Tools Extensions Window Help Search Solution1
strgoutput1997 (2).json X
[{"AreaCode": null, "TotalAmount": 774}]
```

Microsoft Azure portal interface showing the configuration and query for a Stream Analytics job named **myevtdemonmsp1997**.

Left Panel: All resources

- Home > All resources > myevtdemonmsp1997
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- Tags
- Diagnose and solve problems
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- Outputs
- No-code editor (preview)
- Settings
- Environment
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- Scale
- Locale
- Event ordering
- Networking (preview)

Job Configuration:

- Inputs (1): atm, customer
- Outputs (1): strgoutput19
- Functions (0)

Query Editor:

```
34 WHERE Type = 1
35 GROUP BY ATHCode, SlidingWindow(hour, 1)
36
37 SELECT AreaCode, SUM(Amount) AS TotalAmount
38 FROM streamInpt1997
39 WHERE Type = 1
40 GROUP BY AreaCode, TumblingWindow(hour, 1)
41 */
42 SELECT
43     ATH.City,
44     Customer.Gender,
45     SUM(streamInpt1997.Amount) AS TotalAmount
46 FROM
47     streamInpt1997 TIMESTAMP BY streamInpt1997.EventEnqueuedUtcTime
48 JOIN
49     ATH
50 ON
51     streamInpt1997.ATHCode = ATH.atm_code
52 AND DATEDIFF(minute, streamInpt1997, ATH) BETWEEN 0 AND 5
53 JOIN
54     Customer
55 ON
56     streamInpt1997.CardNumber = Customer.card_number
57 AND DATEDIFF(minute, streamInpt1997, Customer) BETWEEN 0 AND 5
58 GROUP BY
59     ATH.City,
60     Customer.Gender, TumblingWindow(hour, 1)
61
```


Microsoft Azure portal interface showing the 'myevtdemonmsp1997' resource. The left sidebar lists resources: All resources, Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Job topology, Inputs, Functions, Query, Outputs, No-code editor (preview), Settings, and Environment. The main pane displays the 'Query' editor for the 'myevtdemonmsp1997' resource. The query is a T-SQL statement:

```
59 WITH Customer AS (
60     SELECT City,
61            Customer.Gender, TumblingWindow(hour, 1)
62     FROM streaminput1997
63 )
64 SELECT '1' AS Alert
65 FROM streaminput1997
66 WHERE Type = 1
67 GROUP BY CardNumber, SlidingWindow(hour, 1)
68 HAVING COUNT(*) > 1
69
70 SELECT '1' AS Alert
71 FROM streaminput1997
72 JOIN Customer
73 ON streaminput1997.CardNumber = Customer.card_number
74 AND DATEDIFF(minute, streaminput1997, Customer) BETWEEN 0 AND 10
75 WHERE streaminput1997.AreaCode <> Customer.AreaCode
76 GROUP BY SlidingWindow(minute, 60)
77
```

Microsoft Azure portal interface showing the 'myevtdemonmsp1997' resource. The left sidebar lists resources: All resources, Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Job topology, Inputs, Functions, Query, Outputs, No-code editor (preview), Settings, and Environment. The main pane displays the 'Query' editor for the 'myevtdemonmsp1997' resource. The query is a T-SQL statement:

```
59 WITH Customer AS (
60     SELECT City,
61            Customer.Gender, TumblingWindow(hour, 1)
62     FROM streaminput1997
63 )
64 SELECT '1' AS Alert
65 FROM streaminput1997
66 WHERE Type = 1
67 GROUP BY CardNumber, SlidingWindow(hour, 1)
68 HAVING COUNT(*) > 1
69
70 SELECT '1' AS Alert
71 FROM streaminput1997
72 JOIN Customer
73 ON streaminput1997.CardNumber = Customer.card_number
74 AND DATEDIFF(minute, streaminput1997, Customer) BETWEEN 0 AND 10
75 WHERE streaminput1997.AreaCode <> Customer.AreaCode
76 GROUP BY SlidingWindow(minute, 60)
77
```