

## Azure Event Hub

Azure Event Hubs is a big data streaming platform and event ingestion service provided by Microsoft Azure. It serves as a highly scalable data streaming platform capable of ingesting and processing millions of events per second. It's commonly used for real-time analytics, telemetry, IoT (Internet of Things) data ingestion, and event-driven architectures.

Key features of Azure Event Hubs include:

1. **Scalability:** Event Hubs can handle large volumes of data and scale dynamically based on demand.
2. **High Throughput:** It can handle millions of events per second, making it suitable for high-velocity data streams.
3. **Event Capture:** It allows you to capture and store data for real-time and batch processing.
4. **Partitioning:** Data is partitioned to enable parallel processing and load balancing across consumers.
5. **Integration:** It integrates seamlessly with other Azure services like Azure Functions, Azure Stream Analytics, and Azure Logic Apps, as well as third-party services.
6. **Security:** Event Hubs provides various security features, including encryption, access control, and network isolation.

## Use cases of Azure Event Hub:

Azure Event Hubs finds applications in various industries and scenarios where real-time data ingestion, processing, and analysis are essential. Here are some common use cases:

1. **IoT Data Ingestion:** IoT devices generate vast amounts of data, such as sensor readings, telemetry, and device status updates. Azure Event Hubs can efficiently ingest this streaming data for real-time monitoring, analysis, and decision-making in IoT applications.
2. **Real-time Analytics:** Businesses can use Event Hubs to ingest data from various sources, such as websites, mobile apps, and backend systems, for real-time analytics. This enables businesses to gain insights into customer behavior, operational performance, and market trends in real-time.
3. **Log and Event Streaming:** Event Hubs can be used to collect and analyze log data, such as server logs, application logs, and security logs, in real-time. This allows organizations to monitor system health, detect anomalies, and respond to incidents promptly.
4. **Clickstream Analysis:** Websites and mobile apps generate clickstream data, including user interactions, page views, and navigation paths. Azure Event Hubs can capture and analyze this data in real-time to understand user behavior, optimize user experience, and personalize content.
5. **Fraud Detection:** Financial institutions and e-commerce companies can use Event Hubs to ingest transaction data for real-time fraud detection and prevention. By

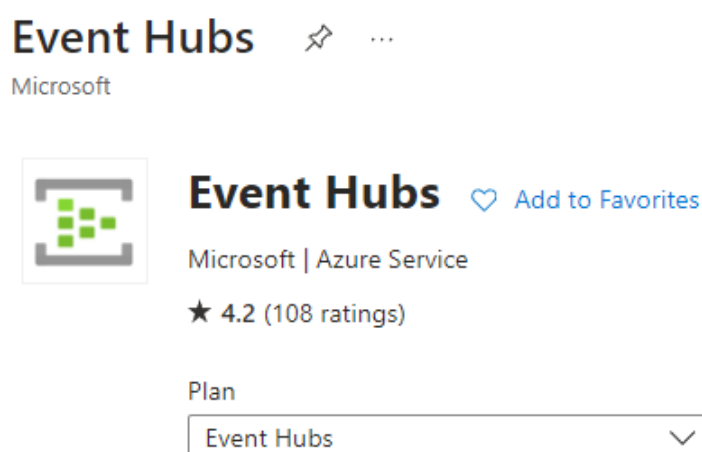
analyzing transaction patterns and anomalies in real-time, organizations can identify fraudulent activities and take immediate action to mitigate risks.

6. **Machine Learning Model Inference:** Event Hubs can be integrated with Azure Machine Learning to deploy and serve machine learning models in real-time. This allows organizations to make predictions and recommendations based on streaming data, such as customer preferences, product recommendations, and predictive maintenance.
7. **Supply Chain Monitoring:** In supply chain management, Event Hubs can be used to monitor and track the movement of goods and inventory in real-time. By integrating with IoT devices, RFID tags, and other sensors, organizations can optimize inventory management, minimize disruptions, and improve supply chain visibility.
8. **Social Media Analytics:** Event Hubs can ingest streaming data from social media platforms, such as Twitter, Facebook, and Instagram, for real-time social media monitoring and sentiment analysis. This enables organizations to track brand mentions, monitor customer feedback, and identify emerging trends in real time.

In this guide, we're setting up Azure Event Hubs within the Azure Portal and creating an Event Hub instance. The end goal is to establish a scalable and efficient platform for ingesting, processing, and analyzing streaming data in real-time. By configuring Event Hubs, we enable capabilities such as IoT data ingestion, real-time analytics, log and event streaming, and other use cases across various industries. Through this setup, we can seamlessly handle large volumes of data, ensure high throughput, and integrate with other Azure services for comprehensive data processing and analysis.

### 😊 To begin with the Lab:

1. Now we have our previous resources with us which are Azure SQL Database, Synapse Analytics, Storage account, Azure Data Factory.
2. In your Azure Portal search for event hubs and choose the service accordingly.



3. Now you are going to create an instance based on event hubs.

4. First you need to choose your resource group.
5. Then give a name to your namespace and choose basic for pricing tiers.

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 \*

Resource group \*  [Create new](#)

### Instance Details

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



Namespace name \*  .servicebus.windows.net

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






Pricing tier \*    
 [Browse the available plans and their features](#)

Throughput Units \*


6. Then move to the review page and create your namespace.
7. Once your deployment is complete then move to resources.


 **demonamespace120** | Overview  ...


Deployment


x <<  Delete  Cancel  Redeploy  Download  Refresh


**Overview**

 Inputs

 Outputs

 Template

 **Your deployment is complete**

 Deployment name : demonamespace120

Subscription : [Azure Pass - Sponsorship](#)

Resource group : [demo-grp](#)

Start time : 9/5/2024, 3:26:05 pm

Correlation ID : 6b245967-59c0-4278-afd5-a2765f54fa4f

> Deployment details

> Next steps

[Go to resource](#)

8. Now we have our namespace, from it we are going to create our event hub.
9. And through this event hub we are going to start sending our events.

**demonamespace120** Event Hubs Namespace

Search Event Hub Delete Refresh Give feedback

**Overview**

Activity log Access control (IAM) Tags Diagnose and solve problems Generate data (preview) Events

**Essentials**

Resource group (move) : [demo-grp](#)  
 Status : Active  
 Location : North Europe  
 Subscription (move) : [Azure Pass - Sponsorship](#)  
 Subscription ID : 3541d15a-44aa-4ffe-a120-1b7a6d5925bf  
 Host name : demonamespace120.servicebus.windows.net

Created : Thursday, 9 May, 2024 at 15:26:10 IST  
 Updated : Thursday, 9 May, 2024 at 15:26:39 IST  
 Zone Redundancy : Enabled  
 Pricing tier : [Basic](#)  
 Throughput Units : [1 unit](#)  
 Auto-inflate throughput ... : [Not Supported](#)  
 Local Authentication : [Enabled](#)

10. First, we need to give a name to it. Then choose 24 hours as your retention time.

## 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 \* ⓘ

Partition count ⓘ

**Retention**

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

Cleanup policy ⓘ

Retention time (hrs) \* ⓘ

min. 1 hour, max. 24 hours (1day)

11. Then just move to review page and create it.

12. Now from the left pane of your namespace expand entities and click on event hub so that you can see the details of your event hub.

Entities

Event Hubs

13. Now click on it to go to the overview of event hub.

+ Event Hub Refresh Give feedback

Search to filter items by name...

Name	Status	Message retention	Partition count
<a href="#">demohub</a>	Active	24 hours	2

- Overview
- Access control (IAM)
- Diagnose and solve problems
- Settings
- Entities
- Features
- Automation
- Help

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 (moyas) : demogro

Location : North Europe

Subscription (moyas) : Azure Pass - Sponsorship

Subscription ID : 3541d15a-44aa-4f5e-a120-1b7a6d5925bf

Partition count : 2

Status : Active

Namespace : demonamespace120

Created : Thursday, 9 May, 2024 at 15:29:40 IST

Updated : Thursday, 9 May, 2024 at 15:29:40 IST

Cleanup policy : Delete

JSON View

Capture events  
Use Capture to save your events to persistent storage.

Process data  
Process data instantly with Azure Stream Analytics.

Connect  
Authenticate with connection strings and SAS policies.

Checkpoint  
Create consumer groups to checkpoint your events.

Generate data (preview)  
Emit data to your event hub just with a few clicks.

Analyze data (preview)  
Ingest to Data Explorer for near real-time analysis.

Event Hub Contents

1 CONSUMER GROUP

Event Hub status

ACTIVE

Cleanup policy

DELETE

Partition count

2

Show data for the last:

1 hour

6 hours

12 hours

1 day

7 days

30 days