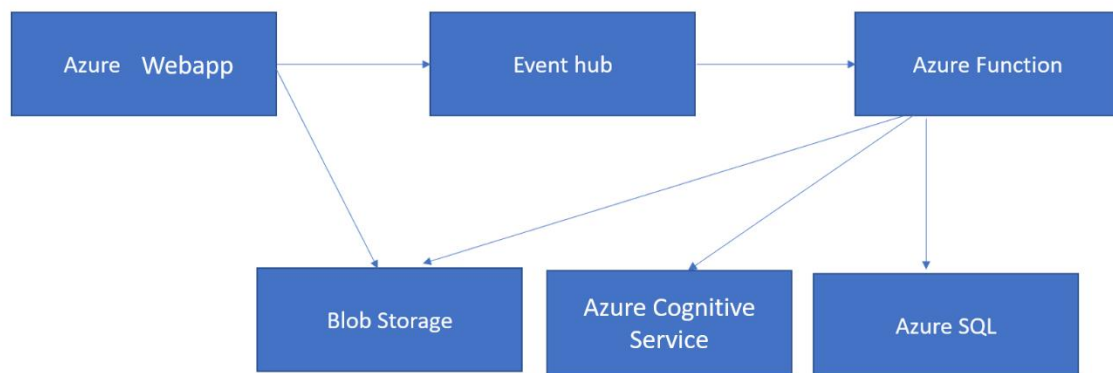


# Project description

A Webapp loads archived dataset with handwritten text from the object storage, unzips it and processes files one by one: the file itself it dumps to the object storage container and the name of the file sends to the Event Hub. Azure Function reads the Queue: it downloads the file from the Blob Container, predicts what is written on the image by sending a request to Azure Cognitive Service and writes down the name of the file and the prediction result to the SQL Database. Services used: 2 compute services: Webapp and Azure Function, 1 storage service: Blob Container, 1 database: Azure SQL, 1 event service: Event Hub and 1 ML Service – Azure Cognitive Service. This is depicted on the diagram:



Here is how the resource group looks like:

cloud\_platforms\_project Resource group

Search (Ctrl+/) << + Create Edit columns Delete resource group Refresh Export to CSV Open query Assign tags Move Delete ...

Overview

- Activity log
- Access control (IAM)
- Tags
- Resource visualizer
- Events

Settings

- Deployments
- Security
- Policies
- Properties
- Locks

Cost Management

- Cost analysis
- Cost alerts (preview)
- Budgets

Monitoring

- Insights (preview)

Essentials

Subscription (change): Visual Studio Enterprise Subscription Deployments: 13 Succeeded

Subscription ID: 8b78c8ae-34d6-41c2-9fa3-01f0be170105 Location: West Europe

Tags (change): Click here to add tags

Filter for any field... Type == all Location == all Add filter

Showing 1 to 11 of 11 records. Show hidden types No grouping List view

Name	Type	Location
ASP-cloudplatformsproject-9c05	App Service plan	West Europe
ASP-cloudplatformsproject-ac5f	App Service plan	Central US
images-event-hub	Event Hubs Namespace	West Europe
images-recognition-result-db (mysqlserver-cloud-images/images-recognition-result-...)	SQL database	West Europe
imagestoragecloud	Storage account	West Europe
mysqlserver-cloud-images	SQL server	West Europe
ocr-api-cloud-platforms	Computer vision	West Europe
storageaccountcloudabd2	Storage account	Central US
unzip-and-save-application	App Service	West Europe
writing-recognition-func	Function App	Central US
writing-recognition-func	Application Insights	Central US

Mapping between the diagram and resources:

- Azure Webapp: "unzip and save application"
- Event Hub: "images-event-hub"
- Azure Function: "writing-recognition-func"
- Blob storage: "imagesstoragecloud"
- Azure Cognitive Service: "ocr-api-cloud-platforms"
- Azure SQL: "images-recognition-result-db"

Images, that are unzipped by the [Webapp](#) are sent to Blob Storage:

Home > Resource groups > cloud\_platforms\_project > imagestoragecloud >

**images** Container

Search (Ctrl+F) Upload Change access level Refresh Delete Change tier Acquire lease Break lease View snapshots Create snapshot

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

Shared access tokens

Access policy

Properties

Metadata

Authentication method: Access key (Switch to Azure AD User Account)

Location: images

Search blobs by prefix (case-sensitive) Show deleted blobs

Add filter

Name	Modified	Access tier	Blob type	Size	Lease state
122530005-stay-yourself-handwritten-text-modern-calligraphy-inspirational-quote-isolated-...	8/31/2021, 9:10:25 PM	Hot (Inferred)	Block blob	66.55 KiB	Available
b9afd24d812a6d61769845416f139efcd6042914.jpeg	8/31/2021, 9:10:25 PM	Hot (Inferred)	Block blob	49.47 KiB	Available
don-t-look-back-you-re-not-going-way-handwritten-text-mo-modern-calligraphy-inspiratio...	8/31/2021, 9:10:26 PM	Hot (Inferred)	Block blob	93.02 KiB	Available
ElfrQ.png	8/31/2021, 9:10:26 PM	Hot (Inferred)	Block blob	32.75 KiB	Available
handwritten2.jpg	8/31/2021, 9:10:27 PM	Hot (Inferred)	Block blob	181.83 KiB	Available
handwritten3.jpg	8/31/2021, 9:10:27 PM	Hot (Inferred)	Block blob	202.74 KiB	Available
images_zipped.zip	8/30/2021, 4:40:29 PM	Hot (Inferred)	Block blob	687.29 KiB	Available
images.png	8/31/2021, 9:10:27 PM	Hot (Inferred)	Block blob	2.83 KiB	Available
img.jpg	8/31/2021, 9:10:27 PM	Hot (Inferred)	Block blob	64.84 KiB	Available
tumblr_owlh45hlU81rkm4r8o1_640.jpg	8/31/2021, 9:10:27 PM	Hot (Inferred)	Block blob	26.38 KiB	Available

And image names are sent to the Event Hub:

Microsoft Azure Search resources, services, and docs (G+)

Home > Resource groups > cloud\_platforms\_project >

**images-event-hub** Event Hubs Namespace

Search (Ctrl+F) Event Hub Delete Refresh

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Events

Settings

Shared access policies

Scale

Geo-Recovery

Encryption

Properties

Locks

Entities

Event Hubs

Monitoring

Alerts

Metrics

Diagnostic settings

Logs

Automation

Tasks (preview)

Export template

Support + troubleshooting

Resource health

Essentials

Resource group (change): cloud\_platforms\_project

Status: Active

Location: West Europe

Subscription (change): Visual Studio Enterprise Subscription

Subscription ID: 8b78c8ae-34d6-41c2-9fa3-01f0be170105

Host name: images-event-hub.servicebus.windows.net

Tags (change): Click here to add tags

Created: Monday, August 30, 2021, 20:30:53 GMT+3

Updated: Monday, August 30, 2021, 20:43:48 GMT+3

Zone Redundancy: Enabled

Pricing tier: Basic

Throughput Units: 1 unit

Auto-inflate throughput ...: Not Supported

NAMESPACE CONTENTS: 1 EVENT HUB

KAFKA SURFACE: NOT SUPPORTED

ZONE REDUNDANCY: ENABLED

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

Requests

Messages

Throughput

Incoming Requests (Sum) images-event-hub: 1.2k

Successful Requests (Sum) images-event-hub: 176

Server Errors (Sum) images-event-hub: 0

Incoming Messages (Sum) images-event-hub: 99

Outgoing Messages (Sum) images-event-hub: 900

Captured Messages (Sum) images-event-hub: 0

Incoming Bytes (Sum) images-event-hub: 8.24 kb

Outgoing Bytes (Sum) images-event-hub: 74.04 kb

Captured Bytes (Sum) images-event-hub: 0

Name: cloud-project-event-hub

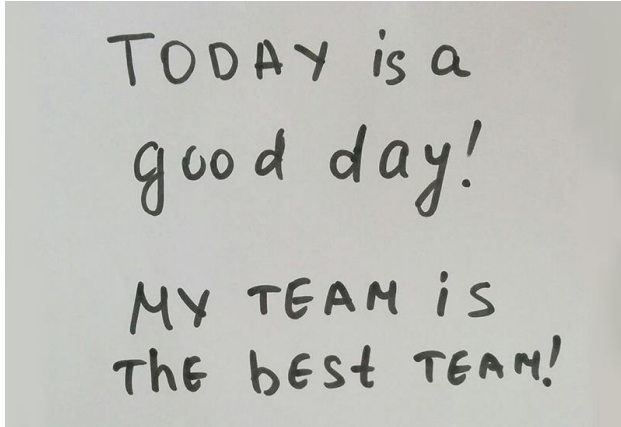
Status: Active

Message Retention: 1 day

Partition Count: 2

Then [Azure Function](#) reads the messages from the Event Hub, downloads the image from the Blob storage and sends a request to the Cognitive Service, which returns recognized text. Then the function sends the name of the file and recognized text to SQL Database:

Example image:



Query from the SQL database:

```
1 select * from [dbo].[recognition_results2]
```

Results Messages

don-t-look-back-you-re-not-going-way-handwritten-text-mo-modern-calligraphy-inspirati...	error
122530005-stay-yourself-handwritten-text-modern-calligraphy-inspirational-quote-isolated...	Q) 123RF Tay Q) 123RF BRF @123RF BRF
b9afd24d812a6d61769845416f139efcd6042914.jpeg	Because be doing
122530005-stay-yourself-handwritten-text-modern-calligraphy-inspirational-quote-isolated...	Q) 123RF Tay Q) 123RF BRF @123RF BRF
b9afd24d812a6d61769845416f139efcd6042914.jpeg	Because be doing
don-t-look-back-you-re-not-going-way-handwritten-text-mo-modern-calligraphy-inspirati...	error
ElfrQ.png	We Start With Good Because all businesses should be doing something good .
handwritten2.jpg	LAST Wednesday We had a good Team building
handwritten3.jpg	TODAY is a good day! MY TEAM is THE BEST TEAM!
images.png	do epic Shit
img.jpg	you
tumblr_owlh45hlUB1rkm4r8o1_640.jpg	Do what malees your soul shine InspirationalQuotesMagazine.com

Other image examples are [here](#).