



# EVIDENCES

ML Ops - IDS 594 (Final Project)

# Docker Image

The screenshot shows the Docker Desktop application window. The top bar is blue with the Docker logo and a search bar. The left sidebar is dark blue with icons for Containers, Images, Volumes, Builds, Dev Environments, and Docker Scout. The main content area is titled 'Images' and has tabs for 'Local' and 'Hub'. Below the tabs, there's a summary bar showing '0 Bytes / 0 Bytes in use' and '2 Images'. A search bar is present. Below that is a table of images:

<input type="checkbox"/>	Name	Tag	Status	Created	Size	Actions
<input type="checkbox"/>	<a href="#">aksflaskapp.azurecr.io/flask_a</a>	latest	Unused	18 hours ago	1.88 GB	<a href="#">▶</a> <a href="#">⋮</a> <a href="#">🗑️</a>
<input type="checkbox"/>	<a href="#">42d66078b67c</a>					
<input type="checkbox"/>	<a href="#">mlops_aks</a>	latest	Unused	18 hours ago	1.88 GB	<a href="#">▶</a> <a href="#">⋮</a> <a href="#">🗑️</a>
<input type="checkbox"/>	<a href="#">42d66078b67c</a>					

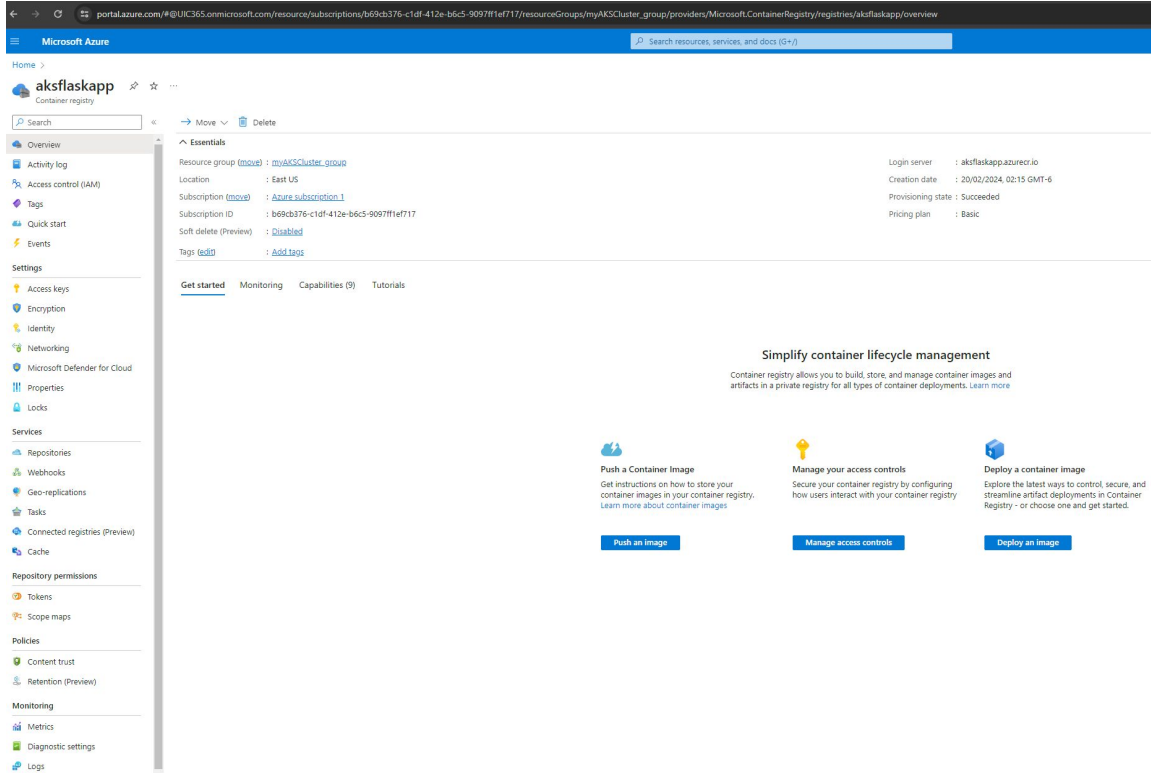
Showing 2 items

**Walkthroughs**

- How do I run a container?**  
1 FROM node  
2 RUN mkdir -p  
3 WORKDIR /app  
4 COPY package  
6 mins
- Run Docker Hub images**  
docker hub-image  
5 mins

At the bottom, there's a status bar showing 'Resource Saver mode', system resources (RAM 4.95 GB, CPU 0.12%), and the Docker version 'v4.27.2'.

# Azure Container Registry (Created ACR)



The screenshot displays the Azure Portal interface for a newly created Azure Container Registry (aksflaskapp). The left sidebar shows the navigation menu with categories like Overview, Settings, Services, Repository permissions, Policies, and Monitoring. The main content area is titled "aksflaskapp" and shows the "Overview" tab. The "Essentials" section provides key information about the registry, including its resource group, location, subscription, and creation date. The "Get started" section offers quick links to push a container image, manage access controls, and deploy a container image.

portal.azure.com/#@UIC365.onmicrosoft.com/resource/subscriptions/b69cb376-c1df-412e-b6c5-909711ef7117/resourceGroups/myAKSCluster\_group/providers/Microsoft.ContainerRegistry/registries/aksflaskapp/overview

Microsoft Azure

Home > aksflaskapp Container registry

Search resources, services, and docs (S+)

Overview

Activity log

Access control (IAM)

Tags

Quick start

Events

Settings

Access keys

Encryption

Identity

Networking

Microsoft Defender for Cloud

Properties

Locks

Services

Repositories

Webhooks

Geo-replications

Tasks

Connected registries (Preview)

Cache

Repository permissions

Tokens

Scope maps

Policies

Content trust

Retention (Preview)

Monitoring

Metrics

Diagnostic settings

Logs

Essentials

Resource group (move) : myAKSCluster\_group

Location : East US

Subscription (move) : Azure subscription 1

Subscription ID : b69cb376-c1df-412e-b6c5-909711ef7117

Soft delete (Preview) : Disabled

Tags (edit) : Add tags

Login server : aksflaskapp.azurecr.io

Creation date : 20/02/2024, 02:15 GMT-6

Provisioning state : Succeeded

Pricing plan : Basic

Get started Monitoring Capabilities (9) Tutorials

**Simplify container lifecycle management**

Container registry allows you to build, store, and manage container images and artifacts in a private registry for all types of container deployments. [Learn more](#)

**Push a Container Image**

Get instructions on how to store your container images in your container registry. [Learn more about container images](#)

**Manage your access controls**

Secure your container registry by configuring how users interact with your container registry

**Deploy a container image**

Explore the latest ways to control, secure, and streamline artifact deployments in Container Registry - or choose one and get started.

Push an image

Manage access controls

Deploy an image

# Azure Container Registry (Docker Image Pushed)

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo and a search bar. The main content area is titled 'aksflaskapp | Repositories' and shows the 'flask\_app' repository. A left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Quick start, Events, Settings, and Services. The 'Services' section is expanded, showing 'Repositories' as the selected option. The 'flask\_app' repository page displays a table of tags, with the 'latest' tag highlighted. A tooltip 'Copy to clipboard' is visible over the 'flask\_app' repository name.

**Microsoft Azure**

Home > aksflaskapp | Repositories

**aksflaskapp** | Repositories

Container registry

Search

Refresh

Overview

Activity log

Access control (IAM)

Tags

Quick start

Events

Settings

Access keys

Encryption

Identity

Networking

Microsoft Defender for Cloud

Properties

Locks

Services

Repositories

Webhooks

Geo-replications

Tasks

Connected registries (Preview)

Cache

**flask\_app**

Repository

Refresh Manage deleted artifacts Delete repository

Essentials

Copy to clipboard

Repository : flask\_app

Tag count : 1

Manifest count : 1

Last updated date : 20/02/2024, 02:59 GMT-6

Search to filter tags ...

Tags ↑↓	Digest ↑↓	Last modified
latest	sha256:6e362578579db7ebb6030e28387c065305a02a827c4620e595394ead0a901dea	20/02/2024, 02:59 GMT-6

# Azure Kubernetes Services (AKS Created)

The screenshot displays the Microsoft Azure portal interface for an Azure Kubernetes Service (AKS) cluster named "akskubes". The left-hand navigation pane includes sections for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Kubernetes resources (Namespaces, Workloads, Services and ingresses, Storage, Configuration, Custom resources, Events, Run command), Settings (Node pools, Cluster configuration, Networking, Extensions + applications, Backup, Open Service Mesh, GitOps, Automated deployments (preview), Policies, Properties), and a search bar.

The main content area is divided into two primary sections: Essentials and Properties.

**Essentials**

- Resource group: [myAKSCluster\\_group](#)
- Status: Succeeded (Running)
- Location: East US
- Subscription: [Azure subscription 1](#)
- Subscription ID: b69cb376-c1df-412e-b6c5-9097ffe7f717
- Tags (edit): [Add tags](#)
- Kubernetes version: [1.27.9](#)
- API server address: akskubes-dns-qcc15hqs.hcp.eastus.azmk8s.io
- Network type (plugin): [Kubenet](#)
- Node pools: [1 node pool](#)


**Properties**

The Properties section is further divided into several sub-sections:

- Kubernetes services**
  - Encryption type: Encryption at-rest with a platform-managed key
  - Virtual node pools: Not enabled
- Node pools**
  - Node pools: 1 node pool
  - Kubernetes versions: 1.27.9
  - Node sizes: Standard\_DS2\_v2
- Configuration**
  - Kubernetes version: 1.27.9
  - Auto Upgrade Type: Patch
  - Authentication and Authorization: Local accounts with Kubernetes RBAC
  - Local accounts: Enabled
- Extensions + applications**
  - No extensions installed
- Networking**
  - API server address: akskubes-dns-qcc15hqs.hcp.eastus.azmk8s.io
  - Network type (plugin): Kubenet
  - Pod CIDR: 10.244.0.0/16
  - Service CIDR: 10.0.0.0/16
  - DNS service IP: 10.0.0.10
  - Docker bridge CIDR: -
  - Network Policy: Calico
  - Load balancer: Standard
  - HTTP application routing: Not enabled
  - Private cluster: Not enabled
  - Authorized IP ranges: Not enabled
  - Application Gateway ingress controller: Not enabled
- Integrations**
  - Container insights: Not enabled
  - Workspace resource ID: -

# Azure Kubernetes Services (Deployment)

Home > akskubes

 **akskubes** | Services and ingresses ☆ ...  
Kubernetes service

 Search

 Create  Delete  Refresh  Show labels  Give feedback


 Overview

 Activity log

 Access control (IAM)


 Tags


 Diagnose and solve problems

 Microsoft Defender for Cloud

Kubernetes resources

 Namespaces

 Workloads

 Services and ingresses

 Storage

 Configuration

 Custom resources


 Events

Services Ingresses

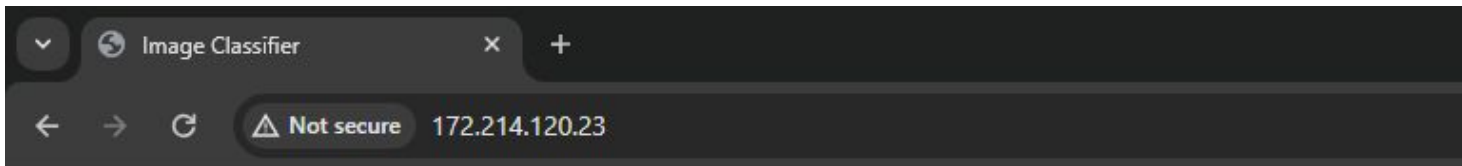
Filter by service name

Filter by namespace

 Add label filter

<input type="checkbox"/>	Name	Namespace	Status	Type	Cluster IP	External IP	Ports	Age ↓
<input type="checkbox"/>	kubernetes	default	✓ Ok	ClusterIP	10.0.0.1		443/TCP	1 hour
<input type="checkbox"/>	kube-dns	kube-system	✓ Ok	ClusterIP	10.0.0.10		53/UDP,53/TCP	1 hour
<input type="checkbox"/>	metrics-server	kube-system	✓ Ok	ClusterIP	10.0.246.105		443/TCP	1 hour
<input type="checkbox"/>	calico-typha	calico-system	✓ Ok	ClusterIP	10.0.32.239		5473/TCP	1 hour
<input type="checkbox"/>	calico-kube-controllers-metrics	calico-system	✓ Ok	ClusterIP	None		9094/TCP	1 hour
<input type="checkbox"/>	ama-metrics-ksm	kube-system	✓ Ok	ClusterIP	10.0.58.58		8080/TCP	1 hour
<input type="checkbox"/>	flask-app-service	default	✓ Ok	LoadBalancer	10.0.151.164	172.214.120.23 	80:30162/TCP	7 minutes

# Web-App (UI) [HTTP is same as in AKS, therefore, not deployed locally, but on AKS]

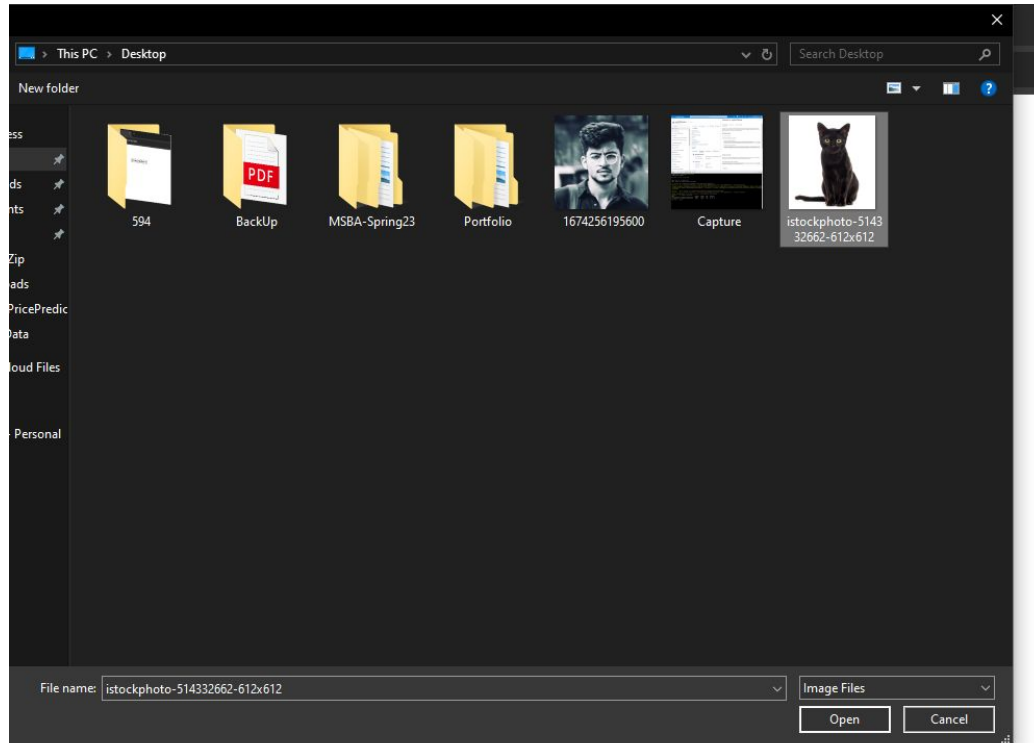


## Image Classifier

Choose File No file chosen

Upload and Classify

# Web-App (User Input)





# Web-App (Output)

