Project 03

CELEBAL TECHNOLOGIES

Description

Implementing automated deployment pipelines in Azure DevOps to orchestrate Azure Kubernetes Service (AKS) deployments for scalable and resilient containerized applications.

Business Problem Statement and Prerequisites

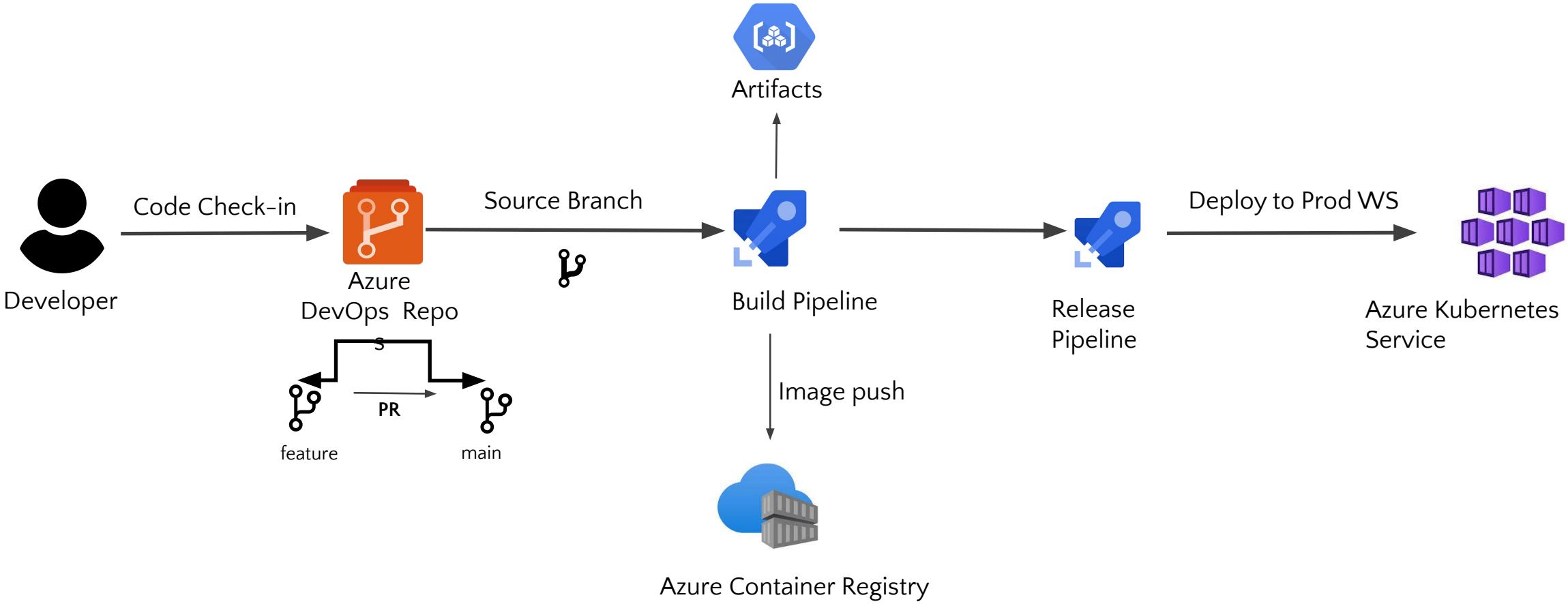
Business problem statement

- A rapidly growing e-commerce company is expanding its online platform to accommodate increased customer demand.
- To ensure high availability, scalability, and reliability of its services, the company decides to migrate its applications to containers orchestrated by Azure Kubernetes Service (AKS).
- Leveraging Azure DevOps, the company aims to establish a robust CI/CD pipeline for automating the deployment of containerized applications on AKS.

Pre- requisites

- Azure DevOps Account: Access to an Azure DevOps organization and project.
- Azure Subscription: Access to Azure resources (AKS, ACR etc).
- Source Code: Code repository (e.g., Git) for the application.

High-Level Architecture:



CICD Process and Helpful documents

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CICD process

- Create a Resource Group on the Azure Portal, ACR and AKS
- Assign a Specific role as per your requirement
- Set Up Service Connection
- Create Repository: Need a Docker file, a Manifest file
- Create a Continuous Integration Pipeline (CI)
    a. First, select the agent
    b. Second Select the Repository and Branch
    c. The first task adds a Docker build task
    d. The second task adds a Docker push task for (Azure Container Registry)
    e. The third task add a Copy Artifacts file
    f. Fourth task Add Publish Artifact
- Now create Continuous Deployment (CD)
    a. Add Artifacts
    b. Add the first task for deployment (select Manifests files)
    c. Click on Save and Create Release

Helpful documents

Azure Kubernetes Service Pipeline via Azure DevOps | by Saurabh Mathuria | Medium