

Deploying to Azure Kubernetes Service

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You can deploy your project to Azure Kubernetes Service (AKS) as part of your continuous deployment (CD) workflows.

Introduction [↗](#)

This guide explains how to use GitHub Actions to build and deploy a project to [Azure Kubernetes Service](#).

Note: If your GitHub Actions workflows need to access resources from a cloud provider that supports OpenID Connect (OIDC), you can configure your workflows to authenticate directly to the cloud provider. This will let you stop storing these credentials as long-lived secrets and provide other security benefits. For more information, see "[About security hardening with OpenID Connect](#)" and "[Configuring OpenID Connect in Azure](#)."

Prerequisites [↗](#)

Before creating your GitHub Actions workflow, you will first need to complete the following setup steps:

- 1 Create a target AKS cluster and an Azure Container Registry (ACR). For more information, see "[Quickstart: Deploy an AKS cluster by using the Azure portal - Azure Kubernetes Service](#)" and "[Quickstart - Create registry in portal - Azure Container Registry](#)" in the Azure documentation.
- 2 Create a secret called `AZURE_CREDENTIALS` to store your Azure credentials. For more information about how to find this information and structure the secret, see [the Azure/login action documentation](#).

Creating the workflow [↗](#)

Once you've completed the prerequisites, you can proceed with creating the workflow.

The following example workflow demonstrates how to build and deploy a project to Azure Kubernetes Service when code is pushed to your repository.

Under the workflow `env` key, change the following values:

- `AZURE_CONTAINER_REGISTRY` to the name of your container registry
- `PROJECT_NAME` to the name of your project

- `RESOURCE_GROUP` to the resource group containing your AKS cluster
- `CLUSTER_NAME` to the name of your AKS cluster

This workflow uses the `helm` render engine for the [azure/k8s-bake action](#). If you will use the `helm` render engine, change the value of `CHART_PATH` to the path to your helm file. Change `CHART_OVERRIDE_PATH` to an array of override file paths. If you use a different render engine, update the input parameters sent to the `azure/k8s-bake` action.

YAML



```
# This workflow uses actions that are not certified by GitHub.
# They are provided by a third-party and are governed by
# separate terms of service, privacy policy, and support
# documentation.

# GitHub recommends pinning actions to a commit SHA.
# To get a newer version, you will need to update the SHA.
# You can also reference a tag or branch, but the action may change without
# warning.

name: Build and deploy to Azure Kubernetes Service

env:
  AZURE_CONTAINER_REGISTRY: MY_REGISTRY_NAME # set this to the name of your
container registry
  PROJECT_NAME: MY_PROJECT_NAME              # set this to your project's name
  RESOURCE_GROUP: MY_RESOURCE_GROUP          # set this to the resource group
containing your AKS cluster
  CLUSTER_NAME: MY_CLUSTER_NAME              # set this to the name of your AKS
cluster
  REGISTRY_URL: MY_REGISTRY_URL              # set this to the URL of your
registry
  # If you bake using helm:
  CHART_PATH: MY_HELM_FILE                   # set this to the path to your helm
file
  CHART_OVERRIDE_PATH: MY_OVERRIDE_FILES     # set this to an array of override
file paths

on: [push]

jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4

      - name: Azure Login
        uses: azure/login@14a755a4e2fd6dff25794233def4f2cf3f866955
        with:
          creds: ${ secrets.AZURE_CREDENTIALS }

      - name: Build image on ACR
        uses: azure/CLI@61bb69d64d613b52663984bf12d6bac8fd7b3cc8
        with:
          azcliversion: 2.29.1
          inlineScript: |
            az configure --defaults acr=${ env.AZURE_CONTAINER_REGISTRY }
            az acr build -t -t ${ env.REGISTRY_URL }/${ env.PROJECT_NAME }:${ env
github.sha }

      - name: Gets K8s context
        uses: azure/aks-set-context@94ccc775c1997a3fcfbfbce3c459fec87e0ab188
        with:
          creds: ${ secrets.AZURE_CREDENTIALS }
          resource-group: ${ env.RESOURCE_GROUP }
          cluster-name: ${ env.CLUSTER_NAME }
        id: login
```

```

- name: Configure deployment
  uses: azure/k8s-bake@61041e8c2f75c1f01186c8f05fb8b24e1fc507d8
  with:
    renderEngine: 'helm'
    helmChart: ${ env.CHART_PATH }
    overrideFiles: ${ env.CHART_OVERRIDE_PATH }
    overrides: |
      replicas:2
    helm-version: 'latest'
  id: bake

- name: Deploys application
- uses: Azure/k8s-deploy@dd4bbd13a5abd2fc9ca8bdc8baee152bb718fa78
  with:
    manifests: ${ steps.bake.outputs.manifestsBundle }
    images: |
      ${ env.AZURE_CONTAINER_REGISTRY }.azurecr.io/${ env.PROJECT_NAME
    }}:${ env.github.sha }
    imagepullsecrets: |
      ${ env.PROJECT_NAME }

```

Additional resources

The following resources may also be useful:

- For the original starter workflow, see [azure-kubernetes-service.yml](#) in the GitHub Actions `starter-workflows` repository.
- The actions used to in this workflow are the official Azure [Azure/login](#) , [Azure/aks-set-context](#) , [Azure/CLI](#) , [Azure/k8s-bake](#) , and [Azure/k8s-deploy](#) actions.
- For more examples of GitHub Action workflows that deploy to Azure, see the [actions-workflow-samples](#) repository.

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