

# Deploying Python to Azure App Service

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

## Introduction

This guide explains how to use GitHub Actions to build and deploy a Python project to [Azure App 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 an Azure App Service plan.

For example, you can use the Azure CLI to create a new App Service plan:

Bash



```
az appservice plan create \
  --resource-group MY_RESOURCE_GROUP \
  --name MY_APP_SERVICE_PLAN \
  --is-linux
```

In the command above, replace `MY_RESOURCE_GROUP` with your pre-existing Azure Resource Group, and `MY_APP_SERVICE_PLAN` with a new name for the App Service plan.

See the Azure documentation for more information on using the [Azure CLI](#):

- For authentication, see "[Sign in with Azure CLI](#)."
- If you need to create a new resource group, see "[az group](#)."

- 2 Create a web app.

For example, you can use the Azure CLI to create an Azure App Service web app with a Python runtime:

Bash

```
az webapp create \  
  --name MY_WEBAPP_NAME \  
  --plan MY_APP_SERVICE_PLAN \  
  --resource-group MY_RESOURCE_GROUP \  
  --runtime "python|3.8"
```

In the command above, replace the parameters with your own values, where `MY_WEBAPP_NAME` is a new name for the web app.

- 3 Configure an Azure publish profile and create an `AZURE_WEBAPP_PUBLISH_PROFILE` secret.

Generate your Azure deployment credentials using a publish profile. For more information, see "[Generate deployment credentials](#)" in the Azure documentation.

In your GitHub repository, create a secret named `AZURE_WEBAPP_PUBLISH_PROFILE` that contains the contents of the publish profile. For more information on creating secrets, see "[Using secrets in GitHub Actions](#)."

- 4 Add an app setting called `SCM_DO_BUILD_DURING_DEPLOYMENT` and set the value to `1`.
- 5 Optionally, configure a deployment environment. Environments are used to describe a general deployment target like `production`, `staging`, or `development`. When a GitHub Actions workflow deploys to an environment, the environment is displayed on the main page of the repository. You can use environments to require approval for a job to proceed, restrict which branches can trigger a workflow, gate deployments with custom deployment protection rules, or limit access to secrets. For more information about creating environments, see "[Using environments for deployment](#)."

## 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 Python project to Azure App Service when there is a push to the `main` branch.

Ensure that you set `AZURE_WEBAPP_NAME` in the workflow `env` key to the name of the web app you created. If you use a version of Python other than `3.8`, change `PYTHON_VERSION` to the version that you use.

If you configured a deployment environment, change the value of `environment` to be the name of your environment. If you did not configure an environment or if your workflow is in a private repository and you do not use GitHub Enterprise Cloud, delete the `environment` key.

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 Python app to Azure Web App

env:

AZURE\_WEBAPP\_NAME: MY\_WEBAPP\_NAME # set this to your application's name  
PYTHON\_VERSION: '3.8' # set this to the Python version to use

on:

push:  
branches:  
- main

jobs:

build:  
runs-on: ubuntu-latest

steps:

- uses: actions/checkout@v4
  - name: Set up Python version  
uses: actions/setup-python@v4  
with:  
python-version: \${ env.PYTHON\_VERSION }
  - name: Create and start virtual environment  
run: |  
python -m venv venv  
source venv/bin/activate
  - name: Set up dependency caching for faster installs  
uses: actions/cache@v3  
with:  
path: ~/.cache/pip  
key: \${ runner.os }-pip-\${ hashFiles('\*\*/requirements.txt') }  
restore-keys: |  
\${ runner.os }-pip-
  - name: Install dependencies  
run: pip install -r requirements.txt
- # Optional: Add a step to run tests here (PyTest, Django test suites, etc.)
- name: Upload artifact for deployment jobs  
uses: actions/upload-artifact@v3  
with:  
name: python-app  
path: |  
.  
!venv/

deploy:

runs-on: ubuntu-latest  
needs: build  
environment:  
name: 'production'  
url: \${ steps.deploy-to-webapp.outputs.webapp-url }

steps:

- name: Download artifact from build job  
uses: actions/download-artifact@v3  
with:  
name: python-app  
path: .
- name: 'Deploy to Azure Web App'  
id: deploy-to-webapp  
uses: azure/webapps-deploy@85270a1854658d167ab239bce43949edb336fa7c  
with:  
app-name: \${ env.AZURE\_WEBAPP\_NAME }  
publish-profile: \${ secrets.AZURE\_WEBAPP\_PUBLISH\_PROFILE }

## Additional resources

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The following resources may also be useful:

- For the original starter workflow, see [azure-webapps-python.yml](#) in the GitHub Actions `starter-workflows` repository.
- The action used to deploy the web app is the official Azure [Azure/webapps-deploy](#) action.
- For more examples of GitHub Action workflows that deploy to Azure, see the [actions-workflow-samples](#) repository.

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