

Deploying .NET to Azure App Service

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You can deploy your .NET 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 .NET 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:



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."

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

```
az webapp create \
    --name MY_WEBAPP_NAME \
    --plan MY_APP_SERVICE_PLAN \
    --resource-group MY_RESOURCE_GROUP \
    --runtime "DOTNET|5.0"
```

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 "<u>Using secrets in GitHub Actions</u>."

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."

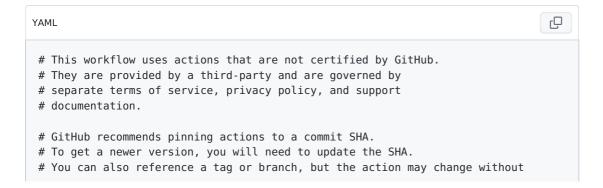
Creating the workflow &

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

The following example workflow demonstrates how to build and deploy a .NET 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 the path to your project is not the repository root, change AZURE_WEBAPP_PACKAGE_PATH . If you use a version of .NET other than 5 , change DOTNET VERSION .

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.



```
warning.
name: Build and deploy ASP.Net Core app to an Azure Web App
  AZURE WEBAPP NAME: MY WEBAPP NAME
                                     # set this to your application's name
 AZURE WEBAPP PACKAGE PATH: '.'
                                     # set this to the path to your web app
project, defaults to the repository root
  DOTNET VERSION: '5'
                                      # set this to the .NET Core version to use
on:
  push:
    branches:
     - main
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
     - uses: actions/checkout@v4
      - name: Set up .NET Core
        uses: actions/setup-dotnet@v3
        with:
         dotnet-version: ${{ env.DOTNET VERSION }}
      - name: Set up dependency caching for faster builds
        uses: actions/cache@v3
        with:
          path: ~/.nuget/packages
          key: ${{ runner.os }}-nuget-${{ hashFiles('**/packages.lock.json') }}
          restore-keys: |
            ${{ runner.os }}-nuget-
      - name: Build with dotnet
        run: dotnet build --configuration Release
      - name: dotnet publish
        run: dotnet publish -c Release -o ${{env.DOTNET_ROOT}}}/myapp
      - name: Upload artifact for deployment job
        uses: actions/upload-artifact@v3
        with:
          name: .net-app
          path: ${{env.DOTNET ROOT}}/myapp
  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: .net-app
      - 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 }}
          package: ${{ env.AZURE_WEBAPP_PACKAGE_PATH }}
```

Additional resources @

The following resources may also be useful:

- For the original starter workflow, see azure-webapps-dotnet-core.yml in the GitHub Actions starter-workflows repository.
- The action used to deploy the web app is the official Azure <u>Azure/webapps-deploy</u> action.
- For more examples of GitHub Action workflows that deploy to Azure, see the <u>actions-workflow-samples</u> repository.

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