

CI/CD in Azure DevOps using Visual Studio and a .NET application

By following these steps, you can create a demo to showcase CI/CD in Azure DevOps with a .NET application developed in Visual Studio, including real-world feature development, branching, merging, and deployment scenarios.

To demonstrate CI/CD in Azure DevOps using Visual Studio and a .NET application, we'll follow these steps:

1. Set up an Azure DevOps project.
2. Create a .NET application in Visual Studio.
3. Configure CI/CD pipelines in Azure DevOps.
4. Simulate feature development, branching, merging, and deployment.

Let's go through each step:

1. Set up Azure DevOps Project:

1. Create a new project in Azure DevOps.
2. Navigate to "Repos" and initialize a Git repository.

2. Create a .NET Application in Visual Studio:

1. Open Visual Studio and create a new .NET application (e.g., ASP.NET Core Web Application).
2. Write some basic code and functionalities.

3. Configure CI/CD Pipelines in Azure DevOps:

Continuous Integration (CI) Pipeline:

1. In Azure DevOps, go to "Pipelines" > "New Pipeline" and select your repository.
2. Choose a template for your CI pipeline (e.g., .NET Core).
3. Configure the pipeline to trigger on every code push to any branch.
4. Build the solution and run tests.

Continuous Deployment (CD) Pipeline:

1. Create a new release pipeline in Azure DevOps.
2. Define stages for different environments (e.g., Dev, QA, Prod).
3. Set up approval gates for promoting releases to higher environments.
4. Configure deployment tasks to deploy the .NET application to Azure App Service or any other target environment.

4. Simulate Feature Development, Branching, Merging, and Deployment:

1. Create feature branches for new features or changes.
2. Develop and test features in feature branches locally.
3. Push feature branches to the Azure DevOps repository.
4. Configure CI pipeline to trigger builds for feature branches.
5. Merge feature branches into the main branch (e.g., using pull requests).
6. CI pipeline automatically triggers builds for the main branch.
7. Deploy the main branch to lower environments (e.g., Dev, QA) for testing.
8. After testing and approval, promote the main branch to production using the CD pipeline.

Demo Execution:

1. Demonstrate creating a feature branch for a new feature in Visual Studio.
2. Push the feature branch to Azure DevOps.
3. Show CI pipeline triggering a build for the feature branch.
4. Merge the feature branch into the main branch using Azure DevOps pull request.
5. Demonstrate CI pipeline triggering a build for the main branch.
6. Show CD pipeline automatically deploying the main branch to a staging environment.
7. After approval, promote the main branch to production using the CD pipeline.