.NET Core API Deployment to Azure Cloud

# 1. Prerequisites

- Azure subscription  
- .NET Core API project (built and tested)  
- Azure CLI or Visual Studio installed  
- GitHub/Azure DevOps account (for CI/CD)

# 2. Azure Resource Setup

1. Log in to Azure Portal (https://portal.azure.com/)  
2. Create Resource Group  
 - Name: e.g., MyAppRG  
3. Create App Service Plan  
 - Choose pricing tier (e.g., B1, S1)  
4. Create App Service  
 - Runtime stack: .NET Core 6/7  
 - Region: Closest to user base  
5. (Optional) Create Azure SQL Database  
 - Configure firewall and access settings

# 3. Prepare .NET Core API

1. Open terminal or Visual Studio  
2. Run publish command:

dotnet publish -c Release -o ./publish

# 4. Deploy API to Azure

## Option 1: Using Visual Studio

Right-click project > Publish > Azure > App Service > Select existing or create new

## Option 2: Using Azure CLI

az webapp deployment source config-zip \  
 --resource-group MyAppRG \  
 --name MyDotNetAPI \  
 --src ./publish.zip

# 5. Configure App Settings

- In Azure Portal > App Service > Configuration  
 - Set connection strings  
 - Add environment variables if needed  
- Restart the app after saving

# 6. Set Up Monitoring (Optional)

- Enable Application Insights  
- Track request performance, failures, and usage

# 7. CI/CD Integration (Optional)

- Use GitHub Actions or Azure DevOps  
 - Auto build and deploy on code push  
 - Connect repo to Azure App Service

# 8. Secure and Scale

- Enable HTTPS only  
- Configure custom domain if needed  
- Set scaling rules based on demand

# 9. Testing and Deployment Slots (Optional)

- Use staging slot for pre-production testing  
- Swap slots after validation

# 10. Backup and Recovery

- Configure daily/weekly backups  
- Store backups in Azure Storage Account