

Azure DevOps Overview

Azure DevOps is a powerful set of development tools and services by **Microsoft** that helps teams plan, build, test, and deliver software faster and more efficiently.

It offers a complete DevOps toolchain for developing and deploying software, and it integrates seamlessly with popular tools like **GitHub**, **Docker**, **Kubernetes**, and more.

🌟 Key Features

- 📋 **Azure Boards** – Agile project management with Kanban boards, backlogs, and dashboards.
- 💻 **Azure Repos** – Unlimited, cloud-hosted private Git repositories.
- ⚙️ **Azure Pipelines** – CI/CD for any language, platform, and cloud.
- 📦 **Azure Artifacts** – Package management for Maven, npm, NuGet, and Python.
- 🛠️ **Azure Test Plans** – Manual and exploratory testing tools.

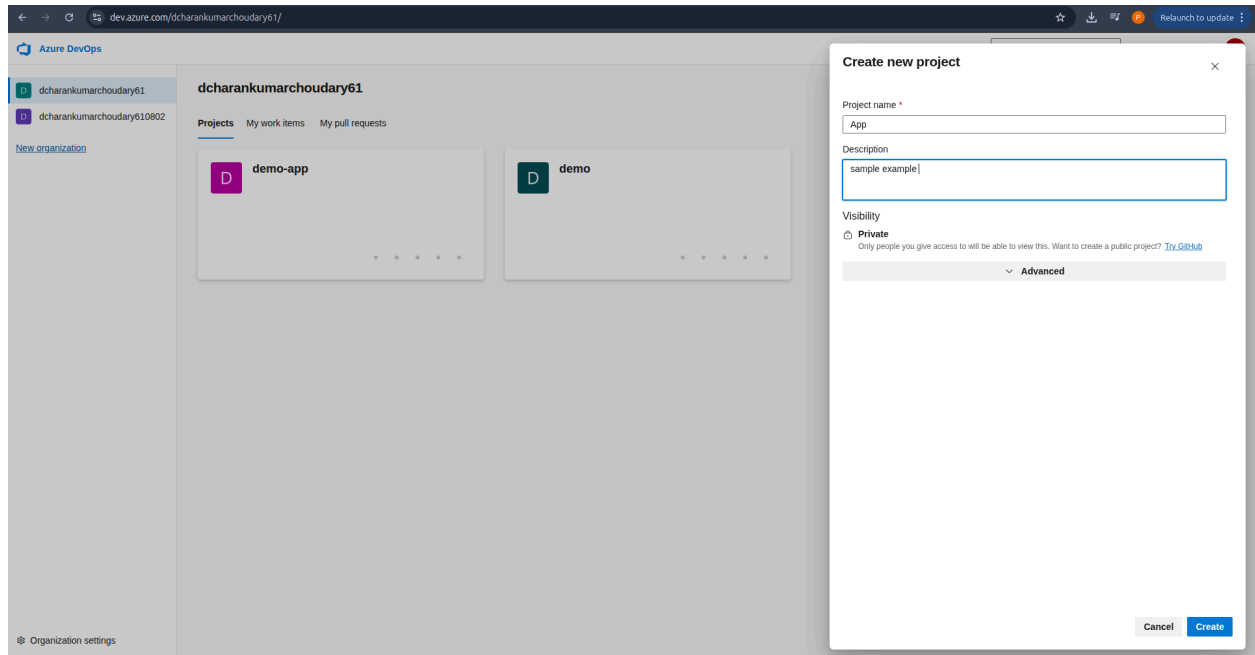
🔗 Benefits

- 🌐 Cross-platform support (Windows, Linux, macOS).
- 🔄 Seamless integration with GitHub, Bitbucket, and other repos.
- ☁️ Deploy to **Azure**, **AWS**, **GCP**, or on-premises servers.
- 🚀 Faster delivery with automated builds and releases.

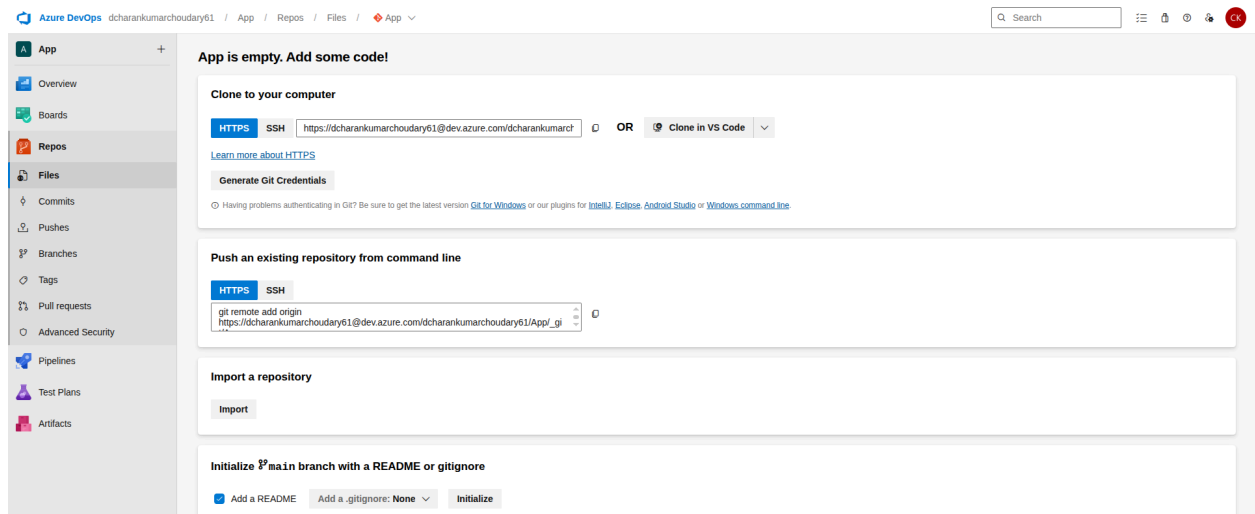
Creation Of Azure Pipelines

Step 1: Login into the azure Devops

Step 2: Create a Project



Step 4: Click on Repos And click on import My Repo is in Github.



- Provide the Github Repo url and click on import

Import a Git repository

×

Repository type

Git

▼

Clone URL *

e.g. https://github.com/Microsoft/vscode.git

☐ Requires Authentication

Cancel

Import

Step 5: Need to check the Default branch as the default branch is main.

- Go branches and click on 3 dots and make the default branch

Azure DevOps

dcharanikumarchoudary61 / App / Repos / Branches / App

App

Overview

Boards

Repos

Files

Commits

Pushes

Branches

Tags

Pull requests

Advanced Security

Pipelines

Test Plans

Artifacts

Branches

Mine All State

Search branch name

New branch

Branch	Commit	Author	Authored Date	Behind Ahead	Status	Pull Re...
dependabot						
npm_and_yaml/result						
express-4.19.2	4d9ff45e	dependabot[bot]	Mar 28, 2024			★
Default Compare						
nuget/worker						
Npgsql-8.0.3	7c1526c0	dependabot[bot]	May 9, 2024	1 1		
duplicate_key	67a2e880	sophia parafina	Jan 21, 2017	145 0		
main	63a9158c	Michael Irwin	Oct 10, 2024	1 10		★
revert-54-connection_pooling	9352ed89	Mano Marks	Dec 27, 2016	154 0		
scout-fix	59a9d864	Ajeet Singh Raina	Aug 17, 2023	11 1		

+

New branch

New pull request

Delete branch

View files

View history

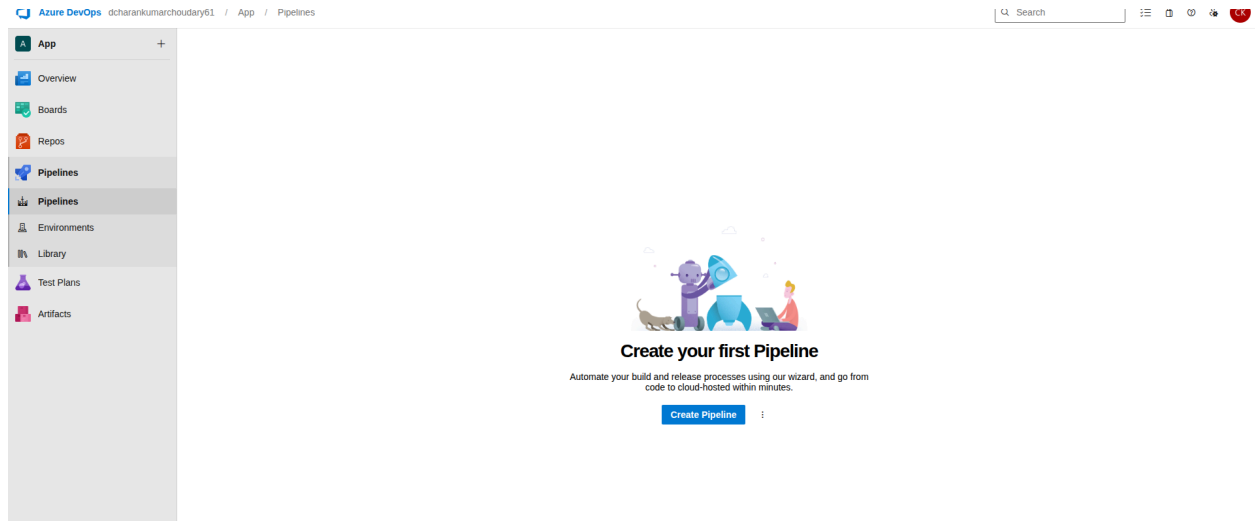
Compare branches

Set as compare branch

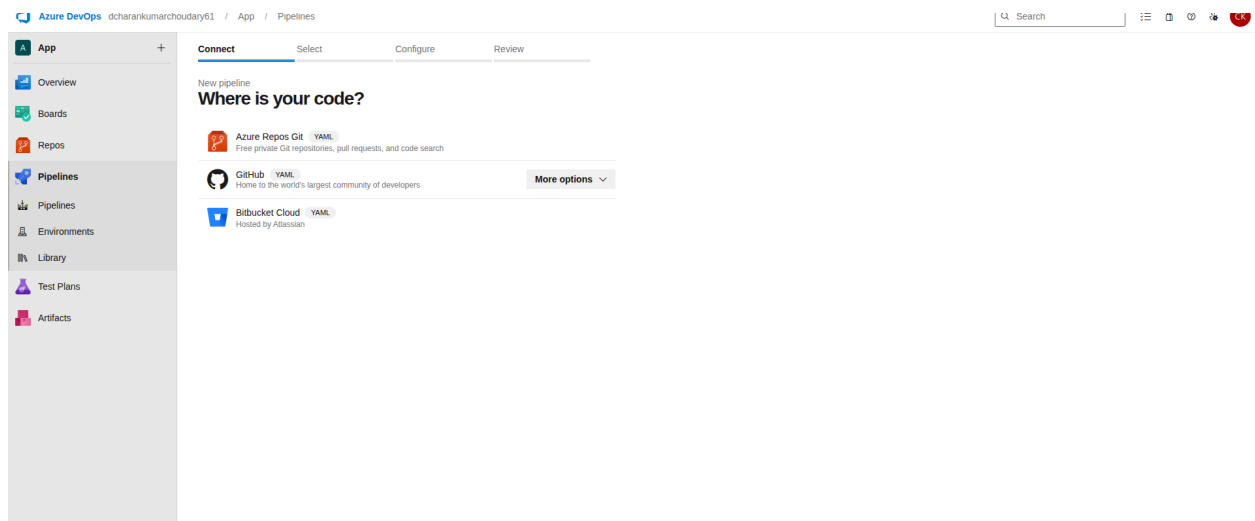
Set as default branch

Step 6: Create A pipeline I have 3- micro services one is worker,result,vote, I will create 3 separate pipeline for 3 services

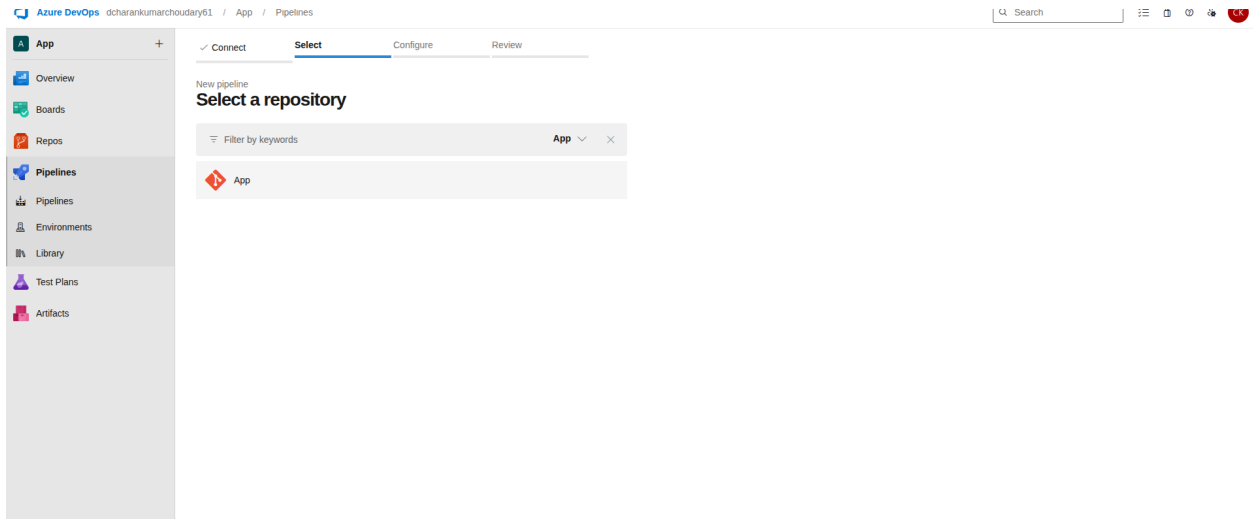
Click on pipeline. Setup of the pipeline:



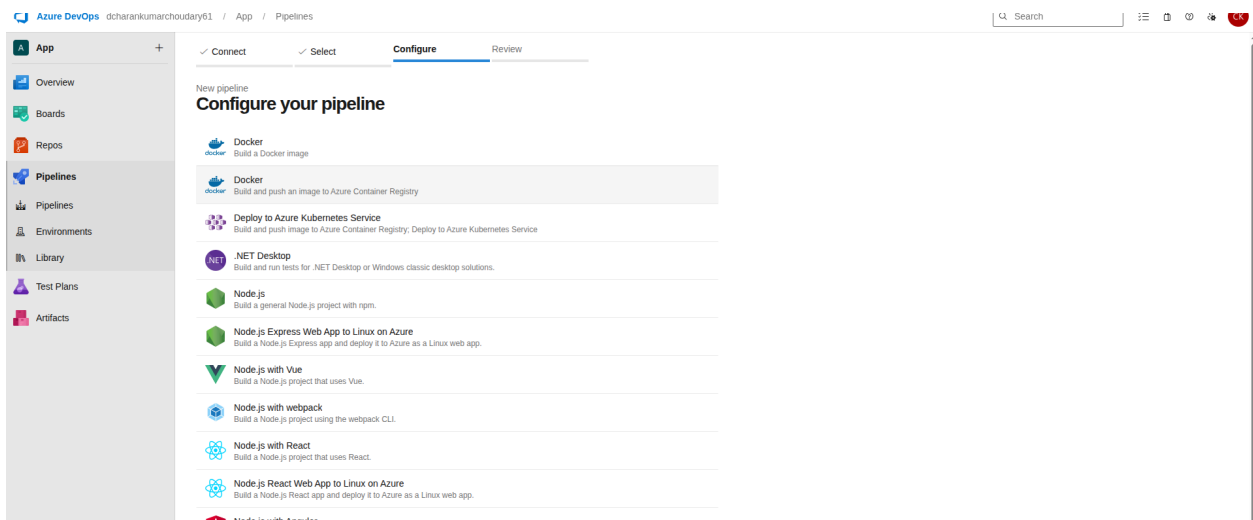
Select the Azure Repo



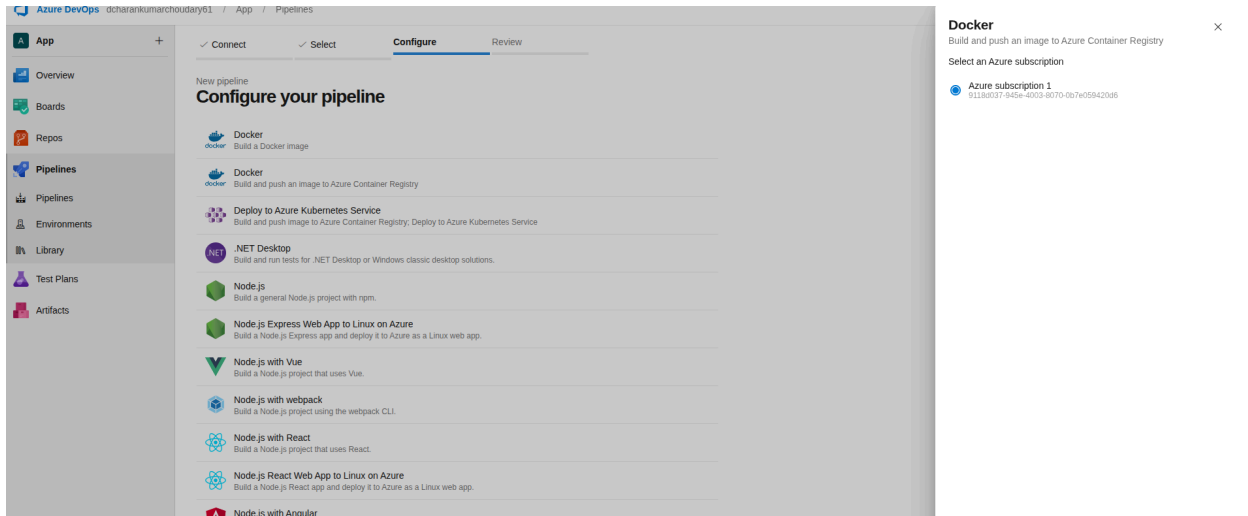
- I selected Previous created repo



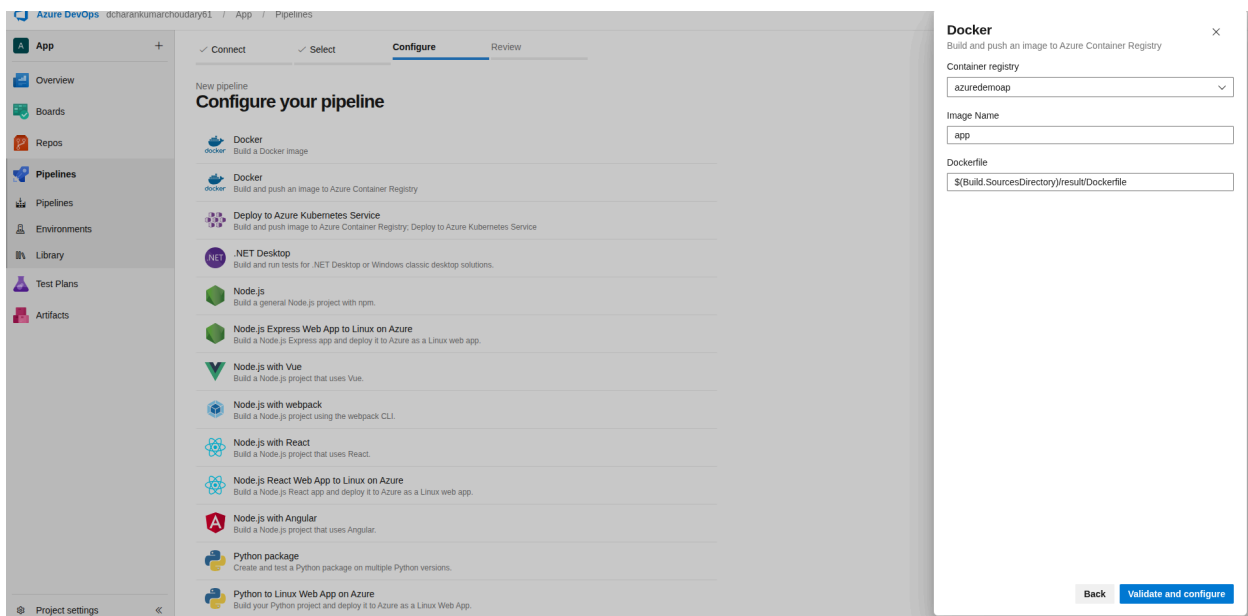
- Select the Docker build and Push image to Azure container Registry



Need to select the azure subscription i have azure container registry so this is for authentication to azure container registry and pipeline



- Select the container registry and click on validate and configure.

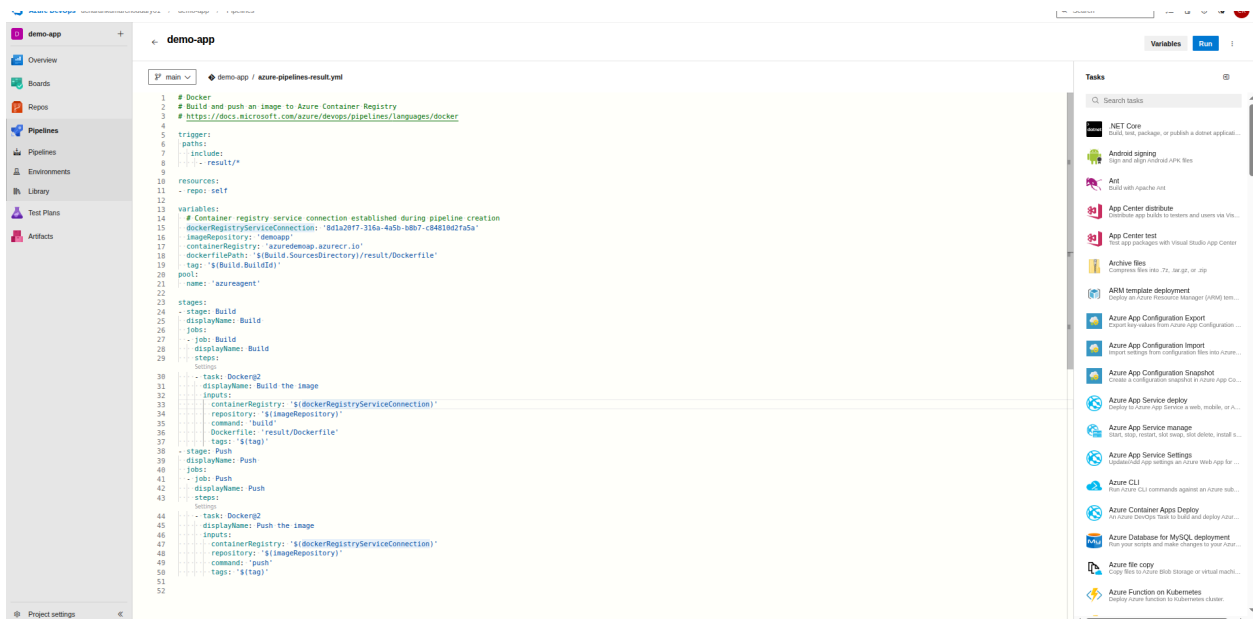


Azure Pipeline structure:

Pipeline → Stage(s) → Job(s) → Step(s) → Task(s)/Script(s)

- **Stage:** Logical grouping of jobs (e.g., *Build*, *Test*, *Deploy*).
- **Job:** Runs on an agent (e.g., Ubuntu, Windows).

- **Step:** Single unit of execution inside a job (can be a task or a script).



trigger:

paths:

include:

- result/*

resources:

- repo: self

variables:

Container registry service connection established during pipeline creation

dockerRegistryServiceConnection: '8d1a20f7-316a-4a5b-b8b7-c84810d2fa5a'

imageRepository: 'demoapp'

```
containerRegistry: 'azuredemoap.azurecr.io'
```

```
dockerfilePath: '$(Build.SourcesDirectory)/result/Dockerfile'
```

```
tag: '$(Build.BuildId)'
```

pool:

name: 'azureagent'

stages:

- stage: Build

displayName: Build

jobs:

- job: Build

displayName: Build

steps:

- task: Docker@2

displayName: Build the image

inputs:

containerRegistry: '\$(dockerRegistryServiceConnection)'

repository: '\$(imageRepository)'

command: 'build'

Dockerfile: 'result/Dockerfile'

tags: '\$(tag)'

- stage: Push

displayName: Push

jobs:


```
- job: Push

  displayName: Push

  steps:

  - task: Docker@2

    displayName: Push the image

    inputs:

      containerRegistry: '$(dockerRegistryServiceConnection)'

      repository: '$(imageRepository)'

      command: 'push'

      tags: '$(tag)'
```

Now We have Mentioned the agent Self hosted agent so that we need to create agent as vm.

Create a VM in Azure

- Use Azure Portal or CLI to create a Linux/Windows VM.
- Ensure it has internet access.

Install prerequisites on the VM

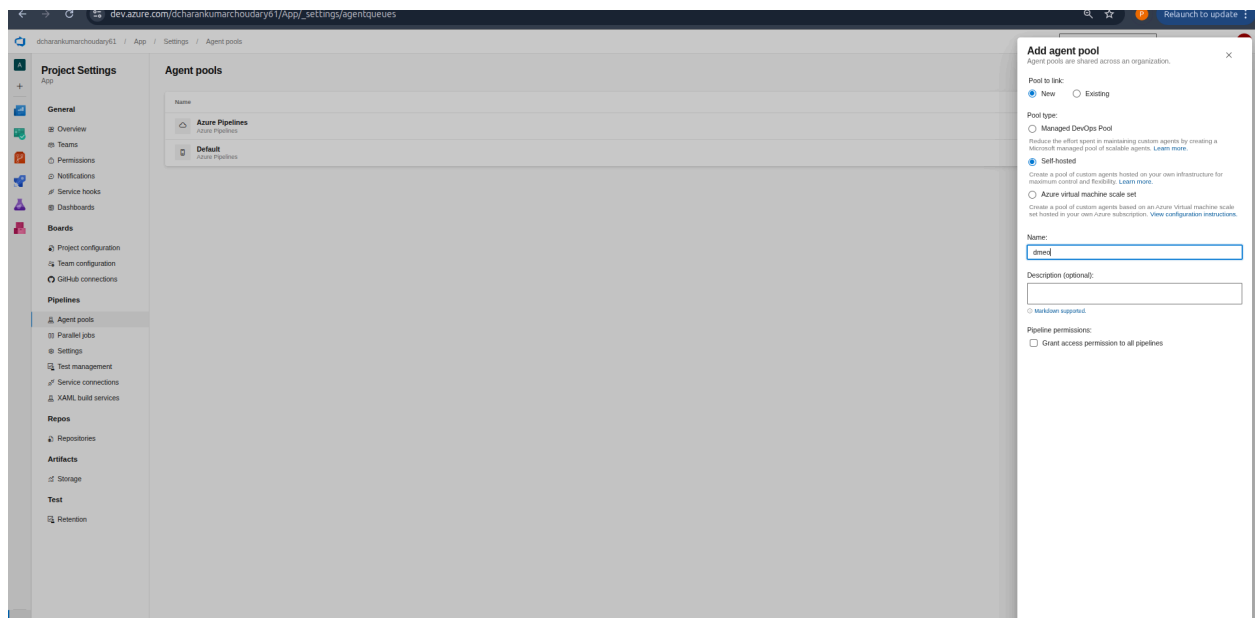
- Update packages.

Create a Personal Access Token (PAT) in Azure DevOps

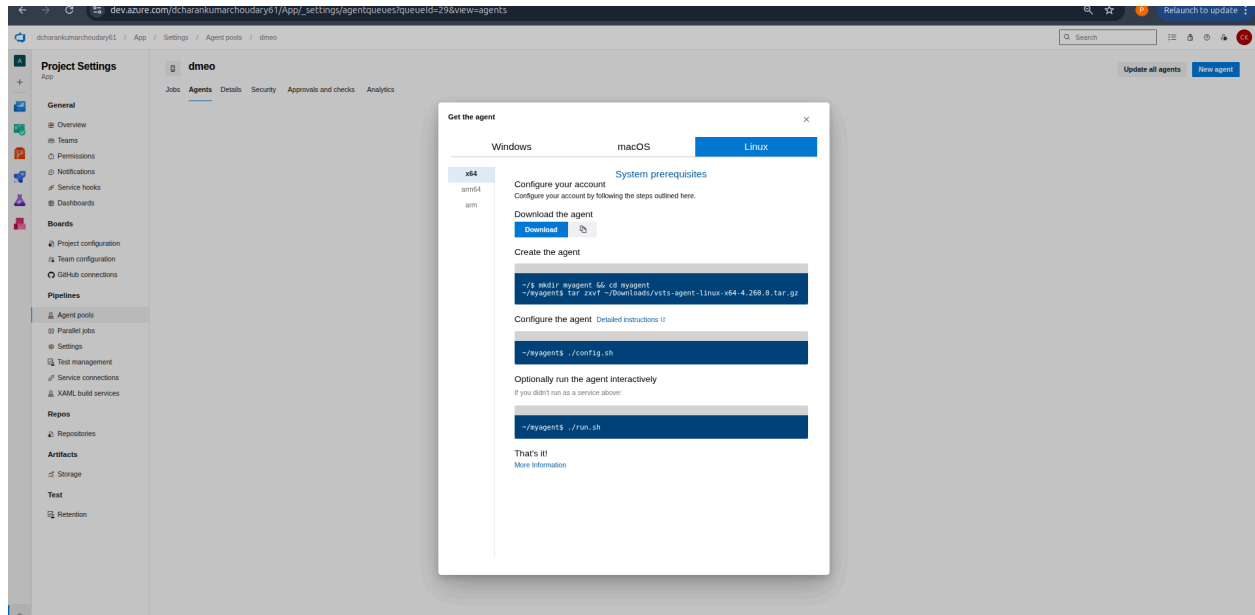
- Go to **User settings** → **Personal Access Tokens**.
- Scope: **Agent Pools** → **Read & manage**.

Download the Azure Pipelines agent

- Go to **Project Settings** → **Agent Pools** → **Default** → **New Agent**.



Configure the agent



```
./run-docker.sh
./env.sh
azureuser@azureagent:~/myagent$ ls
bin config.sh env.sh externals license.html reauth.sh run-docker.sh run.sh vsts-agent-linux-x64-4.260.0.tar.gz
azureuser@azureagent:~/myagent$ sudo ./config.sh
sudo: ./config.sh: command not found
azureuser@azureagent:~/myagent$ ./config.sh

  AZURE DEVOPS
  agent v4.260.0 (commit 531b769)

>> End User License Agreements:

Building sources from a TFVC repository requires accepting the Team Explorer Everywhere End User License Agreement. This step is not required for building sources from Git repositories.
A copy of the Team Explorer Everywhere license agreement can be found at:
/home/azureuser/myagent/license.html

Enter (Y/N) Accept the Team Explorer Everywhere license agreement now? (press enter for N) > Y

>> Connect:

Enter server URL > https://dev.azure.com/dcharankumarchoudary61
Enter authentication type (press enter for PAT) > 3eXJwdecPUxpLXSEW0FGbbCehL33mBZTSFYlp3FOF3U900EdFYzsJQQ399BHACAAAAAAAAAAAAAAAZD044KD
Enter a valid value for authentication type.
Enter authentication type (press enter for PAT) >
Enter personal access token > *****
Connecting to server ...

>> Register Agent:

Enter agent pool (press enter for default) > azureagent
Enter agent name (press enter for azureagent) > azureagent
Scanning for tool capabilities.
Connecting to the server..
Successfully added the agent
Testing agent connection.
```

```
Building sources from a TFVC repository requires accepting the Team Explorer Everywhere End User License Agreement. This step is not required for building sources from Git repositories.

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>> Connect:

Enter server URL > https://dev.azure.com/dcharankumarchoudary61
Enter authentication type (press enter for PAT) > 3eXJwdecPUxpLXSEWOFcbbCehL33mBZTSFYip3FOF3U900EdFYzsJQJ399BHACAAAAAAAAAAAAASAZD044KD
Enter a valid value for authentication type.
Enter authentication type (press enter for PAT) >
Enter personal access token > *****
Connecting to server ...

>> Register Agent:

Enter agent pool (press enter for default) > azureagent
Enter agent name (press enter for azureagent) > azureagent
Scanning for tool capabilities.
Connecting to the server.
Successfully added the agent
Testing agent connection.
Enter work folder (press enter for _work) >
2025-08-13 07:59:38Z: Settings Saved.
azureuser@azureagent:~/myagent$ ./config.sh

  AZURE PIPELINES
  agent v4.260.0      (commit 531b769)

Error reported in diagnostic logs. Please examine the log for more details.
/home/azureuser/myagent/_diag/Agent_20250813-080006-utc.log
Cannot configure the agent because it is already configured. To reconfigure the agent, run 'config.cmd remove' or './config.sh remove' first.
azureuser@azureagent:~/myagent$ ./run.sh
Scanning for tool capabilities.
Connecting to the server.
2025-08-13 08:00:29Z: Listening for Jobs
```

- Run `./config.sh` (Linux) or `config.cmd` (Windows).
- Enter Azure DevOps URL, choose authentication type **PAT**, paste token, select agent pool, and name the agent.

Verify in Azure DevOps

- Go to **Agent Pools** and confirm your agent is **Online**.

dev.azure.com/dcharankumarchoudary61/demo-app/_settings/agentpools?queueId=196&view=agents

dcharankumarchoudary61 / demo-app / Settings / Agent pools / azureagent

As previously announced in our blog, we are transitioning to new IP addresses. If you have not done so already, please update your firewall allowlists with new IP address ranges of Azure DevOps Services. For detailed information and the latest updates, visit our [status page](#).

Project Settings

demo-app

General

- Overview
- Teams
- Permissions
- Notifications
- Service hooks
- Dashboards

Boards

- Project configuration
- Team configuration
- GitHub connections

Pipelines

- Agent pools
- Parallel jobs
- Settings
- Test management
- Service connections
- XAML build services

Repos

- Repositories

Artifacts

azureagent

Update all agents New agent

Jobs Agents Details Security Approvals and checks Analytics

Name	Last run	Current status	Agent version	Enabled
azureagent Online		Idle	4.260.0	On

Now Run the pipeline

dev.azure.com/dcharankumarchoudary61/demo-app/_build/results?buildId=46&view=results

Azure DevOps dcharankumarchoudary61 / demo-app / Pipelines / demo-app / 20250813.3

demo-app

Overview Boards Repos Pipelines Pipelines Environments Library Test Plans Artifacts

#20250813.3 • Set up CI with Azure Pipelines

demo-app

Run new

This run is being retained as one of 3 recent runs by main (Branch). View retention leases

Summary Code Coverage

Manually run by Charan Kumar

View 236 changes

Repository and version
demo-app
main 839c591c

Time started and elapsed
Today at 1:37 PM
2m 30s

Related
0 work items
0 artifacts

Tests and coverage
Get started

Stages Jobs

Build
1 job completed 1m 21s

Push
1 job completed 49s

Project settings

