

CELEBAL SUMMER INTERNSHIP

DevOps Project

Submitted by: Hemansh Sankhla

❖ Problem Statement: Development on VM using Git and pushing code to azure repos

PHASE 1: VM Setup & Prerequisites

1. Created a Virtual Machine in Azure

[Home](#) > [Compute infrastructure | Virtual machines](#) > [Create a virtual machine](#) >

Create a virtual machine ...

✓ Validation passed



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose the right VM size for my workload

Basics

Subscription	Azure subscription 1
Resource group	(new) rgf
Virtual machine name	dev
Region	East US
Availability options	Availability zone
Zone options	Self-selected zone
Availability zone	2
Security type	Trusted launch virtual machines
Enable secure boot	Yes
Enable vTPM	Yes
Integrity monitoring	No
Image	Ubuntu Server 22.04 LTS - Gen2
VM architecture	x64
Size	Standard B2s (2 vcpus, 4 GiB memory)
Enable Hibernation	No
Authentication type	SSH public key
Username	azureuser

< Previous

Next >

Create

2. Connected to the VM

```
PS C:\Users\heman> ssh -i "C:\Users\heman\Downloads\dev_key.pem" azureuser@172.210.75.170
The authenticity of host '172.210.75.170 (172.210.75.170)' can't be established.
ED25519 key fingerprint is SHA256:QqBcMEfj4FIbzKGwCZqPYeDt9TPGH0Pa3tKiJL9eJ1g.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.210.75.170' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)
```

3. Installed Git on VM

```
azureuser@dev:~$ sudo apt install git -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.15).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
azureuser@dev:~$ git --version
git version 2.34.1
```

4. Configured Git

```
azureuser@dev:~$ git config --global user.name "hemansh02"
azureuser@dev:~$ git config --global user.email "hemansh02@gmail.com"
```

5. Installed tools on VM

```
azureuser@dev:~$ sudo apt install git nginx curl -y

azureuser@dev:~$ curl -fsSL https://bun.sh/install | bash
##### 100.0%
bun was installed successfully to ~/.bun/bin/bun

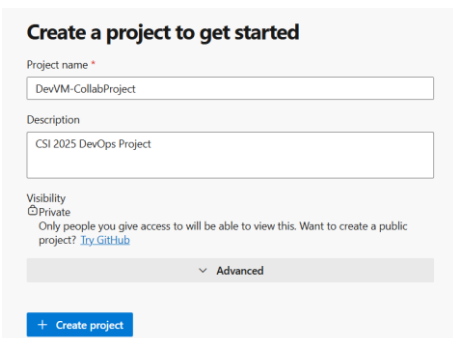
Added "~/.bun/bin" to $PATH in "~/.bashrc"

To get started, run:

source /home/azureuser/.bashrc
bun --help
```

PHASE 2: Azure Repos Setup

1. Created Azure DevOps Project



The screenshot shows the 'Create a project to get started' form in Azure DevOps. It includes fields for 'Project name' (filled with 'DevVM-CollabProject') and 'Description' (filled with 'CSI 2025 DevOps Project'). The 'Visibility' section shows 'Private' selected. At the bottom, there is an 'Advanced' dropdown and a '+ Create project' button.

Create a project to get started

Project name *

DevVM-CollabProject

Description

CSI 2025 DevOps Project

Visibility

☒ Private

Only people you give access to will be able to view this. Want to create a public project? [Try GitHub](#)

Advanced

+ Create project

2. Cloned repo on the VM

```
azureuser@dev:~$ git clone https://testops343@dev.azure.com/testops343/DevVM-CollabProject/_git/DevVM-CollabProject
Cloning into 'DevVM-CollabProject'...
Password for 'https://testops343@dev.azure.com':
remote: Azure Repos
remote: We noticed you're using an older version of Git. For the best experience, upgrade to a newer version.
remote: Found 3 objects to send. (29 ms)
Unpacking objects: 100% (3/3), 739 bytes | 739.00 KiB/s, done.
azureuser@dev:~$ cd DevVM-CollabProject/
azureuser@dev:~/DevVM-CollabProject$ |
```

PHASE 3: Adding Static Website

1. Copied Static Website Files from local system

```
PS C:\Users\heman> scp -i "C:\Users\heman\Downloads\dev_key.pem" -r "D:\Utility\page.html" azureuser@172.210.75.170:/home/azureuser/
page.html 100% 4251 10.8KB/s 00:00
```

2. Moved to repo directory

```
azureuser@dev:~$ ls
DevVM-CollabProject  page.html
azureuser@dev:~$ mv /home/azureuser/page.html /home/azureuser/DevVM-CollabProject/
azureuser@dev:~$ ls
DevVM-CollabProject
azureuser@dev:~$ cd DevVM-CollabProject/
azureuser@dev:~/DevVM-CollabProject$ ls
README.md  page.html
azureuser@dev:~/DevVM-CollabProject$ |
```

Phase 4: Git Workflow on VM

1. Stage, Commit and Push

```
azureuser@dev:~/DevVM-CollabProject$ git add .
azureuser@dev:~/DevVM-CollabProject$ git commit -m "Added static website"
[main d2a3029] Added static website
1 file changed, 178 insertions(+)
create mode 100644 page.html
azureuser@dev:~/DevVM-CollabProject$ git push origin main
Password for 'https://testops343@dev.azure.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 2 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.64 KiB | 1.64 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote: Analyzing objects... (3/3) (4 ms)
remote: Validating commits... (1/1) done (0 ms)
remote: Storing packfile... done (35 ms)
remote: Storing index... done (29 ms)
remote: Updating refs... done (108 ms)
remote: We noticed you're using an older version of Git. For the best experience, upgrade to a newer version.
To https://dev.azure.com/testops343/DevVM-CollabProject/_git/DevVM-CollabProject
aafff15a..d2a3029 main -> main
azureuser@dev:~/DevVM-CollabProject$ |
```

2. File updated in Azure Repo

The screenshot shows the Azure DevOps web interface for a project named 'DevVM-CollabProject'. The left sidebar contains navigation options: Overview, Boards, Repos (selected), Files, Commits, Pushes, Branches, Tags, Pull requests, Advanced Security, Pipelines, Test Plans, and Artifacts. The 'Files' view shows a file tree with 'page.html' and 'README.md'. The 'README.md' file is selected, and its content is displayed on the right. The content includes sections for 'Introduction', 'Getting Started', 'Build and Test', and 'Contribute'. The 'Getting Started' section lists tasks: 1. Installation process, 2. Software dependencies, 3. Latest releases, and 4. API references. The 'Build and Test' section contains a TODO: Describe and show how to build your code and run the tests.

Name	Last change	Commits
page.html	9m ago	d2a3029d Added static website hemansh02
README.md	Yesterday	afff15a0 Added README.md Hemansh Sankhla

Introduction
TODO: Give a short introduction of your project. Let this section explain the objectives or the motivation behind this project.

Getting Started
TODO: Guide users through getting your code up and running on their own system. In this section you can talk about:

1. Installation process
2. Software dependencies
3. Latest releases
4. API references

Build and Test
TODO: Describe and show how to build your code and run the tests.

Contribute

Phase 5: CI/CD Pipeline

1. Created Build Pipeline (CI)

The screenshot shows the 'Review your pipeline YAML' step in the 'New pipeline' wizard. The left sidebar contains navigation options: Overview, Boards, Repos, Pipelines (selected), Environments, Releases, Library, Task groups, Deployment groups, Test Plans, and Artifacts. The 'Review your pipeline YAML' step is selected, and the pipeline definition is displayed in the main area. The pipeline definition is a YAML file named 'azure-pipelines.yml' with the following content:

```
1 trigger:
2   - main
3
4 pool:
5   - name: Default
6
7 steps:
8   - task: CopyFiles@2
9     inputs:
10      contents: '**/*'
11      targetFolder: '$(Build.ArtifactStagingDirectory)'
12      displayName: 'Copy static files to staging'
13
14   - task: PublishBuildArtifacts@1
15     inputs:
16      pathToPublish: '$(Build.ArtifactStagingDirectory)'
17      artifactName: 'static-site'
18      displayName: 'Publish static files as build artifact'
19
20
```

2. Job is Successful

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / DevVM-CollabProject / 20250722.1

Search

DevVM-CollabProject +

- Overview
- Boards
- Repos
- Pipelines
- Pipelines
- Environments
- Releases
- Library
- Task groups
- Deployment groups
- Test Plans
- Artifacts
- Project settings

#20250722.1 • Set up CI with Azure Pipelines

Run new

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

Summary Code Coverage

Individual CI by Hemansh Sankhla View 4 changes

Repository and version: DevVM-CollabProject, main, 7d4c2bae

Time started and elapsed: Today at 21:45, 49s

Related: 0 work items, 1 published

Tests and coverage: Get started

Jobs

Name	Status	Duration
Job	Success	26s

3. Created Release Pipeline (CD)

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases

DevVM-CollabProject +

- Overview
- Boards
- Repos
- Pipelines
- Pipelines
- Environments
- Releases
- Library
- Task groups
- Deployment groups
- Test Plans
- Artifacts
- Project settings

All pipelines > New release pipeline

Pipeline Tasks Variables Retention Options History

You cannot save a release pipeline that contains zero stages.

Artifacts | + Add

Stages | + Add

Add an artifact

Source type: Build, Azure Repos, GitHub, TFVC

5 more artifact types

Project: DevVM-CollabProject

Source (build pipeline): DevVM-CollabProject

Default version: Latest

Source alias: _DevVM-CollabProject

The artifacts published by each version will be available for deployment in release pipelines. The latest successful build of DevVM-CollabProject published the following artifacts: static-site.

Add

Added an Artifact

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases

DevVM-CollabProject +

- Overview
- Boards
- Repos
- Pipelines
- Pipelines
- Environments
- Releases
- Library
- Task groups
- Deployment groups
- Test Plans
- Artifacts
- Project settings

All pipelines > New release pipeline

Pipeline Tasks Variables Retention Options History

Save Create release View releases

Artifacts | + Add

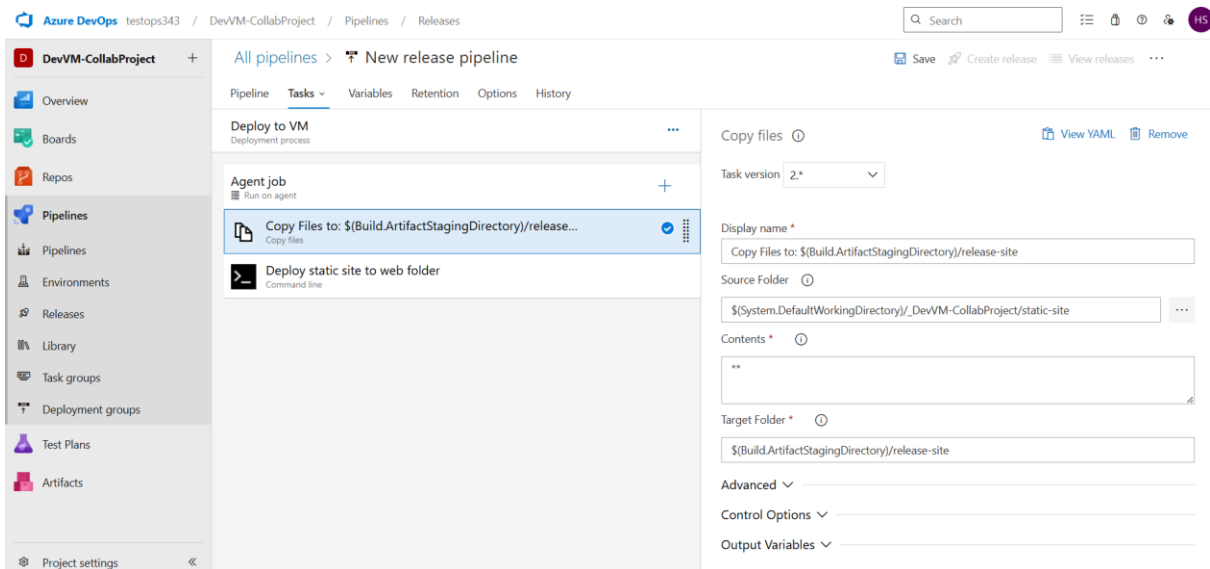
Stages | + Add

Deploy to VM

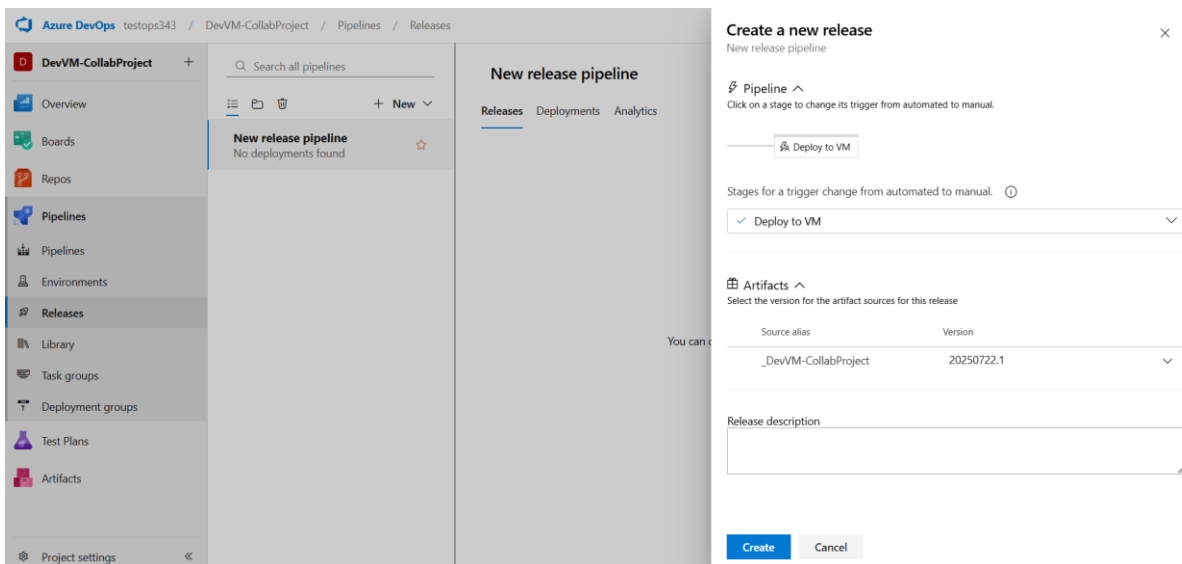
Stage name: Deploy to VM

Stage owner: Hemansh Sankhla

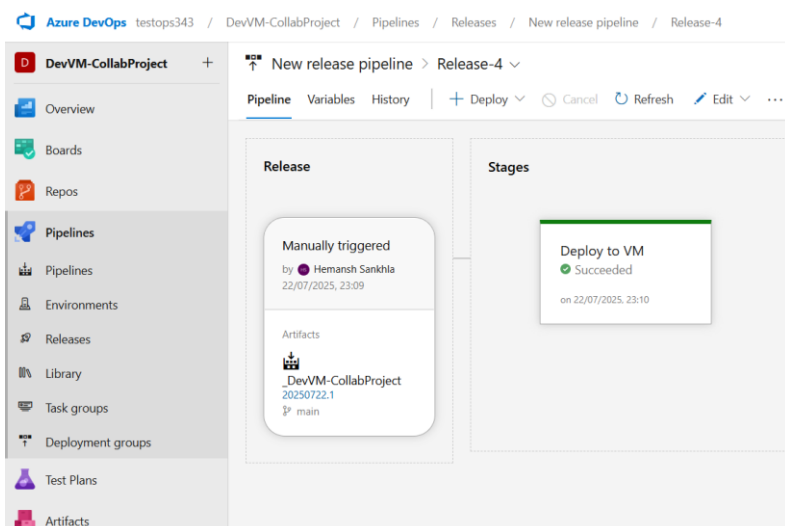
Added a Stage



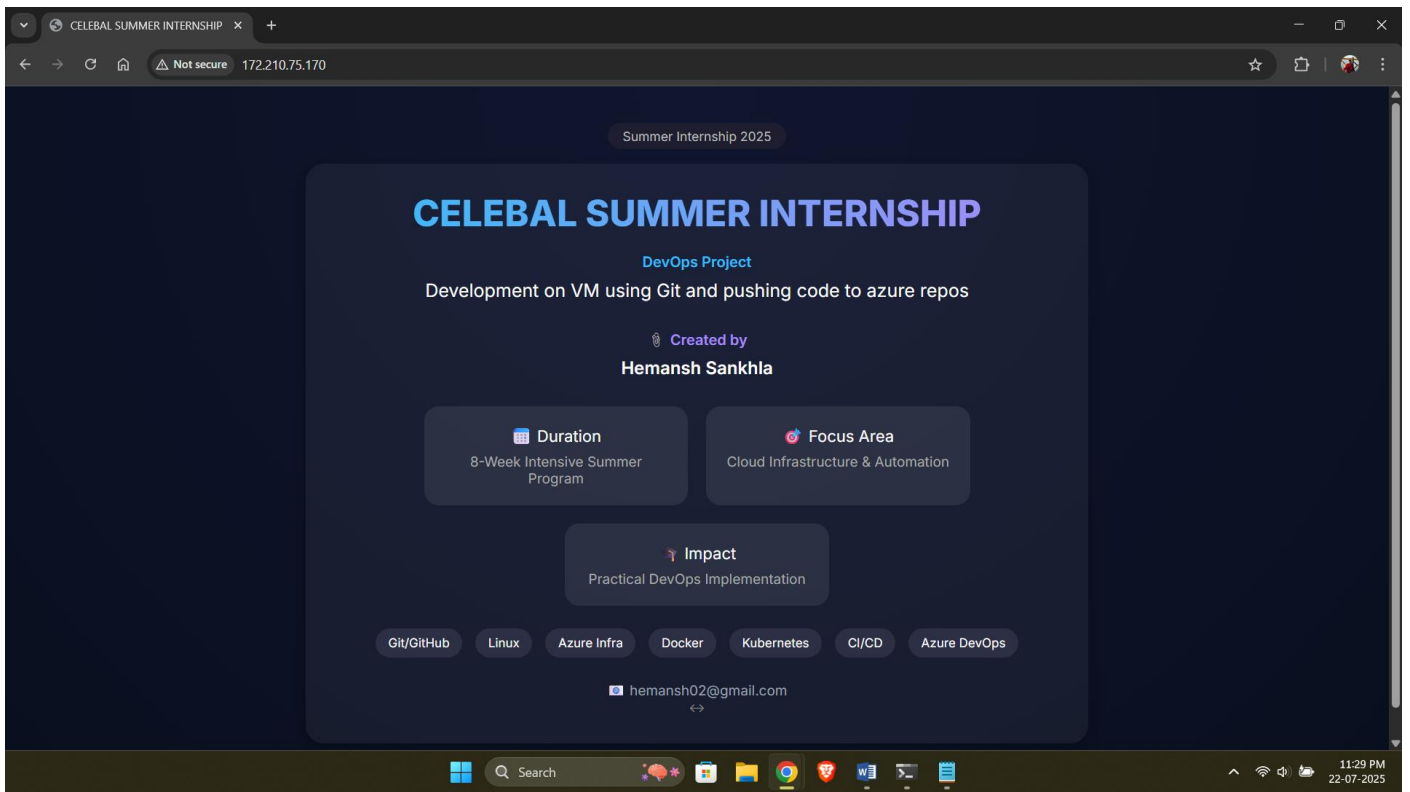
Added Deployment task



Finally created the Release



Deploy to VM successful



Successfully Deployed Static Website on Azure VM via Azure Repos and CI/CD

THANK YOU!