

CELEBAL SUMMER INTERNSHIP

DevOps Project

Submitted by: Hemansh Sankhla

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

Create a project to get started

Project name *

Description

Visibility

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

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
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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
 afff15a..d2a3029  main -> main
azureuser@dev:~/DevVM-CollabProject$ |
```

2. File updated in Azure Repo

The screenshot shows the Azure DevOps interface for a repository named 'DevVM-CollabProject'. The left sidebar has 'Files' selected under 'Repos'. The main area shows two files: 'page.html' and 'README.md'. 'page.html' was last changed 9m ago by 'd2a3029d' with the commit message 'Added static website hemansh02'. 'README.md' was last changed Yesterday by 'afff15a0' with the commit message 'Added README.md Hemansh Sankhla'. There are sections for 'Introduction' and 'Getting Started' with TODO items, and a 'Build and Test' section with a TODO item.

Phase 5: CI/CD Pipeline

1. Created Build Pipeline (CI)

The screenshot shows the Azure DevOps interface for creating a new pipeline. The left sidebar has 'Pipelines' selected. The top navigation bar shows 'Review' is active. The main area displays the YAML configuration for the pipeline:

```
trigger:
- main

pool:
  name: Default

steps:
  - task: CopyFiles@2
    inputs:
      contents: ***
      targetFolder: '$(Build.ArtifactStagingDirectory)'
      displayName: 'Copy static files to staging'

    settings:
      task: PublishBuildArtifacts@1
      inputs:
        pathToPublish: '$(Build.ArtifactStagingDirectory)'
        artifactName: 'static-site'
        displayName: 'Publish static files as build artifact'
```

2. Job is Successful

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

#20250722.1 • Set up CI with Azure Pipelines

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

Summary Code Coverage

Individual CI by Hemansh Sankhla

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

View 4 changes

Get started

Jobs

Name	Status	Duration
Job	Success	26s

Project settings

3. Created Release Pipeline (CD)

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases

All pipelines > New release pipeline

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

All pipelines > New release pipeline

Artifacts | + Add Stages | + Add

Stage Deploy to VM

Properties ^ Name and owners of the stage

Stage name Deploy to VM

Stage owner Hemansh Sankhla

Added a Stage

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases

All pipelines > New release pipeline

Pipeline Tasks Variables Retention Options History

Deploy to VM Deployment process

Agent job Run on agent

Copy Files to: \$(Build.ArtifactStagingDirectory)/release... Copy files

Deploy static site to web folder Command line

Copy files (1)

Task version 2.*

View YAML Remove

Display name * Copy Files to: \$(Build.ArtifactStagingDirectory)/release-site

Source Folder \$(System.DefaultWorkingDirectory)/_DevVM-CollabProject/static-site

Contents **

Target Folder * \$(Build.ArtifactStagingDirectory)/release-site

Advanced Control Options Output Variables

Added Deployment task

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases

DevVM-CollabProject +

Search all pipelines

New release pipeline

Releases Deployments Analytics

New release pipeline No deployments found

Create a new release

New release pipeline

Click on a stage to change its trigger from automated to manual.

Deploy to VM

Stages for a trigger change from automated to manual.

Deploy to VM

Artifacts

Select the version for the artifact sources for this release

Source alias Version

_DevVM-CollabProject 20250722.1

Release description

Create Cancel

Finally created the Release

Azure DevOps testops343 / DevVM-CollabProject / Pipelines / Releases / New release pipeline / Release-4

DevVM-CollabProject +

New release pipeline > Release-4

Pipeline Variables History Deploy Cancel Refresh Edit ...

Release

Manually triggered by Hemansh Sankha 22/07/2025, 23:09

Artifacts

_DevVM-CollabProject 20250722.1 main

Stages

Deploy to VM Succeeded on 22/07/2025, 23:10

Deploy to VM successful

The screenshot shows a web browser window with the title 'CELEBAL SUMMER INTERNSHIP'. The page content is as follows:

Summer Internship 2025

CELEBAL SUMMER INTERNSHIP

DevOps Project
Development on VM using Git and pushing code to azure repos

Created by
Hemansh Sankhla

Duration
8-Week Intensive Summer Program

Focus Area
Cloud Infrastructure & Automation

Impact
Practical DevOps Implementation

Git/GitHub Linux Azure Infra Docker Kubernetes CI/CD Azure DevOps

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The browser status bar at the bottom shows the URL '172.210.75.170', the time '11:29 PM', and the date '22-07-2025'.

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

THANK YOU!