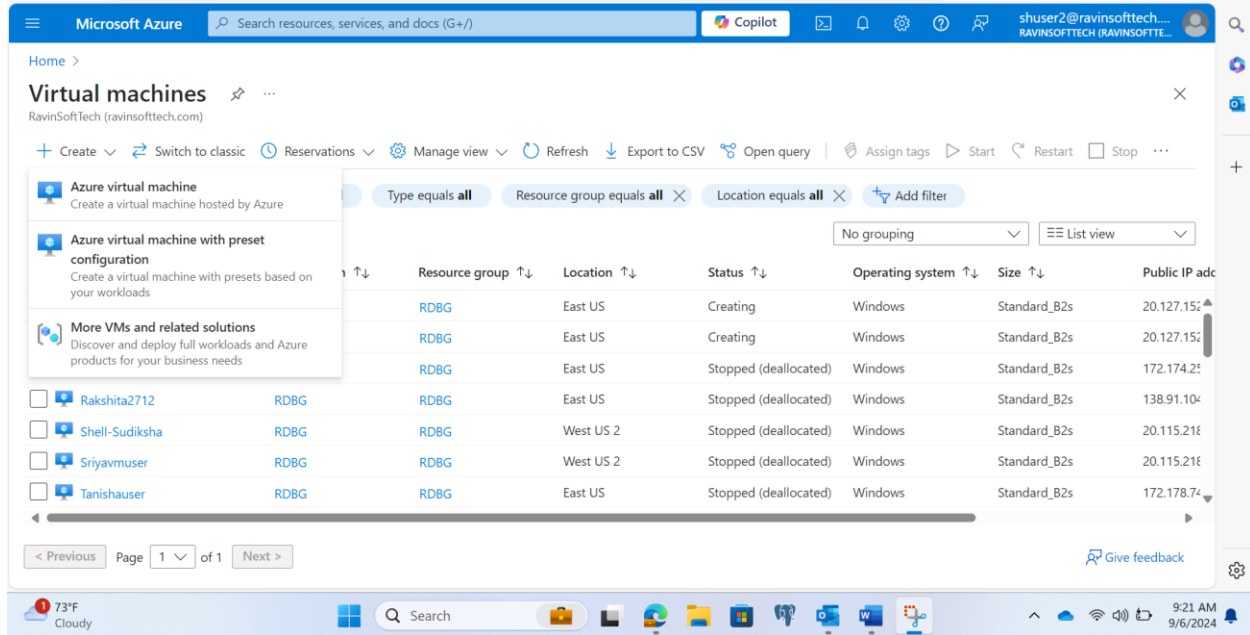


CASE STUDY

VM CREATION AND GitHub Actions Implementation

Creation of Azure VM

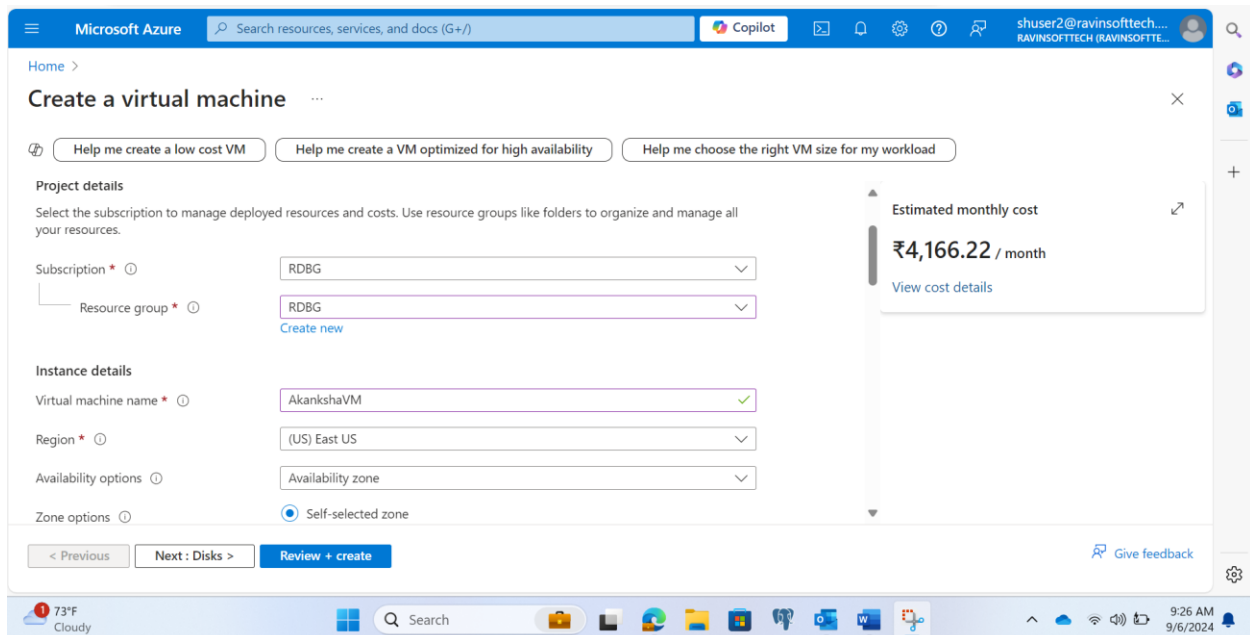
Step 1: Login to azure and click on create Azure VM



The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. The main content area is titled 'Virtual machines' and shows a list of existing VMs. The table has columns for Name, Resource group, Location, Status, Operating system, Size, and Public IP address. The 'Create' button is highlighted, and a dropdown menu shows options like 'Azure virtual machine', 'Azure virtual machine with preset configuration', and 'More VMs and related solutions'.

Name	Resource group	Location	Status	Operating system	Size	Public IP address
Rakshita2712	RDBG	East US	Stopped (deallocated)	Windows	Standard_B2s	138.91.104
Shell-Sudiksha	RDBG	West US 2	Stopped (deallocated)	Windows	Standard_B2s	20.115.21
Sriyavmuser	RDBG	West US 2	Stopped (deallocated)	Windows	Standard_B2s	20.115.21
Tanishauser	RDBG	East US	Stopped (deallocated)	Windows	Standard_B2s	172.178.7

Step 2: Set project details as shown below



The screenshot shows the 'Create a virtual machine' page in the Microsoft Azure portal. The page displays the 'Project details' section with fields for Subscription, Resource group, Virtual machine name, Region, Availability options, and Zone options. The 'Estimated monthly cost' is shown as ₹4,166.22 / month. The 'Next: Disks' button is highlighted.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Zone options ☒ Self-selected zone

[< Previous](#) [Next: Disks >](#) [Review + create](#)

Estimated monthly cost

₹4,166.22 / month

[View cost details](#)

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

shuser2@ravinsofttech...
RAVINSOFTTECH (RAVINSOFTTE...

Home >

Create a virtual machine

Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

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

Availability zone * ⓘ

Zone 1

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type ⓘ

Standard

This image is compatible with additional security features. [Click here to swap to the Trusted launch security type.](#)

Image * ⓘ

Windows 10 Pro, version 22H2 - x64 Gen2

[See all images](#) | [Configure VM generation](#)

VM architecture ⓘ

Arm64

x64

< Previous

Next : Disks >

Review + create

Give feedback

Estimated monthly cost

₹4,166.22 / month

[View cost details](#)

73°F
Cloudy

Search

9:31 AM
9/6/2024

Step 3: Enter the username and password for the VM

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

shuser2@ravinsofttech...
RAVINSOFTTECH (RAVINSOFTTE...

Home >

Create a virtual machine

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

Size * ⓘ

Standard_B2s - 2 vcpus, 4 GiB memory (₹2,526.46/month)

[See all sizes](#)

Item(s) availability based on policy assignment(s) for the selected scope.
Allowed virtual machine size SKUs ([Policy details](#))

Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

Enable Hibernation ⓘ

☐

Administrator account

Username * ⓘ

vmuser

✓

Password *

✓

Confirm password *

✓

< Previous

Next : Disks >

Review + create

Give feedback

Estimated monthly cost

₹4,166.22 / month

[View cost details](#)

73°F
Cloudy

Search

9:27 AM
9/6/2024

Step 4: Select all inbound ports

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The user is at the 'Select inbound ports' step. The 'Public inbound ports' section has two radio buttons: 'None' and 'Allow selected ports'. The 'Allow selected ports' option is selected. Below this, there is a dropdown menu for 'Select inbound ports' with the value 'HTTP (80), HTTPS (443), SSH (22), RDP (3389)'. A blue information box states: 'All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.' On the right, a box shows the 'Estimated monthly cost' as ₹4,166.22 / month. At the bottom, there are navigation buttons: '< Previous', 'Next : Disks >', and 'Review + create'. The Windows taskbar at the bottom shows the date as 9/6/2024 and the time as 9:27 AM.

Microsoft Azure Search resources, services, and docs (G+/)

Home >

Create a virtual machine

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

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports * HTTP (80), HTTPS (443), SSH (22), RDP (3389)

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Licensing

☒ I confirm I have an eligible Windows 10/11 license with multi-tenant hosting rights.

< Previous Next : Disks > Review + create Give feedback

73°F Cloudy 9:27 AM 9/6/2024

Step 5: Go to Next:Disks and configure OS disk type as shown below

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, at the 'Next: Disks' step. The 'OS disk' section has three dropdown menus: 'OS disk size' (Image default (127 GiB)), 'OS disk type' (Standard HDD (locally-redundant storage)), and 'Delete with VM' (checked). Below these are 'Key management' (Platform-managed key) and 'Enable Ultra Disk compatibility' (unchecked). A section for 'Data disks for AkankshaVM' is also visible. On the right, a box shows the 'Estimated monthly cost' as ₹3,016.31 / month. At the bottom, there are navigation buttons: '< Previous', 'Next : Networking >', and 'Review + create'. The Windows taskbar at the bottom shows the date as 9/6/2024 and the time as 9:29 AM.

Microsoft Azure Search resources, services, and docs (G+/)

Home >

Create a virtual machine

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

OS disk

OS disk size

OS disk type *

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM ☒

Key management

Enable Ultra Disk compatibility ☐

Data disks for AkankshaVM

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

< Previous Next : Networking > Review + create Give feedback

73°F Cloudy 9:29 AM 9/6/2024

Step 6: Click on Next: Networking and configure as shown below

Microsoft Azure Search resources, services, and docs (G+/) Copilot shuser2@ravinssofttech... RAVINSOFTTECH (RAVINSOFTTE...)

Home >

Create a virtual machine

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 Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * (new) AkankshaVM [Create new](#)

Subnet * (new) default (10.7.0.0/24) [Create new](#)

Public IP (new) AkankshaVM-ip [Create new](#)

NIC network security group (None)

Estimated monthly cost ₹3,985.52 / month [View cost details](#)

< Previous Next : Management > Review + create Give feedback

73°F Cloudy Search 9:33 AM 9/6/2024

Step 7: Click on Review+Create to Validate the configuration.

Microsoft Azure Search resources, services, and docs (G+/) Copilot shuser2@ravinssofttech... RAVINSOFTTECH (RAVINSOFTTE...)

Home >

Create a virtual machine

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

Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports * HTTP (80), HTTPS (443), SSH (22), RDP (3389)

Warning: This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is deleted ☒

Enable accelerated networking ☐ The selected VM size does not support accelerated networking.

Estimated monthly cost ₹3,985.52 / month [View cost details](#)

< Previous Next : Management > Review + create Give feedback

73°F Cloudy Search 9:34 AM 9/6/2024

Step 8: Click on Create after validation passes.

Microsoft Azure

Home >

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 | Disks | Networking | Management | Monitoring | Advanced | Tags | **Review + create**

Price

1 X Standard B2s by Microsoft

Subscription credits apply

3.4609 INR/hr

Estimated monthly cost: ₹4,986.52 / month

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional

< Previous | Next > | **Create**

Download a template for automation | Give feedback

Step 9: VM is deployed successfully.

Microsoft Azure

Home >

CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240906105020 | Overview

Deployment

Search

Delete | Cancel | Redeploy | Download | Refresh

Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name: CreateVm-MicrosoftWindowsDesk... | Start time: 9/6/2024, 10:52:44 AM | Correlation ID: 7bd47ffe-2b51-4b13-

Subscription: RDBG | Resource group: RDBG

Deployment details

Next steps

Setup auto-shutdown | Recommended

Monitor VM health, performance and network dependencies | Recommended

Run a script inside the virtual machine | Recommended

Go to resource | Create another VM

Give feedback

Tell us about your experience with deployment

Cost Management

Get notified to stay within your budget and prevent unexpected charges on your bill.

Set up cost alerts >

Microsoft Defender for Cloud

Secure your apps and infrastructure

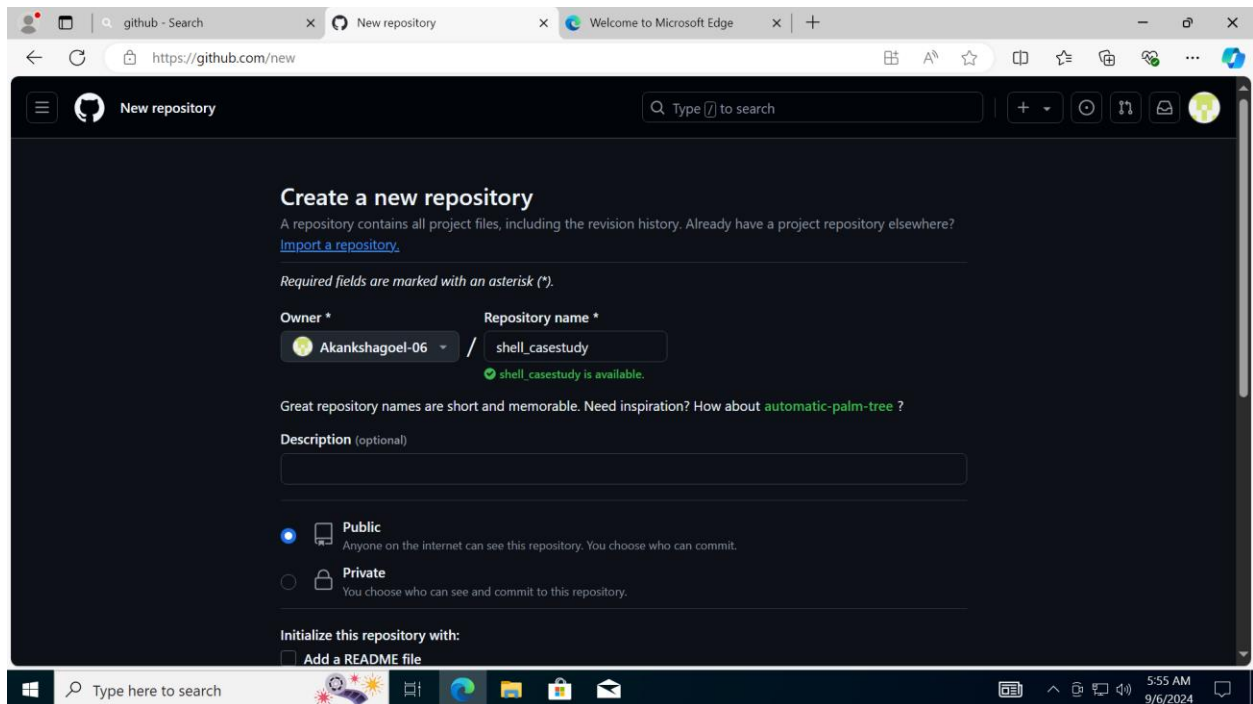
Go to Microsoft Defender for Cloud >

Free Microsoft tutorials

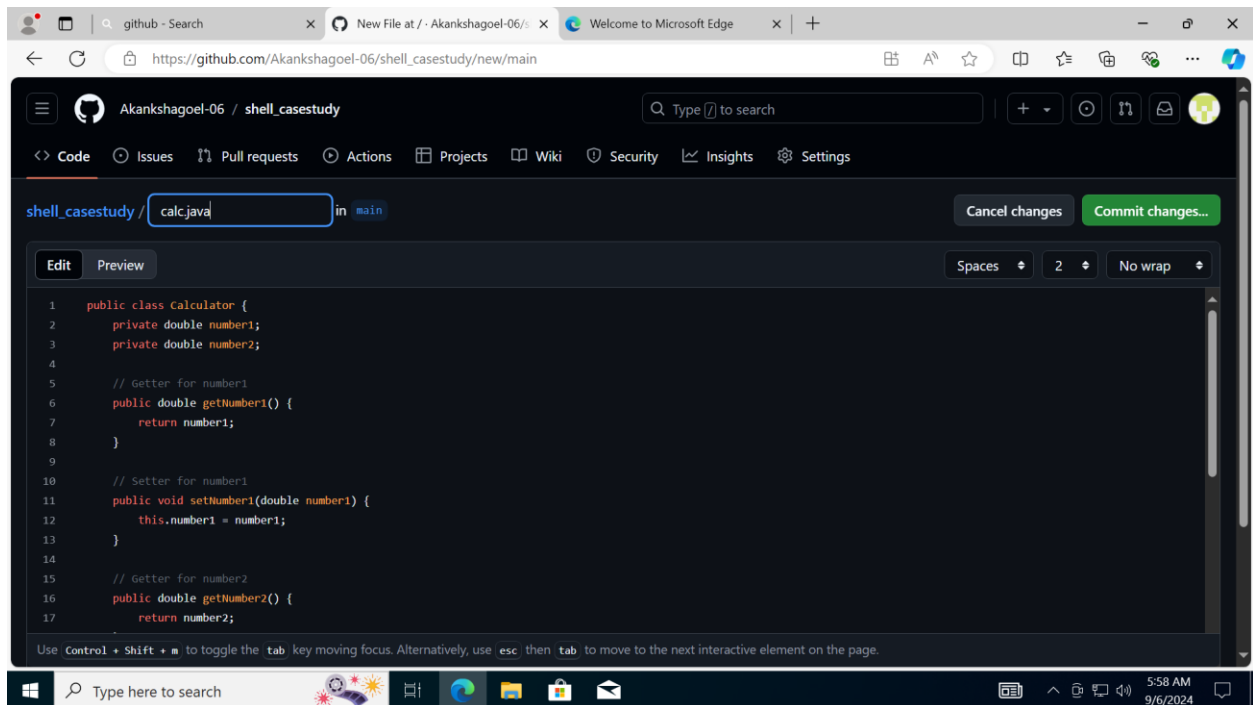
Start learning today >

Implementation of Pipeline on GitHub.

Step 1: Create a new repository.



Step 2: Add code for java project



Step 3: Create Maven.yml using GitHub actions workflows.

The screenshot shows the GitHub repository page for 'Akankshagoel-06 / shell_casestudy'. The 'Code' tab is selected, and the file 'maven.yml' is open. The file content is as follows:

```
1 # This workflow will build a Java project with Maven, and cache/restore any dependencies to improve the workflow execution
2 # For more information see: https://docs.github.com/en/actions/automating-builds-and-tests/building-and-testing-java-with-m
3
4 # This workflow uses actions that are not certified by GitHub.
5 # They are provided by a third-party and are governed by
6 # separate terms of service, privacy policy, and support
7 # documentation.
8
9 name: Java CI with Maven
10
11 on:
12   push:
13     branches: [ "main" ]
14   pull_request:
15     branches: [ "main" ]
```

The file is 35 lines (28 loc) and 1.12 KB. The commit message is 'Akankshagoel-06 Update maven.yml' and it was committed 308bf22 · 5 minutes ago.

Step 4: Add pom.xml file

The screenshot shows the GitHub repository page for 'Akankshagoel-06 / shell_casestudy'. The 'Code' tab is selected, and the file 'pom.xml' is open. The file content is as follows:

```
1 <project xmlns="http://maven.apache.org/POM/4.0.0"
2   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3   xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
4   <modelVersion>4.0.0</modelVersion>
5
6   <groupId>com.example</groupId>
7   <artifactId>simple-java-app</artifactId>
8   <version>1.0-SNAPSHOT</version>
9
10  <properties>
11    <maven.compiler.source>11</maven.compiler.source>
12    <maven.compiler.target>11</maven.compiler.target>
13  </properties>
14
15  <dependencies>
16    <!-- Add your project dependencies here -->
```

The file is 44 lines (40 loc) and 1.52 KB. The commit message is 'Akankshagoel-06 Create pom.xml' and it was committed 52aed58 · 8 minutes ago.

Step 5: `System.out.println("Answers:");` is added and java file is updated, the build is automatically deployed in the workflow

The screenshot shows the GitHub Actions interface for the repository 'Akankshagoel-06 / shell_casestudy'. The 'All workflows' tab is selected, displaying a list of workflow runs. The left sidebar shows the 'Actions' section with a 'New workflow' button and a list of workflow files: 'Java CI with Maven', 'Caches', 'Attestations', and 'Runners'. The main area shows 7 workflow runs, with the first two being successful and the last two failing.

Event	Status	Branch	Actor
Update calc.java	Success	main	Akankshagoel-06
Update maven.yml	Success	main	Akankshagoel-06
Create pom.xml	Failure	main	Akankshagoel-06
Create maven.yml	Failure	main	Akankshagoel-06

The bottom of the screenshot shows the Windows taskbar with the search bar and system tray icons, indicating the time is 6:43 AM on 9/6/2024.