Azure Portfolio Projects

Overview

Each project in this 5 project portfolio is designed to demonstrate my hands-on experience with Azure and cloud technologies. The projects cover core aspects such as compute and identity management, networking and storage, monitoring, backup, and recovery, identity integration, and app service deployment.

Project 5: Azure App Service Deployment and Scaling

Topics Covered: App Service, Deployment Slots, Autoscaling, Backup, Monitoring

Summary

This project focuses on deploying a web application using Azure App Service, utilizing deployment slots for testing, configuring autoscaling based on metrics, and setting up backups.

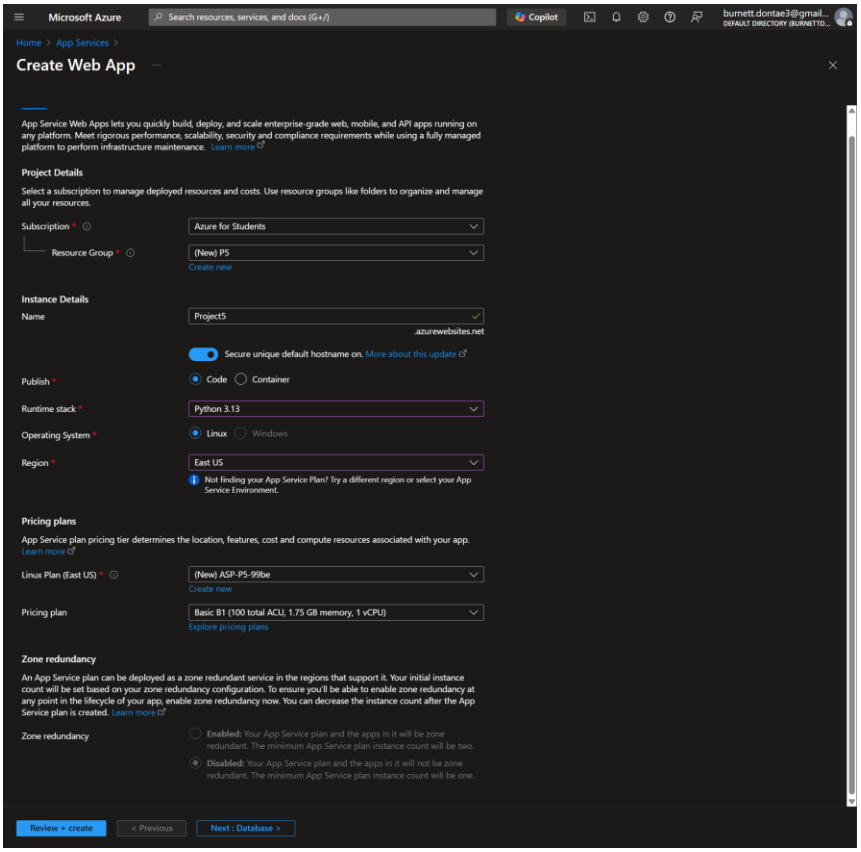
Scenario

A company wants to deploy a web application using Azure App Service, set up deployment slots for testing, enable autoscaling based on demand, and configure backups for disaster recovery.

Steps

- Step: Create an App Service

    1. Navigate to App Services > Create.
    2. Select the subscription, resource group, and enter a name for the app.
    3. Choose a Runtime Stack (e.g., .NET, Node.js, Python) and select a pricing tier.
    4. Review and create the App Service.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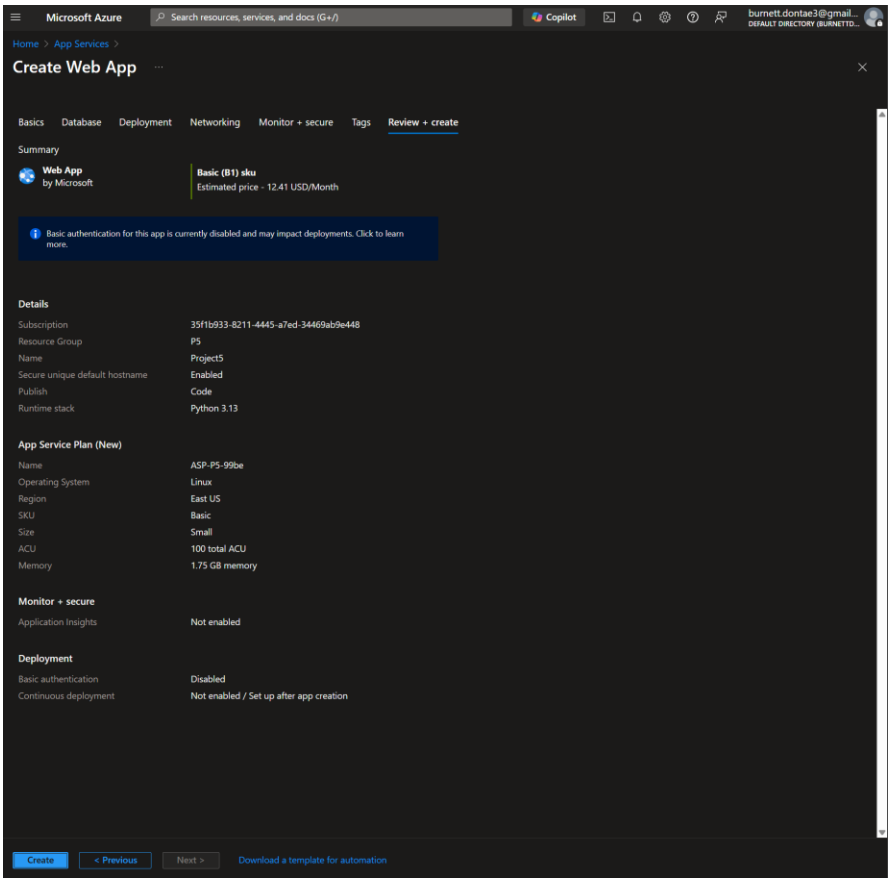
Create Web App
App Service Web Apps lets you quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. Meet rigorous performance, scalability, security and compliance requirements while using a fully managed platform to perform infrastructure maintenance. Learn more
Project Details
Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.
Subscription *
Azure for Students
Resource Group *
(New) P5
Create new
Instance Details
Name
Project5
.azurewebsites.net
Secure unique default hostname on. More about this update
Publish *
Code
Container
Runtime stack *
Python 3.13
Operating System *
Linux
Windows
Region *
East US
Not finding your App Service Plan? Try a different region or select your App Service Environment.
Pricing plans
App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.
Learn more
Linux Plan (East US) *
(New) ASP-P5-99be
Create new
Pricing plan
Basic B1 (100 total ACU, 1.75 GB memory, 1 vCPU)
Explore pricing plans
Zone redundancy
An App Service plan can be deployed as a zone redundant service in the regions that support it. Your initial instance count will be set based on your zone redundancy configuration. To ensure you'll be able to enable zone redundancy at any point in the lifecycle of your app, enable zone redundancy now. You can decrease the instance count after the App Service plan is created. Learn more
Zone redundancy
Enabled: Your App Service plan and the apps in it will be zone redundant. The minimum App Service plan instance count will be two.
Disabled: Your App Service plan and the apps in it will not be zone redundant. The minimum App Service plan instance count will be one.
Review + create
< Previous
Next : Database >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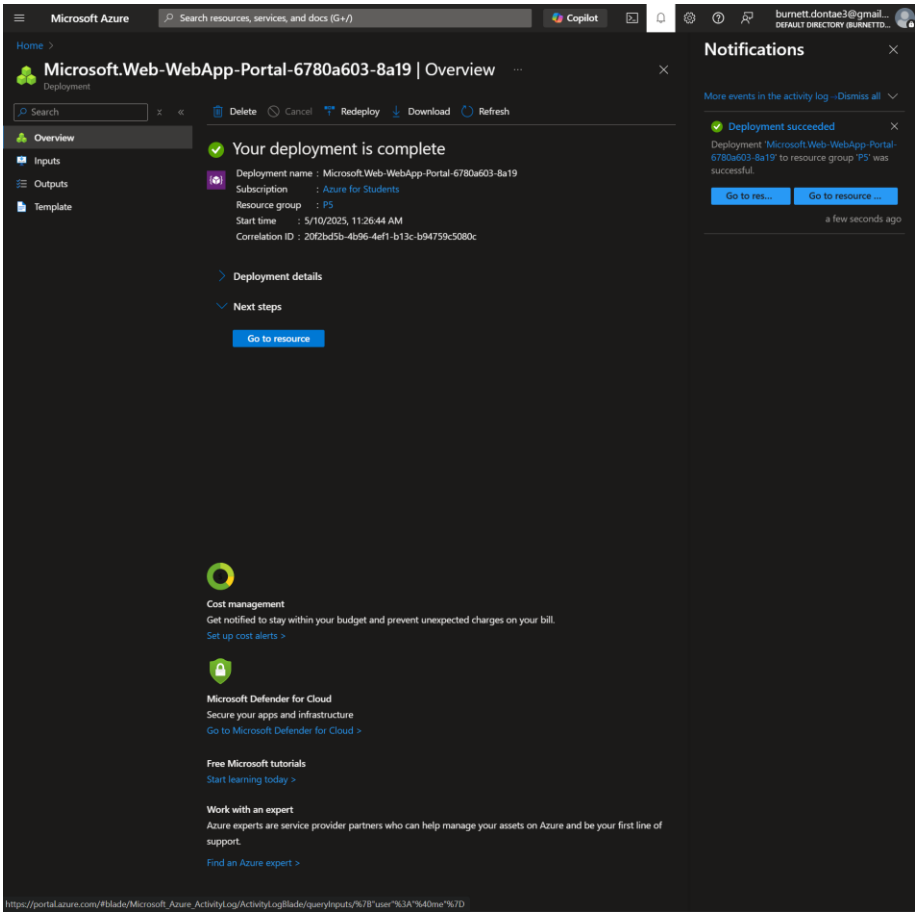
Home > App Services >
Create Web App
Basics
Database
Deployment
Networking
Monitor + secure
Tags
Review + create
Summary
Web App
by Microsoft
Basic (B1) sku
Estimated price - 12.41 USD/Month
Basic authentication for this app is currently disabled and may impact deployments. Click to learn more.
Details
Subscription 35f1b933-8211-4445-a7ed-34469ab9e448
Resource Group P5
Name Project5
Secure unique default hostname Enabled
Publish Code
Runtime stack Python 3.13
App Service Plan (New)
Name ASP-P5-99be
Operating System Linux
Region East US
SKU Basic
Size Small
ACU 100 total ACU
Memory 1.75 GB memory
Monitor + secure
Application Insights Not enabled
Deployment
Basic authentication Disabled
Continuous deployment Not enabled / Set up after app creation
Create
< Previous
Next >
Download a template for automation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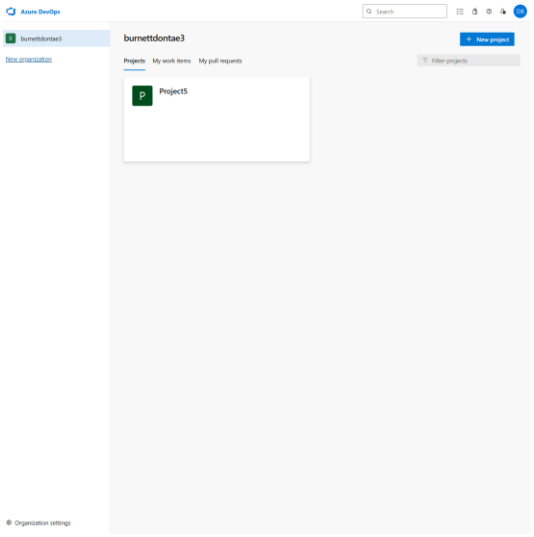
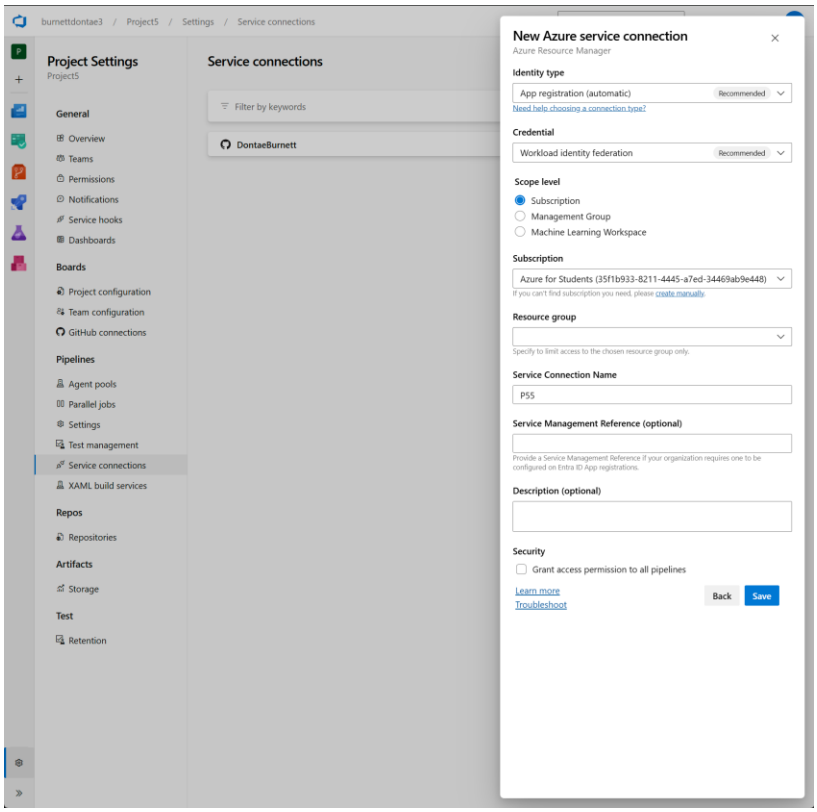
Home
Microsoft.Web-WebApp-Portal-6780a603-8a19 | Overview
Deployment
Search
Overview
Inputs
Outputs
Template
Delete
Cancel
Redeploy
Download
Refresh
Your deployment is complete
Deployment name : Microsoft.Web-WebApp-Portal-6780a603-8a19
Subscription : Azure for Students
Resource group : P5
Start time : 5/10/2025, 11:26:44 AM
Correlation ID : 20f2bd5b-4b96-4ef1-b13c-b94759c5080c
Deployment details
Next steps
Go to resource
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 >
Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
Find an Azure expert >
Notifications
More events in the activity log → Dismiss all
Deployment succeeded
Deployment 'Microsoft.Web-WebApp-Portal-6780a603-8a19' to resource group 'P5' was successful.
Go to res...
Go to resource ...
a few seconds ago
https://portal.azure.com/#blade/Microsoft_Azure_ActivityLog/ActivityLogBlade/queryInputs/%7B"user"%3A"%40me"%7D

- Step: Deploy the Web Application

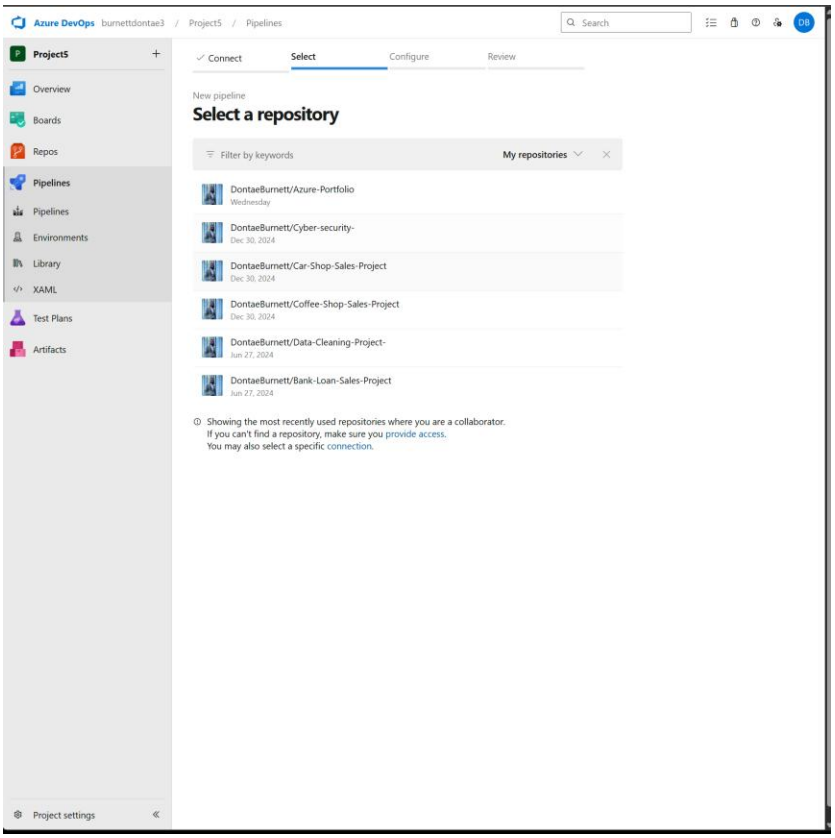
5. Use Azure DevOps or GitHub Actions to set up a CI/CD pipeline.
6. Deploy the sample web application to the App Service.
7. Verify the deployment by accessing the application URL.

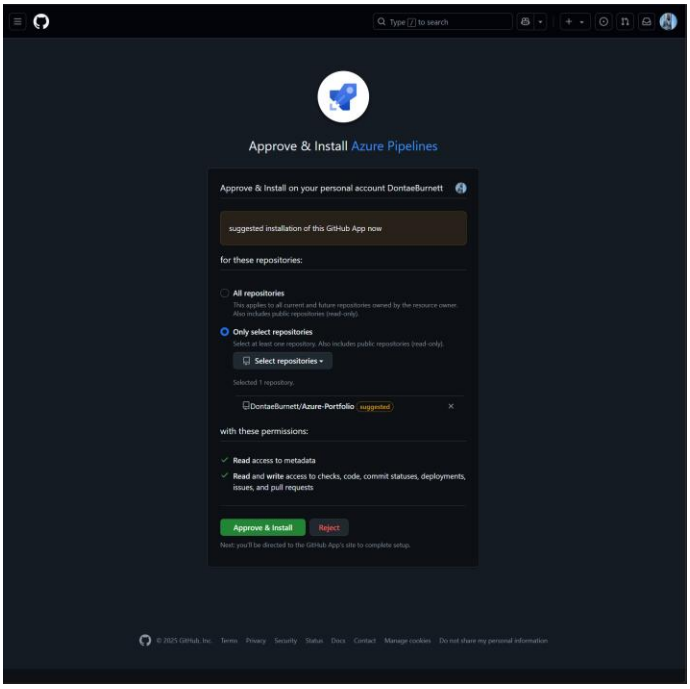


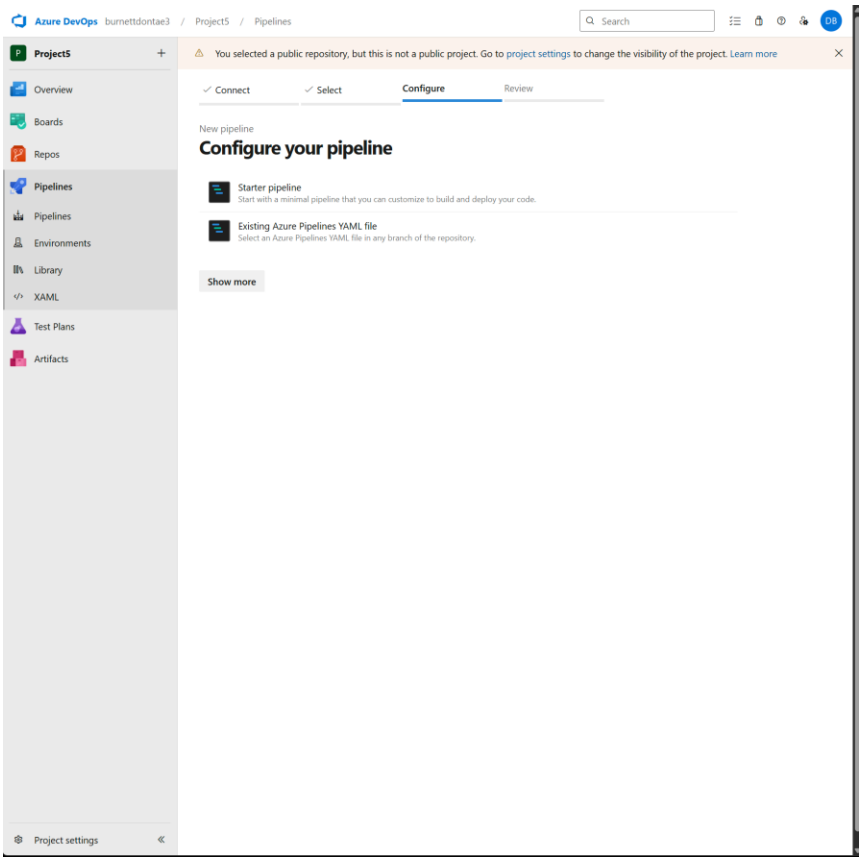
Under the Project settings you can add Different service Connections the one im using is Azure Resource Manager



Connect your GitHub Account if you want to post it there






Azure DevOps
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Project5
Pipelines
Search
DB
Project5
You selected a public repository, but this is not a public project. Go to project settings to change the visibility of the project. Learn more
Overview
Boards
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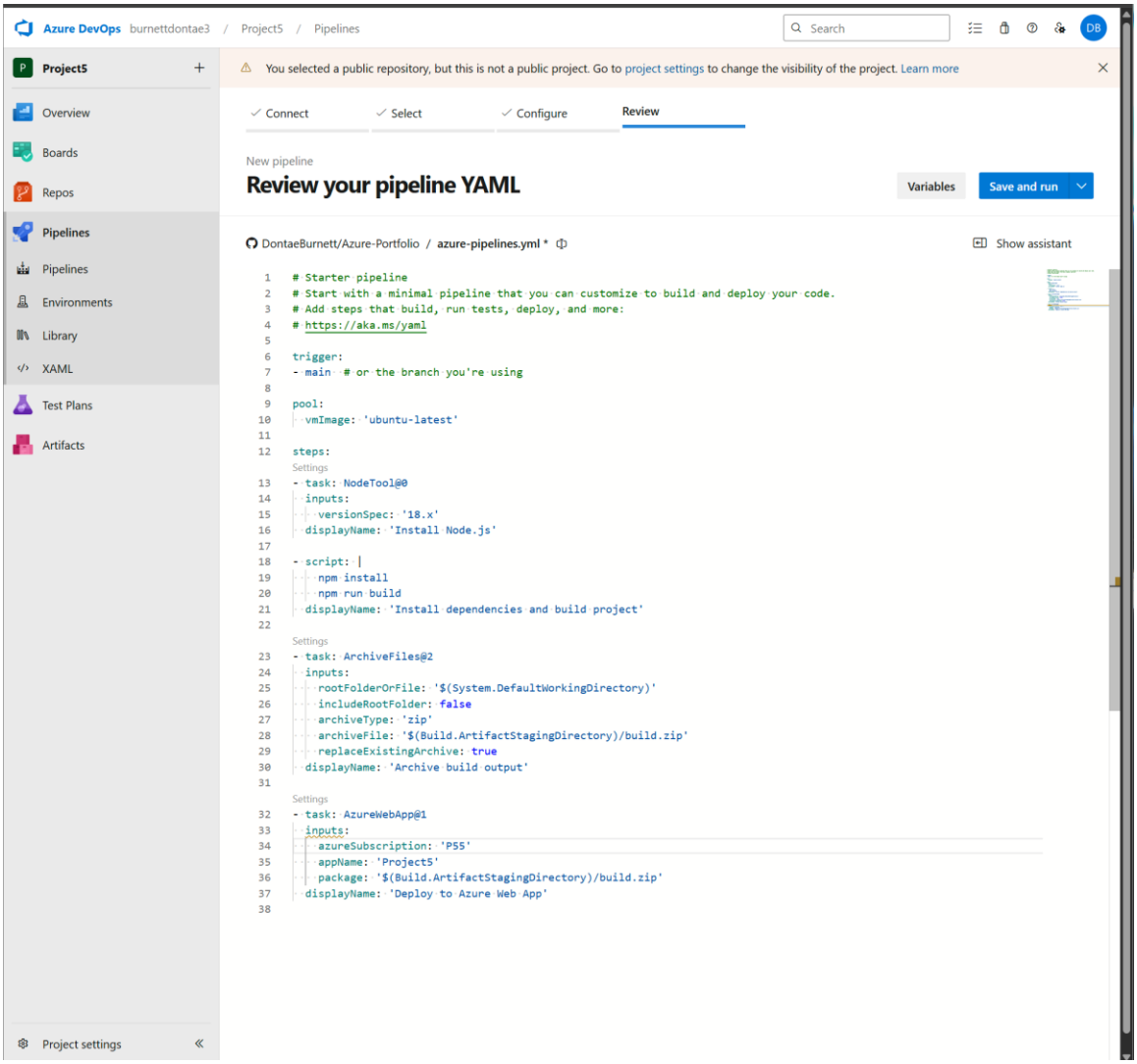
Pipelines
Pipelines
Environments
Library
XAML
Test Plans
Artifacts
Connect
Select
Configure
Review
New pipeline
Configure your pipeline
Starter pipeline
Start with a minimal pipeline that you can customize to build and deploy your code.
Existing Azure Pipelines YAML file
Select an Azure Pipelines YAML file in any branch of the repository.
Show more
Project settings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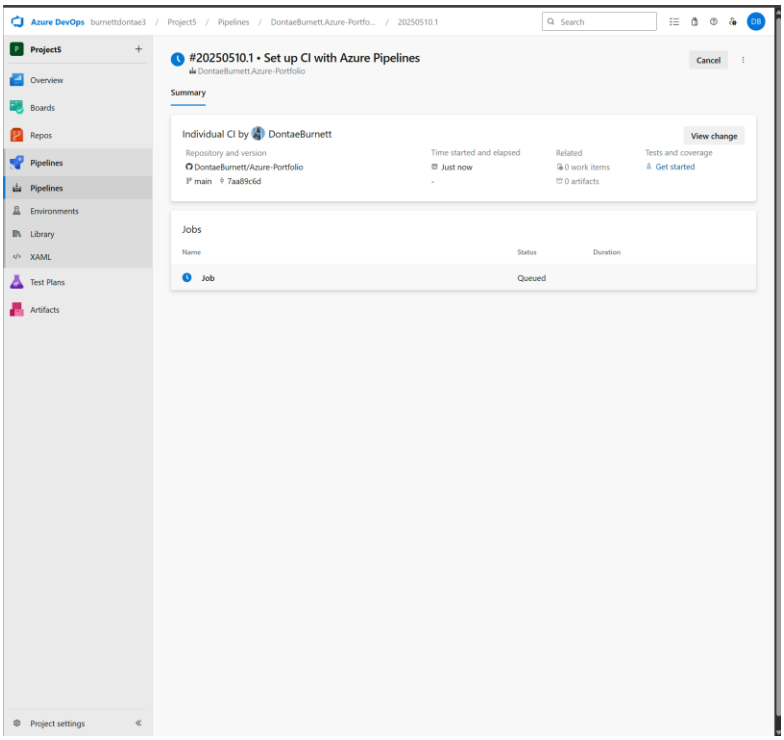
Pipelines
Environments
Library
XAML
Test Plans
Artifacts
Project settings
You selected a public repository, but this is not a public project. Go to project settings to change the visibility of the project. Learn more
Connect
Select
Configure
Review
New pipeline
Review your pipeline YAML
Variables
Save and run
DontaeBurnett/Azure-Portfolio / azure-pipelines.yml *
Show assistant
Starter pipeline
Start with a minimal pipeline that you can customize to build and deploy your code.
Add steps that build, run tests, deploy, and more:
https://aka.ms/yaml
trigger:
- main # or the branch you're using
pool:
vmImage: 'ubuntu-latest'
steps:
Settings
- task: NodeTool@0
inputs:
versionSpec: '18.x'
displayName: 'Install Node.js'
- script: |
npm install
npm run build
displayName: 'Install dependencies and build project'
Settings
- task: ArchiveFiles@2
inputs:
rootFolderOrFile: '$(System.DefaultWorkingDirectory)'
includeRootFolder: false
archiveType: 'zip'
archiveFile: '$(Build.ArtifactStagingDirectory)/build.zip'
replaceExistingArchive: true
displayName: 'Archive build output'
Settings
- task: AzureWebApp@1
inputs:
azureSubscription: 'P55'
appName: 'Project5'
package: '$(Build.ArtifactStagingDirectory)/build.zip'
displayName: 'Deploy to Azure Web App'


Azure DevOps
Project5
Pipelines
#20250510.1 • Set up CI with Azure Pipelines
DontaeBurnett.Azure-Portfolio
Cancel
Summary
Individual CI by DontaeBurnett
View change
Repository and version
DontaeBurnett/Azure-Portfolio
main 7aa89c6d
Time started and elapsed
Just now
Related
0 work items
0 artifacts
Tests and coverage
Get started
Jobs
Name
Status
Duration
Job
Queued
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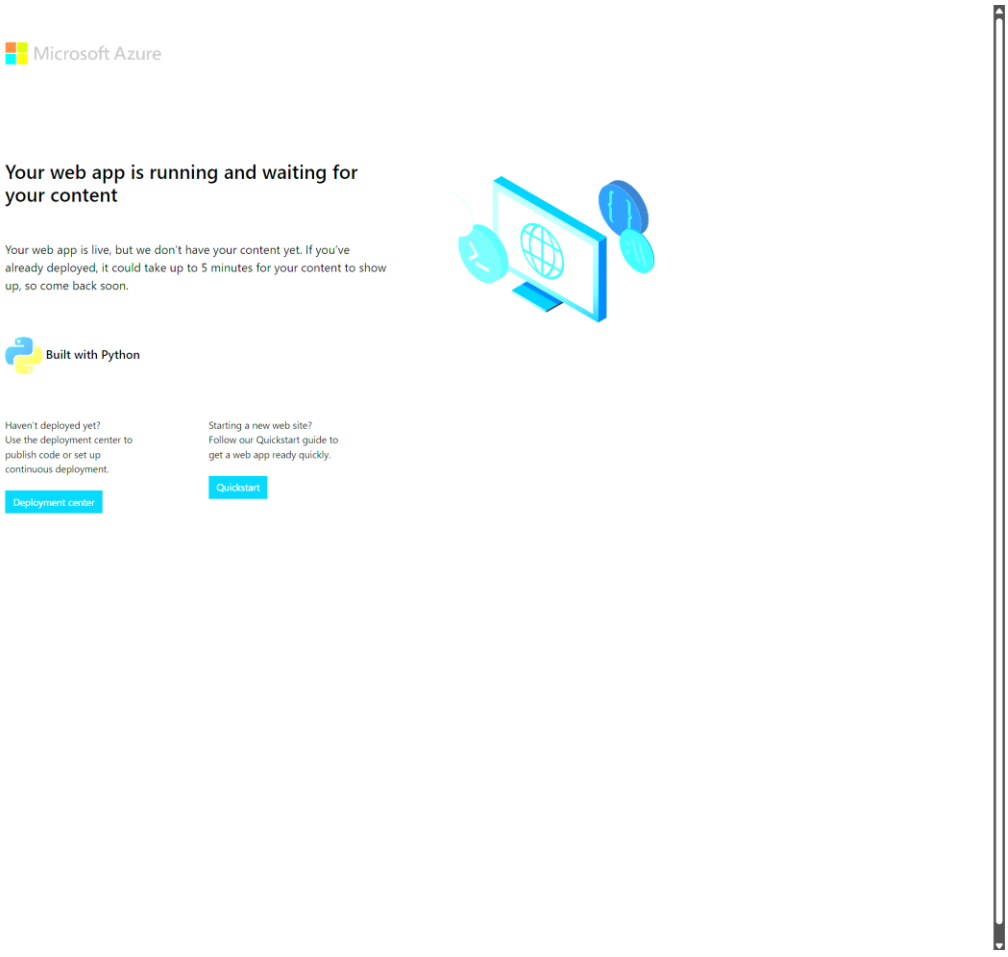
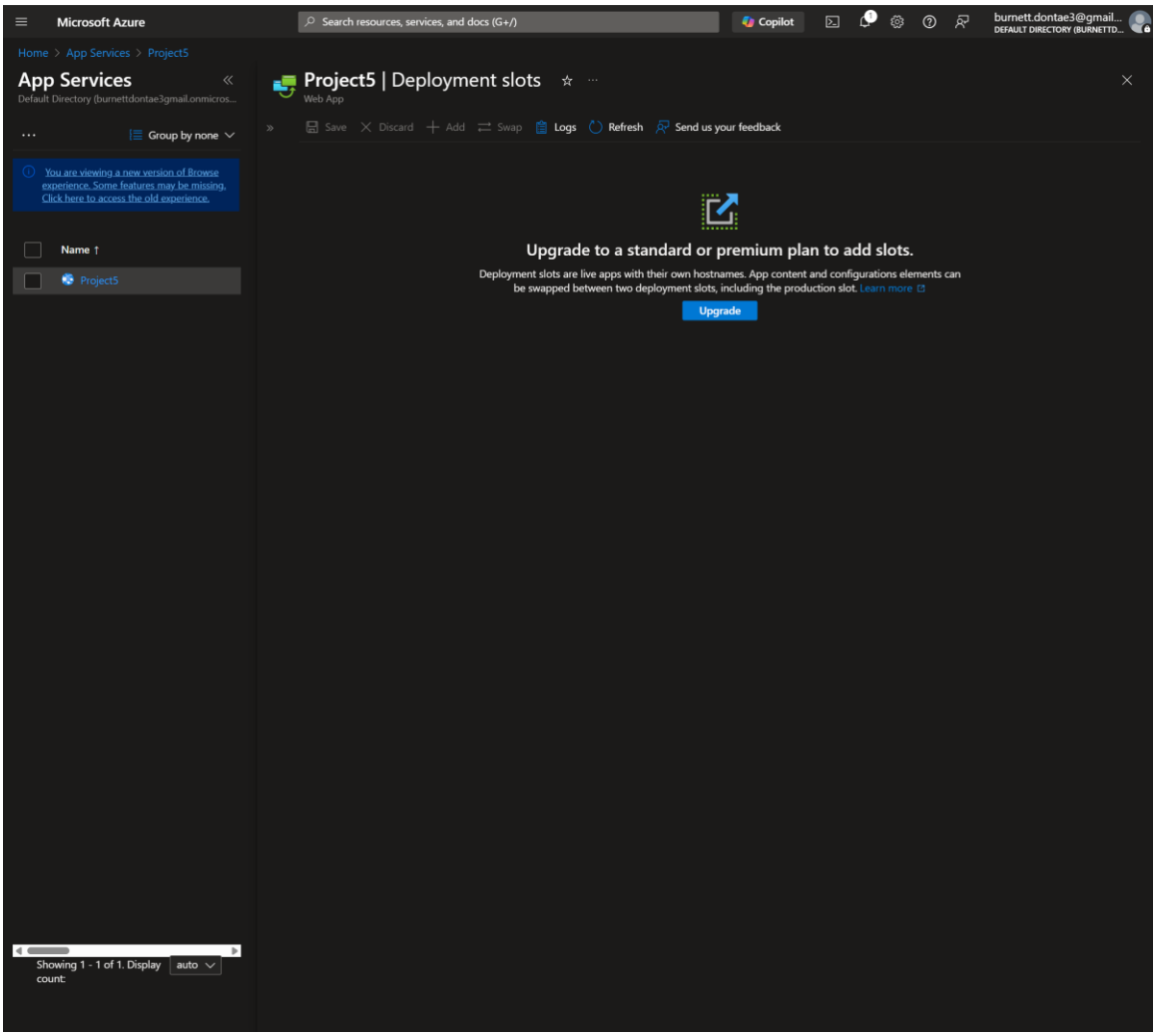

Microsoft Azure
Your web app is running and waiting for your content
Your web app is live, but we don't have your content yet. If you've already deployed, it could take up to 5 minutes for your content to show up, so come back soon.
Built with Python
Haven't deployed yet?
Use the deployment center to publish code or set up continuous deployment.
Deployment center
Starting a new web site?
Follow our Quickstart guide to get a web app ready quickly.
Quickstart

- Step: Set Up Deployment Slots

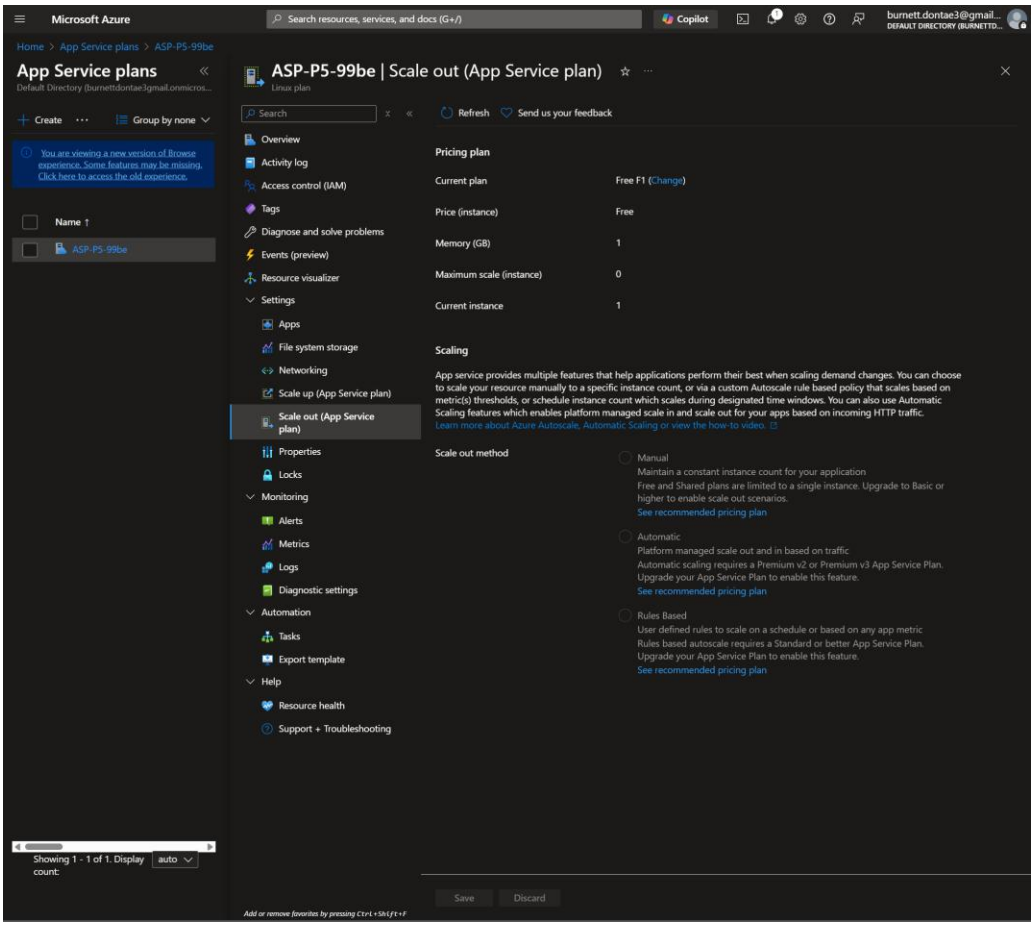
8. Navigate to the App Service > Deployment Slots > Add Slot.
9. Create a slot named 'Staging'.
10. Deploy a new version of the application to the Staging slot.
11. Swap slots to promote the staging version to production after testing.

The Free trial does not allow you to have Additional deployment slots but if your not on a free trial then you can Alternate between a staging slot to a production slot when your done testing



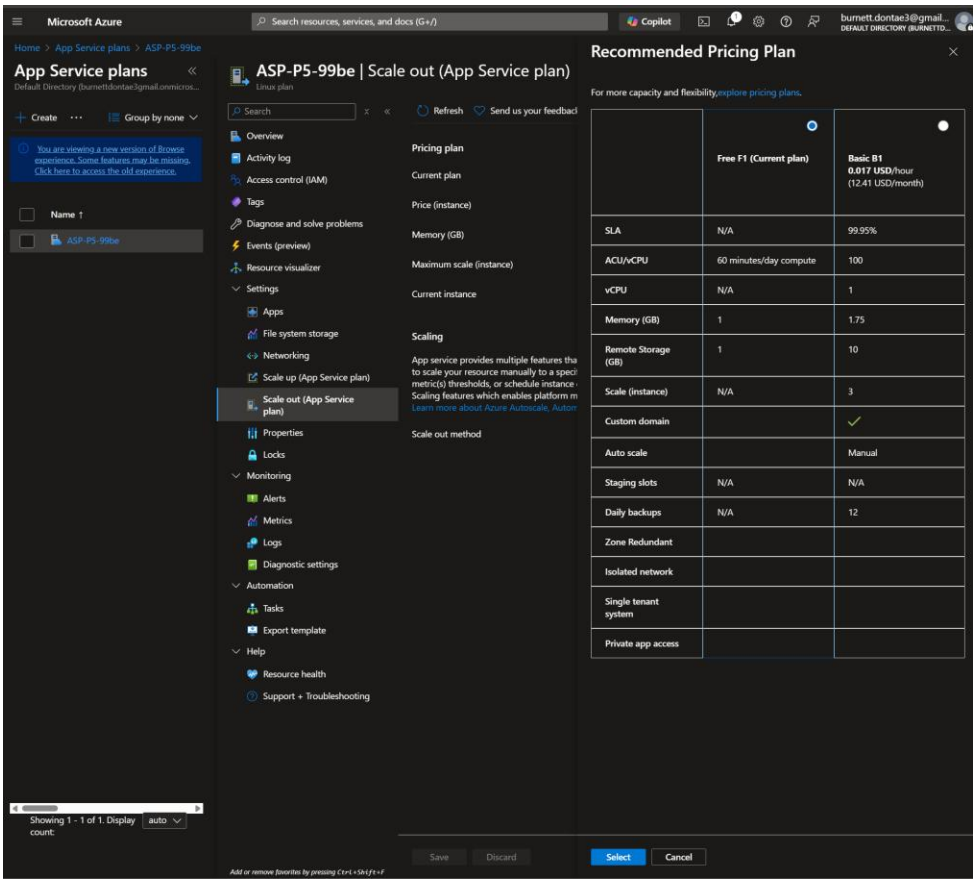
- Step: Configure Autoscaling

12. Navigate to the App Service Plan > Scale Out (App Service Plan).
13. Set up autoscaling based on metrics such as CPU usage or request count.
14. Define rules (e.g., scale out by 1 instance if CPU > 70% for 10 minutes).



Since I am on the Free version using my student account it does not allow me to create a scale out plan as there is not allow scale out instances

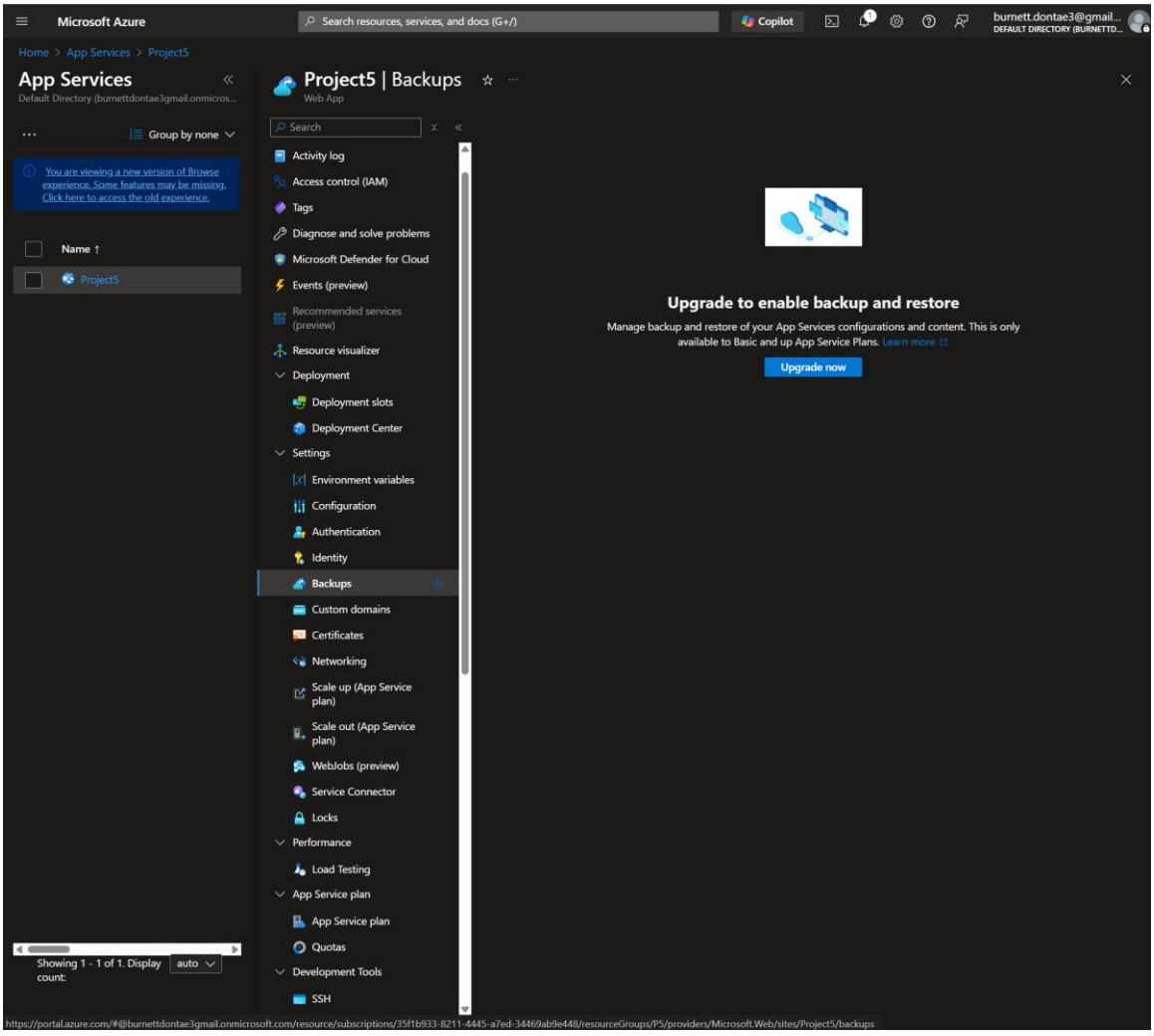
But if you do then you would just need to create a scale out for CPU usage and define the rule to limit CPU power



- Step: Backup and Restore

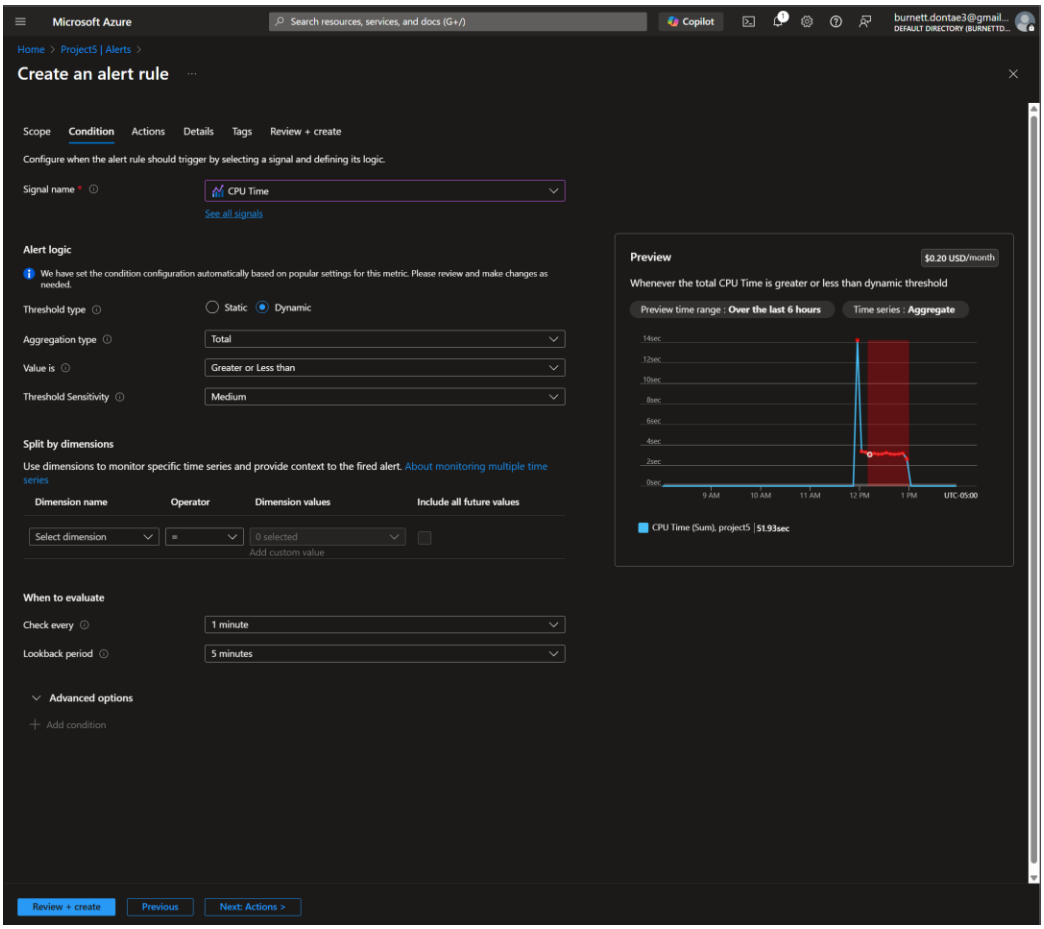
15. Navigate to the App Service > Backups > Configure.
16. Set up a backup schedule to back up the app and its associated database.
17. Perform a manual backup and verify it by restoring it to a new App Service.

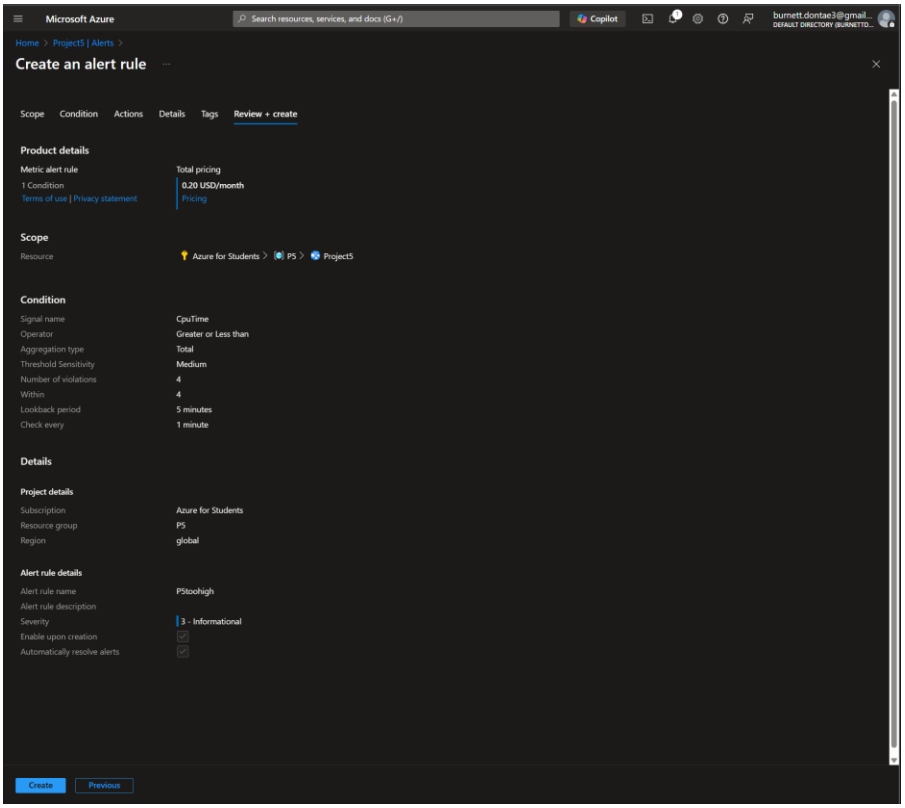
You will need a upgraded plan to set up back up



- Step: Monitor and Configure Alerts

18. Navigate to App Service > Monitoring > Metrics.
19. Set up metrics to monitor app performance (e.g., CPU usage, response time).

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Home > Project5 | Alerts >
Create an alert rule
Scope
Condition
Actions
Details
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Review + create
Product details
Metric alert rule
1 Condition
Terms of use | Privacy statement
Total pricing
0.20 USD/month
Pricing
Scope
Resource
Azure for Students > P5 > Project5
Condition
Signal name
CpuTime
Operator
Greater or Less than
Aggregation type
Total
Threshold Sensitivity
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Number of violations
4
Within
4
Lookback period
5 minutes
Check every
1 minute
Details
Project details
Subscription
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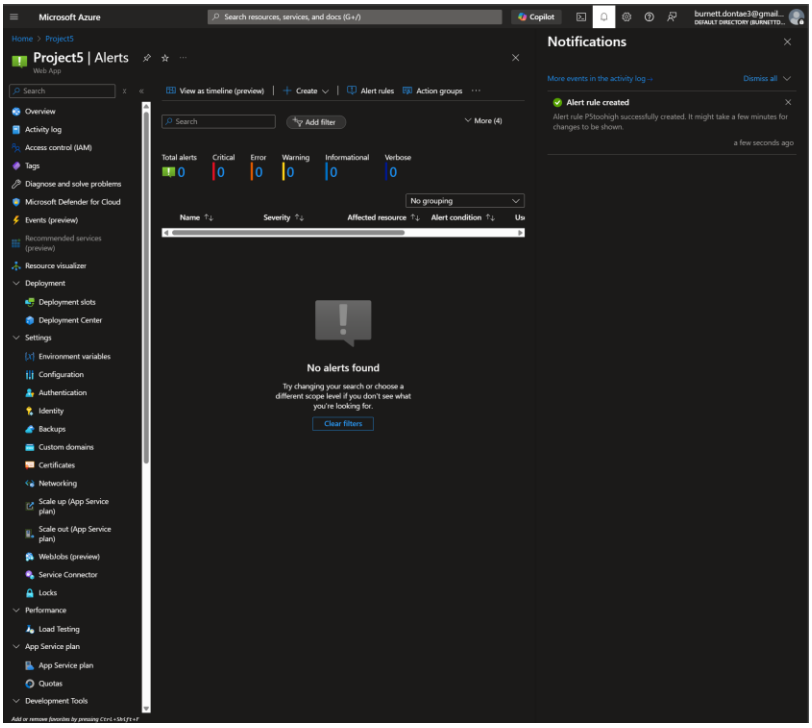
Resource group
P5
Region
global
Alert rule details
Alert rule name
P5toohigh
Alert rule description
Severity
3 - Informational
Enable upon creation
Automatically resolve alerts
Create
Previous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Scale up (App Service plan)
Scale out (App Service plan)
WebJobs (preview)
Service Connector
Locks
Performance
Load Testing
App Service plan
App Service plan
Quotas
Development Tools
Add or remove favorites by pressing Ctrl+Shift+F
View as timeline (preview)
Create
Alert rules
Action groups
Search
Add filter
More (4)
Total alerts
Critical
Error
Warning
Informational
Verbose
No grouping
Name
Severity
Affected resource
Alert condition
No alerts found
Try changing your search or choose a different scope level if you don't see what you're looking for.
Clear filters
Notifications
More events in the activity log →
Dismiss all
Alert rule created
Alert rule P5toohigh successfully created. It might take a few minutes for changes to be shown.
a few seconds ago