

Create a VNet

Creating a virtual network and resource group...

The screenshot shows the 'Create virtual network' wizard in the Microsoft Azure portal, specifically the 'Basics' tab. The breadcrumb navigation at the top indicates the path: Home > Virtual networks > Create virtual network. The page has a blue header with the Microsoft Azure logo, a search bar, and user information (SHG182@pitt.edu, UNIVERSITY OF PITTSBURGH, PA). The 'Project details' section includes a 'Subscription' dropdown set to 'Azure for Students' and a 'Resource group' dropdown set to '(New) GuoDevVNET', with a 'Create new' link below it. The 'Instance details' section features a 'Virtual network name' text box containing 'GuoDevVNET' and a 'Region' dropdown set to '(US) East US 2', with a 'Deploy to an Azure Extended Zone' link below it. At the bottom, there are 'Previous', 'Next', and 'Review + create' buttons, along with a 'Give feedback' link.

Microsoft Azure

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

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Home > Virtual networks > Create virtual network

Basics Security IP addresses Tags Review + create

Learn more

Project details

Select the 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) GuoDevVNET

Create new

Instance details

Virtual network name * GuoDevVNET

Region * (US) East US 2

Deploy to an Azure Extended Zone

Previous Next Review + create

Give feedback

Adding subnets...

The screenshot shows the 'Add a subnet' dialog box in the Microsoft Azure portal. The background shows the 'Create virtual network' wizard with the 'IP addresses' tab selected. The dialog has a title bar 'Add a subnet' and a close button. It contains instructions: 'Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more'. The 'Subnet purpose' dropdown is set to 'Default' and the 'Name' text box contains 'default2'. Under the 'IPv4' section, 'Include an IPv4 address space' is checked. The 'IPv4 address range' dropdown is set to a redacted value. The 'Starting address' text box is redacted, and the 'Size' dropdown is set to a redacted value. The 'Subnet address range' text box is redacted. Under the 'IPv6' section, 'Include an IPv6 address space' is unchecked, with a note 'This virtual network has no IPv6 address ranges.' Below this is the 'Private subnet' section with a description and a 'Learn more' link. At the bottom are 'Add' and 'Cancel' buttons, and a 'Give feedback' link.

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Home > Virtual networks > Create virtual network

Basics Security IP addresses Tags Review + create

Configure your virtual network address space with the IPv4 and IPv6 addresses and subnets you need

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. Create virtual network address space into smaller ranges for use by your applications. When you deploy resource assigns the resource an IP address from the subnet. Learn more

+ Add a subnet

Subnets IP address range Size NAT gateway

default

Add IPv6 address space

Previous Next Review + create

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more

Subnet purpose Default

Name * default2

IPv4

Include an IPv4 address space

IPv4 address range

Starting address *

Size

Subnet address range

IPv6

Include an IPv6 address space

This virtual network has no IPv6 address ranges.

Private subnet

Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. Learn more

Add Cancel

Give feedback

Subnets added...

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Home > Virtual networks >

Create virtual network

Basics Security IP addresses Tags Review + create

+ Add a subnet

Subnets IP address range Size NAT gateway

DMZ			-	
Intranet			-	
AppServices			-	

Previous Next Review + create

Give feedback

Creating a virtual network...

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Home > Virtual networks >

Create virtual network

Basics Security IP addresses Tags Review + create

Basics

Subscription Azure for Students

Resource Group GuoDevVNET

Name GuoDevVNET

Region East US 2

Security

Azure Bastion Disabled

Azure Firewall Disabled

Azure DDoS Network Protection Disabled

IP addresses

Address space

Subnet DMZ

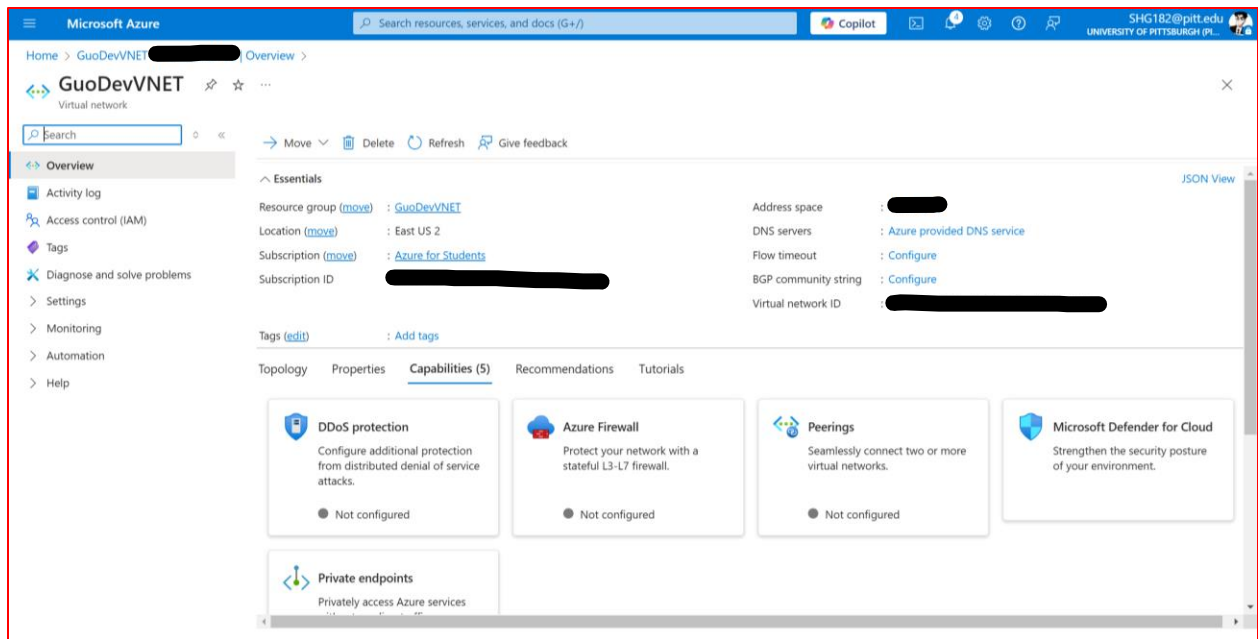
Subnet Intranet

Subnet AppServices

Previous Next Create

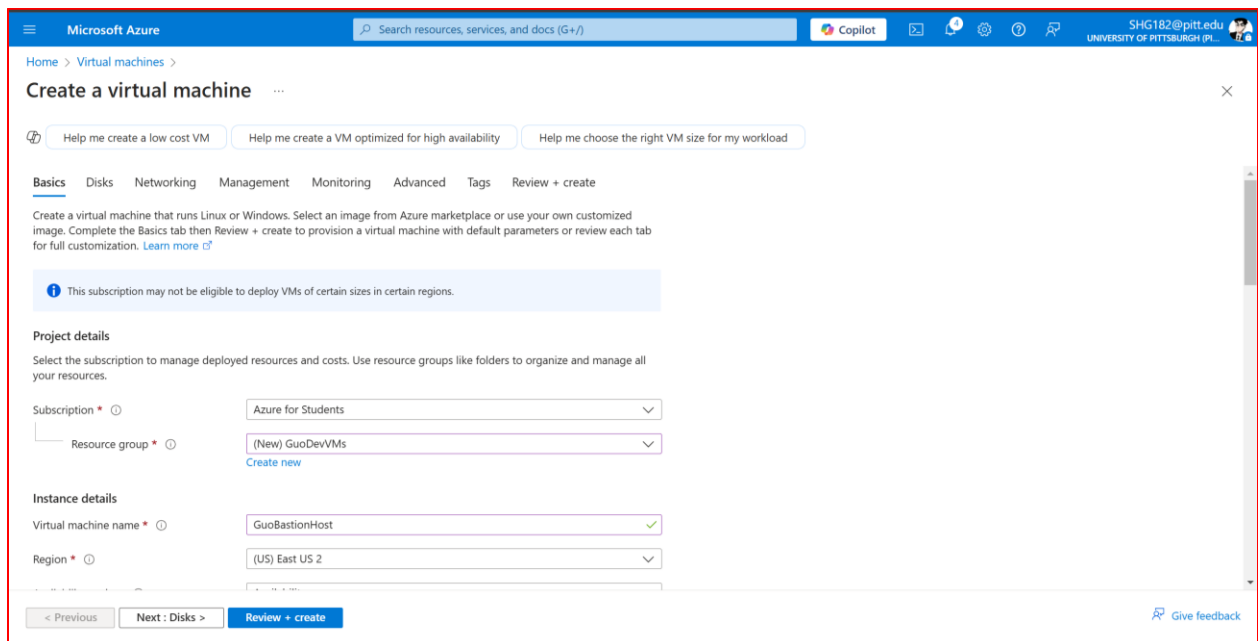
Give feedback

Virtual network created...



Create a VM

Creating a virtual machine...



Selecting network...

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Home > Virtual machines >

Create a virtual machine

Help me create a low cost VMHelp me create a VM optimized for high availabilityHelp me choose the right VM size for my workload

BasicsDisksNetworkingManagementMonitoringAdvancedTagsReview + 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 *

GuoDevVNET
[Create new](#)

Subnet *

DMZ
[Manage subnet configuration](#)

Public IP

(new) GuoBastionHost-ip
[Create new](#)

NIC network security group

☐ None

☒ Basic

☐ Advanced

Public inbound ports *

☐ None

☒ Allow selected ports

< Previous

Next : Management >

Review + create

[Give feedback](#)

Creating VM...

Microsoft Azure

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Home > Virtual machines >

Create a virtual machine

Validation passed

Help me create a low cost VMHelp me create a VM optimized for high availabilityHelp me choose the right VM size for my workload

BasicsDisksNetworkingManagementMonitoringAdvancedTagsReview + create

Price

1 X Standard B2s
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply
0.0496 USD/hr
[Pricing for other VM sizes](#)

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 information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

You have set RDP port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.

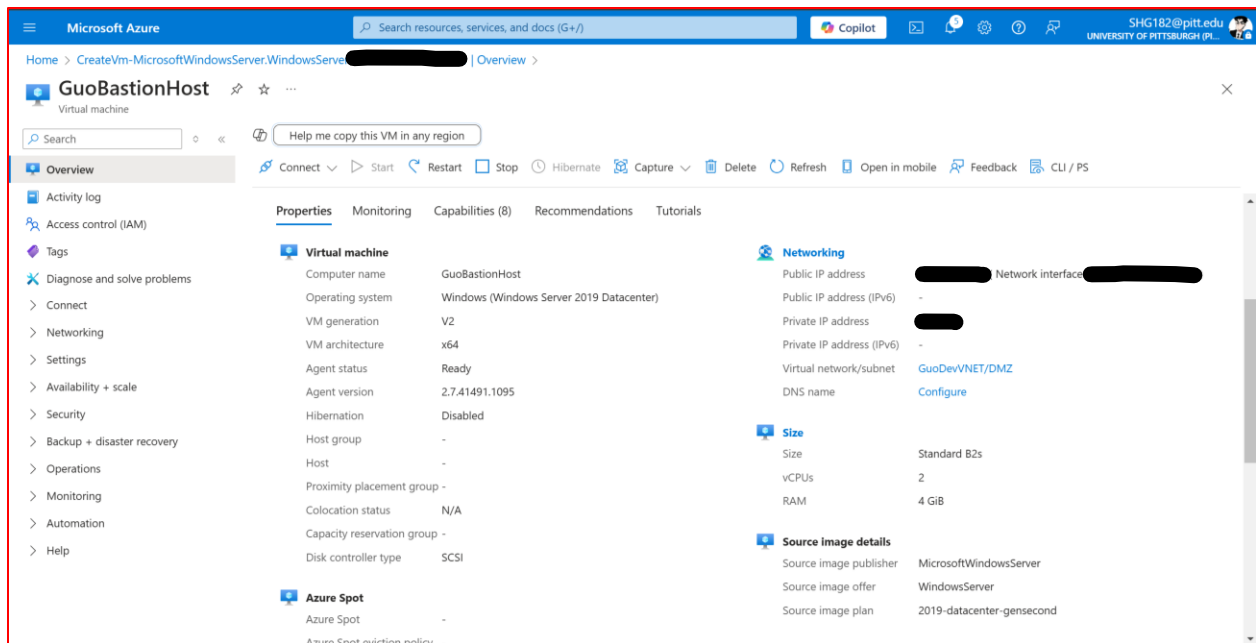
< Previous

Next >

Create

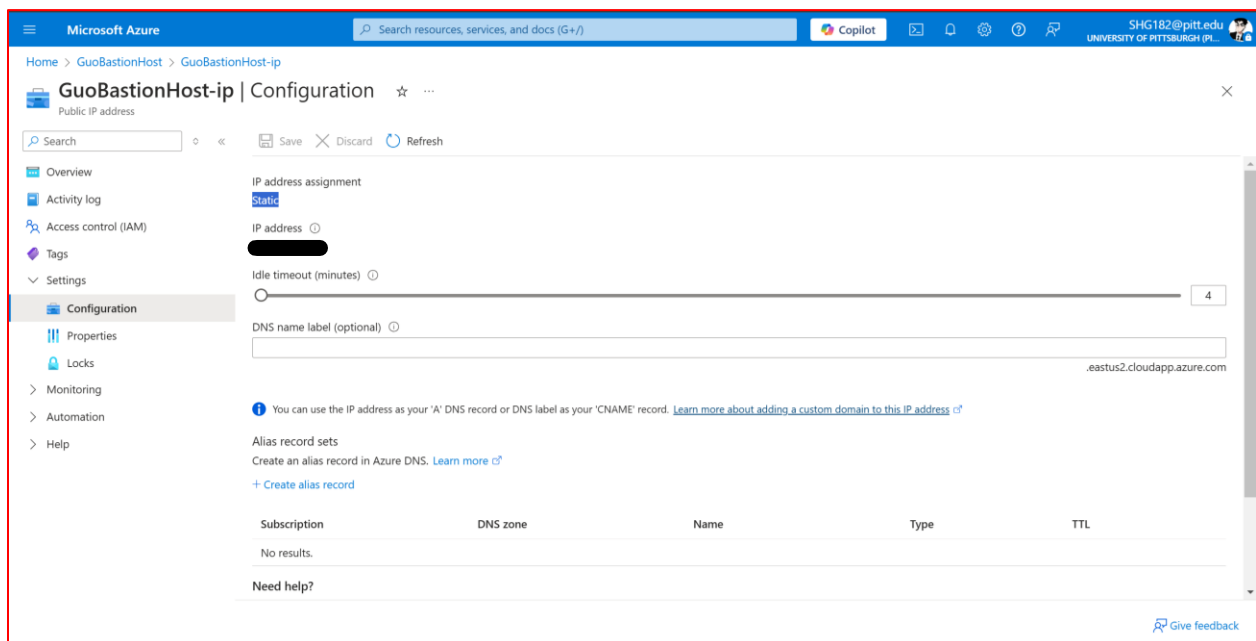
[Download a template for automation](#) [Give feedback](#)

VM created...

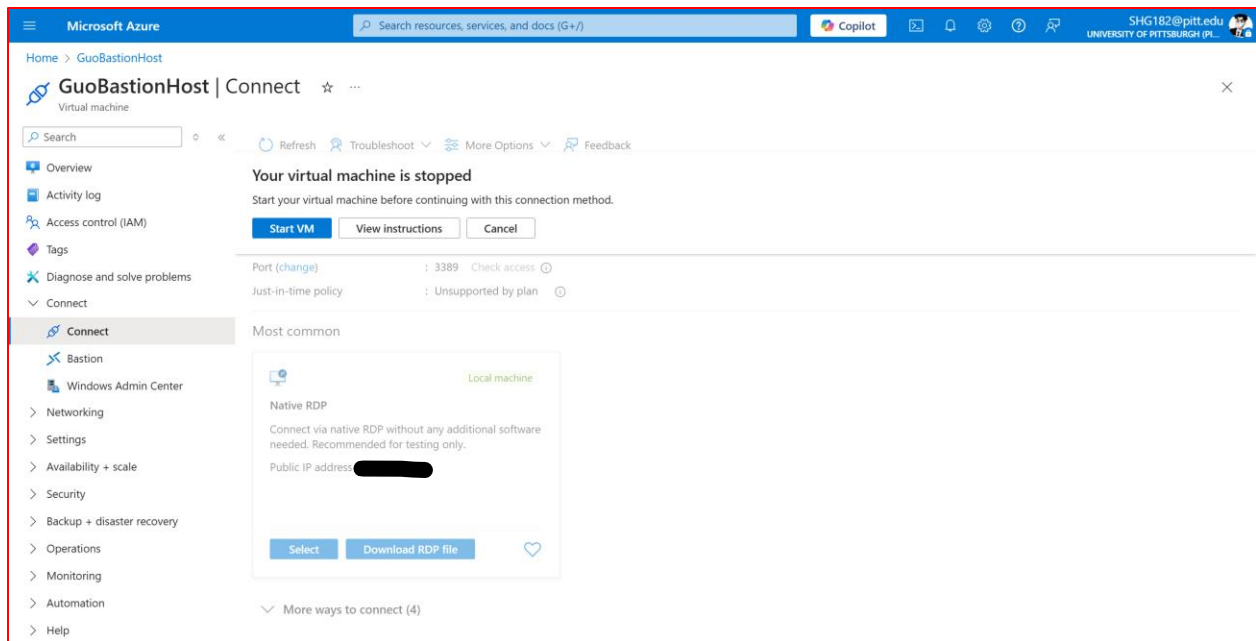


Connecting to VM

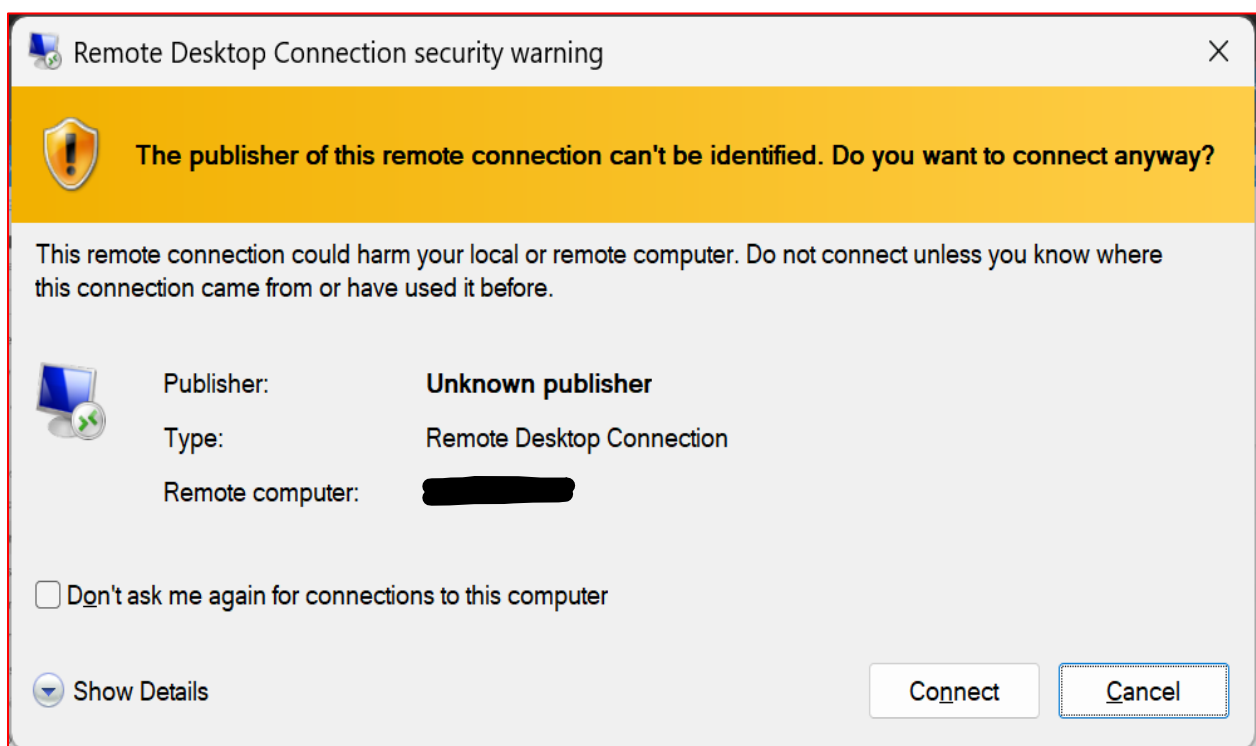
Is the public IP static or dynamic? What is the difference? This public IP is static as shown in the image below. The difference between static and dynamic is that static IP remains constant over time, while dynamic will change periodically, such as a router restart or ISP refresh. In conclusion, if the public IP changes, it is dynamic; If it doesn't change, in most cases, it is static.



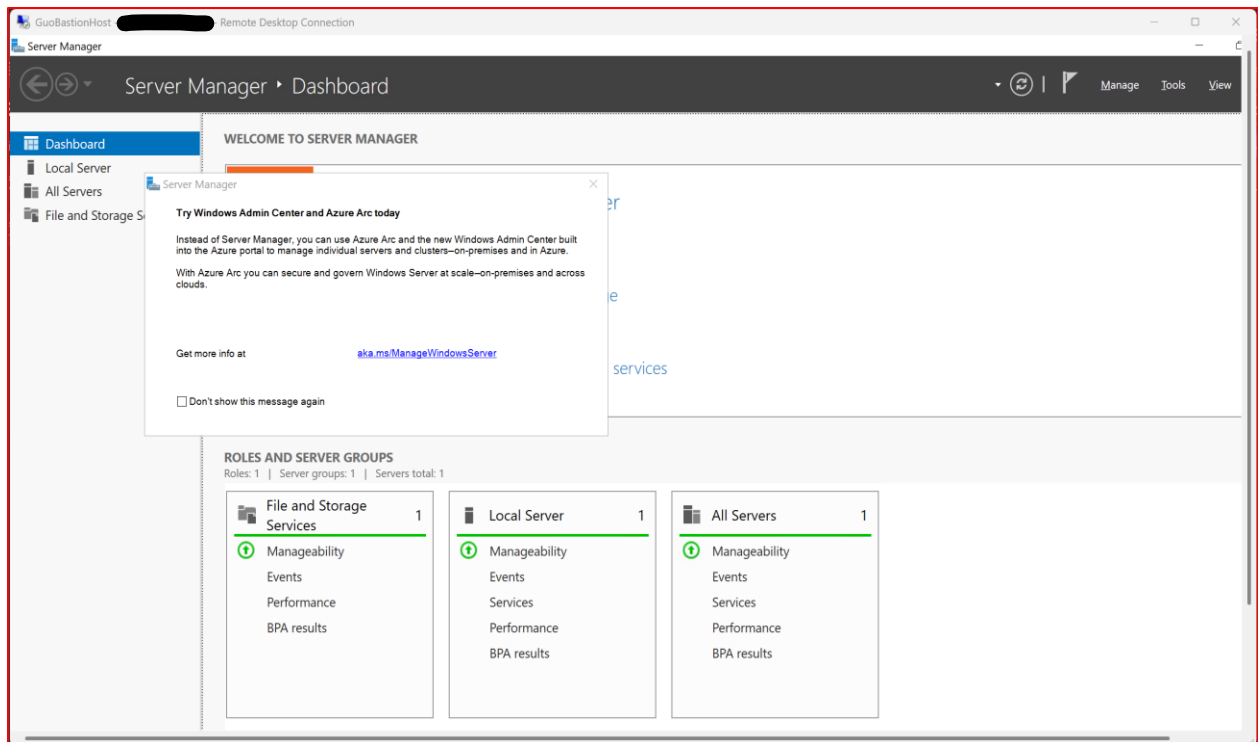
Connecting to VM using RDP...



VM connected using the **public IP** ([REDACTED]) ...

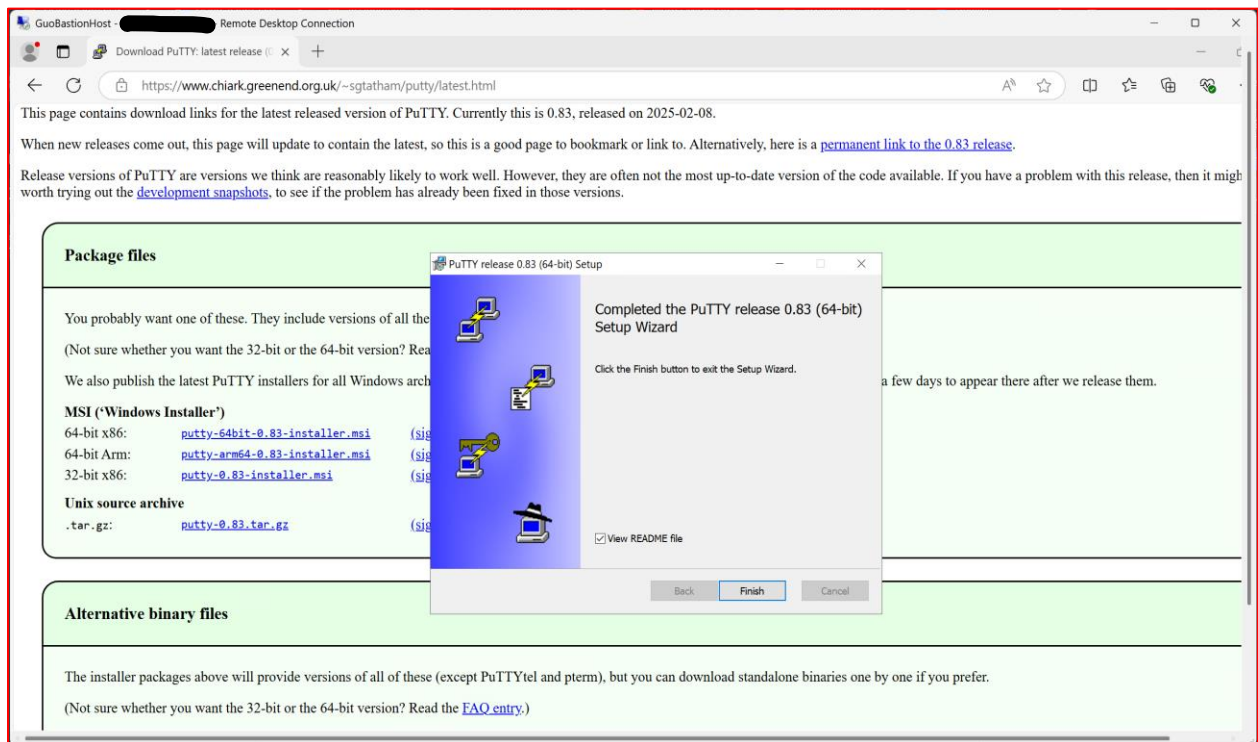


Successfully connected...

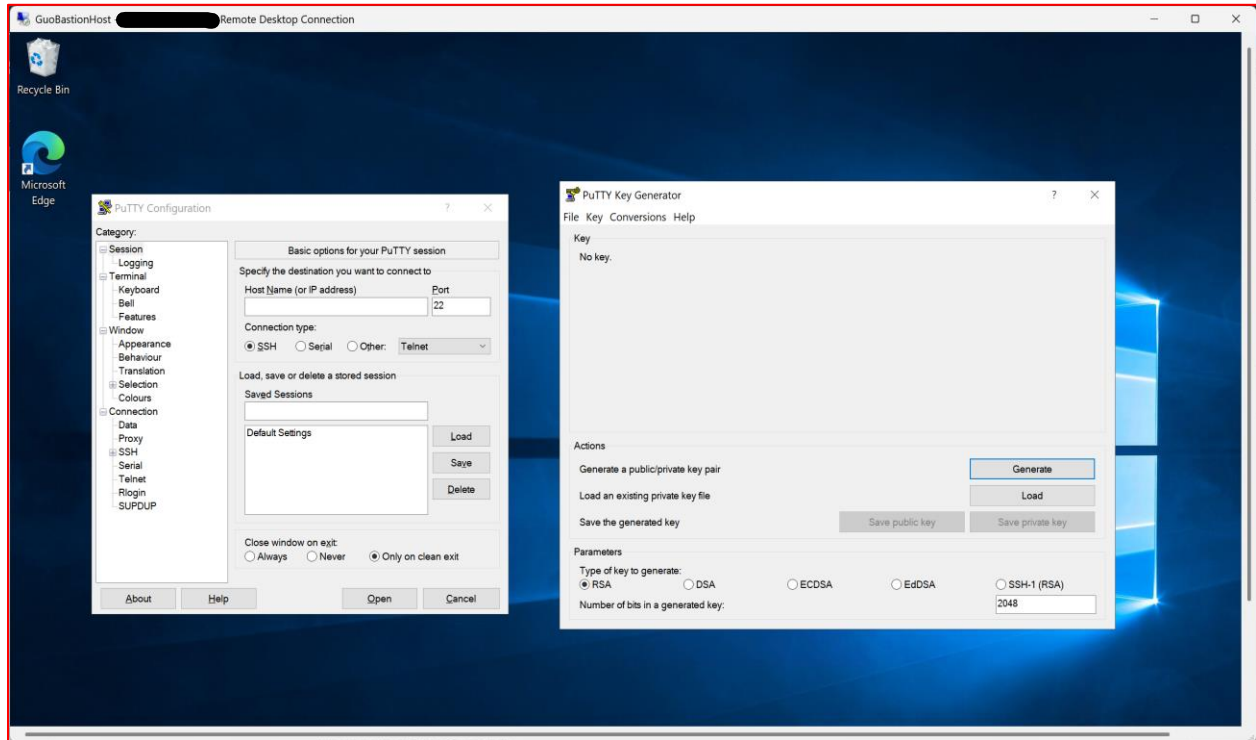


Installing PuTTY on VM

Installing PuTTY...

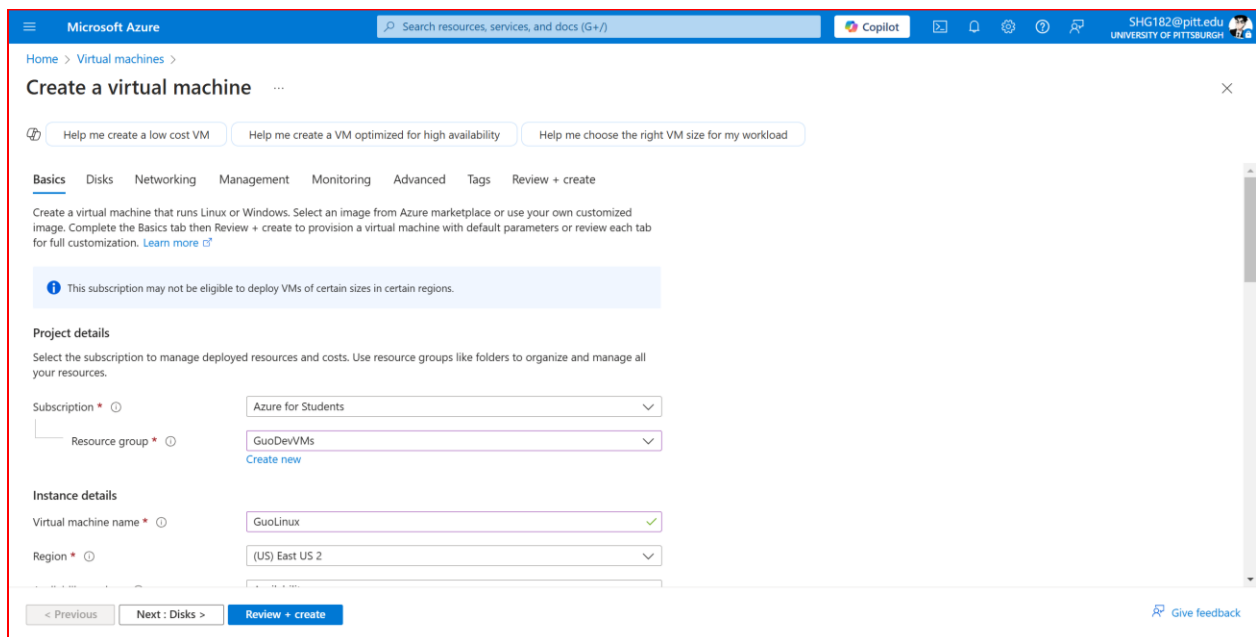


PuTTY installed...



Create an Ubuntu VM

Creating a VM...



Review... (I used size B2s, because it's a bit faster and price is not a big different hourly, than the B1s)

Microsoft Azure

Home > Virtual machines >

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
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ
0.0416 USD/hr
[Pricing for other VM sizes](#)

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 information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name: Shi Hao Guo

Preferred e-mail address: SHG182@pitt.edu

Preferred phone number: [REDACTED]

< Previous | Next > | **Create**

[Download a template for automation](#) | [Give feedback](#)

Ubuntu VM created...

Microsoft Azure

Home > CreateVm-canonical.ubuntu[REDACTED] Overview >

GuoLinux

Virtual machine

Search | Help me copy this VM in any region

Overview | Connect | Start | Restart | Stop | Hibernate | Capture | Delete | Refresh | Open in mobile | Feedback | CLI / PS

Properties | Monitoring | Capabilities (7) | Recommendations | Tutorials

Virtual machine

Computer name	GuoLinux
Operating system	Linux (ubuntu 24.04)
VM generation	V2
VM architecture	x64
Agent status	Ready
Agent version	2.12.0.2
Hibernation	Disabled
Host group	-
Host	-
Proximity placement group	-
Colocation status	N/A
Capacity reservation group	-
Disk controller type	SCSI

Azure Spot

Azure Spot: -
[Azure Spot eviction policy](#)

Networking

Public IP address	-
Public IP address (IPv6)	-
Private IP address	[REDACTED]
Private IP address (IPv6)	-
Virtual network/subnet	GuoDevVNET/Intranet
DNS name	-

Size

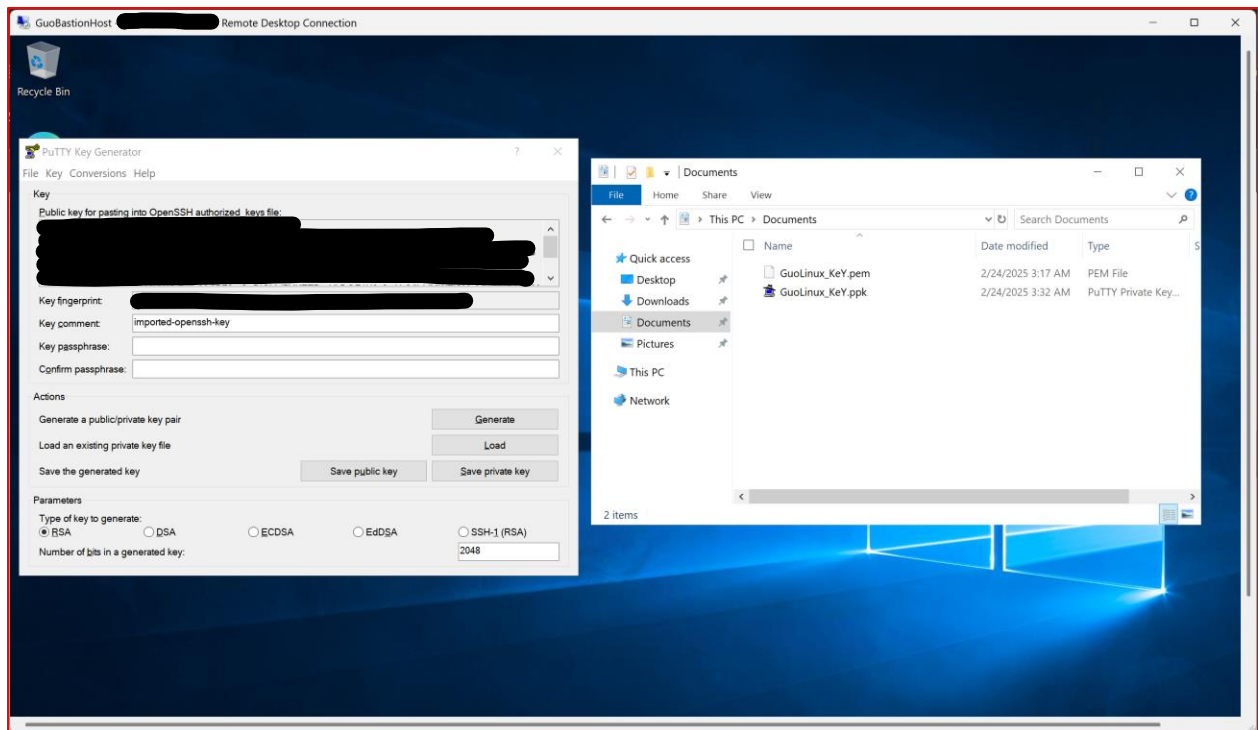
Size	Standard B2s
vCPUs	2
RAM	4 GiB

Source image details

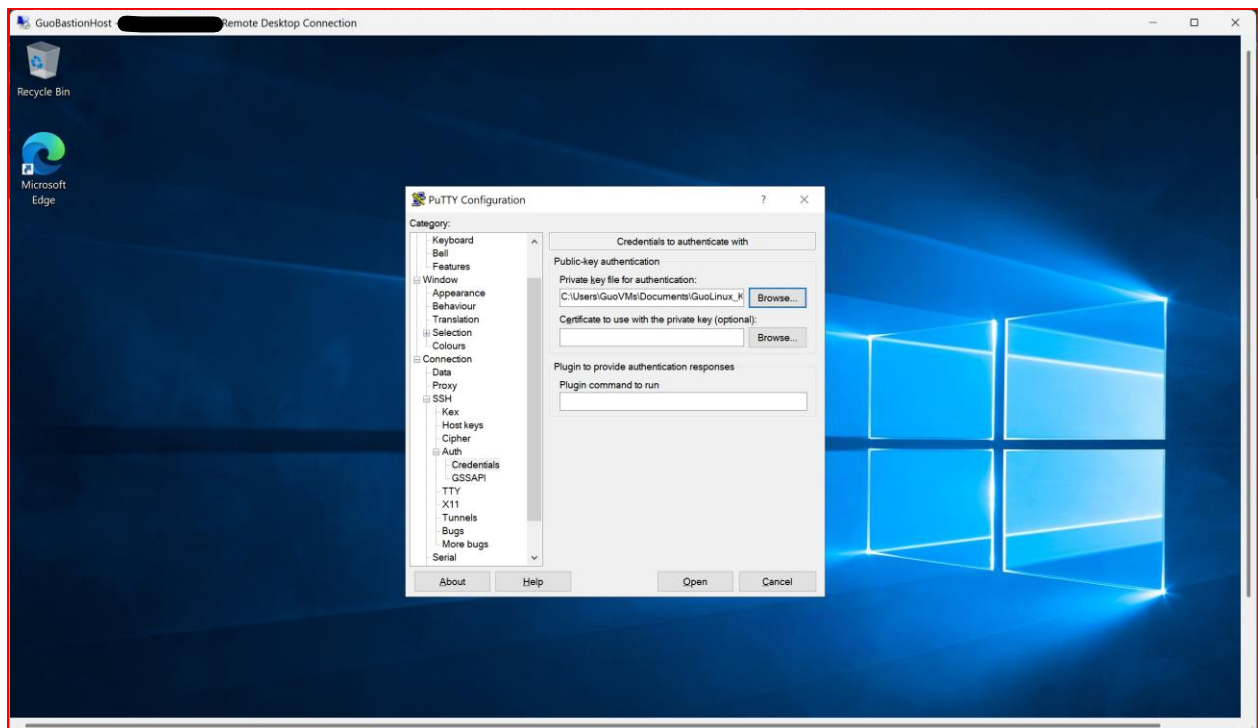
Source image publisher	canonical
Source image offer	ubuntu-24_04-lts
Source image plan	server

Using PuTTY

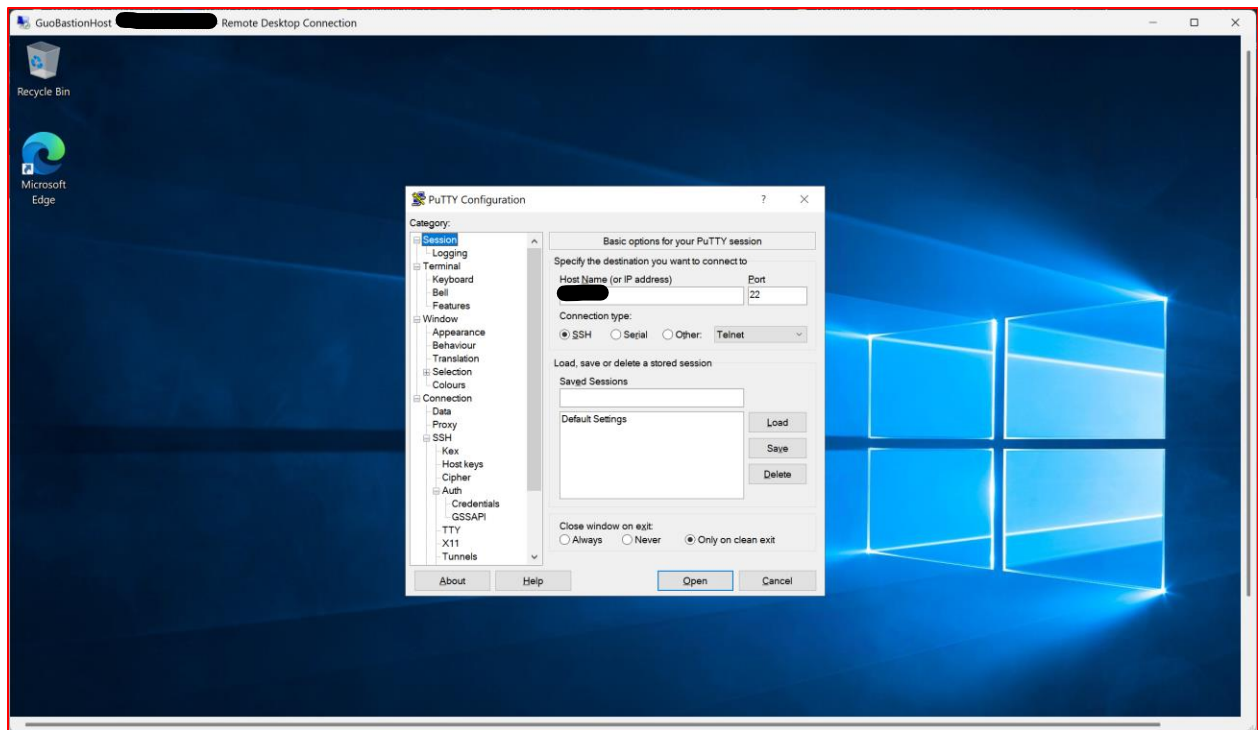
Converted .pem to .ppk in Windows 2019 VM using PuTTY...



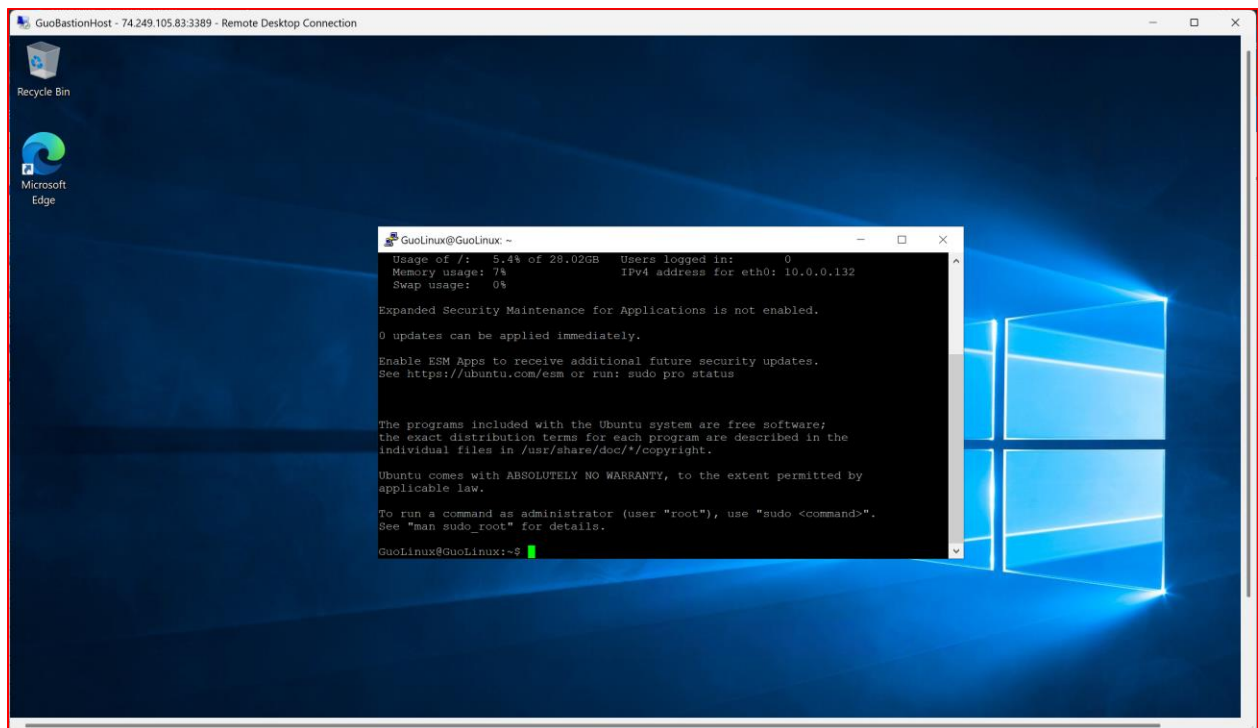
Connecting to Linux VM...



Connecting to Linux VM...



Linux VM successfully connected...



Can you connect to your Linux VM via SSH from the internet? Explain why or why not? **No, I cannot connect to my Linux VM via SSH. This is because I will need a public IP address in order to connect to the VM.**

Create a Web App

Creating a web application...

The screenshot shows the 'Create Web App' wizard in the Microsoft Azure portal, specifically the 'Basics' tab. The interface includes a top navigation bar with the Azure logo, a search bar, and user information (SHG182@pitt.edu). The main content area has a breadcrumb trail 'Home > App Services >' and a title 'Create Web App'. Below the title are tabs for 'Basics', 'Database', 'Deployment', 'Networking', 'Monitor + secure', 'Tags', and 'Review + create'. A descriptive paragraph about App Service Web Apps is provided. The 'Project Details' section prompts the user to select a subscription and resource group. The 'Instance Details' section includes fields for the app name, a toggle for 'Secure unique default hostname', and options for 'Publish' (Code or Container) and 'Runtime stack' (Python 3.12). The 'Operating System' is set to Linux. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next : Database >'.

Microsoft Azure

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Home > App Services >

Create Web App

Basics Database Deployment Networking Monitor + secure Tags Review + create

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) GuoDevASP

[Create new](#)

Instance Details

Name GuoAppRandomChar

☒ Secure unique default hostname on. [More about this update](#)

Publish * ☒ Code ☐ Container

Runtime stack * Python 3.12

Operating System * ☒ Linux ☐ Windows

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

Review...

The screenshot shows the 'Create Web App' wizard in the Microsoft Azure portal, specifically the 'Review + create' tab. The interface includes the same top navigation bar and breadcrumb trail as the previous screenshot. The 'Review + create' tab is active, showing a 'Summary' section with the 'Web App by Microsoft' icon, 'Free sku', and 'Estimated price - Free'. A blue information box states: 'Basic authentication for this app is currently disabled and may impact deployments. Click to learn more.' Below this is a 'Details' section listing the configuration: Subscription, Resource Group (GuoDevASP), Name (GuoAppRandomChar), Secure unique default hostname (Enabled), Publish (Code), and Runtime stack (Python 3.12). An 'App Service Plan (New)' section is also present. At the bottom, there are buttons for 'Create', '< Previous', 'Next >', and a link to 'Download a template for automation'.

Microsoft Azure

Search resources, services, and docs (G+/I)

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Home > App Services >

Create Web App

Basics Database Deployment Networking Monitor + secure Tags Review + create

Summary

Web App
by Microsoft

Free sku
Estimated price - Free

Basic authentication for this app is currently disabled and may impact deployments. Click to learn more.

Details

Subscription

Resource Group GuoDevASP

Name GuoAppRandomChar

Secure unique default hostname Enabled

Publish Code

Runtime stack Python 3.12

App Service Plan (New)

Name

[Create](#) < Previous Next > [Download a template for automation](#)

Web App created...

Microsoft Azure

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

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Home > Microsoft.Web-WebApp-Portal [redacted] | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name: Microsoft.Web-WebApp-Portal [redacted] Start time: [redacted]
Subscription: Azure for Students Correlation ID: [redacted]
Resource group: GuoDevASP

Deployment details

Resource	Type	Status	Operation details
GuoAppRandomChar/scm	Microsoft.Web/sites/basicPubli...	OK	Operation details
GuoAppRandomChar/ftp	Microsoft.Web/sites/basicPubli...	OK	Operation details
GuoAppRandomChar	Microsoft.Web/sites	OK	Operation details
ASP-GuoDevASP-87f1	Microsoft.Web/serverfarms	OK	Operation details

Next steps

Manage deployments for your app. Recommended

Protect your app with authentication. Recommended

[Go to resource](#)

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](#)

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 >](#)

Questions

What is the URL to access your app service and what is shown when accessing this URL via a web-browser? [redacted]

It is showing “Your web app is running and waiting for your content”.

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.

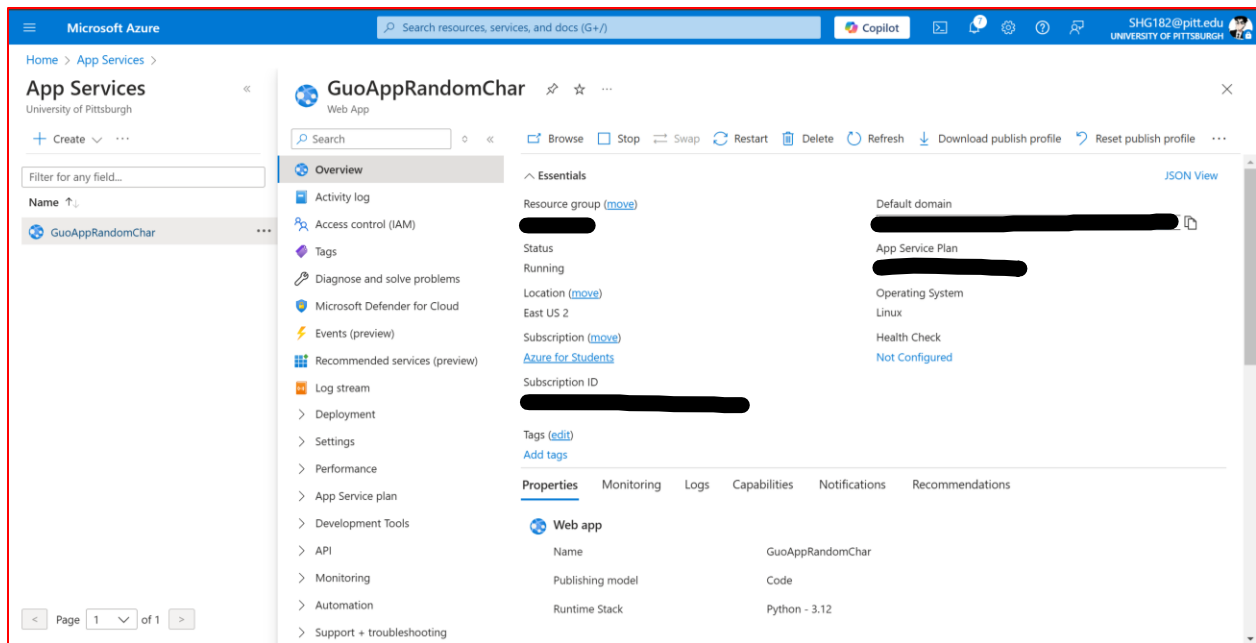
Built with Python

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](#)



Overview...



Is App Services IaaS or PaaS? Why or why not? In regard to responsibility, which additional layers (i.e. networking, hypervisor, etc...) is Microsoft Azure responsible for vs a VM?

Microsoft Azure App Services is a PaaS, because it handles the operating system, server maintenance, patching, and other infrastructure tasks. On the other hand, Microsoft Azure VM is an IaaS, because it has more control over the infrastructure, but it also requires more responsibility from the user. In addition, Azure App Services is responsible for OS & runtime layers compared to Azure VM. In conclusion, Azure App Service is PaaS where I deploy my code, and Microsoft manages the underlying infrastructure (OS, servers, etc.), and Azure VMs are IaaS where I manage the OS, runtime, and everything above the hypervisor.

Screenshot of Resource Group... (What is NetworkWatcherRG? I don't remember creating it.)

Name	Subscription	Location
GuoDevASP	Azure for Students	East US 2
GuoDevVMs	Azure for Students	East US 2
GuoDevVNET	Azure for Students	East US 2
NetworkWatcherRG	Azure for Students	East US 2

What is the purpose of Azure Resource Groups? “Resource groups are logical containers where you can deploy and manage Azure resources like virtual machines, web apps, databases, and storage accounts.” -Microsoft Teams

Management settings scope

You can apply management settings, such as policies and role-based access control, at any management level. The level determines how widely the setting is applied. Lower levels inherit

Note

To understand and minimize the effect of regional outages, see [Select Azure regions](#).

Documentation

Subscription considerations and recommendations - Cloud Adoption Framework

Learn about the critical role that subscriptions play as units of management, billing, and scale in Azure.

Management groups - Cloud Adoption Framework

Learn about the resource organization and management group design considerations and recommendations.

Organize your resources with management groups - Azure Governance - Azure governance

Learn about management groups, how their permissions work, and how to use them.

Show 5 more

Deleting all Resource Groups except for GuoDevVNET and NetworkWatcherRG... (Should I delete NetworkWatcherRG as well?)

Microsoft Azure

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Home >

Resource groups

University of Pittsburgh

Create

Manage view

Refresh

Export to CSV

Open query

Assign tags

Filter for any field...

Subscription equals all

Location equals all

Add filter

Showing 1 to 2 of 2 records.

No grouping

List view

<input type="checkbox"/> Name ↑↓	Subscription ↑↓	Location ↑↓	
<input type="checkbox"/> GuoDevVNET	Azure for Students	East US 2	...
<input type="checkbox"/> NetworkWatcherRG	Azure for Students	East US 2	...

< Previous

Page 1 of 1

Next >

Give feedback