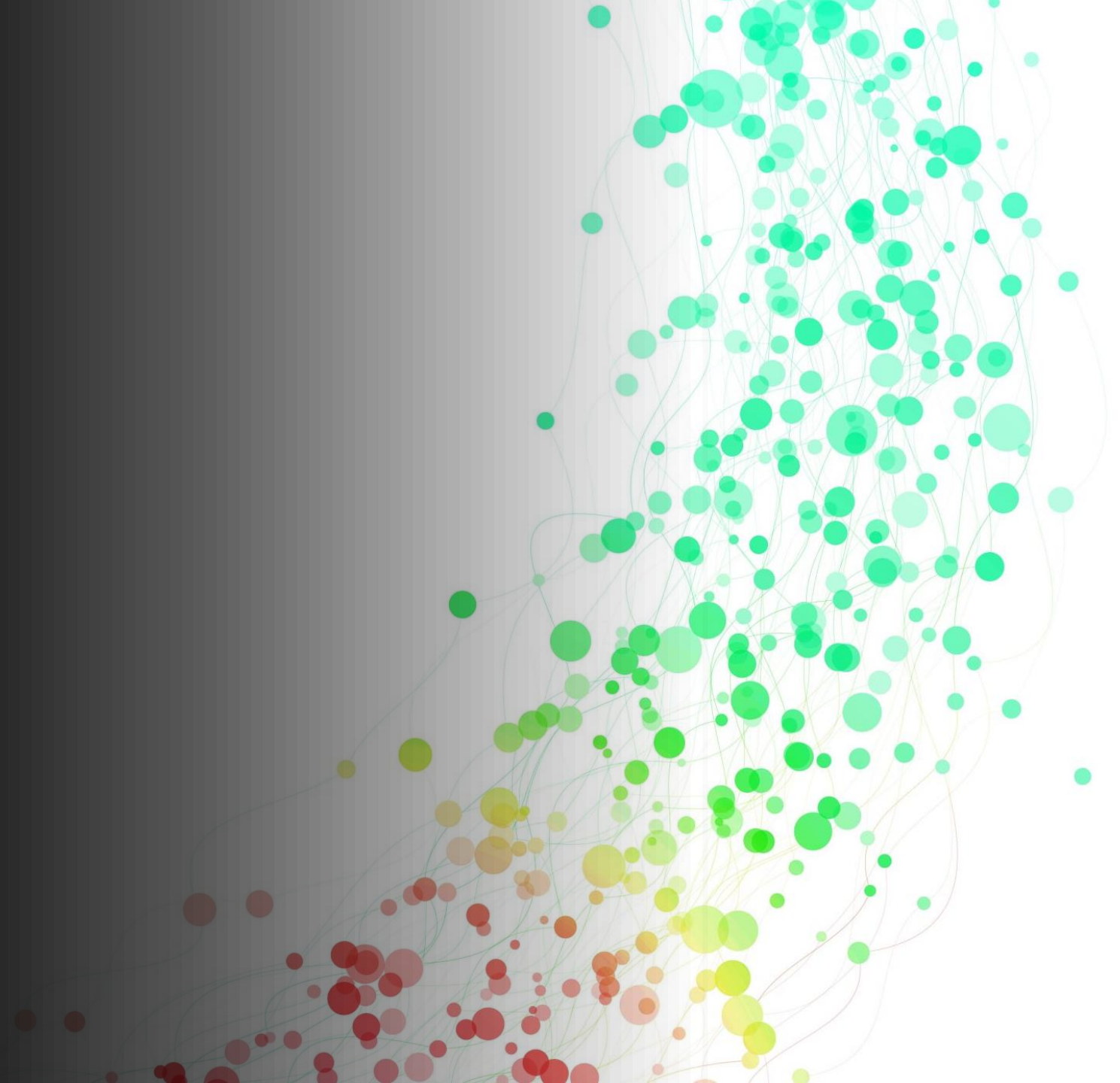
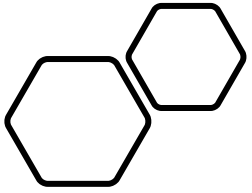




# NETW211 Final Project

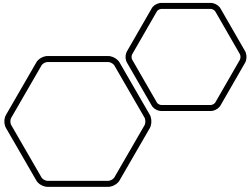
---





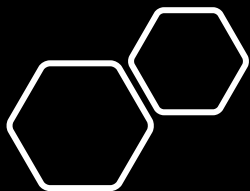
# Introduction

This project covers a lot of the basics of VM's, everything from deploying a VM, creating subnets, verifying the connections between to VM's , accessing files , blob snapshots and testing alerts and few more of the many things that can be done with a VM.



# Career Skills

- Deploying VMs
- Testing connections between different VM's
- Configuring a NSG
- Testing alerts



# Deploying a VM in Azure

Microsoft Azure portal screenshot showing the details of a virtual machine named **NETW211VM**.

**Overview**

Search resources, services, and docs (G+)

Home > CreateVm-MicrosoftWindowsServer.WindowsServer-201-20221105165107 | Overview >

**NETW211VM**  
Virtual machine

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

**Essentials**

Resource group (move) : [NETW211-BS](#)  
Status : Running  
Location : East US (Zone 1)  
Subscription (move) : [Azure for Students](#)  
Subscription ID : e5c5ada3-cb59-4176-8b31-a0d0eaa644b3  
Availability zone : 1  
Tags (edit) : [Click here to add tags](#)

Operating system : Windows (Windows Server 2019 Datacenter)  
Size : Standard B1s (1 vcpu, 1 GiB memory)  
Public IP address : [20.102.88.195](#)  
Virtual network/subnet : [NETW211-BS-vnet/default](#)  
DNS name : [Not configured](#)

**Properties** Monitoring Capabilities (8) Recommendations Tutorials

**Virtual machine**

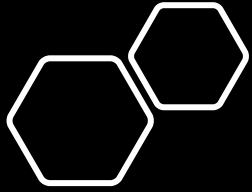
Computer name	NETW211VM
Health state	-
Operating system	Windows (Windows Server 2019 Datacenter)
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2019-datacenter-gensecond
VM generation	V2
VM architecture	x64
Agent status	Ready
Agent version	2.7.41491.1044

**Networking**

Public IP address	<a href="#">20.102.88.195</a>
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	<a href="#">NETW211-BS-vnet/default</a>
DNS name	<a href="#">Configure</a>

**Size**

Size	Standard B1s
vCPUs	1



# Connecting to the VM

Server Manager

Server Manager ▸ Local Server

Dashboard  
Local Server  
All Servers  
File and Storage Services ▸

**PROPERTIES**  
For NETW211VM

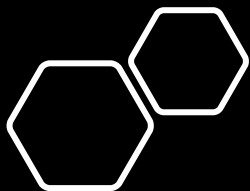
Computer name	NETW211VM	Last installed updates	Today at 10:02 PM
Workgroup	WORKGROUP	Windows Update	<a href="#">Install updates automatically using Windows Update</a>
		Last checked for updates	Today at 10:01 PM
Windows Defender Firewall	Private: On	Windows Defender Antivirus	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	<a href="#">Settings</a>
Remote Desktop	Enabled	IE Enhanced Security Configuration	On
NIC Teaming	Disabled	Time zone	(UTC) Coordinated Universal Time
Ethernet	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	00430-00000-00000-AA581 (activated)
Operating system version	Microsoft Windows Server 2019 Datacenter	Processors	Intel(R) Xeon(R) Platinum 8171M CPU @ 2.60GHz
Hardware information	Microsoft Corporation Virtual Machine	Installed memory (RAM)	1 GB
		Total disk space	130.45 GB

**EVENTS**  
All events | 1 total

Filter

Server Name	ID	Severity	Source	Log	Date and Time
NETW211VM	7031	Error	Microsoft-Windows-Service Control Manager	System	11/5/2022 10:03:03 PM

10:24 PM  
11/5/2022



- Deleting the VM

Resource groups - Microsoft Azure

https://portal.azure.com/?Microsoft\_Azure\_Education\_correlationId=872869a4e951462392665e23293c073a&Microsoft\_Azure\_Education\_newA4E=true&Microsoft\_A...

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

bsisk3@my.devry.edu DEVRY UNIVERSITY (MYDEVRYE...)

Home >

## Resource groups

DeVry University (mydevryedu.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Location equals all Add filter

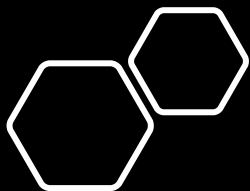
0 Unsecure resources 0 Recommendations

No grouping List view

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

< Previous Page 1 of 1 Next > Showing 1 to 1 of 1 records.

Give feedback



# Deploying a VM in Azure

Microsoft Azure portal screenshot showing the details of a virtual machine named **NETW211VM**.

**Overview**

Search resources, services, and docs (G+)

Home > CreateVm-MicrosoftWindowsServer.WindowsServer-201-20221105165107 | Overview >

**NETW211VM**  
Virtual machine

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

**Essentials**

Resource group (move) : [NETW211-BS](#)  
Status : Running  
Location : East US (Zone 1)  
Subscription (move) : [Azure for Students](#)  
Subscription ID : e5c5ada3-cb59-4176-8b31-a0d0eaa644b3  
Availability zone : 1  
Tags (edit) : [Click here to add tags](#)

Operating system : Windows (Windows Server 2019 Datacenter)  
Size : Standard B1s (1 vcpu, 1 GiB memory)  
Public IP address : [20.102.88.195](#)  
Virtual network/subnet : [NETW211-BS-vnet/default](#)  
DNS name : [Not configured](#)

**Properties** Monitoring Capabilities (8) Recommendations Tutorials

**Virtual machine**

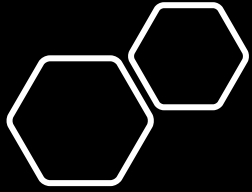
Computer name	NETW211VM
Health state	-
Operating system	Windows (Windows Server 2019 Datacenter)
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2019-datacenter-gensecond
VM generation	V2
VM architecture	x64
Agent status	Ready
Agent version	2.7.41491.1044

**Networking**

Public IP address	<a href="#">20.102.88.195</a>
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	<a href="#">NETW211-BS-vnet/default</a>
DNS name	<a href="#">Configure</a>

**Size**

Size	Standard B1s
vCPUs	1



# Connecting to the VM

Server Manager

Server Manager ▸ Local Server

Dashboard  
Local Server  
All Servers  
File and Storage Services ▸

**PROPERTIES**  
For NETW211VM

Computer name	NETW211VM	Last installed updates	Today at 10:02 PM
Workgroup	WORKGROUP	Windows Update	<a href="#">Install updates automatically using Windows Update</a>
		Last checked for updates	Today at 10:01 PM
Windows Defender Firewall	Private: On	Windows Defender Antivirus	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	<a href="#">Settings</a>
Remote Desktop	Enabled	IE Enhanced Security Configuration	On
NIC Teaming	Disabled	Time zone	(UTC) Coordinated Universal Time
Ethernet	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	00430-00000-00000-AA581 (activated)
Operating system version	Microsoft Windows Server 2019 Datacenter	Processors	Intel(R) Xeon(R) Platinum 8171M CPU @ 2.60GHz
Hardware information	Microsoft Corporation Virtual Machine	Installed memory (RAM)	1 GB
		Total disk space	130.45 GB

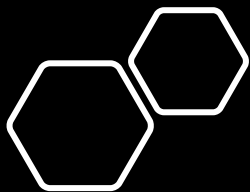
**EVENTS**  
All events | 1 total

Filter

Server Name	ID	Severity	Source	Log	Date and Time
NETW211VM	7031	Error	Microsoft-Windows-Service Control Manager	System	11/5/2022 10:03:03 PM

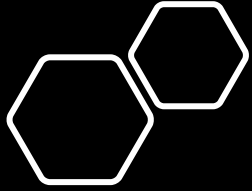
10:24 PM  
11/5/2022





# Creating a VNet with Two Subnets

- 1. With a /24 network prefix, how many **usable** IPv4 host addresses are there? [hint: you learned this in NETW191]
- Answer here: 254
- 
- 2. Given the answer above, why is the number of available IP addresses for Subnet0 (10.0.0.0/24) or Subnet1 (10.0.1.0/24) shown as 251? [hint: where did the missing addresses go?]
- Answer here: In IPv4, there are two IPs that cannot be assigned to any devices. These are the **Network ID** and the **Broadcast IP address**. Therefore, you need to subtract two addresses from the total IP formula.
- References (here are two examples to get your research started):
- 1. IP Subnet Calculator, <https://www.calculator.net/ip-subnet-calculator.html>
- 2. Azure Virtual Network frequently asked questions, <https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-faq>
- 3. <https://hub.packtpub.com/understanding-address-spaces-and-subnetting-in-ipv4-tutorial/>
- 4.



# Deploying VMs into Subnets

The screenshot displays the Microsoft Azure portal interface. The browser address bar shows the URL: <https://portal.azure.com/#@mydevryedu.onmicrosoft.com/resource/subscriptions/e5c5ada3-cb59-4176-8b31-a0d0eaa644b3/resourcegroups/NETW211-RG/pr...>. The page title is "Subnet0-VM - Microsoft Azure". The main content area shows the "Overview" tab for the virtual machine "Subnet0-VM". A warning banner at the top states: "Subnet0-VM virtual machine agent status is not ready. Troubleshoot the issue →". The "Essentials" section provides key information:

- Resource group (move): [NETW211-RG](#)
- Status: Running
- Location: East US
- Subscription (move): [Azure for Students](#)
- Subscription ID: e5c5ada3-cb59-4176-8b31-a0d0eaa644b3
- Operating system: Windows (Windows Server 2019 Datacenter)
- Size: Standard B1s (1 vcpu, 1 GiB memory)
- Public IP address: [52.146.35.173](#)
- Virtual network/subnet: [NETW211-VNet-B5/Subnet0](#)
- DNS name: [Not configured](#)

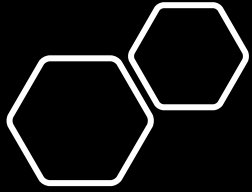
The "Properties" section is expanded, showing details for the "Virtual machine":

Property	Value
Computer name	Subnet0-VM
Health state	-
Operating system	Windows
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2019-datacenter-gensecond
VM generation	V2

The "Networking" section is also expanded, showing details for the network configuration:

Property	Value
Public IP address	<a href="#">52.146.35.173</a>
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	<a href="#">NETW211-VNet-B5/Subnet0</a>
DNS name	<a href="#">Configure</a>

The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center, Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications, Continuous delivery, Availability + scaling, Configuration, and Identity. The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying the date and time as 4:34 PM on 11/10/2022.



# Deploying VMs into Subnets cont'd

Subnet1-VM - Microsoft Azure

https://portal.azure.com/#@mydevryedu.onmicrosoft.com/resource/subscriptions/e5c5ada3-cb59-4176-8b31-a0d0eaa644b3/resourcegroups/NETW211-RG/pr...

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

Home > CreateVm-MicrosoftWindowsServer.WindowsServer-201-20221110163717 | Overview >

## Subnet1-VM

Virtual machine

Search

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

Subnet1-VM virtual machine agent status is not ready. Troubleshoot the issue →

### Essentials

JSON View

Resource group (move)	: NETW211-RG	Operating system	: Windows
Status	: Running	Size	: Standard B1s (1 vcpu, 1 GiB memory)
Location	: East US	Public IP address	: 20.228.182.250
Subscription (move)	: Azure for Students	Virtual network/subnet	: NETW211-VNet-BS/Subnet1
Subscription ID	: e5c5ada3-cb59-4176-8b31-a0d0eaa644b3	DNS name	: Not configured
Tags (edit)	: Click here to add tags		

### Properties

Monitoring Capabilities (8) Recommendations Tutorials

#### Virtual machine

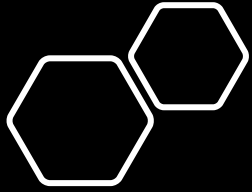
Computer name	Subnet1-VM
Health state	-
Operating system	Windows
Publisher	MicrosoftWindowsServer
Offer	WindowsServer
Plan	2019-datacenter-gensecond
VM generation	V2
VM architecture	x64
Agent status	Not Ready

#### Networking

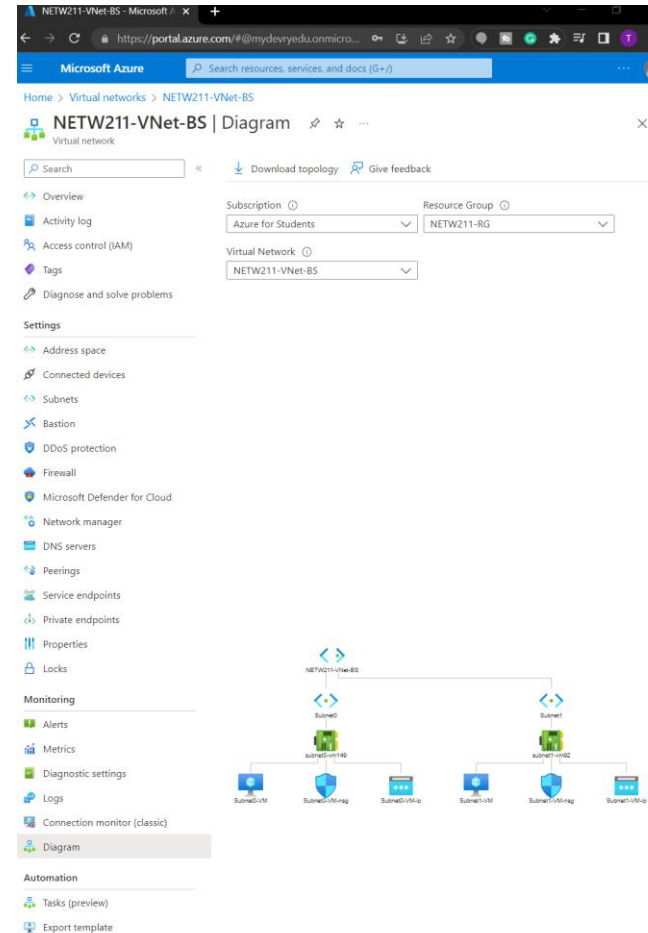
Public IP address	20.228.182.250
Public IP address (IPv6)	-
Private IP address	10.0.1.4
Private IP address (IPv6)	-
Virtual network/subnet	NETW211-VNet-BS/Subnet1
DNS name	Configure

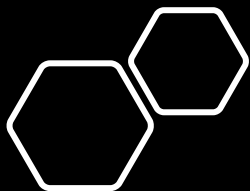
#### Size

Size	Standard B1s
------	--------------



# Deploying VMs into Subnets cont'd





# Verifying Connectivity between VMs

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

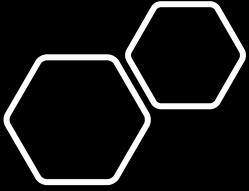
    Connection-specific DNS Suffix  . : v0ilp24mr5teznb1qd32jubmga.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::243f:7cc9:31e9:a703%5
    IPv4 Address. . . . . : 10.0.0.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.0.1

C:\Users\myaccount>ping 10.0.1.4

Pinging 10.0.1.4 with 32 bytes of data:
Reply from 10.0.1.4: bytes=32 time=1ms TTL=128
Reply from 10.0.1.4: bytes=32 time=2ms TTL=128
Reply from 10.0.1.4: bytes=32 time=3ms TTL=128
Reply from 10.0.1.4: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 2ms

C:\Users\myaccount>
```



- Verifying Connectivity between VMs
- cont'd

```
Select Administrator: Command Prompt

Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

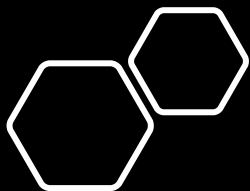
    Connection-specific DNS Suffix  . : v0ilp24mr5teznb1qd32jubmga.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::f029:fd4f:5983:89c2%6
    IPv4 Address. . . . . : 10.0.1.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.1.1

C:\Users\myaccount>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 2ms, Average = 2ms

C:\Users\myaccount>
```



# Verifying Connectivity between VMs

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

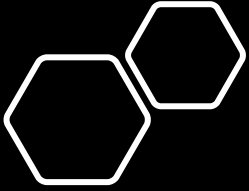
    Connection-specific DNS Suffix  . : v0ilp24mr5teznb1qd32jubmga.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::243f:7cc9:31e9:a703%5
    IPv4 Address. . . . . : 10.0.0.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.0.1

C:\Users\myaccount>ping 10.0.1.4

Pinging 10.0.1.4 with 32 bytes of data:
Reply from 10.0.1.4: bytes=32 time=1ms TTL=128
Reply from 10.0.1.4: bytes=32 time=2ms TTL=128
Reply from 10.0.1.4: bytes=32 time=3ms TTL=128
Reply from 10.0.1.4: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 2ms

C:\Users\myaccount>
```



- Verifying Connectivity between VMs
- cont'd

```
Select Administrator: Command Prompt

Microsoft Windows [Version 10.0.17763.3650]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : v0ilp24mr5teznb1qd32jubmga.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::f029:fd4f:5983:89c2%6
    IPv4 Address. . . . . : 10.0.1.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.1.1

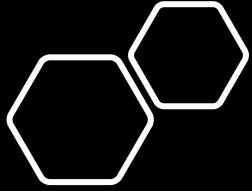
C:\Users\myaccount>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 2ms, Average = 2ms

C:\Users\myaccount>
```





# Launching a VM

Microsoft Azure portal screenshot showing the details of a virtual machine named **NETW211VM**.

**Overview**

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

**Settings**

- Networking
- Connect
- Disks
- Size
- Microsoft Defender for Cloud
- Advisor recommendations
- Extensions + applications
- Continuous delivery
- Availability + scaling
- Configuration
- Identity

**Essentials**

Resource group (move)	: <a href="#">NETW211-RG-BS</a>	Operating system	: Linux (ubuntu 20.04)
Status	: Running	Size	: Standard B1s (1 vcpu, 1 GiB memory)
Location	: East US	Public IP address	: <a href="#">20.231.98.205</a>
Subscription (move)	: <a href="#">Azure for Students</a>	Virtual network/subnet	: <a href="#">NETW211-RG-BS-vnet/default</a>
Subscription ID	: e5c5ada3-cb59-4176-8b31-a0d0eaa644b3	DNS name	: <a href="#">Not configured</a>
Tags (edit)	: <a href="#">Click here to add tags</a>		

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

**Virtual machine**

Computer name	NETW211VM
Health state	-
Operating system	Linux (ubuntu 20.04)
Publisher	canonical
Offer	0001-com-ubuntu-server-focal
Plan	20_04-lts-gen2
VM generation	V2
VM architecture	x64
Agent status	Ready

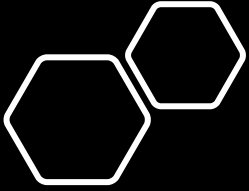
**Networking**

Public IP address	<a href="#">20.231.98.205</a>
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	<a href="#">NETW211-RG-BS-vnet/default</a>
DNS name	<a href="#">Configure</a>

**Size**

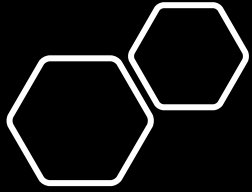
Size	Standard B1s
------	--------------

NETW211-VM-BS....pem



- Connecting to the VM
- via SSH

```
azureuser@NETW211VM: ~  
HOME_URL="https://www.ubuntu.com/"  
SUPPORT_URL="https://help.ubuntu.com/"  
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"  
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"  
VERSION_CODENAME=focal  
UBUNTU_CODENAME=focal  
azureuser@NETW211VM:~$ ping -c 4 www.facebook.com  
PING star-mini.c10r.facebook.com (31.13.66.35) 56(84) bytes of data.  
64 bytes from edge-star-mini-shv-01-iad3.facebook.com (31.13.66.35): icmp_seq=1 ttl=54 time=1.42 ms  
64 bytes from edge-star-mini-shv-01-iad3.facebook.com (31.13.66.35): icmp_seq=2 ttl=54 time=1.43 ms  
64 bytes from edge-star-mini-shv-01-iad3.facebook.com (31.13.66.35): icmp_seq=3 ttl=54 time=1.52 ms  
64 bytes from edge-star-mini-shv-01-iad3.facebook.com (31.13.66.35): icmp_seq=4 ttl=54 time=1.88 ms  
  
--- star-mini.c10r.facebook.com ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3005ms  
rtt min/avg/max/mdev = 1.424/1.563/1.882/0.187 ms  
azureuser@NETW211VM:~$ ip addr  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000  
    link/ether 00:0d:3a:1d:4c:af brd ff:ff:ff:ff:ff:ff  
    inet 10.0.0.4/24 brd 10.0.0.255 scope global eth0  
        valid_lft forever preferred_lft forever  
    inet6 fe80::20d:3aff:fe1d:4caf/64 scope link  
        valid_lft forever preferred_lft forever  
azureuser@NETW211VM:~$
```



# Configuring an NSG

Microsoft Azure portal screenshot showing the configuration of a Network Security Group (NSG) for a virtual machine.

**Page Title:** NETW211VM | Networking

**Left Navigation Panel:**

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings
  - Networking**
  - Connect
  - Disks
  - Size
  - Microsoft Defender for Cloud
  - Advisor recommendations
  - Extensions + applications
  - Continuous delivery
  - Availability + scaling
  - Configuration
  - Identity
  - Properties

**Main Content Area:**

**netw211vm341**

IP configuration: ipconfig1 (Primary)

**Network Interface: netw211vm341** | [Effective security rules](#) | [Troubleshoot VM connection issues](#) | [Topology](#)

Virtual network/subnet: NETW211-RG-BS-vnet/default | NIC Public IP: 20.231.98.205 | NIC Private IP: 10.0.0.4 | Accelerated networking: Disabled

**Inbound port rules** | Outbound port rules | Application security groups | Load balancing

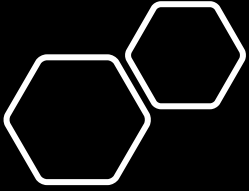
Network security group: NETW211VM-nsg (attached to network interface: netw211vm341)  
Impacts 0 subnets, 1 network interfaces

[Add inbound port rule](#)

Priority	Name	Port	Protocol	Source	Destination	Action
300	SSH	22	TCP	Any	Any	Allow
310	Allow_Ping	Any	ICMP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

**Need help?**

- [Understand Azure load balancing](#)
- [Quickstart: Create a public load balancer to load balance Virtual Machines](#)



- Configuring an NSG
- cont'd

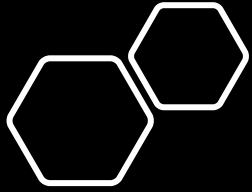
```
Administrator: Command Prompt
C:\WINDOWS\system32>cd C:\users\brady
C:\Users\brady>ping 20.231.98.205

Pinging 20.231.98.205 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 20.231.98.205:
    Packets: Sent = 3, Received = 0, Lost = 3 (100% loss),
Control-C
^C
C:\Users\brady>ping 20.231.98.205

Pinging 20.231.98.205 with 32 bytes of data:
Reply from 20.231.98.205: bytes=32 time=62ms TTL=49
Reply from 20.231.98.205: bytes=32 time=60ms TTL=49
Reply from 20.231.98.205: bytes=32 time=60ms TTL=49
Reply from 20.231.98.205: bytes=32 time=60ms TTL=49

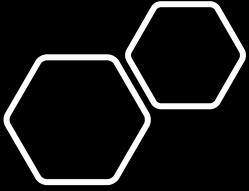
Ping statistics for 20.231.98.205:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 60ms, Maximum = 62ms, Average = 60ms
C:\Users\brady>
C:\Users\brady>
```



# Uploading and Accessing a File

The screenshot displays the Microsoft Azure portal interface for a storage container named 'netw211container1656'. The browser address bar shows the URL: [https://portal.azure.com/#view/Microsoft\\_Azure\\_Storage/ContainerMenuBlade/~/overview/storageAccountId/%2Fsubscriptions%2Fe5c5ada3-cb59-4176-8b31-a0d0...](https://portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlade/~/overview/storageAccountId/%2Fsubscriptions%2Fe5c5ada3-cb59-4176-8b31-a0d0...). The page header includes the Microsoft Azure logo and a search bar. The left sidebar contains navigation links: Overview, Diagnose and solve problems, Access Control (IAM), Settings, Shared access tokens, Access policy, Properties, and Metadata. The main content area shows the container's overview, including the authentication method (Access key) and location (netw211container1656). A search bar for blobs is present, along with a toggle for 'Show deleted blobs'. Below this is a table with the following columns: Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. The table currently displays 'No results'.

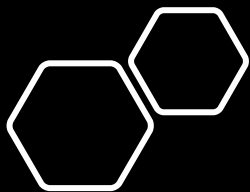
Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
No results						



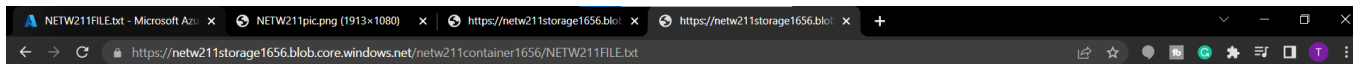
# Question

- What does the *access tier* setting do? What are the Azure blob storage access tiers?
  - [hint: in the Azure portal, on the *Upload blob* page, under *Advanced*, click the ? circle above the *Access tier* box.]
  - Answer here:
  - Access tier determines which online tier a new blob is created by default.
- 
- Azure blob storage access tiers is a tool that can be used to reduce cost, the tiers are divided into three groups based on how frequently it accessed and how rapidly it is required and those groups are hot, cool, and archive.

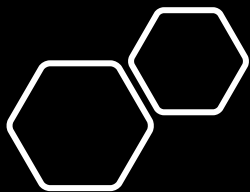
- References (here are two examples to get your research started):
- 1. Hot, Cool, and Archive access tiers for blob data, <https://docs.microsoft.com/en-us/azure/storage/blobs/access-tiers-overview>
- 2. Azure Blob Storage Access Tiers, <https://devry.percipio.com/courses/c7ef0333-8560-403f-a004-9c5c843866b0/videos/2658bbe6-ee97-438b-a376-fbb079c3b3a0>
- 3.
- 4.



# Creating Blob Snapshots



This is the original version.--B5

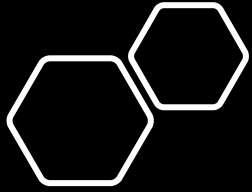


# Enabling Blob Versioning



This is the first revised version.--BS





- Setting up an Action Group and Notifications

Resource groups - Microsoft Azure

https://portal.azure.com/#view/HubsExtension/BrowseResourceGroups

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

bsisk3@my.devry.edu DEVRY UNIVERSITY (MYDEVRYE...)

Home >

### Resource groups

DeVry University (mydevryedu.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Location equals all Add filter

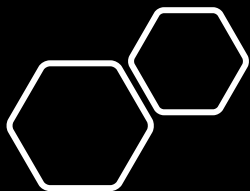
0 Unsecure resources 0 Recommendations

No grouping List view

<input type="checkbox"/> Name ↑↓	Subscription ↑↓	Location ↑↓	
<input type="checkbox"/> NETW211-RG-BS1656	Azure for Students	East US	...
<input type="checkbox"/> NetworkWatcherRG	Azure for Students	East US	...

< Previous Page 1 of 1 Next > Showing 1 to 2 of 2 records.

Give feedback



## Setting up Alert Rules

Alert rules - Microsoft Azure

https://portal.azure.com/#view/Microsoft\_Azure\_Monitoring\_Alerts/AlertRulesBlade/resourceId/%2Fsubscriptions%2F5c5ada3-cb59-4176-8b31-a0d0ea644b...

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

Home > NETW211-RG-BS | Alerts >

### Alert rules

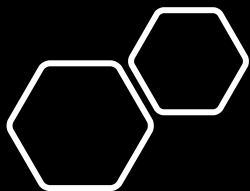
+ Create Columns Refresh Export to CSV Open query Delete Enable Disable

Search Target resource type : all Target scope : NETW211-RG-BS Subscription : all Signal type : all Severity : all Status : Enabled

Showing 1 to 2 of 2 Alert rules. No grouping

Name ↑↓	Condition	Severity ↑↓	Target scope	Target resource type	Signal type ↑↓	Status ↑↓
<input type="checkbox"/> VM-Deallocate	Category=Administrative, Opera...	4 - Verbose	NETW211-RG-BS	Virtual machine	Activity log	Enabled
<input type="checkbox"/> VM-Restart	Category=Administrative, Opera...	4 - Verbose	NETW211-RG-BS	Virtual machine	Activity log	Enabled

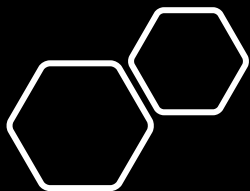
< Previous Page 1 of 1 Next >



# Testing Alerts

The screenshot shows a web browser with multiple tabs: 'DeVry Student Portal', 'Mail - Sisk, Brady - Outlook', 'Module 6: Project - Cloud Monit...', 'Dashboard', and '(58,135 unread) - bradysiskpro@...'. The active tab is the Yahoo! Mail interface. The address bar shows a URL from mail.yahoo.com. The navigation bar includes links for HOME, MAIL, NEWS, FINANCE, SPORTS, ENTERTAINMENT, LIFE, SEARCH, SHOPPING, YAHOO PLUS, and MORE... The main header features the 'yahoo!mail' logo and a search bar with the text 'Find messages, documents, photos or people'. Below the header, there's a 'Compose' button and a list of folders: Inbox (999+), Unread, Starred, Drafts (14), Sent, Archive, Spam, Trash, and Less. The 'Views' section shows icons for Photos, Documents, Subscriptions, Shopping, Receipts, and Travel. The 'Folders' section shows '+ New Folder', Drafts, and hkk htm c. nih. The main content area displays an email titled 'Azure Monitor alert 'VM-Restart' was activated for 'NETW211-RG-BS' at December 4, 2022 20:42 UTC'. The email body states: 'You're receiving this notification as a member of the VM-Status action group because an Azure Monitor alert was activated.' Below the text is a table of alert details:

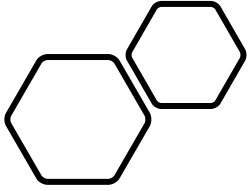
Activity	VM-Restart log alert
Time	December 4, 2022 20:42 UTC
Category	Administrative
Operation name	Microsoft.Compute/virtualMachines/restart/action
Correlation ID	c09bc68b-e25e-4e5f-b792-9bed2438bb8c
Level	Informational
Resource ID	/subscriptions/e5c5ada3-cb59-4176-8b31-a0d0eaa644b3/resourceGroups/NETW211-RG-BS1656/providers/Microsoft.Compute/virtualMachines/NETW211-RG-BS
Caller	bsisk3@my.devry.edu



# Testing Alerts cont'd

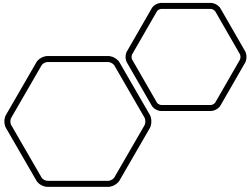
The screenshot shows a web browser window with the Yahoo Mail interface. The address bar shows a URL from mail.yahoo.com. The navigation bar includes links for HOME, MAIL, NEWS, FINANCE, SPORTS, ENTERTAINMENT, LIFE, SEARCH, SHOPPING, YAHOO PLUS, and MORE... The main header has the 'yahoo/mail' logo and a search bar. On the left, a sidebar lists folders like Inbox (999+), Unread, Starred, Drafts (14), Sent, Archive, Spam, Trash, and a 'Less' link. Below these are 'Views' and 'Folders' sections. The main content area displays an email titled 'Azure Monitor alert 'VM-Deallocate' was activated for 'NETW211-RG-BS' at December 4, 2022 20:46 UTC'. The email body contains a notification message and a table of alert details.

Activity	VM-Deallocate
log alert	
Time	December 4, 2022 20:46 UTC
Category	Administrative
Operation name	Microsoft.Compute/virtualMachines/deallocate/action
Correlation ID	ba6f1112-762f-4fe4-a55a-8b6256a9d493
Level	Informational
Resource ID	/subscriptions/e5c5ada3-cb59-4176-8b31-a0d0eaa644b3/resourceGroups/NETW211-RG-BS1656/providers/Microsoft.Compute/virtualMachines/NETW211-RG-BS
Caller	bsisk3@my.devry.edu



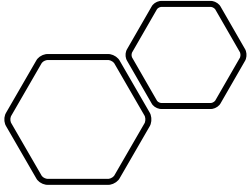
# Challenges

I didn't run into a lot of challenges throughout the course but if it would be anything I think it would have to be remembering all the commands and what they do when working in the command prompt



# References

Site: <https://bradysisk.github.io/>



# conclusion

- This project deals with some of the basics in cloud computing
- Is a stepping stone into a very broad industry