

FINAL COURSE PROJECT

DeVry University
Fundamentals of Cloud
Computing – NETW211
By John Francis





INTRODUCTION

- Fundamentals of cloud computing is a class that has taught many aspects of what cloud computing can do, as well as administration and networking skills and setting up alerts and actions when something happens. The following slides will demonstrate the skills obtained during this class.



NETW211 COURSE PROJECT-1

- Deploy a Virtual Machine on Microsoft Azure
- Connect to the Virtual Machine

Deploy

This screenshot should show the **NETW211VM** page with information such as the resource group name, subscription, public IP address, etc.

The screenshot displays the Microsoft Azure portal interface for a virtual machine named **NETW211VM**. The left sidebar contains navigation options such as Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications, Continuous delivery, Availability + scaling, Configuration, Identity, Properties, Locks, Operations, and Station. The main content area is divided into several sections:

- Essentials**: Provides a quick overview of the VM's status and configuration.
 - Resource group: [NETW211-vmf](#)
 - Status: Running
 - Location: East Asia
 - Subscription: [Azure for Students](#)
 - Subscription ID: b600e63-08af-43e3-8c79-c33b3a5d9e7
 - Tags: [Click here to add tags](#)
 - Operating system: Windows (Windows Server 2019 Datacenter)
 - Size: Standard B1s (1 vcpu, 1 GiB memory)
 - Public IP address: [20.187.85.95](#)
 - Virtual network/subnet: [NETW211-vmf-vnet/default](#)
 - DNS name: [Not configured](#)
- Properties**: Details the virtual machine's specifications.
 - Computer name: NETW211VM
 - Health state: -
 - Operating system: Windows (Windows Server 2019 Datacenter)
 - Publisher: MicrosoftWindowsServer
 - Offer: WindowsServer
 - Plan: 2019-datacenter-genssecond
 - VM generation: V2
 - Agent status: Ready
 - Agent version: 2.7.41491.1044
 - Host group: None
 - Host: -
 - Proximity placement group: -
 - Colocation status: N/A
 - Capacity reservation group: -
- Networking**: Shows network configuration details.
 - Public IP address: [20.187.85.95](#)
 - Public IP address (IPv6): -
 - Private IP address: 10.0.0.4
 - Private IP address (IPv6): -
 - Virtual network/subnet: [NETW211-vmf-vnet/default](#)
 - DNS name: [Configure](#)
- Size**: Displays the VM's hardware specifications.
 - Size: Standard B1s
 - vCPUs: 1
 - RAM: 1 GiB
- Disk**: Shows the disk configuration.
 - OS disk: [NETW211VM_disk1_bddde0542b30446686aead2a34d11](#)
 - Encryption at host: Disabled
 - Azure disk encryption: Not enabled
 - BitLocker OS disk: N/A

Con

This screenshot should show the *PROPERTIES* for *NETW211VM* page, with the computer name, operating system version, hardware information, etc.

PROPERTIES
For NETW211VM

TASKS

Computer name	NETW211VM	Last installed updates	Never
Workgroup	WORKGROUP	Windows Update	Install updates automatically using Windows Update
		Last checked for updates	Never
Windows Defender Firewall	Private: On	Windows Defender Antivirus	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	Settings
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-AA574 (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

NETW211 COURSE PROJECT-2

- Create a Virtual Network with 2 subnets
- Deploy Virtual Machines to the Networks
- Verify connectivity between Virtual Machines

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: 251

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: The cloud reserves some of the IP addresses for its own use

- 1.) 10.0.1.0 – is the network address
- 2.) 10.0.1.1 – reserved for routing
- 3.) 10.0.1.2 – reserved for DNS
- 4.) 10.0.1.3 – reserved for future use, possibly for mapping
- 5.) 10.0.1.255 – reserved as the broadcast address

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. Stackoverflow, <https://stackoverflow.com/questions/43298448/why-azure-reserves-first-four-ip-address-of-a-subnet>
- 4.

Done

This screenshot should show the *Properties* section of the **Subnet0-VM** page, showing the networking and size information of the VM.

The screenshot shows the Azure portal interface for a virtual machine named "Subnet0-VM". The left sidebar contains navigation options such as Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications, Continuous delivery, Availability + scaling, Configuration, Identity, Properties, Locks, Operations, and Bastion. The main content area is titled "Subnet0-VM" and includes a search bar and action buttons like Connect, Start, Restart, Stop, Capture, Delete, Refresh, Open in mobile, CLI / PS, and Feedback. The "Properties" tab is selected, displaying a table of VM details. The table is organized into sections: Virtual machine, Networking, Size, Disk, Availability + scaling, Security type, and Extensions - applications. The Networking section shows public and private IP addresses, and the Size section shows the VM size, vCPUs, and RAM. The Disk section shows the OS disk and its properties. The Availability + scaling section shows the availability zone and scale set. The Security type section shows the security type. The Extensions - applications section shows the extensions and applications.

Section	Property	Value
Virtual machine	Computer name	Subnet0-VM
	Health state	-
	Operating system	Windows (Windows Server 2019 Datacenter)
	Publisher	MicrosoftWindowsServer
	Offer	WindowsServer
	Plan	2019-datacenter-gensecond
	VM generation	V2
	Agent status	Ready
	Agent version	2.7.41491.1044
	Host group	None
Networking	Public IP address	20.255.60.97
	Public IP address (IPv6)	-
	Private IP address	10.0.0.4
	Private IP address (IPv6)	-
Size	Size	Standard B1s
	vCPUs	1
	RAM	1 GiB
Disk	OS disk	Subnet0-VM_OsDisk_1_9b1e5c40ac2c498da754b631a09d152
	Encryption at host	Disabled
	Azure disk encryption	Not enabled
	Ephemeral OS disk	N/A
	Data disks	0
Availability + scaling	Availability zone	1
	Scale Set	-
Security type	Security type	Standard
Extensions - applications	Extensions	-
	Applications	-
Azure Spot	Azure Spot	-
	Azure Spot eviction policy	-

Desktop

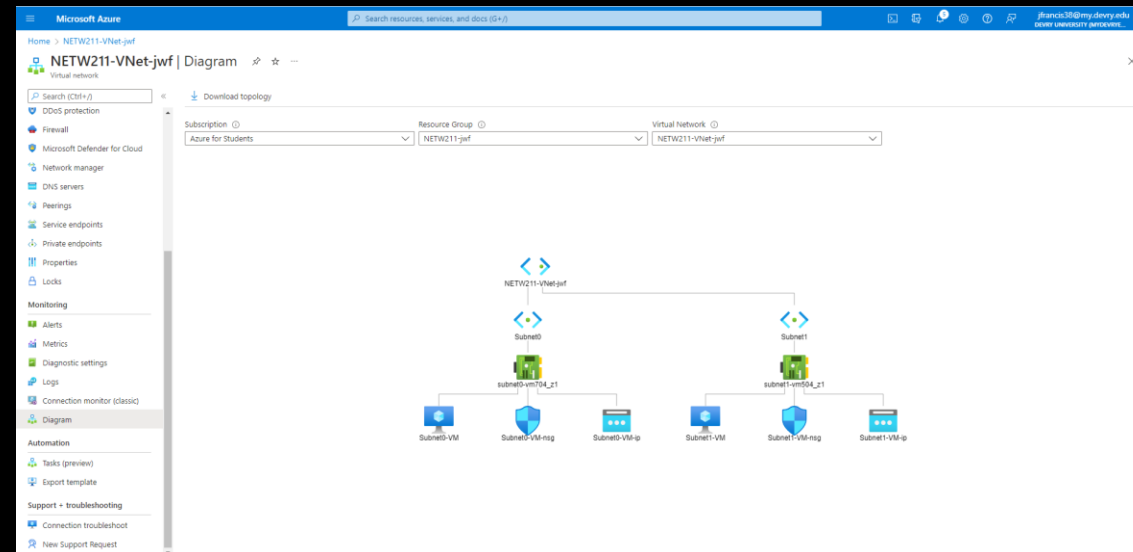
This screenshot should show the *Properties* section of the **Subnet1-VM** page, showing the networking and size information of the VM.

The screenshot shows the Azure portal interface for a virtual machine named 'Subnet1-VM'. The left sidebar contains navigation options such as Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications, Continuous delivery, Availability + scaling, Configuration, Identity, Properties, Locks, Operations, and Bastion. The main content area is titled 'Subnet1-VM' and includes a search bar and a toolbar with actions like Connect, Start, Restart, Stop, Capture, Delete, Refresh, Open in mobile, and Feedback. A warning banner at the top states: 'Subnet1-VM virtual machine agent status is not ready. Troubleshoot the issue →'. Below this, the 'Properties' tab is selected, showing a table of VM details. The table is organized into sections: 'Virtual machine' (Computer name: Subnet1-VM, Health state: -, Operating system: Windows, Publisher: MicrosoftWindowsServer, Offer: WindowsServer, Plan: 2019-datacenter-gensecond, VM generation: V2, Agent status: Not Ready, Agent version: Unknown, Host group: None, Host: -, Proximity placement group: -, Colocation status: N/A, Capacity reservation group: -), 'Availability + scaling' (Availability zone: 1, Scale Set: -), 'Security type' (Security type: Standard), and 'Extensions + applications' (Extensions: -). To the right of the table, there are two sections: 'Networking' and 'Size'. The 'Networking' section lists: Public IP address (20.255.62.3), Public IP address (IPv6) (-), Private IP address (10.0.1.4), Private IP address (IPv6) (-), Virtual network/subnet (NETW211-VNet-jwf/Subnet1), and DNS name (Configure). The 'Size' section lists: Size (Standard B1s), vCPUs (1), and RAM (1 GiB). Below these, the 'Disk' section lists: OS disk (Subnet1-VM_OsDisk_1_b0f10245b2cb4146972d90255aab9c38), Encryption at host (Disabled), Azure disk encryption (Not enabled), Ephemeral OS disk (N/A), and Data disks (0). The 'Azure Spot' section lists: Azure Spot (-) and Azure Spot eviction policy (-).

Section	Property	Value
Virtual machine	Computer name	Subnet1-VM
	Health state	-
	Operating system	Windows
	Publisher	MicrosoftWindowsServer
	Offer	WindowsServer
	Plan	2019-datacenter-gensecond
	VM generation	V2
	Agent status	Not Ready
	Agent version	Unknown
	Host group	None
Availability + scaling	Host	-
	Proximity placement group	-
	Colocation status	N/A
	Capacity reservation group	-
	Availability zone	1
Security type	Scale Set	-
	Security type	Standard
Extensions + applications	Extensions	-
Networking	Public IP address	20.255.62.3
	Public IP address (IPv6)	-
	Private IP address	10.0.1.4
	Private IP address (IPv6)	-
	Virtual network/subnet	NETW211-VNet-jwf/Subnet1
	DNS name	Configure
Size	Size	Standard B1s
	vCPUs	1
	RAM	1 GiB
Disk	OS disk	Subnet1-VM_OsDisk_1_b0f10245b2cb4146972d90255aab9c38
	Encryption at host	Disabled
	Azure disk encryption	Not enabled
	Ephemeral OS disk	N/A
	Data disks	0
Azure Spot	Azure Spot	-
	Azure Spot eviction policy	-

Don't

This screenshot should show the topology diagram of your VNet (*NETW211-VNet-Your Initials*) with two subnets (*Subnet0* and *Subnet1*) and one VM in each subnet (*Subnet0-VM* and *Subnet1-VM*).



This screenshot should show the *ipconfig* and *ping* x.x.x.x results in the command prompt window, including the **Subnet10-VM** – x.x.x.x – Remote Desktop Connection window title.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3165]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : fhxgrejvndzujg2u4mhs5hthc.hx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::136:69ad:149b:9a98%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=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=2ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms 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 = 1ms, Maximum = 2ms, Average = 1ms

C:\Users\myaccount>
```

Verif

This screenshot should show the *ipconfig* and *ping* x.x.x.x results in the command prompt window, including the **Subnet1-VM** – x.x.x.x – Remote Desktop Connection window title.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3165]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\myaccount>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : fhxgrejvndzujg2u4mhxs5hthc.hx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::995c:dbc2:e025:b756%6
    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=1ms TTL=128
Reply from 10.0.1.4: bytes=32 time=2ms TTL=128
Reply from 10.0.1.4: bytes=32 time=1ms 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 = 2ms, Average = 1ms

C:\Users\myaccount>
```

NETW211 COURSE PROJECT-3

- Launch a Virtual Machine
- Attempt Connect to Virtual Machine via SSH
- Configure Network Service Group (NSG)
- Show successful ping

This screenshot should show the **NETW211-VM-***Your Initials* page, with information such as the resource group name, subscription, public IP address, etc.

The screenshot displays the Azure portal interface for a virtual machine named "NETW211-VM-JF". The left sidebar shows the navigation menu with options like 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, Locks, Operations, and Bastion. The main content area is divided into two sections: "Essentials" and "Properties".

Essentials:

- Resource group: [NETW211-8G-JF](#)
- Status: Running
- Location: East US (Zone 1)
- Subscription: [Azure for Students](#)
- Subscription ID: bba06e63-08af-43e3-8c78-c3363a9cde97
- Availability zone: 1
- Tags: [Add](#) [Click here to add tags](#)
- Operating system: Linux (ubuntu 20.04)
- Size: Standard B1s (1 vcpu, 1 GiB memory)
- Public IP address: [52.186.166.128](#)
- Virtual network/subnet: [NETW211-8G-JF-vnet/default](#)
- DNS name: Not configured

Properties:

Property	Value
Computer name	NETW211-VM-JF
Health state	-
Operating system	Linux (ubuntu 20.04)
Publisher	canonical
Offer	0001-com-ubuntu-server-focal
Plan	20_04-fs-gen2
VM generation	V2
Agent status	Ready
Agent version	2.7.3.0
Host group	None
Host	-
Proximity placement group	-
Colocation status	N/A

Networking:

Property	Value
Public IP address	52.186.166.128
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	NETW211-8G-JF-vnet/default
DNS name	Configure

Size:

Property	Value
Size	Standard B1s
vCPUs	1
RAM	1 GiB

Disk:

Property	Value
CX disk	NETW211-VM-JF-disk1 3857670d78a445c94e9f557615761898

Conn

This screenshot should show the `azureuser@NETW211-VM-Your Initials` window showing the IPv4 address of the VM in the Azure cloud.

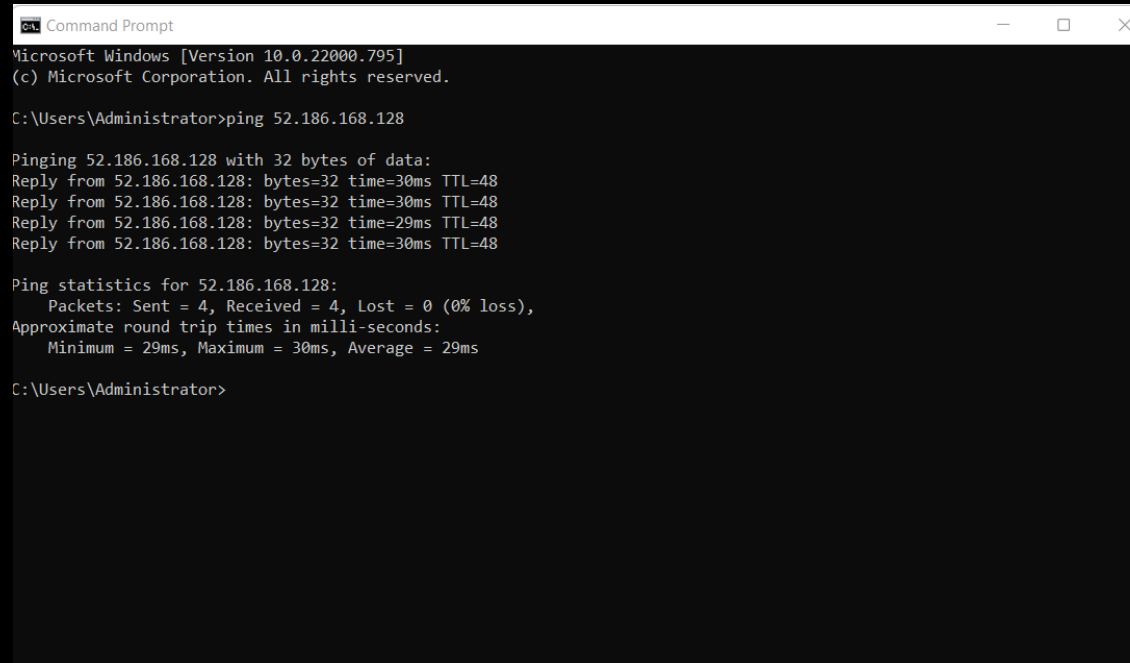
```
azureuser@NETW211-VM-JF: ~  
  
System information as of Sun Jul 24 17:34:00 UTC 2022  
  
System load:  0.0          Processes:      103  
Usage of /:   5.0% of 28.89GB Users logged in:  0  
Memory usage: 29%         IPv4 address for eth0: 10.0.0.4  
Swap usage:   0%  
  
1 update can be applied immediately.  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
azureuser@NETW211-VM-JF:~$  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
azureuser@NETW211-VM-JF:~$ uname -r  
5.15.0-1014-azure  
azureuser@NETW211-VM-JF:~$ cat /etc/os-release  
NAME="Ubuntu"  
VERSION="20.04.4 LTS (Focal Fossa)"  
ID=ubuntu  
ID_LIKE=debian  
PRETTY_NAME="Ubuntu 20.04.4 LTS"  
azureuser@NETW211-VM-JF:~$  
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@NETW211-VM-JF:~$ 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=2.39 ms
```


This screenshot should show the *Inbound port rules* section with the newly added *Allow_Ping* rule.

The screenshot shows the Microsoft Azure portal interface for a virtual machine named 'NETW211-VM-JF'. The 'Networking' section is selected in the left-hand navigation pane. The main content area displays the 'Inbound port rules' for the network interface 'netw211-vm-jf823_p1'. A table lists the rules, with 'Allow_Ping' at priority 310. Below the table, there are links for 'Need help?' and 'Quickstart'.

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

This screenshot should show the successful ping result from your local computer to the VM in the Azure cloud.



```
Command Prompt
Microsoft Windows [Version 10.0.22000.795]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping 52.186.168.128

Pinging 52.186.168.128 with 32 bytes of data:
Reply from 52.186.168.128: bytes=32 time=30ms TTL=48
Reply from 52.186.168.128: bytes=32 time=30ms TTL=48
Reply from 52.186.168.128: bytes=32 time=29ms TTL=48
Reply from 52.186.168.128: bytes=32 time=30ms TTL=48

Ping statistics for 52.186.168.128:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 29ms, Maximum = 30ms, Average = 29ms

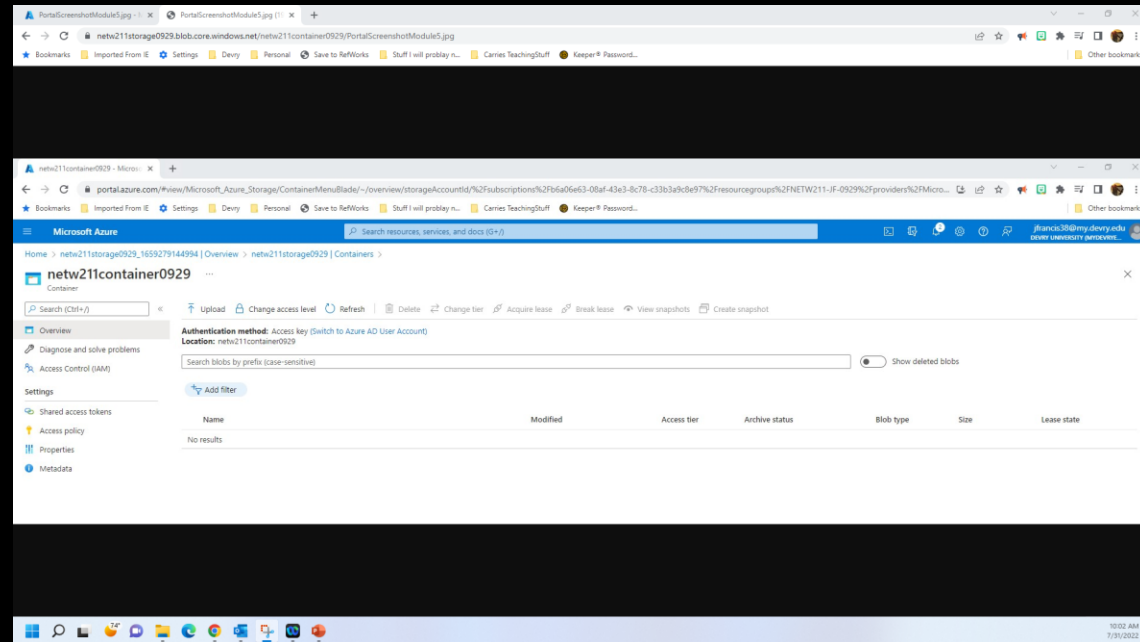
C:\Users\Administrator>
```

NETW211 COURSE PROJECT-4

- Uploading and accessing a file
- What does the *access tier* setting do? What are the Azure blob storage access tiers?
- Show Original version of the file
- Creating Blob Snapshot
- Enable Blob Versioning

Uploading and Accessing a File

This screenshot should show the browser window with the image uploaded from your local computer and the URL on top of the window.



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:

It allows you to select what type of storage best suits your needs.

Data stored in the cloud grows at an exponential pace. To manage costs for your expanding storage needs, it can be helpful to organize your data based on how frequently it will be accessed and how long it will be retained. Azure storage offers different access tiers so that you can store your blob data in the most cost-effective manner based on how it's being used. Azure Storage access tiers include:

- Hot tier** - An online tier optimized for storing data that is accessed or modified frequently. The Hot tier has the highest storage costs, but the lowest access costs.

- Cool tier** - An online tier optimized for storing data that is infrequently accessed or modified. Data in the Cool tier should be stored for a minimum of 30 days. The Cool tier has lower storage costs and higher access costs compared to the Hot tier.

- Archive tier** - An offline tier optimized for storing data that is rarely accessed, and that has flexible latency requirements, on the order of hours. Data in the Archive tier should be stored for a minimum of 180 days.

Azure storage capacity limits are set at the account level, rather than according to access tier. You can choose to maximize your capacity usage in one tier, or to distribute capacity across two or more tiers.

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>

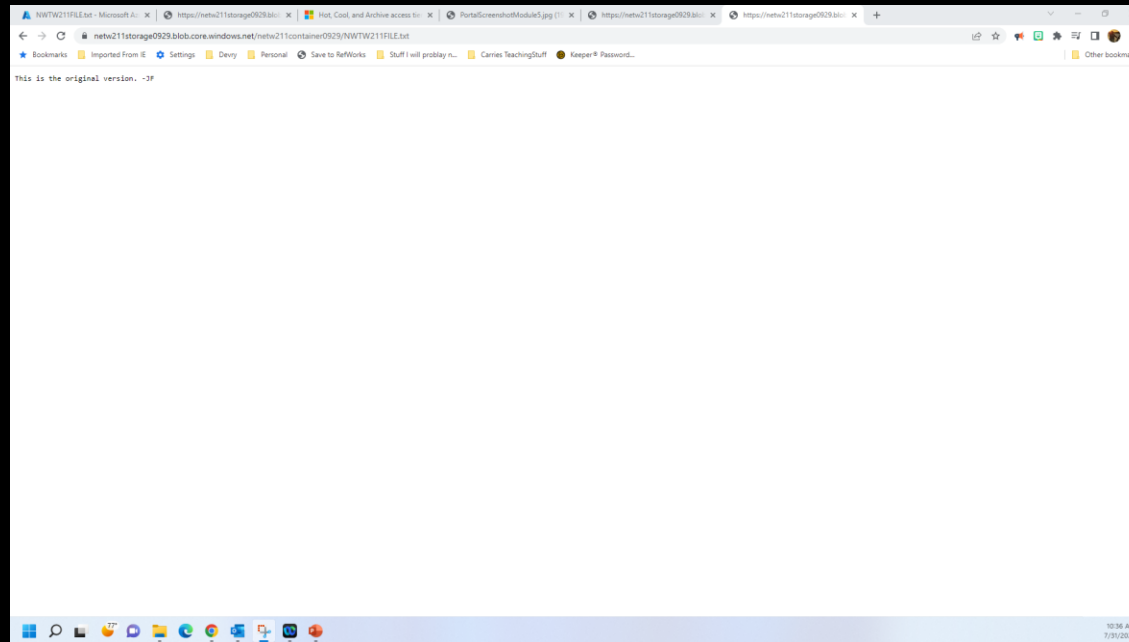
2. Azure Blob Storage Access Tiers, <https://devry.percipio.com/courses/c7ef0333-8560-403f-a004-9c5c843866b0/videos/2658bbe6-ee97-438b-a376-fbb079c3b3a0>

- 3.

- 4.

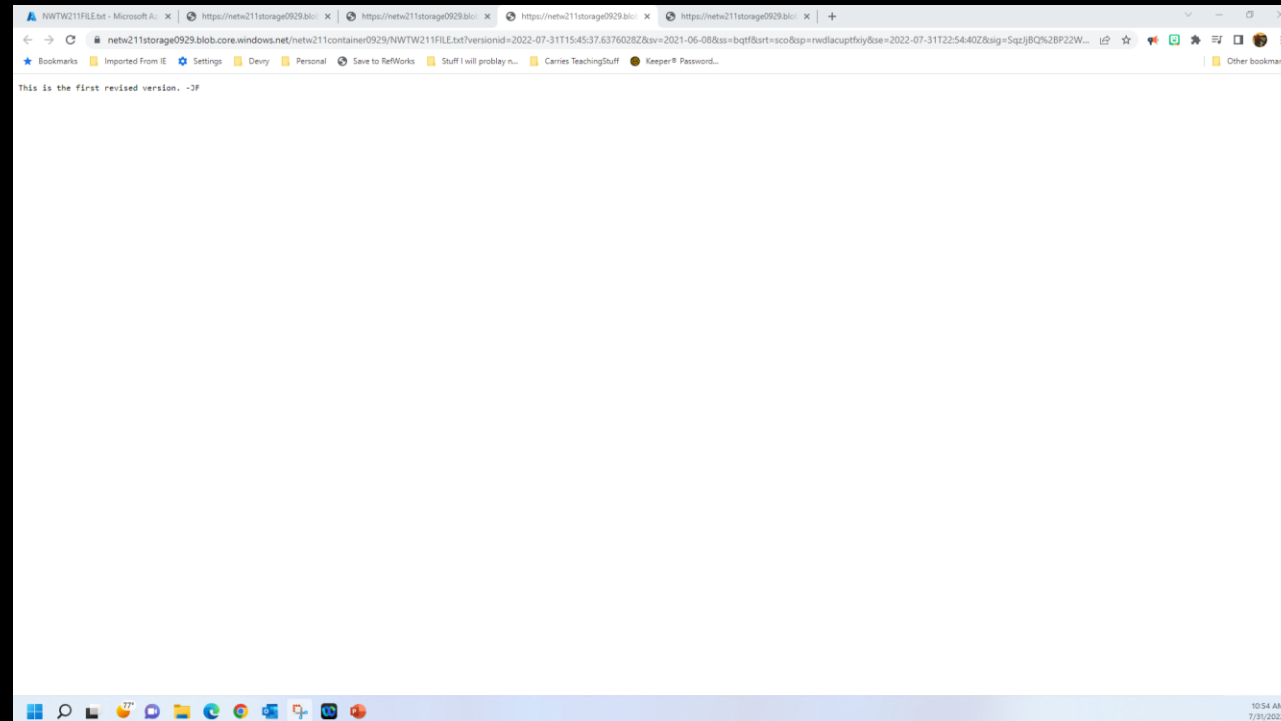
Creating Blob Snapshots

This screenshot should show the browser window with the “*This is the original version. –Your Initials*” message and the URL on top of the window



Enabling Blob Versioning

This screenshot should show the browser window with the “*This is the first revised version. –Your Initials*” message and the URL on top of the window.



NETW211 COURSE PROJECT-5

- Setting Up an Action Group and Notification
- Setting up Alert Rules
- Testing Alerts

Setting

This screenshot should show the “VM-Status-Change” action group on the *Manage actions* page.

Microsoft Azure

Home > Action groups

+ Create Columns Refresh Delete Test action group (preview)

Search Subscription: all Resource group: all Location: all

Showing 1 to 1 of 1 Action groups.

Name	Short name	Resource group	Subscription	Actions
VM-Status-Change	VM-Status	netx211-rg-jf0929	Azure for Students	1 Email

< Previous Page 1 of 1 Next >

This screenshot should show the *Alert rules* window showing the *VM-Deallocate* and *VM-Restart* rules.

The screenshot shows the Microsoft Azure portal interface for managing alert rules. The browser address bar indicates the URL: `portal.azure.com/#view/Microsoft_Azure_Monitoring/AlertRulesBlade/subscriptions-/null/resourceId/%2Fsubscriptions%2Fb6a6663-08af-43e3-8c78-c33e3a3de97%2Fresourcegroup%2FNETW211-RG-g0929%2Fproviders%2FMicr...`. The page title is "Alert rules" and the breadcrumb trail is "Home > NETW211-VM-jf | Alerts >".

At the top, there are action buttons: "+ Create", "Columns", "Refresh", "Export to CSV", "Delete", "Enable", and "Disable". Below these are filter tabs: "Signal scope: all", "Signal scope: NETW211-VM-jf", "Subscription: all", "Signal type: all", "Severity: all", and "Status: Enabled". A search bar is also present.

The main content area displays a table of alert rules. The text "Showing 1 to 2 of 2 Alert rules." is shown above the table. The table has columns for Name, Condition, Severity, Target scope, Target resource type, Signal type, and Status. Two rules are listed:

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

At the bottom, there are navigation controls: "< Previous", "Page 1 of 1", and "Next >".

This screenshot should show the 'VM-Restart' was activated email message with the date and time of the alert.

Important notice: Azure Monitor alert VM-Restart was activated

Microsoft Azure <azure-noreply@microsoft.com>
To: Francis, John

Sun 8/7/2022 11:23 AM

ⓘ If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Azure Monitor alert 'VM-Restart' was activated for 'NETW211-VM-jf' at August 7, 2022 16:21 UTC


You're receiving this notification as a member of the VM-Status action group because an Azure Monitor alert was activated.

Activity log alert	VM-Restart
Time	August 7, 2022 16:21 UTC
Category	Administrative
Operation name	Microsoft.Compute/virtualMachines/restart/action
Correlation ID	7e6194f7-faaf-456b-9191-8b03eb0e9fb3
Level	Informational
Resource ID	/subscriptions/b6a06e63-08af-43e3-8c78-c33b3a9c8e97/resourceGroups/NETW211-RG-jf0929/providers/Microsoft.Compute/virtualMachines/NETW211-VM-jf
Caller	jfrancis38@my.devry.edu
Properties	[{"eventCategory":"Administrative","entity":"/subscriptions/b6a06e63-08af-43e3-8c78-c33b3a9c8e97/resourceGroups/NETW211-RG-jf0929/providers/Microsoft.Compute/virtualMachines/NETW211-VM-jf","message":"Microsoft.Compute/virtualMachines/restart/action","hierarchy"

All folders are up to date. Connected to: Microsoft Exchange

This screenshot should show the 'VM-Deallocate' was activated email message with the date and time of the alert.


Important notice: Azure Monitor alert VM- Deallocate was activated

 Microsoft Azure <azure-noreply@microsoft.com>
To: Francis, John

↩ Reply

↩ Reply All

→ Forward



⋮

Sun 8/7/2022 11:27 AM

ⓘ

If there are problems with how this message is displayed, click here to view it in a web browser.

🖼

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.


Azure Monitor alert 'VM- Deallocate' was activated for 'NETW211-VM-jf' at August 7, 2022 16:25 UTC


You're receiving this notification as a member of the VM-Status action group because an Azure Monitor alert was activated.


Activity log alert	VM- Deallocate
Time	August 7, 2022 16:25 UTC
Category	Administrative
Operation name	Microsoft.Compute/virtualMachines/deallocate/action
Correlation ID	5008fa0a-1b07-4e8a-a5d6-f49cb474ac16
Level	Informational
Resource ID	/subscriptions/b6a06e63-08af-43e3-8c78-c33b3a9c8e97/resourceGroups/NETW211-RG-jf0929/providers/Microsoft.Compute/virtualMachines/NETW211-VM-jf
Caller	jfrancis38@my.devry.edu
Properties	[{"statusCode": "Accepted", "serviceRequestId": null, "eventCategory": "Administrative", "entity": "/subscriptions/b6a06e63-08af-43e3-8c78-c33b3a9c8e97/resourceGroups/NETW211-RG-jf0929/providers/Microsoft.Compute/virtualMachines/NETW211-VM-jf"}]


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Display Settings









100%



CHALLENGES IN THE PROJECT.

- Cybersecurity can be a big concern with cloud computing, and I was able to overcome some of the challenges by learning how to configure the network service group
- Maintenance is another challenge I experience and learned how to help the resources with rules and alerts.

CAREER SKILLS OBTAINED DURING THIS COURSE

- Hardware virtualization
- Cloud infrastructure
- Cloud security
- Cloud storage
- Cloud migration
- Capacity planning
- Performance monitoring

CONCLUSION

- This course taught me the fundamentals of being able to work with cloud computing including deployment of virtual machines, resource groups, security, storage and migration. The attached slides have proved I have confidence to be able to perform actions and maintain the resources available including horizontal or vertical scaling of the network and resources. This class was a great learning experience and taught me new terminology and technology as more companies are moving to Platform as a Service, Infrastructure as a Service and Software as a Service.