



HERALD
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K A T H M A N D U



**Module Title: Distributed and Cloud Systems
Programming
(5CS022)**

Subject Title: Workshop 07

Student Name: Nayan Raj Khanal

Student Code: 2227486

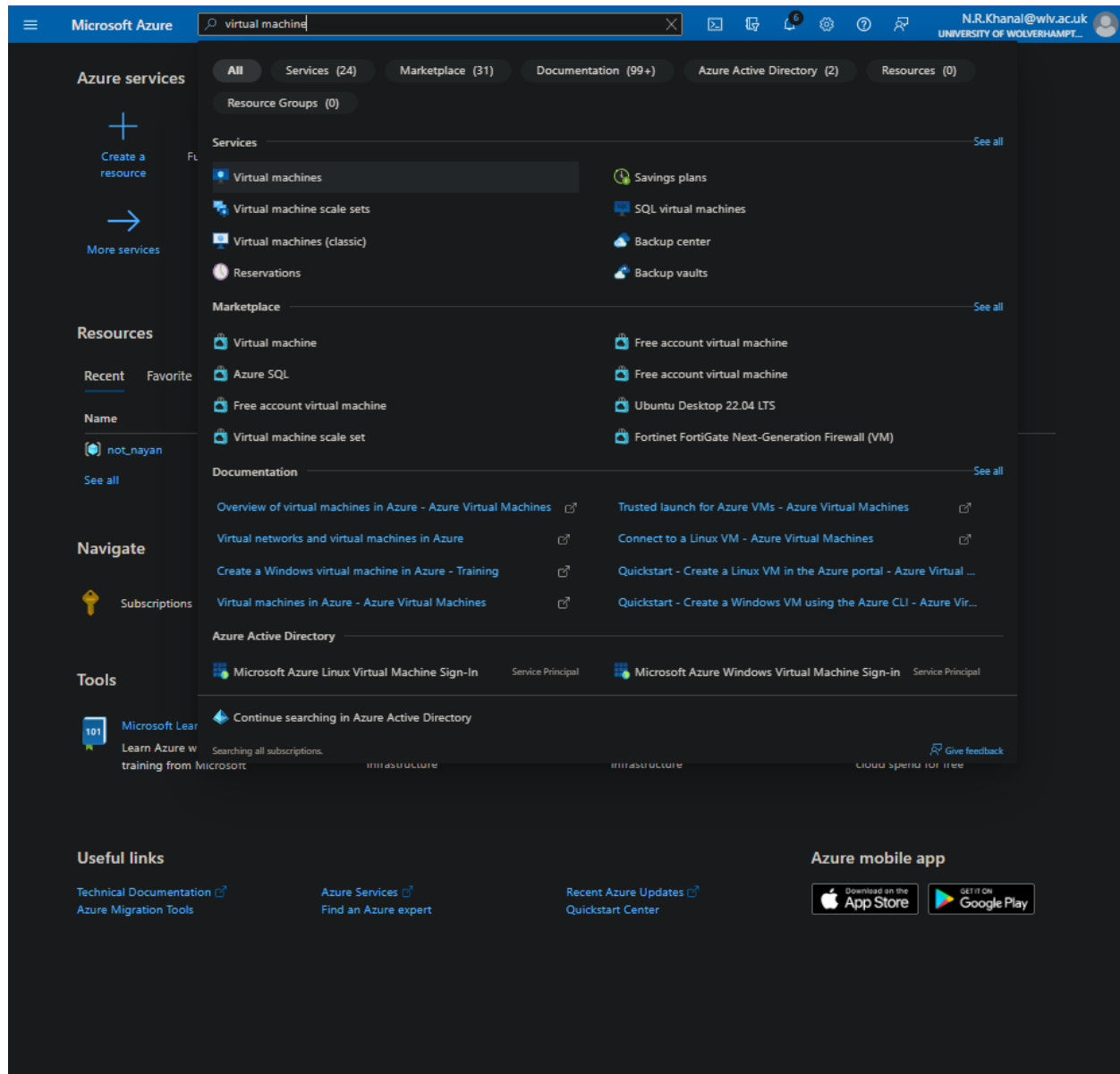
Instructor: Mr. Prabin Sapkota

Submitted on: 28.04.2023

Azure Virtual Machine:

Step 1: Creating a Virtual Machine

➔ Search for Virtual machines in the search bar



➔ Click on create and select Azure Virtual Machine

The screenshot shows the Microsoft Azure portal interface. At the top, the header includes the Microsoft Azure logo, a search bar, and user information for N.R.Khanal@wlv.ac.uk. The main heading is 'Virtual machines' with a subtitle 'University of Wolverhampton (livevlac.onmicrosoft.com)'. Below the heading, there are navigation links: '+ Create', 'Switch to classic', 'Reservations', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Start', 'Restart', and a menu icon. A left-hand sidebar lists four virtual machine options: 'Azure virtual machine' (Create a virtual machine hosted by Azure), 'Azure virtual machine with preset configuration' (Create a virtual machine with presets based on your workloads), 'Azure Arc virtual machine' (Create a new Azure Arc virtual machine in one of your non-Azure environments), and 'Azure VMware Solution virtual machine' (Create a VMware virtual machine hosted by Azure). The main content area shows a message 'No virtual machines to display' with a sub-message 'Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.' and a 'Create' button. Below this, there are links to 'Learn more about Windows virtual machines' and 'Learn more about Linux virtual machines'. At the bottom right, there is a 'Give feedback' link.

➔ Enter details and click Review + Create:

NOTE:

1. Select windows server
2. Select the cheapest size
3. Select all the ports

Microsoft Azure

Home > Virtual machines >

Create a virtual machine

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

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

Subscription *

Resource group *
[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Security type

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

VM architecture ☐ Arm64 ☒ x64
Arm64 is not supported with the selected image.

Run with Azure Spot discount ☐

Size *
[See all sizes](#)

Administrator account

Username *

Password *

Confirm password *

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

Public inbound ports * ☐ None ☒ Allow selected ports

Select inbound ports *







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

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

➔ Review your details and press Create

Microsoft Azure

Search resources, services, and docs (G+)



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Home > Virtual machines >

Create a virtual machine

Validation passed

BasicsDisksNetworkingManagementMonitoringAdvancedTagsReview + create

Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

Price

1 X Standard B1s
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ
0.0144 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, SSH port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.

Basics

Subscription	Azure for Students
Resource group	not_nayan
Virtual machine name	nayan
Region	West US 3
Availability options	No infrastructure redundancy required
Security type	Standard
Image	Windows Server 2019 Datacenter - Gen2
VM architecture	x64
Size	Standard B1s (1 vcpu, 1 GiB memory)
Username	notnayan
Public inbound ports	RDP, SSH, HTTPS, HTTP
Already have a Windows license?	No
Azure Spot	No

Disks

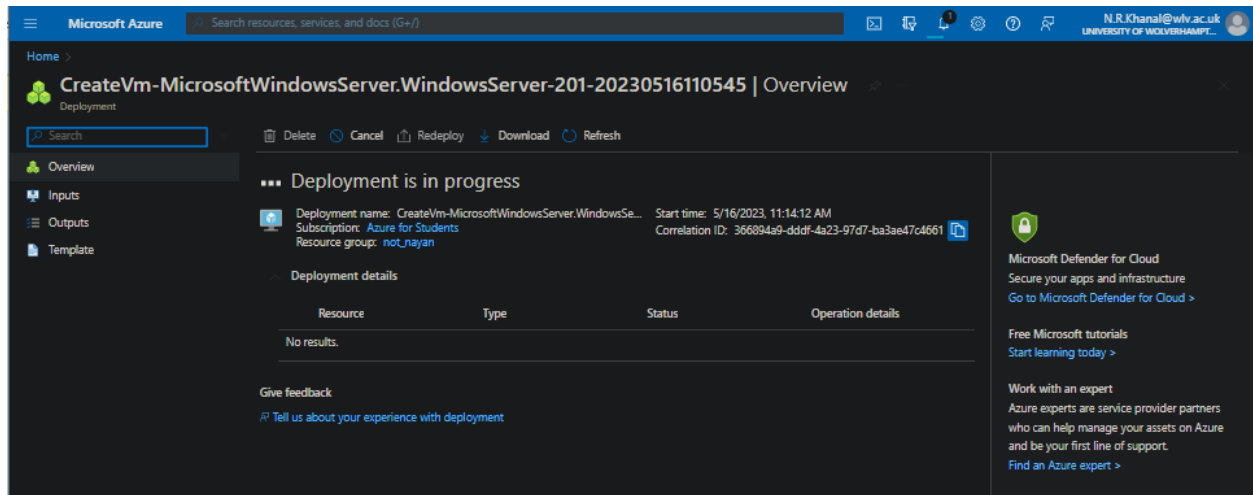
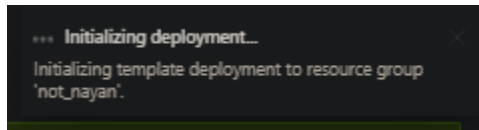
OS disk type	Premium SSD LRS
Use managed disks	Yes
Delete OS disk with VM	Enabled
Ephemeral OS disk	No

Networking

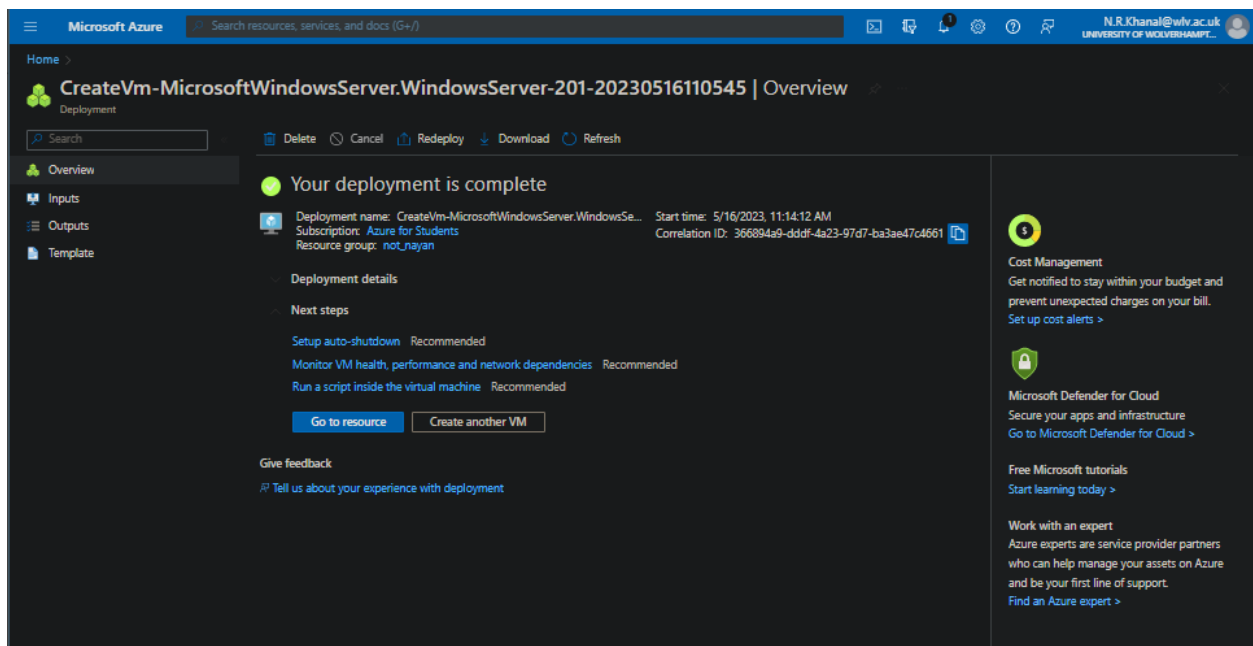
Virtual network	(new) nayan-vnet
Subnet	(new) default (10.0.0.0/24)

Create< PreviousNext >Download a template for automationGive feedback

➔ Please be patient while the VM is being deployed



Once completed you will see



Click on go to resource to continue our workshop.

Step 2: Connecting to the Virtual Machine

➔ Select the connect button

The screenshot displays the Microsoft Azure portal interface for a virtual machine named 'nayan'. The top navigation bar includes the 'Connect' button, which is highlighted. The left sidebar shows the 'Overview' tab selected. The main content area is divided into two sections: 'Essentials' and 'Properties'.

Essentials

Property	Value
Resource group	not_nayan
Status	Running
Location	West US 3
Subscription	Azure for Students
Subscription ID	32812db4-95b9-47b5-90b6-a4de0d650f2
Operating system	Windows (Windows Server 2019 Datacenter)
Size	Standard B1s (1 vcpu, 1 GiB memory)
Public IP address	20.25.128.140
Virtual network/subnet	nayan-vnet/default
DNS name	Not configured
Health state	-

Properties

Property	Value
Computer name	nayan
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	2.7.41491.1075
Host group	None
Host	-
Proximity placement group	-
Colocation status	N/A
Capacity reservation group	-
Disk controller type	SCSI

Availability + scaling

Property	Value
Availability zone	-
Availability set	-
Scale Set	-

Security type

Property	Value
Security type	Standard

Extensions + applications

Property	Value
Extensions	-
Applications	-

Networking

Property	Value
Public IP address	20.25.128.140 (Network interface nayan800)
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-
Virtual network/subnet	nayan-vnet/default
DNS name	Configure

Size

Property	Value
Size	Standard B1s
vCPUs	1
RAM	1 GiB

Disk

Property	Value
OS disk	nayan_OsDisk_1_e5a7411cb1d44a86be877e9af16f5054
Encryption at host	Disabled
Azure disk encryption	Not enabled
Ephemeral OS disk	N/A
Data disks	0

Auto-shutdown

Property	Value
Auto-shutdown	Not enabled
Scheduled shutdown	-

Azure Spot

Property	Value
Azure Spot	-
Azure Spot eviction policy	-

➔ Select RDP and download the file.

NOTE: Save the IP address, we'll need it later.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information (N.R.Khanal@wlv.ac.uk). The left sidebar contains a navigation menu with categories like Overview, Settings, Operations, and Monitoring. The main content area is titled 'nayan | Connect' and shows the 'Connect with RDP' page. A warning banner at the top states: 'To improve security, enable just-in-time access on this VM.' The page lists prerequisites for RDP: 'An inbound network security group rule has been created and your client IP address can access port 3389', 'The VM's network interface has a Public IP address', and 'The VM is running'. Below this, there are input fields for 'IP address' (Public IP address (20.25.128.140)) and 'Port number' (3389), followed by a 'Download RDP File' button. At the bottom, a purple bar displays the downloaded file 'nayan.rdp' and a 'Show all' button.

Microsoft Azure

Search resources, services, and docs (G+)

N.R.Khanal@wlv.ac.uk
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Home > CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230516110545 | Overview > nayan

nayan | Connect
Virtual machine

Search

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

Availability + scaling

Configuration

Identity

Properties

Locks

Operations

Bastion

Auto-shutdown

Backup

Disaster recovery

Updates

Inventory

Change tracking

Automate

Configuration management (Preview)

Policies

Run command

Monitoring

Insights

Alerts

Metrics

To improve security, enable just-in-time access on this VM.

RDP SSH Bastion

Connect with RDP

Suggested method for connecting

Azure has checked the status for the most common prerequisites when connecting using this method.

- An inbound network security group rule has been created and your client IP address can access port 3389. [Learn more](#)
- The VM's network interface has a Public IP address. [Learn more](#)
- The VM is running.

To connect to your virtual machine via RDP, select an IP address, optionally change the port number, and download the RDP file.

IP address *

Public IP address (20.25.128.140)

Port number *

3389

Download RDP File

Can't connect?

- Test network security groups
- Run a comprehensive RDP connectivity test

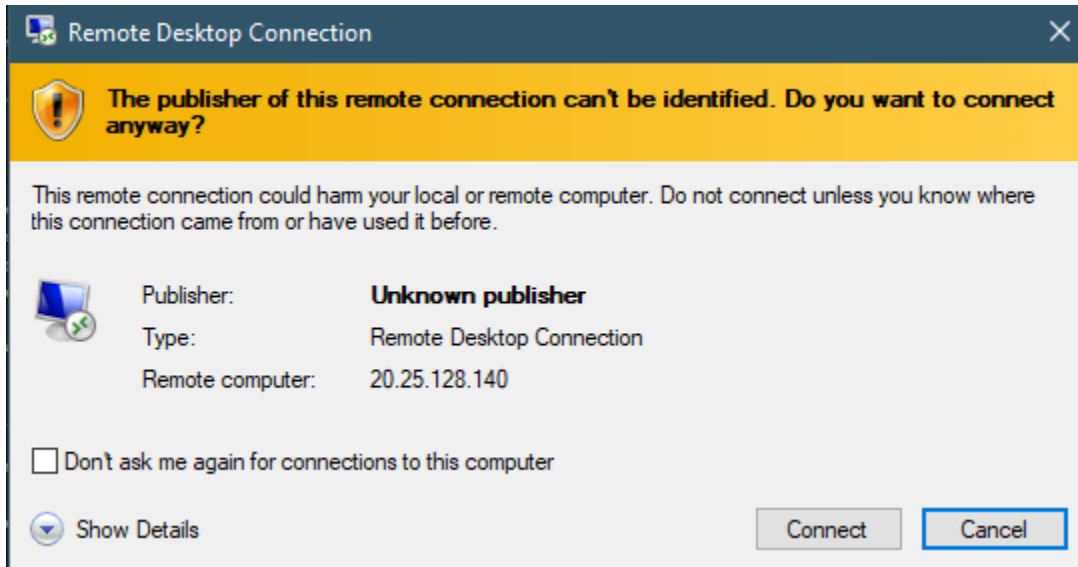
Provide feedback

- Tell us about your RDP experience

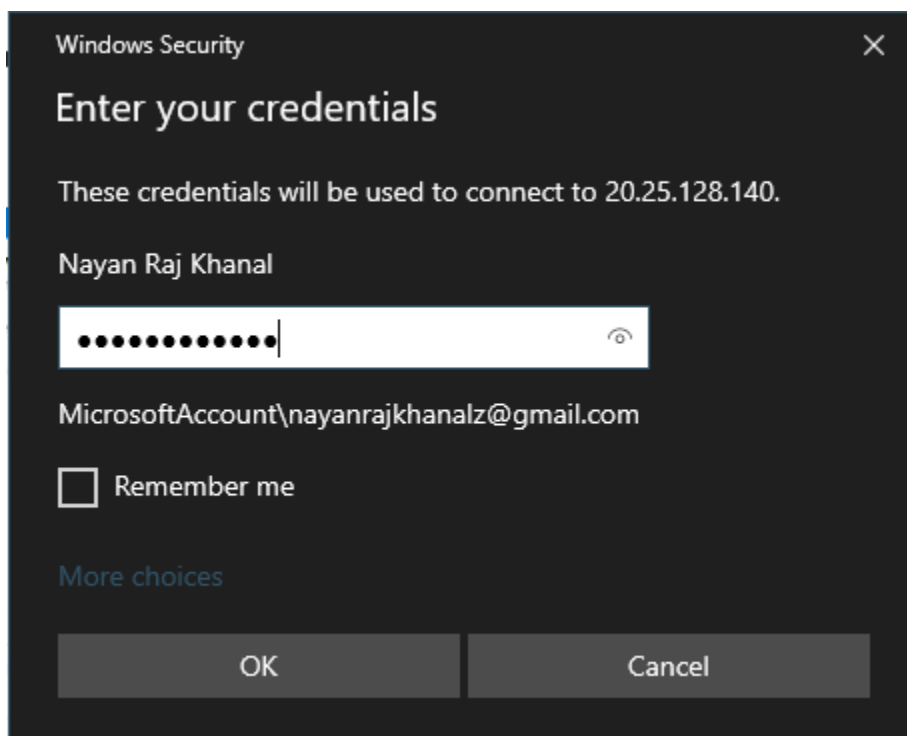
nayan.rdp

Show all

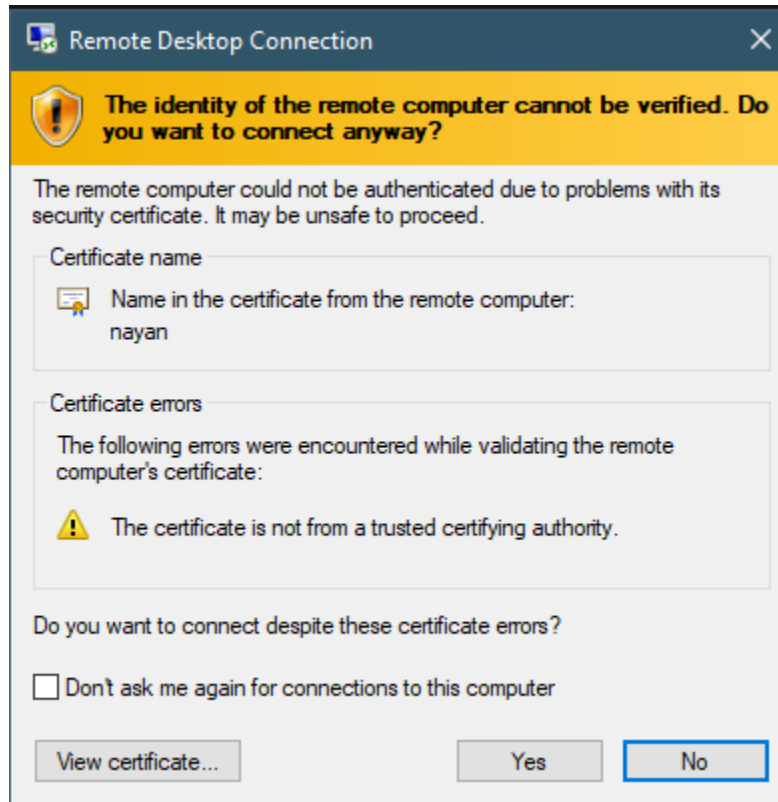
→ Open the RDP file, you'll get a warning, don't worry and press connect



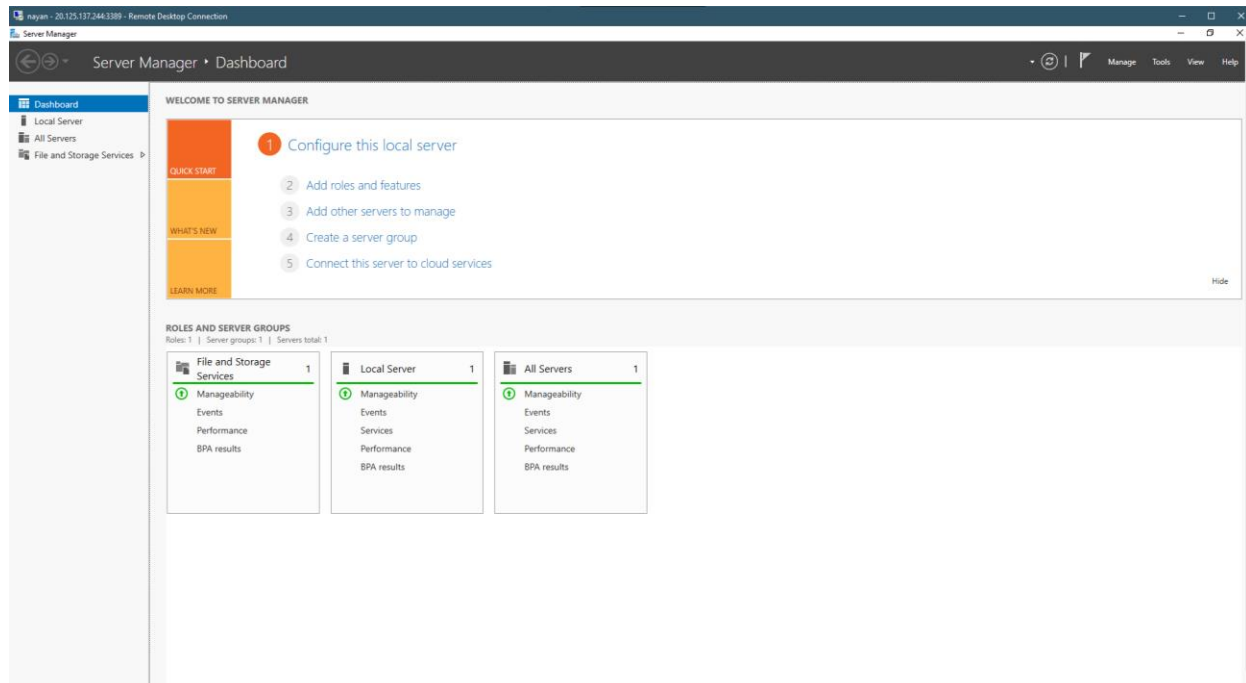
→ Enter your credentials used to create the VM



➔ Click Yes again



You should be logged in your server



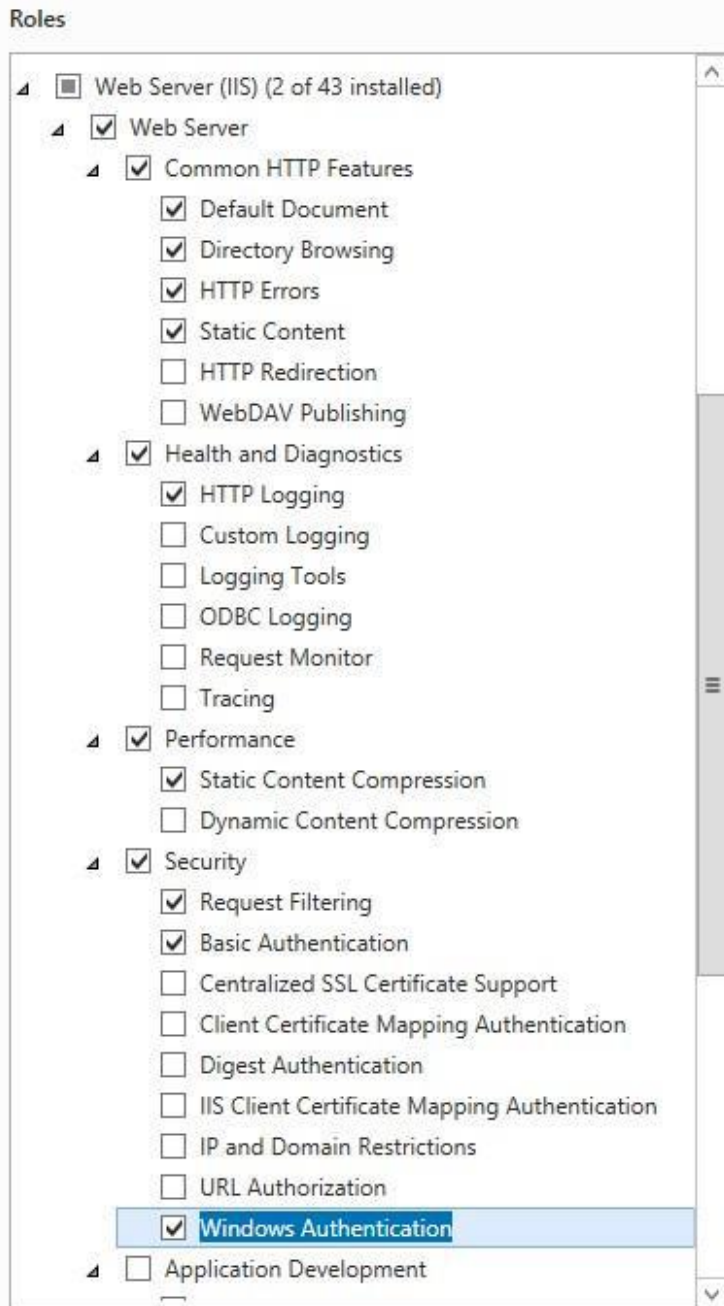
Step 3: Using Windows Server

Task – Setting up IIS

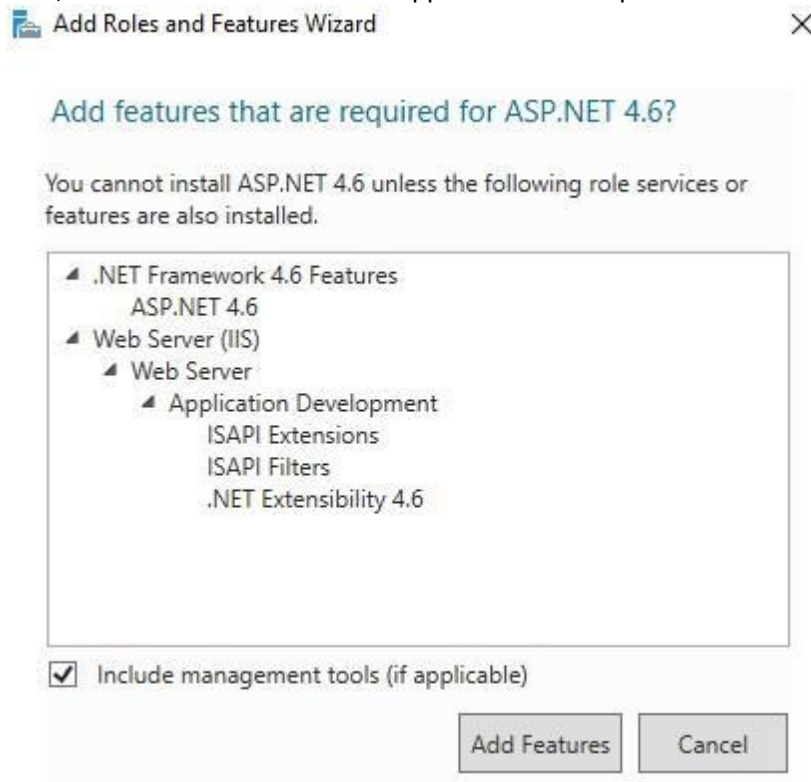
Start “Server Manager” if it is not already running.

- Click “Manage”, and then “Add Roles And Features”.
- Click Next.
- Select “Role-Based or feature-based installation” and click next.
- Select your server, and click next.

Click “Web Server”, and drill down into the options. Set them as following:



Also, click “ASP.NET 4.6” under “Application Development”. You will get the following popup:

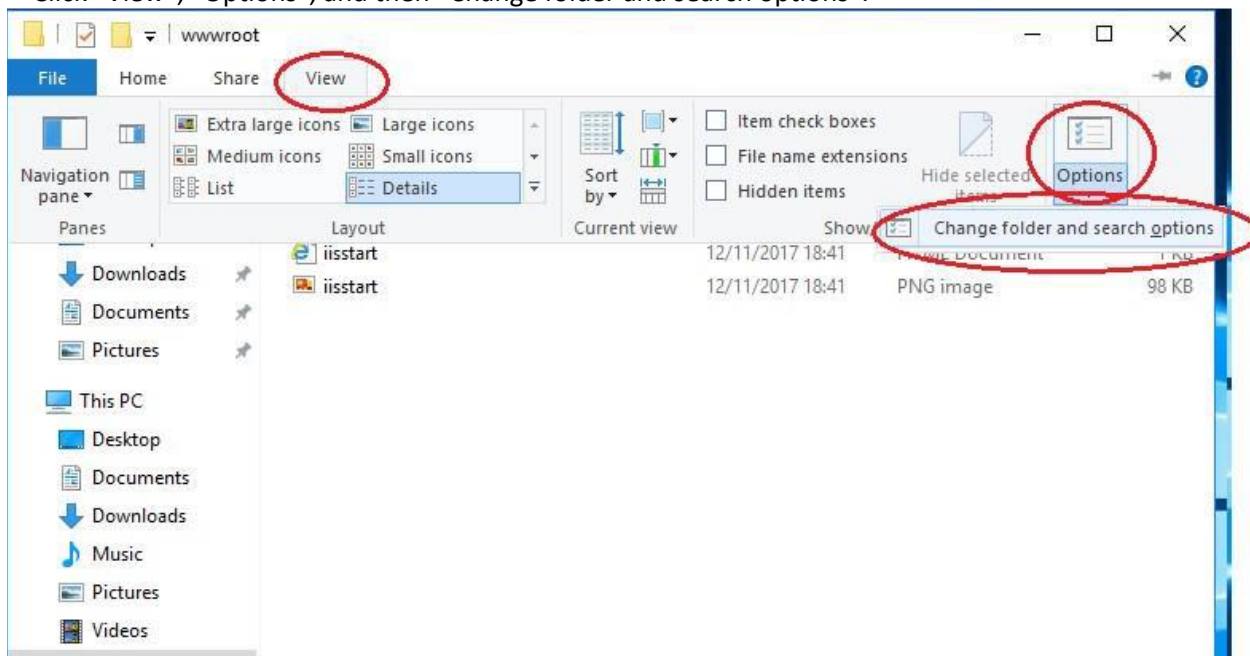


- Please note, you may get a different ASP.NET version, by the time you do this as it is updated regularly.
- Click “Add Features”.
- Click “Next”.
- And then click “Install”.
- When it has finished installing, click “Close”.
- When you have finished, open Internet Explorer, and go to <http://127.0.0.1>
- You should get a page saying “Internet Information Services”.

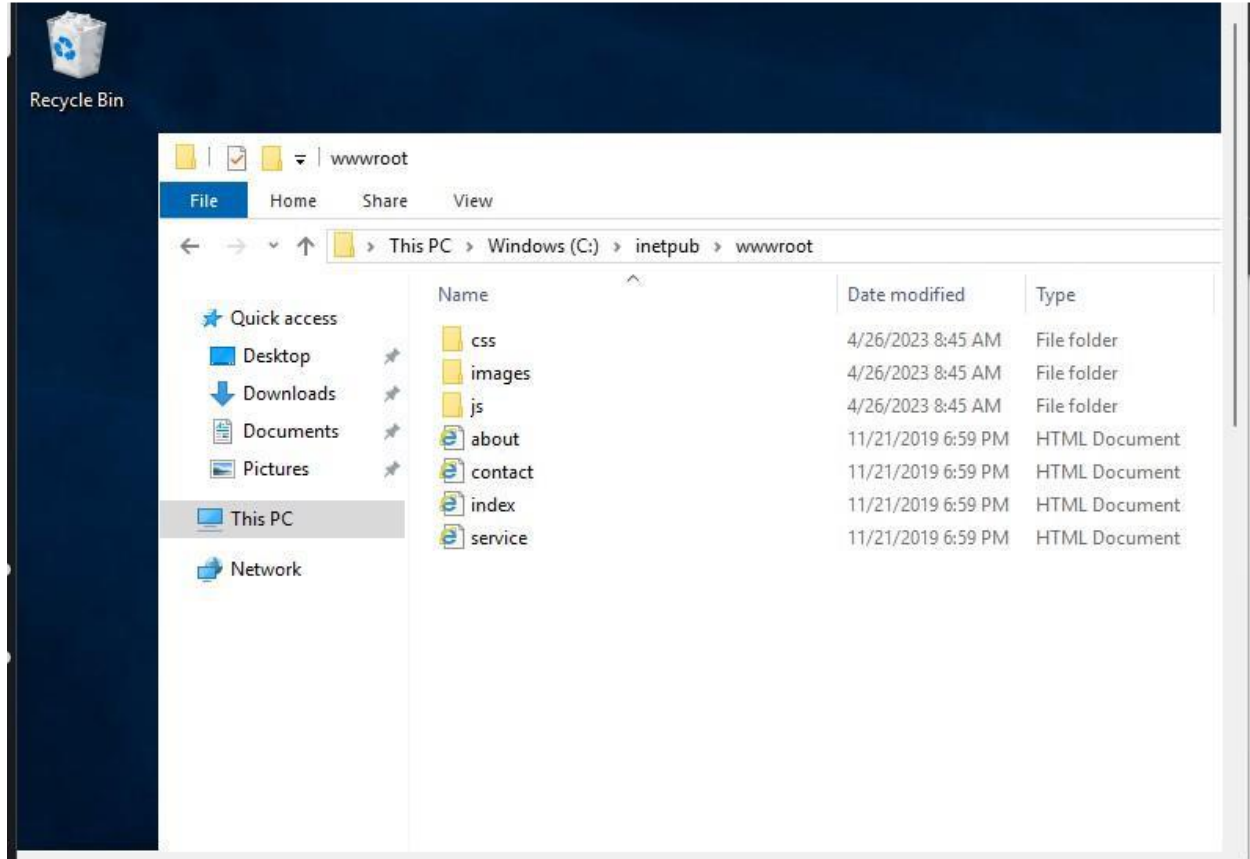
Task – creating a website.

Go to the Start Menu, and start IIS.

- Click on your server name, from the list on the left of IIS.
- If you get a message asking “Do you want to get started with Microsoft Web Platform”, tick “Do not show this message”, and then click “No”.
- You should see “Default Web Site” under “Sites”. Right-click, and click “Explore”.
- Windows Explorer should appear.
- Click “View”, “Options”, and then “Change folder and search options”:



- In the “Folder Options” window, click “View”, and scroll down. Untick “Hide extensions for known file types”, and then click “Apply”, and “OK”.
- Create a new text file, called “test.aspx”. Open it for editing.
- Paste the files in these directory



Open the site using public id of your virtual machine that was created in azure

