

REPORT ON MICROSOFT AZURE FUNDAMENTALS

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1)Sandbox:

Create a Linux virtual machine and install Nginx

The screenshot shows the Microsoft Learn interface for the exercise "Exercise - Create an Azure virtual machine". The page indicates that the sandbox is activated with 55 minutes remaining. The Azure Cloud Shell is open, displaying a JSON configuration for a custom script extension. The script is a bash script that creates a Linux virtual machine with Nginx installed.

```
"location": "westus",
"name": "customScript",
"protectedSettings": null,
"protectedSettingsFromKeyVault": null,
"provisionAfterExtensions": null,
"provisioningState": "Succeeded",
"publisher": "Microsoft.Azure.Extensions",
"resourceGroup": "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc",
"settings": {
  "fileUri": [
    "https://raw.githubusercontent.com/MicrosoftDocs/mslearn-welcome-to-azure/master/configure-nginx.sh"
  ]
},
"suppressFailures": null,
"tags": null,
"type": "Microsoft.Compute/virtualMachines/extensions",
"typeHandlerVersion": "2.1",
"typePropertiesType": "customScript"
}
```

udhaya [~]\$

Access your web server

The screenshot shows the Microsoft Learn interface for the exercise "Exercise - Configure network access". The page indicates that the sandbox is activated with 39 minutes remaining. The Azure Cloud Shell is open, displaying a JSON configuration for a virtual machine and the commands to list its IP addresses and access the web server.

```
"storageAccountType": "Premium_LRS"
},
"name": "my-vm_disk1_47708583fea54c2d86271762aa9e0fe8",
"osType": "Linux",
"vhd": null,
"writeAcceleratorEnabled": null
},
"tags": {},
"timeCreated": "2024-08-10T05:47:07.707323+00:00",
"type": "Microsoft.Compute/virtualMachines",
"userData": null,
"virtualMachineScaleSet": null,
"vmId": "ba03c606-650c-4cc3-8195-767bd60c546f",
"zones": null
}
]
udhaya [ ~ ]$ IPADDRESS=$(az vm list-ip-addresses --resource-group "
learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" --name my-vm --query "[].
virtualMachine.network.publicIpAddresses[*].ipAddress" --output tsv)
udhaya [ ~ ]$ curl --connect-timeout 5 http://$IPADDRESS
```

List the current network security group rules

The screenshot shows a Microsoft Learn page for 'Task 2: List the current network security group rules'. The page explains that a web server was inaccessible and suggests examining current NSG rules. It provides a step-by-step guide to list the rules using the Azure CLI command `az network nsg list`. The terminal window on the right shows the command being executed and the resulting JSON output for the 'allow-http' rule.

Task 2: List the current network security group rules

Your web server wasn't accessible. To find out why, let's examine your current NSG rules.

- Run the following `az network nsg list` command to list the network security groups that are associated with your VM:

```
az network nsg list \
  --resource-group "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" \
  --query '[] .name' \
  --output tsv
```

You see this output:

```
{
  "name": "allow-http",
  "priority": 100,
  "protocol": "Tcp",
  "provisioningState": "Succeeded",
  "resourceGroup": "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc",
  "sourceAddressPrefix": "*",
  "sourceAddressPrefixes": [],
  "sourcePortRange": "*",
  "sourcePortRanges": [],
  "type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
```

```
udhaya [ ~ ]$ az network nsg rule list --resource-group "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" --nsg-name my-vmNSG --query '[] .{Name: name, Priority: priority, Port: destinationPortRange, Access: access}' --output table
```

Name	Priority	Port	Access
default-allow-ssh	1000	22	Allow
allow-http	100	80	Allow

Create the network security rule

The screenshot shows a Microsoft Learn page for 'Task 3: Create the network security rule'. It explains how to create a network security rule that allows inbound access on port 80 (HTTP). It provides a step-by-step guide to create the rule using the Azure CLI command `az network nsg rule create`. The terminal window on the right shows the command being executed and the resulting JSON output for the 'allow-http' rule.

Task 3: Create the network security rule

Here, you create a network security rule that allows inbound access on port 80 (HTTP).

- Run the following `az network nsg rule create` command to create a rule called `allow-http` that allows inbound access on port 80:

```
az network nsg rule create \
  --resource-group "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" \
  --nsg-name my-vmNSG \
  --name allow-http \
  --protocol tcp \
  --priority 100 \
  --destination-port-range 80 \
  --access Allow
```

```
.Network/networkSecurityGroups/my-vmNSG/securityRules/allow-http",
"name": "allow-http",
"priority": 100,
"protocol": "Tcp",
"provisioningState": "Succeeded",
"resourceGroup": "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc",
"sourceAddressPrefix": "*",
"sourceAddressPrefixes": [],
"sourcePortRange": "*",
"sourcePortRanges": [],
"type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
```

```
udhaya [ ~ ]$ az network nsg rule list --resource-group "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" --nsg-name my-vmNSG --query '[] .{Name: name, Priority: priority, Port: destinationPortRange, Access: access}' --output table
```

Name	Priority	Port	Access
default-allow-ssh	1000	22	Allow
allow-http	100	80	Allow

Access your web server again

The screenshot shows the Microsoft Learn training page for 'Task 4: Access your web server again'. The page includes a navigation bar with 'Learn', 'Discover', 'Product documentation', 'Development languages', and 'Topics'. The main content area has a title 'Task 4: Access your web server again' and a sub-header 'Now that you configured network access to port 80, let's try to access the web server a second time.' A note box states: 'After you update the NSG, it may take a few moments before the updated rules propagate. Retry the next step, with pauses between attempts, until you get the desired results.' Below the note, a step '1. Run the same `curl` command that you ran earlier:' is followed by a code block containing the command: `curl --connect-timeout 5 http://$IPADDRESS`. To the right, the Azure Cloud Shell terminal is open, showing the command `az network nsg rule list --resource-group "learn-5953395b-b7aa-42db-bc3d-09e4cbe484fc" --nsg-name my-vmNSG --query '[].{Name:name, Priority:priority, Port:destinationPortRange, Access:access}' --output table` and its output:

Name	Priority	Port	Access
default-allow-ssh	1000	22	Allow
allow-http	100	80	Allow

The terminal also shows the execution of the `curl` command, which returns the response: `<html><body><h2>Welcome to Azure! My name is my-vm.</h2></body></html>`.

Final output:

The screenshot shows a web browser window with the address bar displaying '104.42.101.178'. The page content displays the message: 'Welcome to Azure! My name is my-vm.'

2) Azure Academic Services: Azure for Students

Creation of resource groups

The screenshot shows the Microsoft Azure portal's 'Resource groups' page. The page title is 'Resource groups' and it indicates the user is in the 'Default Directory (iamyokithoutlook.onmicrosoft.com)'. The page includes a search bar, a 'Create' button, and a 'Manage view' dropdown. A message states: 'You are viewing a new version of Browse experience. Some features may be missing. Click here to access the old experience.' Below this, there are filter buttons: 'Subscription equals all', 'Location equals all', and 'Add filter'. The main table lists resource groups with columns for Name, Subscription, and Location. One resource group is listed: 'rg' under 'Azure for Students' in 'Central India'. The page footer shows 'Showing 1 - 1 of 1. Display count: 10' and a 'Give feedback' link.

Name ↑	Subscription	Location
rg	Azure for Students	Central India

Creation of Virtual Machine

The screenshot shows the Microsoft Azure portal's 'Virtual machines' page. The page title is 'Virtual machines' and it indicates the user is in the 'Default Directory (iamyokithoutlook.onmicrosoft.com)'. The page includes a search bar, a 'Create' button, and a 'Switch to classic' button. A message states: 'You are viewing a new version of Browse experience. Some features may be missing. Click here to access the old experience.' Below this, there are filter buttons: 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all'. The main table lists virtual machines with columns for Name, Subscription, Resource group, Location, Status, Operating system, Size, Public IP address, and Disks. Two virtual machines are listed: 'model' (Running) and 'Udhayagiri' (Stopped (deallocated)). The page footer shows 'Showing 1 to 2 of 2 records' and a 'Give feedback' link.

Name ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP address ↑↓	Disks ↑↓
model	Azure for Students	rg	Central India	Running	Linux	Standard_D2s_v3	98.70.50.165	1
Udhayagiri	Azure for Students	rg	Central India	Stopped (deallocated)	Linux	Standard_E2s_v3	20.235.245.75	1

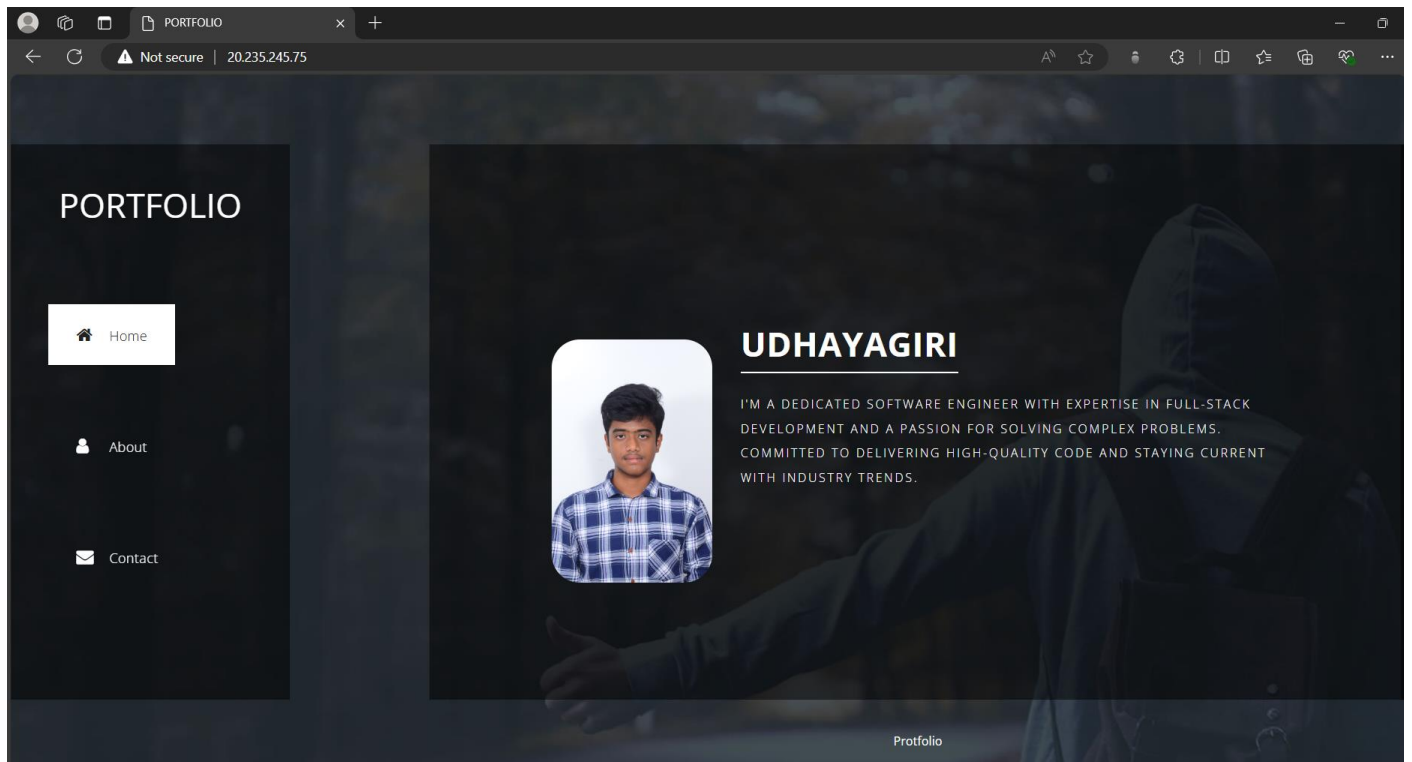
```
Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.
udhaya [ ~ ]$ ssh Udhaya@20.235.245.75
```

Hosting my portfolio using Azure Cloud Services



Pricing calculator

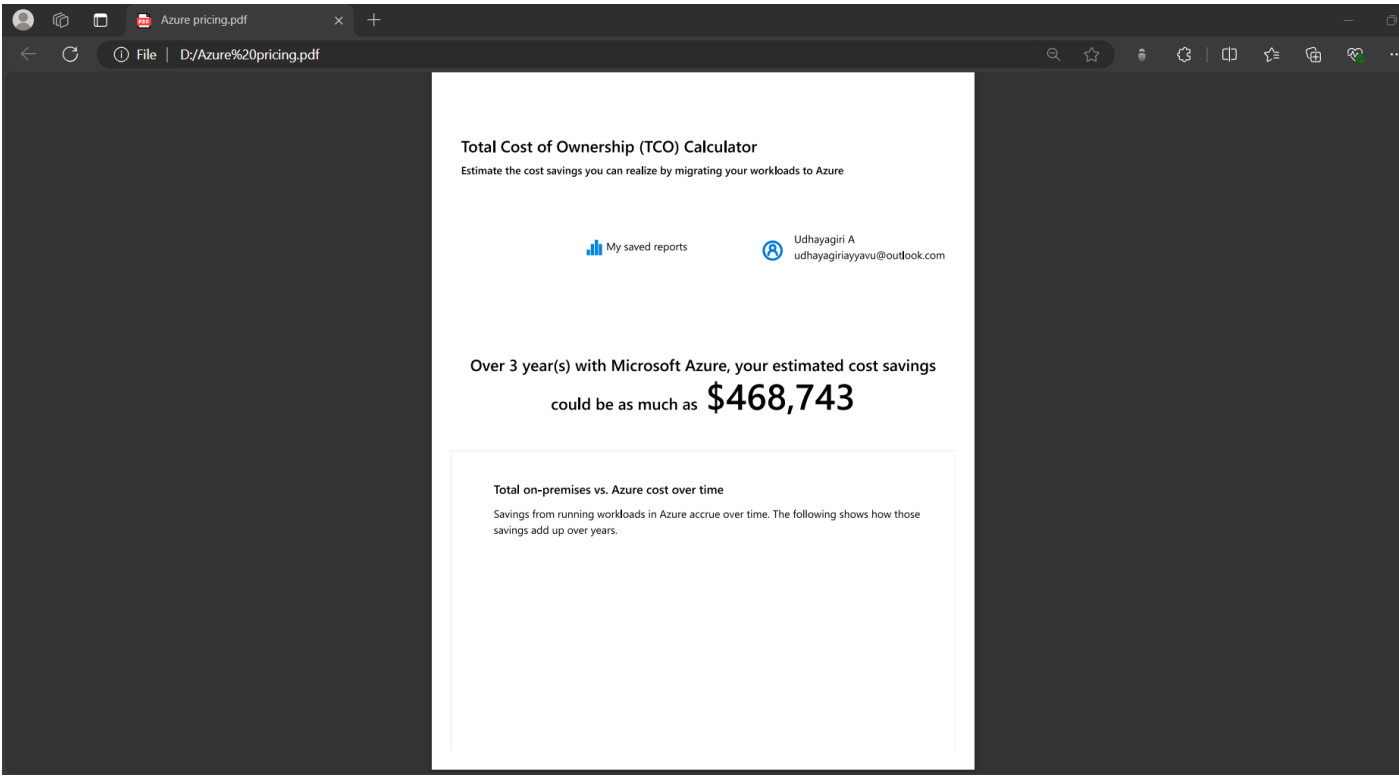
ExportedEstimate - Excel

Service category	Service type	Custom name	Region	Description	Estimated monthly cost	Estimated upfront cost
Compute	Virtual Machines		West US	2 D2 v3 (2 vCPUs, 8 GB RAM) x 730 Hours (Pay as you go), Windows (License included), OS Only; 0 managed disks – S4; Inter Region transfer type, 5 GB outbound data transfer from West US to East Asia	\$305.14	\$0.00
Databases	Azure SQL Database		West US	Single Database, vCore, General Purpose, Provisioned, Standard-series (Gen 5), Primary or Geo replica Disaster Recovery, Locally Redundant, 1 - 8 vCore Database(s) x 730 Hours, 32 GB Storage, SQL License (Pay as you go), RA-GRS Backup Storage Redundancy, 0 GB Point-In-Time Restore, 0 x 5 GB Long Term Retention	\$1,567.39	\$0.00
Networking	Application Gateway		West US	Web Application Firewall tier, Medium Instance size: 2 Gateway hours instance(s) x 730 Hours, 1 TB Data processed unit(s), 5 TB Zone unit(s)	\$607.64	\$0.00
Support			Support		\$0.00	\$0.00
			Licensing Program	Microsoft Customer Agreement (MCA)		
			Billing Account			
			Billing Profile			
			Total		\$2,480.16	\$0.00

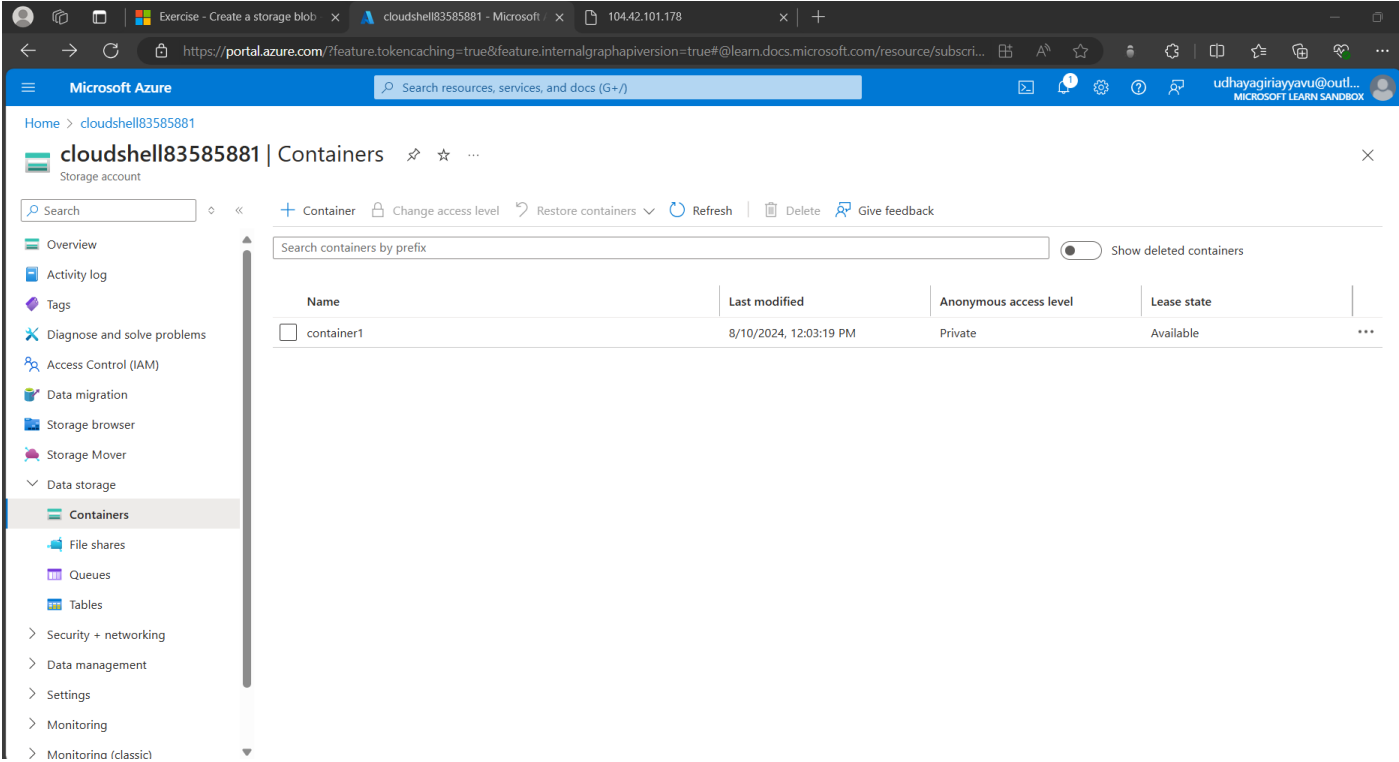
Disclaimer

All prices shown are in United States – Dollar (\$) USD. This is a summary estimate, not a quote. For up to date pricing information please visit <https://azure.microsoft.com/pricing/calculator/>

Total Cost of Ownership (TCO) Calculator



Creation of container



Microsoft Azure portal interface showing the 'container1' container overview. The breadcrumb navigation is 'Home > cloudshell83585881 | Containers > container1'. The left sidebar contains 'Overview', 'Diagnose and solve problems', 'Access Control (IAM)', and 'Settings'. The main area displays the container's authentication method as 'Access key' and location as 'container1'. A search bar for blobs is present. A table lists the blobs:

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
gt 650.jpg	8/10/2024, 12:06:13 ...			Block blob	370.53 KiB	Available

Microsoft Azure portal interface showing the 'gt 650.jpg' blob properties. The breadcrumb navigation is 'Home > cloudshell83585881 | Containers > container1 > gt 650.jpg'. The left sidebar is the same as the previous screenshot. The main area displays the blob's properties:

Property	Value
URL	https://cloudshell83585881.blob.core.windows.net/container1/gt-650.jpg
LAST MODIFIED	8/10/2024, 12:06:13 PM
CREATION TIME	8/10/2024, 12:06:13 PM
VERSION ID	-
TYPE	Block blob
SIZE	370.53 KiB
ACCESS TIER	N/A
ACCESS TIER LAST MODIFIED	N/A
ARCHIVE STATUS	-
REHYDRATE PRIORITY	-
SERVER ENCRYPTED	true
ETAG	0x8DCB9068ABC7077
VERSION-LEVEL IMMUTABILITY POLICY	Disabled
CACHE-CONTROL	
CONTENT-TYPE	image/jpeg
CONTENT-MD5	GXI48aeAgov8AOro+nf1JA==
CONTENT-ENCODING	

Exercise - Create a storage blobVirtual machines - Microsoft Az104.42.101.178

https://portal.azure.com/?feature.tokencaching=true&feature.internalgraphapiversion=true#browse/Microsoft.Compute%2FVirtualMachines

Microsoft AzureSearch resources, services, and docs (G+/)udhayagiriayyavu@out...DEFAULT DIRECTORY (IAMYONIT...

Home

Virtual machines

Default Directory (iamyckithoutlook.onmicrosoft.com)

CreateSwitch to classicReservationsManage viewRefreshExport to CSVOpen queryAssign tagsStartRestartStopDeleteServices

Filter for any field...Subscription equals allType equals allResource group equals allLocation equals allAdd filter

Showing 1 to 2 of 2 records.No groupingList view

<input type="checkbox"/>	Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disks	
<input type="checkbox"/>	model	Azure for Students	rg	Central India	Running	Linux	Standard_D2s_v3	98.70.50.165	1	...
<input type="checkbox"/>	Udhayagiri	Azure for Students	rg	Central India	Running	Linux	Standard_E2s_v3	20.235.245.75	1	...

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Give feedback