MICROSOFT AZURE

NAME : ANJU C

DEPARTMENT: B.TECH ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

GITHUB LINK: https://github.com/anjukamal/html.git

1.REQUESTING A CLOUD SHELL SUCCEEDED.

SANDBOX:

Welcome to Azure Cloud Shell

- az vm create --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --public-ip-sku Standard --image Ubuntu2204 --admin-username azureuser --generate-ssh-keys

- az vm extension set --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --vm-name my-vm --name customScript --publisher Microsoft.Azure.Extensions --version 2.1 --settings '{"fileUris":["https://raw.githubusercontent.com/MicrosoftDocs/mslearn-welcome-to-azure/master/configure-nginx.sh"]}' --protected-settings '{"commandToExecute": "./configure-nginx.sh"}'

- sudo apt-get update
- ssh azureuser@ 13.91.107.53

- echo "sudo apt-get update -y
- sudo apt-get install nginx -y
- sudo systemctl start nginx
- sudo systemctl enable nginx" > setup_nginx.sh
- chmod +x setup_nginx.sh
- ./setup_nginx.sh

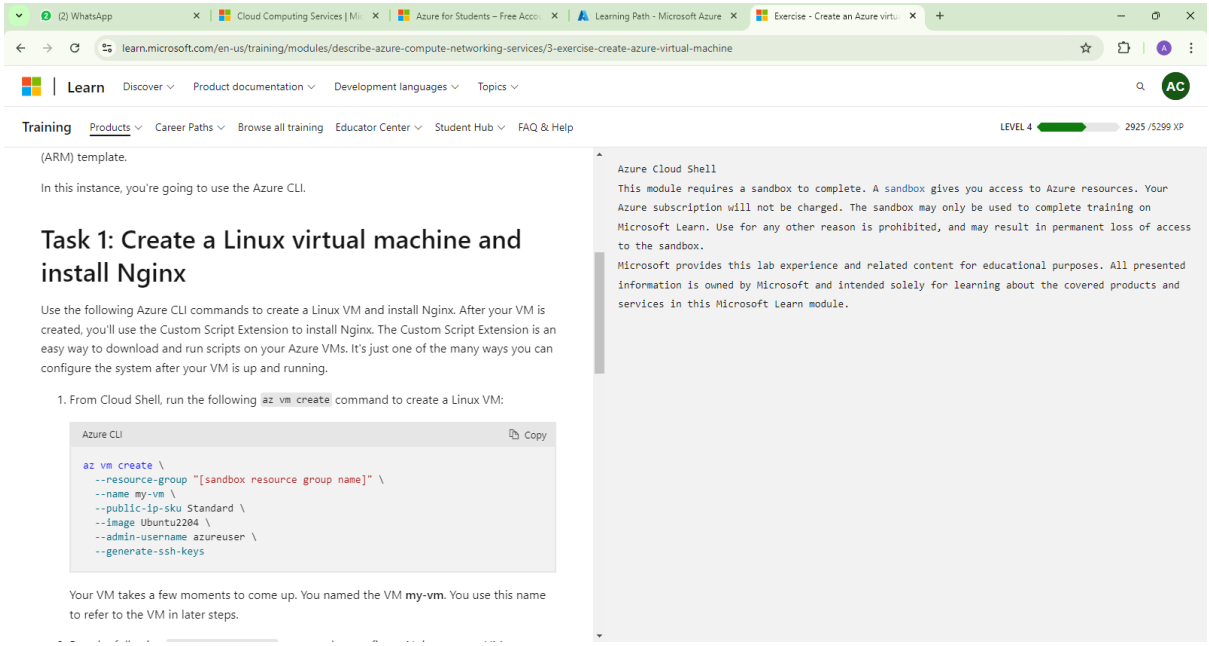
- echo "<html><body><h2>Welcome to Azure! My name is $(hostname).</h2></body></html>" | sudo tee -a /var/www/html/index.html

- sudo systemctl status nginx

- az vm open-port --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --port 80

- az vm list-ip-addresses --resource-group "learn-1dd151f8-37c6-44cc-a975-8f08e65c30c2" --name my-vm --output table
- ssh azureuser@ 13.91.107.53
- sudo apt-get update
- git clone https://github.com/anjukamal/html.git
- sudo cp -r html/* /var/www/html/
- sudo chown -R www-data:www-data /var/www/html
- sudo chmod -R 755 /var/www/html
- sudo systemctl restart nginx

WORKING:



(ARM) template.

In this instance, you're going to use the Azure CLI.

Task 1: Create a Linux virtual machine and install Nginx

Use the following Azure CLI commands to create a Linux VM and install Nginx. After your VM is created, you'll use the Custom Script Extension to install Nginx. The Custom Script Extension is an easy way to download and run scripts on your Azure VMs. It's just one of the many ways you can configure the system after your VM is up and running.

1. From Cloud Shell, run the following `az vm create` command to create a Linux VM:

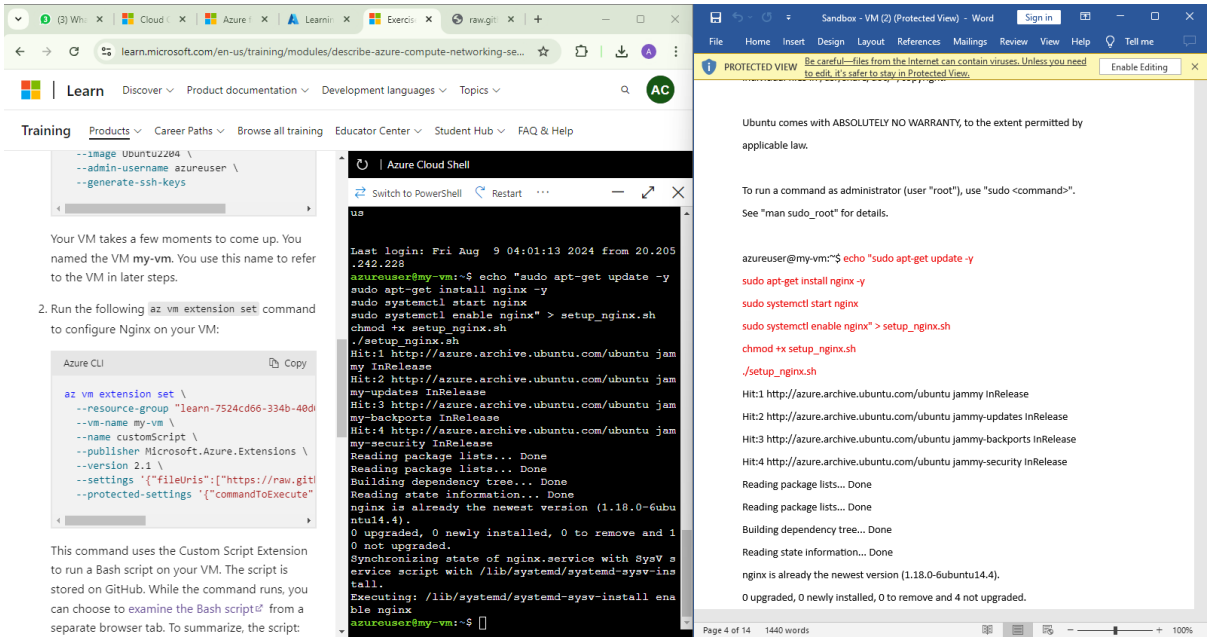
```
az vm create \
  --resource-group "[sandbox resource group name]" \
  --name my-vm \
  --public-ip-sku Standard \
  --image Ubuntu2204 \
  --admin-username azureuser \
  --generate-ssh-keys
```

Your VM takes a few moments to come up. You named the VM **my-vm**. You use this name to refer to the VM in later steps.

Azure Cloud Shell

This module requires a sandbox to complete. A sandbox gives you access to Azure resources. Your Azure subscription will not be charged. The sandbox may only be used to complete training on Microsoft Learn. Use for any other reason is prohibited, and may result in permanent loss of access to the sandbox.

Microsoft provides this lab experience and related content for educational purposes. All presented information is owned by Microsoft and intended solely for learning about the covered products and services in this Microsoft Learn module.



Your VM takes a few moments to come up. You named the VM **my-vm**. You use this name to refer to the VM in later steps.

2. Run the following `az vm extension set` command to configure Nginx on your VM:

```
az vm extension set \
  --resource-group "learn-7524cd66-334b-40d
  --vm-name my-vm \
  --name customScript \
  --publisher Microsoft.Azure.Extensions \
  --version 2.1 \
  --settings '{"fileUris":["https://raw.gith
  --protected-settings '{"commandToExecute"
```

This command uses the Custom Script Extension to run a Bash script on your VM. The script is stored on GitHub. While the command runs, you can choose to examine the Bash script from a separate browser tab. To summarize, the script:

```
Last login: Fri Aug  9 04:01:13 2024 from 20.205
.242.228
azureuser@my-vm:~$ echo "sudo apt-get update -y
sudo apt-get install nginx -y
sudo systemctl start nginx
sudo systemctl enable nginx" > setup_nginx.sh
chmod +x setup_nginx.sh
./setup_nginx.sh
Hit:1 http://azure.archive.ubuntu.com/ubuntu jam
my InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu jam
my-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu jam
my-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu jam
my-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.18.0-6ubu
ntu14.4).
0 upgraded, 0 newly installed, 0 to remove and 1
0 not upgraded.
Synchronizing state of nginx.service with SysV s
ervice script with /lib/systemd/systemd-sysv-ins
tall.
Executing: /lib/systemd/systemd-sysv-install ena
ble nginx
azureuser@my-vm:~$
```

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@my-vm:~$ echo "sudo apt-get update -y

sudo apt-get install nginx -y

sudo systemctl start nginx

sudo systemctl enable nginx" > setup_nginx.sh

chmod +x setup_nginx.sh

./setup_nginx.sh

Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease

Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease

Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease

Hit:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease

Reading package lists... Done

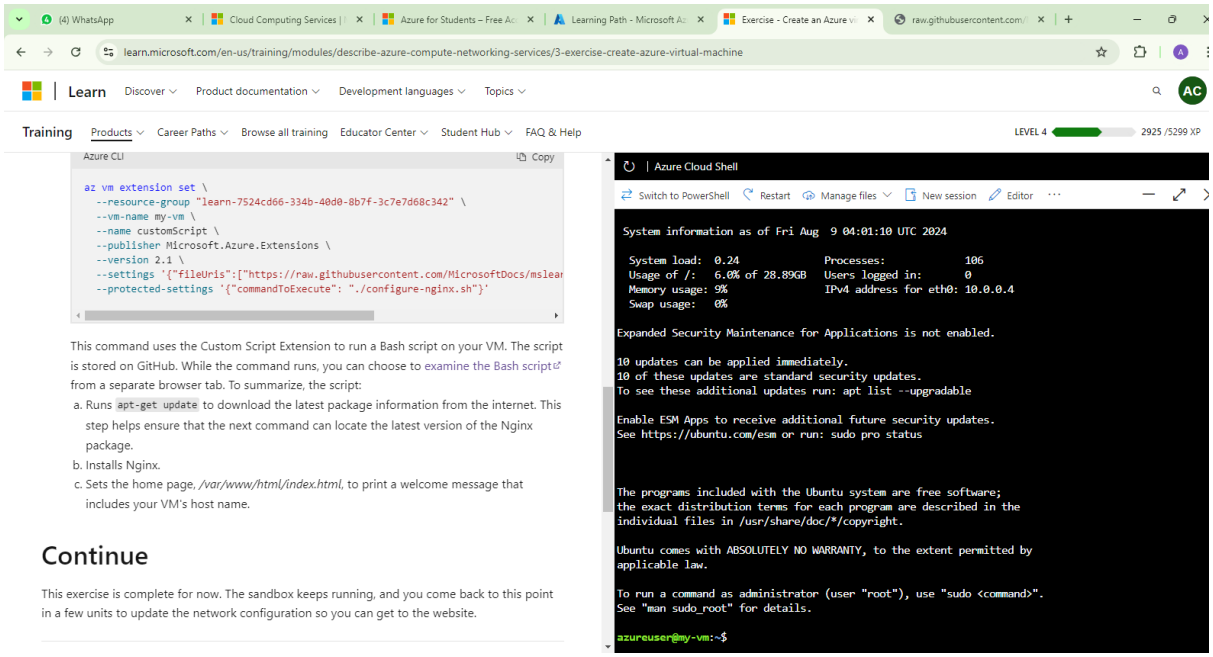
Reading package lists... Done

Building dependency tree... Done

Reading state information... Done

nginx is already the newest version (1.18.0-6ubuntu14.4).

0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.


learn.microsoft.com/en-us/training/modules/describe-azure-compute-networking-services/3-exercise-create-azure-virtual-machine
Learn
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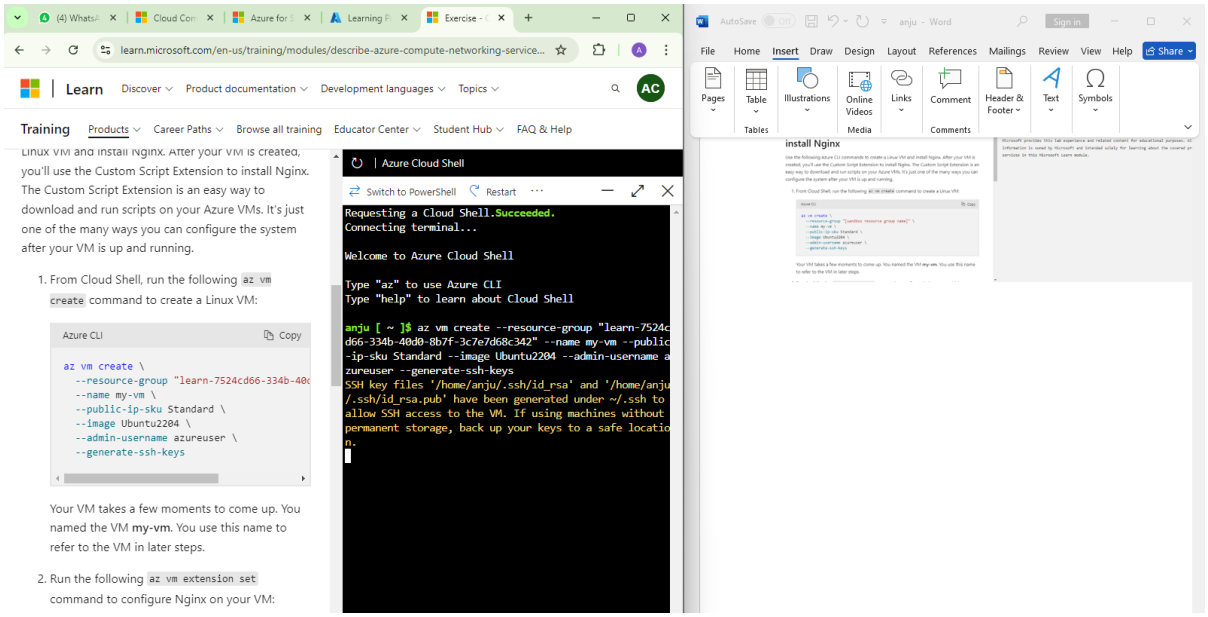
Development languages
Topics
Training
Products
Career Paths
Browse all training
Educator Center
Student Hub
FAQ & Help
LEVEL 4
2925 /5299 XP
Azure CLI
Copy
az vm extension set \
--resource-group "learn-7524cd66-334b-40d0-8b7f-3c7e7d68c342" \
--vm-name my-vm \
--name customScript \
--publisher Microsoft.Azure.Extensions \
--version 2.1 \
--settings '{"fileUris":["https://raw.githubusercontent.com/MicrosoftDocs/mslear
--protected-settings '{"commandToExecute": "./configure-nginx.sh"}'
This command uses the Custom Script Extension to run a Bash script on your VM. The script is stored on GitHub. While the command runs, you can choose to examine the Bash script from a separate browser tab. To summarize, the script:
a. Runs apt-get update to download the latest package information from the internet. This step helps ensure that the next command can locate the latest version of the Nginx package.
b. Installs Nginx.
c. Sets the home page, /var/www/html/index.html, to print a welcome message that includes your VM's host name.
Continue
This exercise is complete for now. The sandbox keeps running, and you come back to this point in a few units to update the network configuration so you can get to the website.
Azure Cloud Shell
Switch to PowerShell
Restart
Manage files
New session
Editor
System information as of Fri Aug 9 04:01:10 UTC 2024
System load: 0.24
Usage of /: 6.0% of 28.89GB
Memory usage: 9%
Swap usage: 0%
Processes: 106
Users logged in: 0
IPv4 address for eth0: 10.0.0.4
Expanded Security Maintenance for Applications is not enabled.
10 updates can be applied immediately.
10 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
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@my-vm:~$


learn.microsoft.com/en-us/training/modules/describe-azure-compute-networking-service...
Learn
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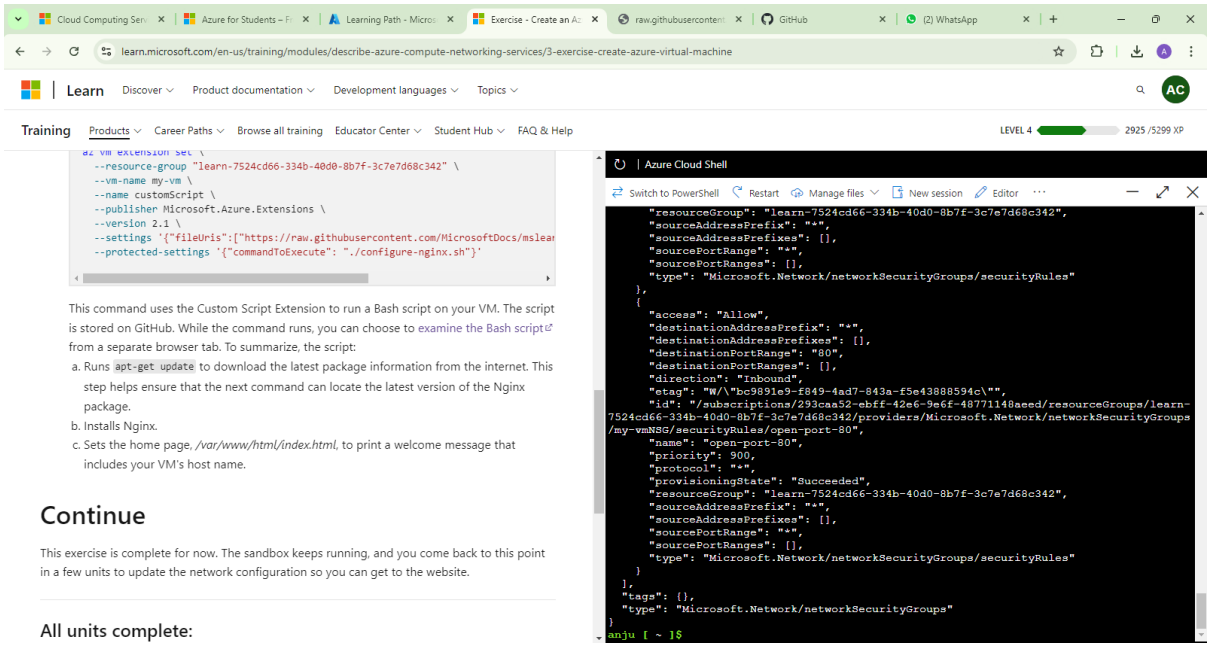
Topics
Training
Products
Career Paths
Browse all training
Educator Center
Student Hub
FAQ & Help
Linux VM and install Nginx. After your VM is created, you'll use the Custom Script Extension to install Nginx. The Custom Script Extension is an easy way to download and run scripts on your Azure VMs. It's just one of the many ways you can configure the system after your VM is up and running.
1. From Cloud Shell, run the following az vm create command to create a Linux VM:
Azure CLI
Copy
az vm create \
--resource-group "learn-7524cd66-334b-40
--name my-vm \
--public-ip-sku Standard \
--image Ubuntu2204 \
--admin-username azureuser \
--generate-ssh-keys
Your VM takes a few moments to come up. You named the VM my-vm. You use this name to refer to the VM in later steps.
2. Run the following az vm extension set command to configure Nginx on your VM:
Azure Cloud Shell
Switch to PowerShell
Restart
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
anju [~]$ az vm create --resource-group "learn-7524c
d66-334b-40d0-8b7f-3c7e7d68c342" --name my-vm --public
-ip-sku Standard --image Ubuntu2204 --admin-username a
zureuser --generate-ssh-keys
SSH key files '/home/anju/.ssh/id_rsa' and '/home/anju
/.ssh/id_rsa.pub' have been generated under ~/.ssh to
allow SSH access to the VM. If using machines without
permanent storage, back up your keys to a safe locatio
n.
anju - Word
File
Home
Insert
Draw
Design
Layout
References
Mailings
Review
View
Help
Share
Pages
Table
Illustrations
Online Videos
Links
Comment
Header & Footer
Text
Symbols
Tables
Media
Comments
install Nginx



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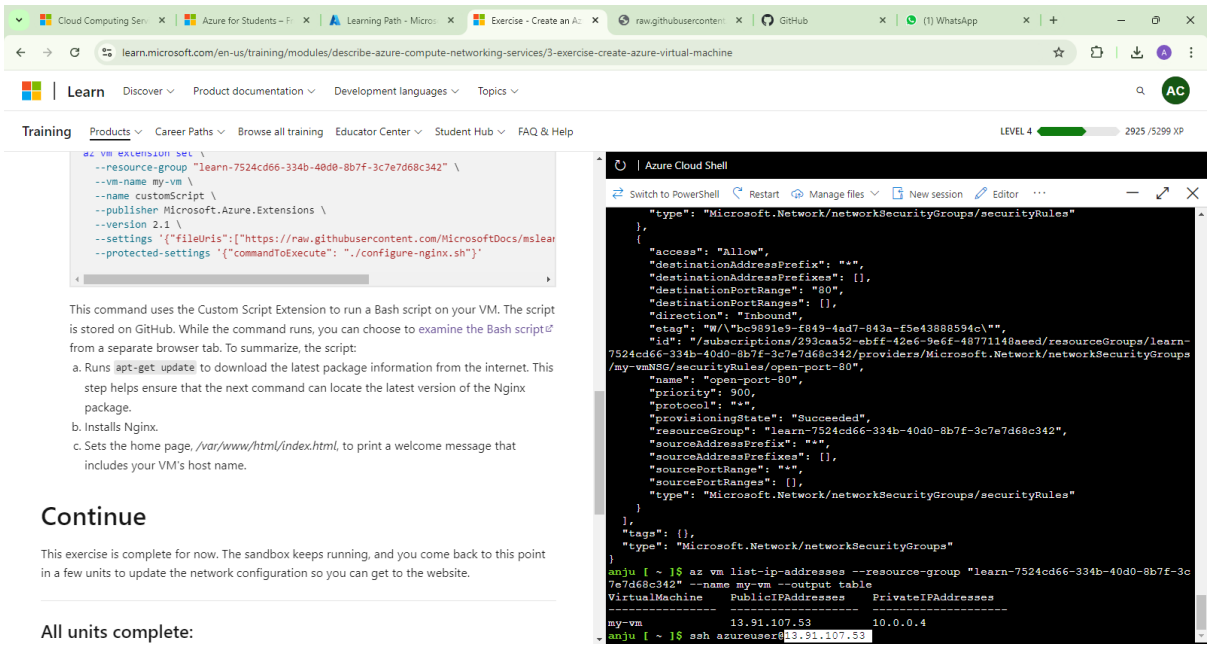
All units complete:



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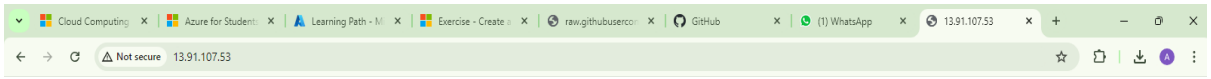
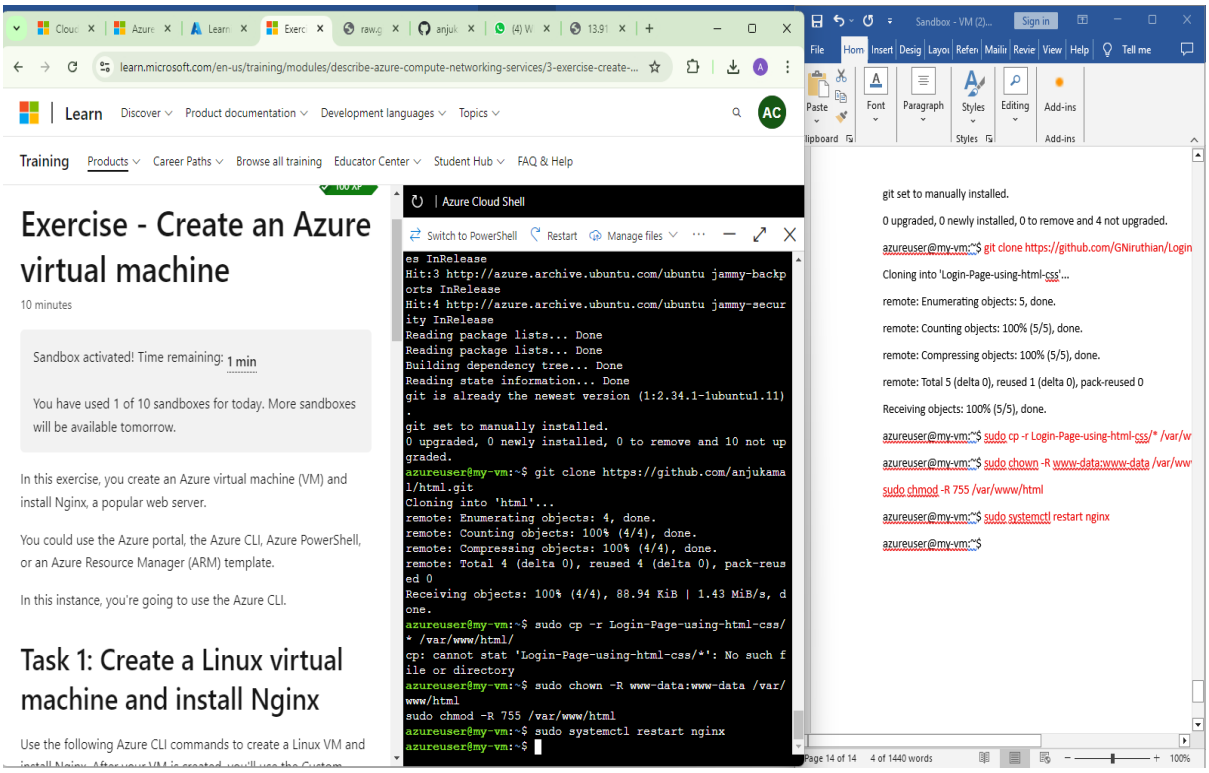
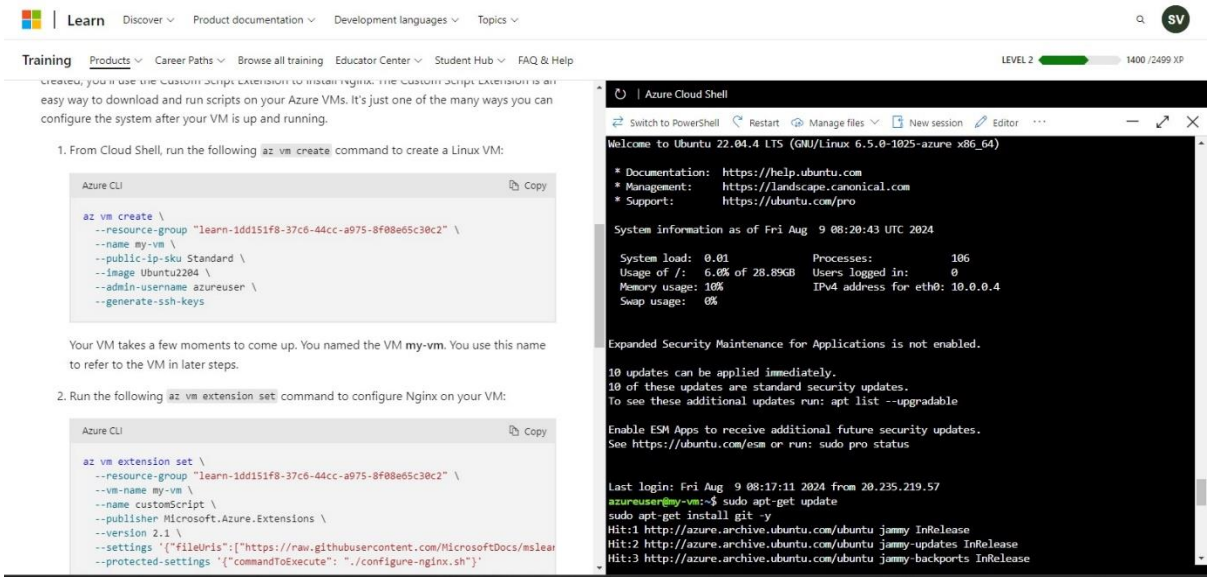


Welcome to Azure! My name is my-vm.

Welcome to Azure! My name is my-vm.

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LEVEL 2
1400 /2499 XP
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--version 2.1 \
--settings '{"fileUris":["https://raw.githubusercontent.com/MicrosoftDocs/mslear
--protected-settings '{"commandToExecute": "./configure-nginx.sh"}'
Azure Cloud Shell
Switch to PowerShell
Restart
Manage files
New session
Editor
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1025-azure x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Fri Aug 9 08:20:43 UTC 2024
System load: 0.01 Processes: 106
Usage of /: 6.0% of 28.89GB Users logged in: 0
Memory usage: 10% IPv4 address for eth0: 10.0.0.4
Swap usage: 0%
Expanded Security Maintenance for Applications is not enabled.
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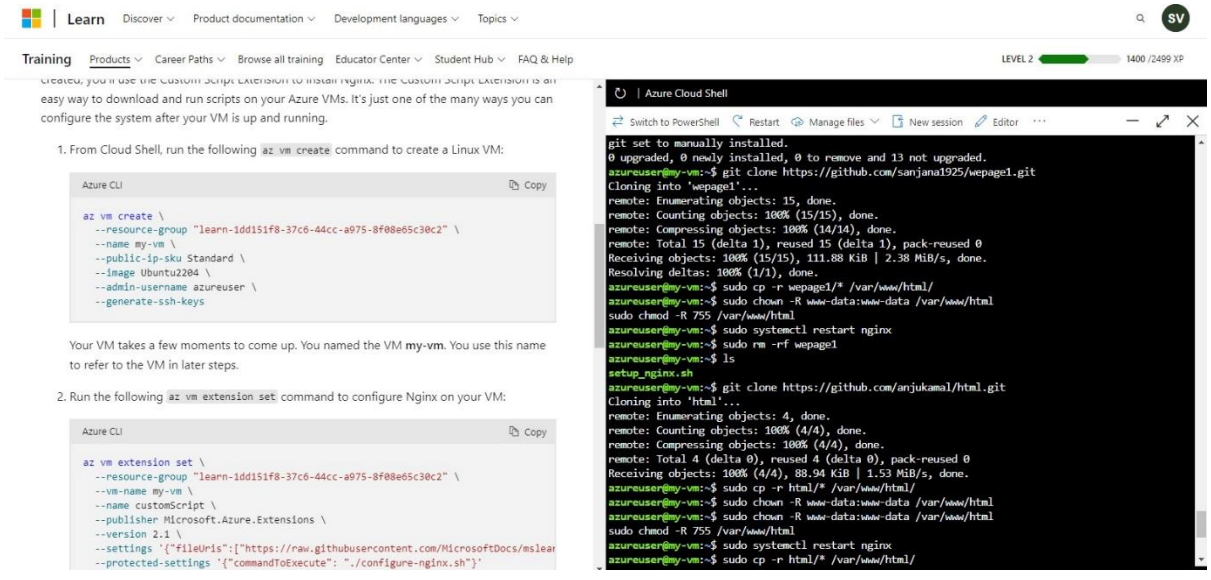
10 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
Last login: Fri Aug 9 08:17:11 2024 from 20.235.219.57
azureuser@my-vm:~$ sudo apt-get update
sudo apt-get install git -y
Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease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SV
Training
Products
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Browse all training
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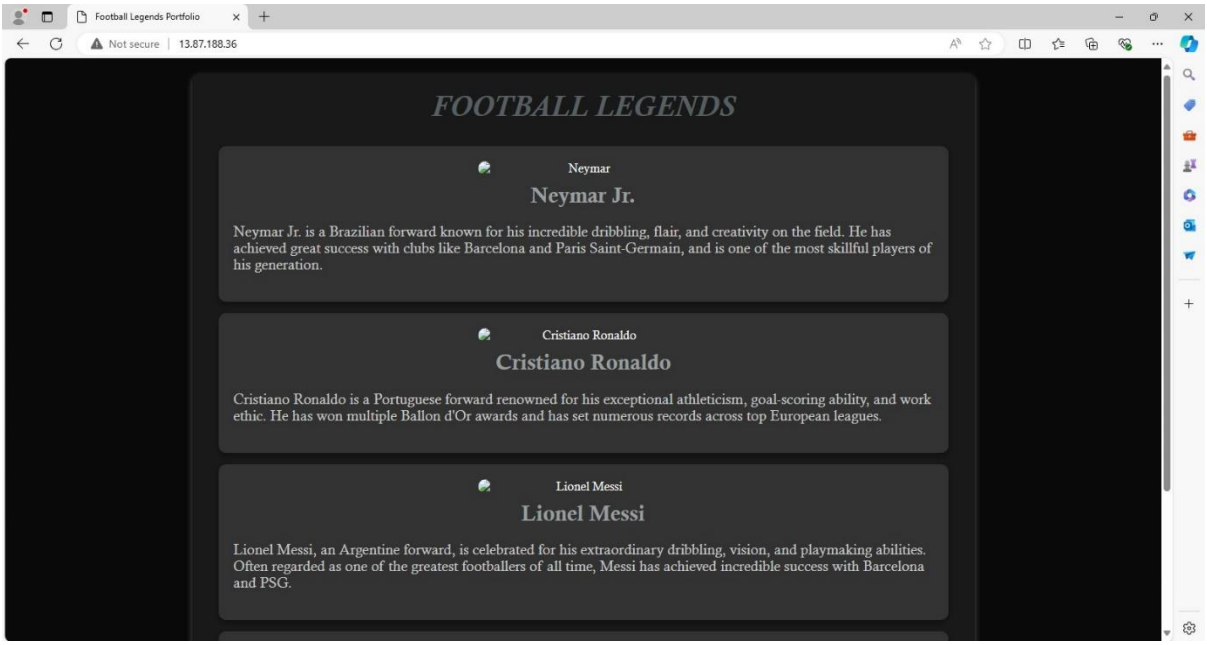
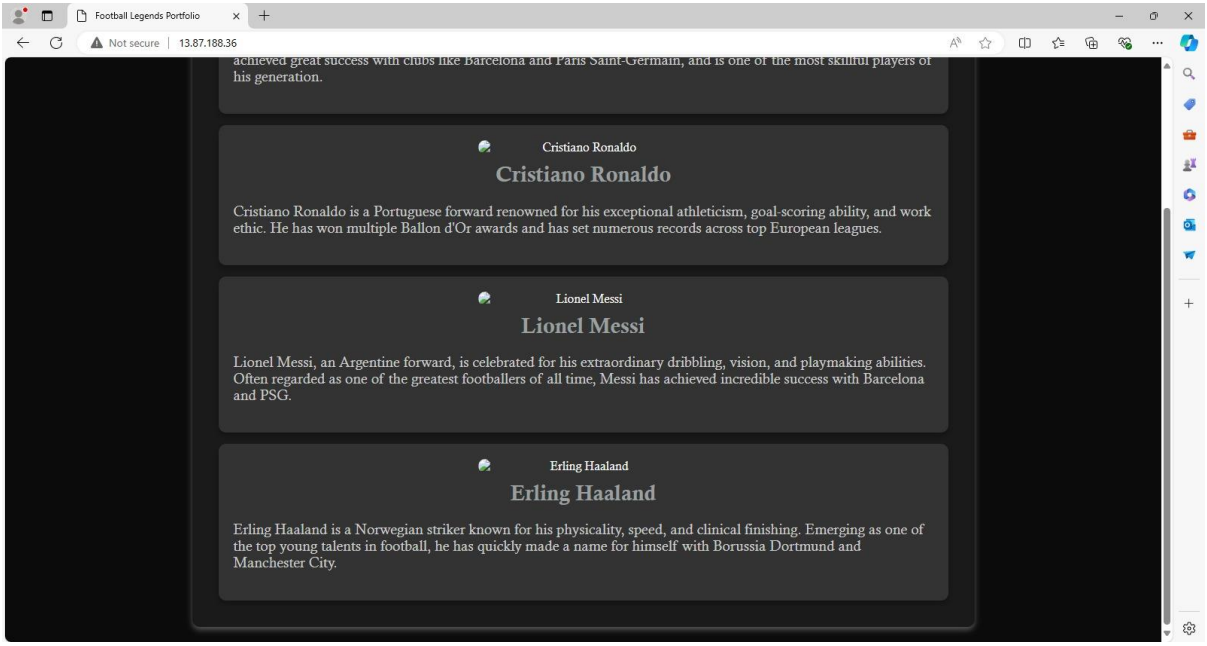
--protected-settings '{"commandToExecute": "./configure-nginx.sh"}'
Azure Cloud Shell
Switch to PowerShell
Restart
Manage files
New session
Editor
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 13 not upgraded.
azureuser@my-vm:~$ git clone https://github.com/sanjana1925/wepage1.git
Cloning into 'wepage1'...
remote: Enumerating objects: 15, done.
remote: Counting objects: 100% (15/15), done.
remote: Compressing objects: 100% (14/14), done.
remote: Total 15 (delta 1), reused 15 (delta 1), pack-reused 0
Receiving objects: 100% (15/15), 111.88 KiB | 2.38 MiB/s, done.
Resolving deltas: 100% (1/1), done.
azureuser@my-vm:~$ sudo cp -r wepage1/* /var/www/html/
azureuser@my-vm:~$ sudo chown -R www-data:www-data /var/www/html
sudo chmod -R 755 /var/www/html
azureuser@my-vm:~$ sudo systemctl restart nginx
azureuser@my-vm:~$ sudo rm -rf wepage1
azureuser@my-vm:~$ ls
setup_nginx.sh
azureuser@my-vm:~$ git clone https://github.com/anjukamal/html.git
Cloning into 'html'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 0), reused 4 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 88.94 KiB | 1.53 MiB/s, done.
azureuser@my-vm:~$ sudo cp -r html/* /var/www/html/
azureuser@my-vm:~$ sudo chown -R www-data:www-data /var/www/html
azureuser@my-vm:~$ sudo chown -R www-data:www-data /var/www/html
sudo chmod -R 755 /var/www/html
azureuser@my-vm:~$ sudo systemctl restart nginx
azureuser@my-vm:~$ sudo cp -r html/* /var/www/html/


Football Legends Portfolio
Not secure | 13.87.188.36
FOOTBALL LEGENDS
Neymar
Neymar Jr.
Neymar Jr. is a Brazilian forward known for his incredible dribbling, flair, and creativity on the field. He has achieved great success with clubs like Barcelona and Paris Saint-Germain, and is one of the most skillful players of his generation.
Cristiano Ronaldo
Cristiano Ronaldo
Cristiano Ronaldo is a Portuguese forward renowned for his exceptional athleticism, goal-scoring ability, and work ethic. He has won multiple Ballon d'Or awards and has set numerous records across top European leagues.
Lionel Messi
Lionel Messi
Lionel Messi, an Argentine forward, is celebrated for his extraordinary dribbling, vision, and playmaking abilities. Often regarded as one of the greatest footballers of all time, Messi has achieved incredible success with Barcelona and PSG.


Football Legends Portfolio
Not secure | 13.87.188.36
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Lionel Messi, an Argentine forward, is celebrated for his extraordinary dribbling, vision, and playmaking abilities. Often regarded as one of the greatest footballers of all time, Messi has achieved incredible success with Barcelona and PSG.
Erling Haaland
Erling Haaland
Erling Haaland is a Norwegian striker known for his physicality, speed, and clinical finishing. Emerging as one of the top young talents in football, he has quickly made a name for himself with Borussia Dortmund and Manchester City.

2.DESCRIBE AZURE STORAGE SERVICES

WORK WITH BLOB STORAGE:

In this section, you'll create a Blob container and upload a picture.

1. Under **Data storage**, select **Containers**.
2. Select **+ Container** and complete the information.
3. Select Create.

NOTE:

Step 4 will need an image. If you want to upload an image you already have on your computer, continue to Step 4. Otherwise, open a new browser window and search Bing for an image of a flower. Save the image to your computer.

4. Back in the Azure portal, select the container you created, then select Upload.
5. Browse for the image file you want to upload. Select it and then select upload.

NOTE:

You can upload as many blobs as you like in this way. New blobs will be listed within the container.

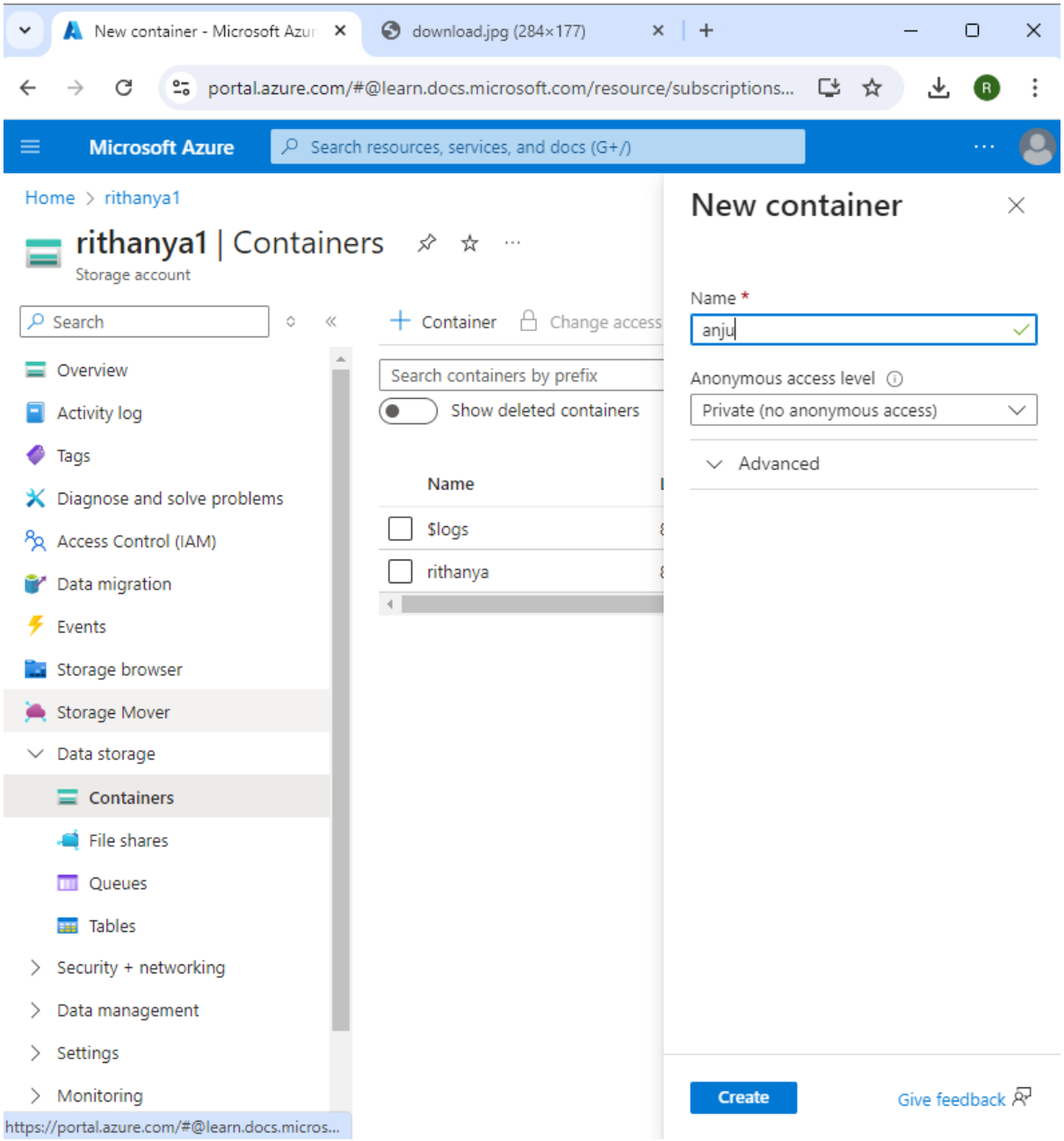
6. Select the Blob (file) you just uploaded. You should be on the properties tab.
7. Copy the URL from the URL field and paste it into a new tab.

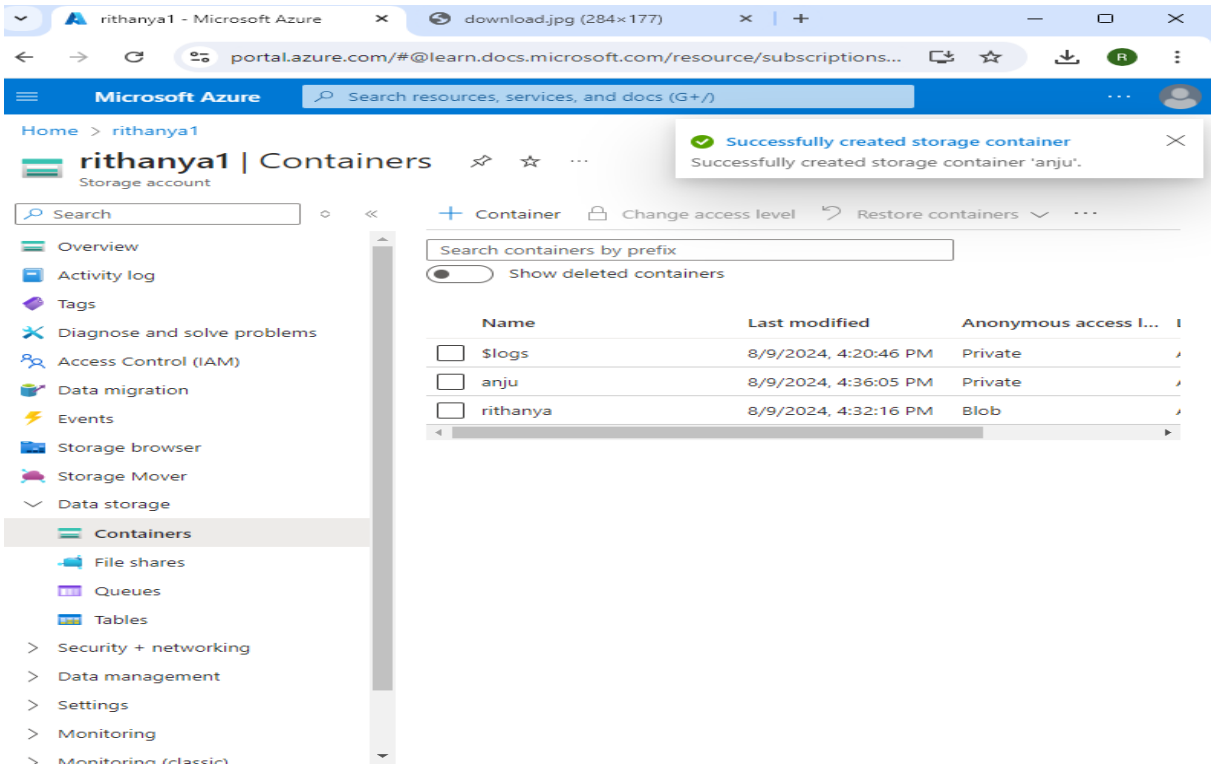
CHANGE THE ACCESS LEVEL OF THE BOB:

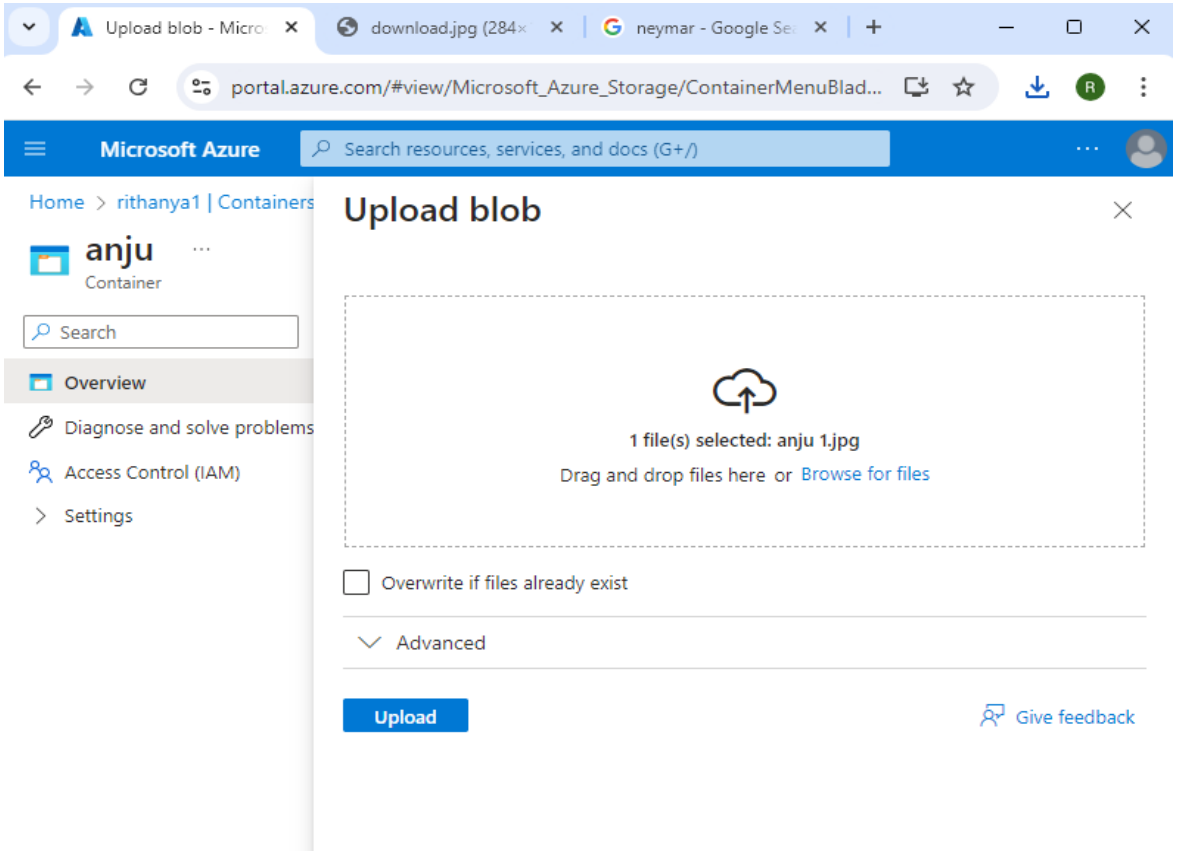
1. Go back to the Azure portal.

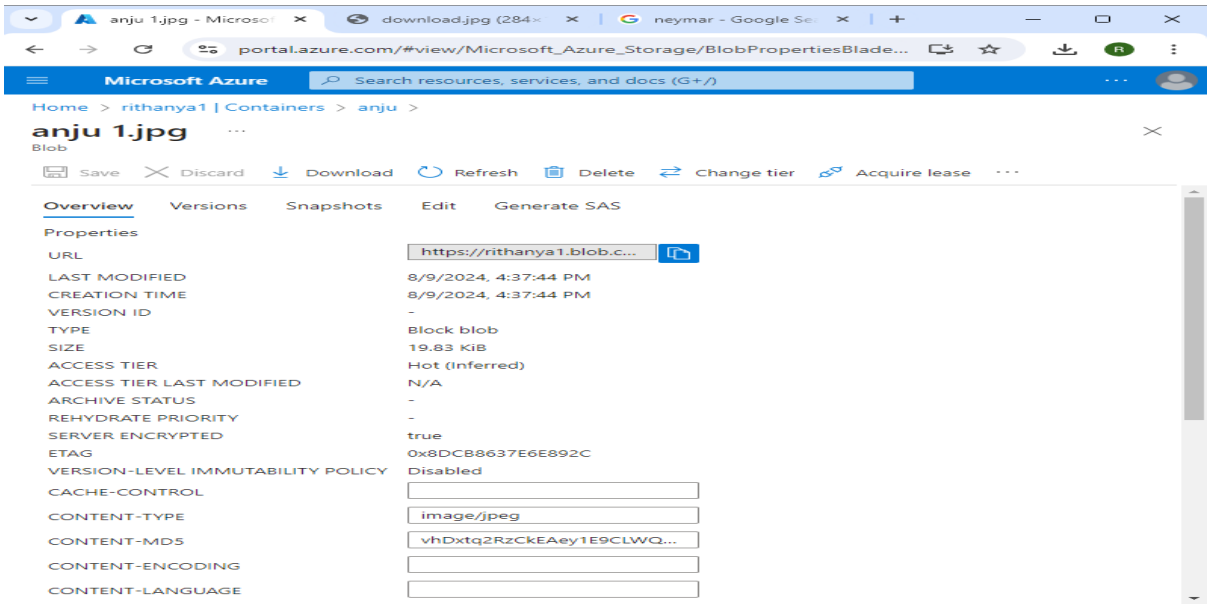
2. Select Change access level.
3. Set the Anonymous access level to Blob (anonymous read access for blobs only).
4. Select OK.
5. Refresh the tab where you attempted to access the file earlier.

WORKING:




rithanya1 - Microsoft Azure
download.jpg (284×177)
portal.azure.com/#@learn.docs.microsoft.com/resource/subscriptions...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1
rithanya1 | Containers
Storage account
Successfully created storage container
Successfully created storage container 'anju'.
Search
Overview
Activity log
Tags
Diagnose and solve problems
Access Control (IAM)
Data migration
Events
Storage browser
Storage Mover
Data storage
Containers
File shares
Queues
Tables
Security + networking
Data management
Settings
Monitoring
Container
Change access level
Restore containers
Search containers by prefix
Show deleted containers
Name
Last modified
Anonymous access l...
$logs
8/9/2024, 4:20:46 PM
Private
anju
8/9/2024, 4:36:05 PM
Private
rithanya
8/9/2024, 4:32:16 PM
Blob


Upload blob - Micro
download.jpg (284×
neymar - Google Se
portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlad...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers
anju
Container
Search
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Upload blob
1 file(s) selected: anju 1.jpg
Drag and drop files here or Browse for files
Overwrite if files already exist
Advanced
Upload
Give feedback


anju 1.jpg - Microsoft Azure
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portal.azure.com/#view/Microsoft_Azure_Storage/BlobPropertiesBlade...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers > anju >
anju 1.jpg
Blob
Save
Discard
Download
Refresh
Delete
Change tier
Acquire lease
Overview
Versions
Snapshots
Edit
Generate SAS
Properties
URL
https://rithanya1.blob.c...
LAST MODIFIED
8/9/2024, 4:37:44 PM
CREATION TIME
8/9/2024, 4:37:44 PM
VERSION ID
-
TYPE
Block blob
SIZE
19.83 KiB
ACCESS TIER
Hot (Inferred)
ACCESS TIER LAST MODIFIED
N/A
ARCHIVE STATUS
-
REHYDRATE PRIORITY
-
SERVER ENCRYPTED
true
ETAG
0x8DCB8637E6E892C
VERSION-LEVEL IMMUTABILITY POLICY
Disabled
CACHE-CONTROL
CONTENT-TYPE
image/jpeg
CONTENT-MD5
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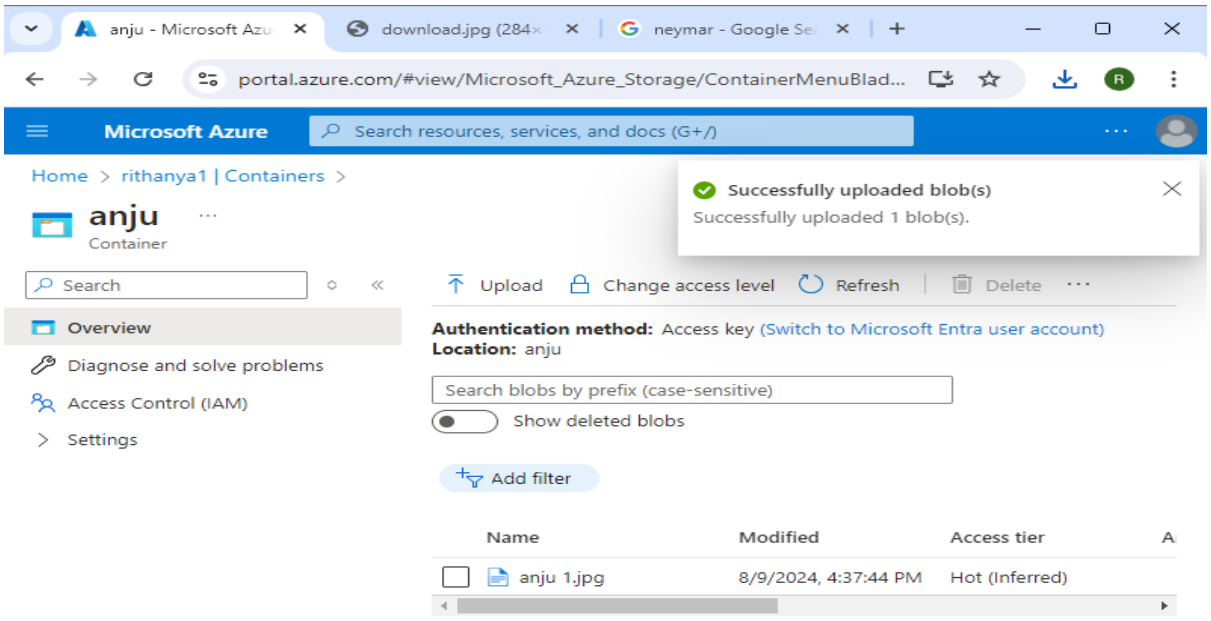
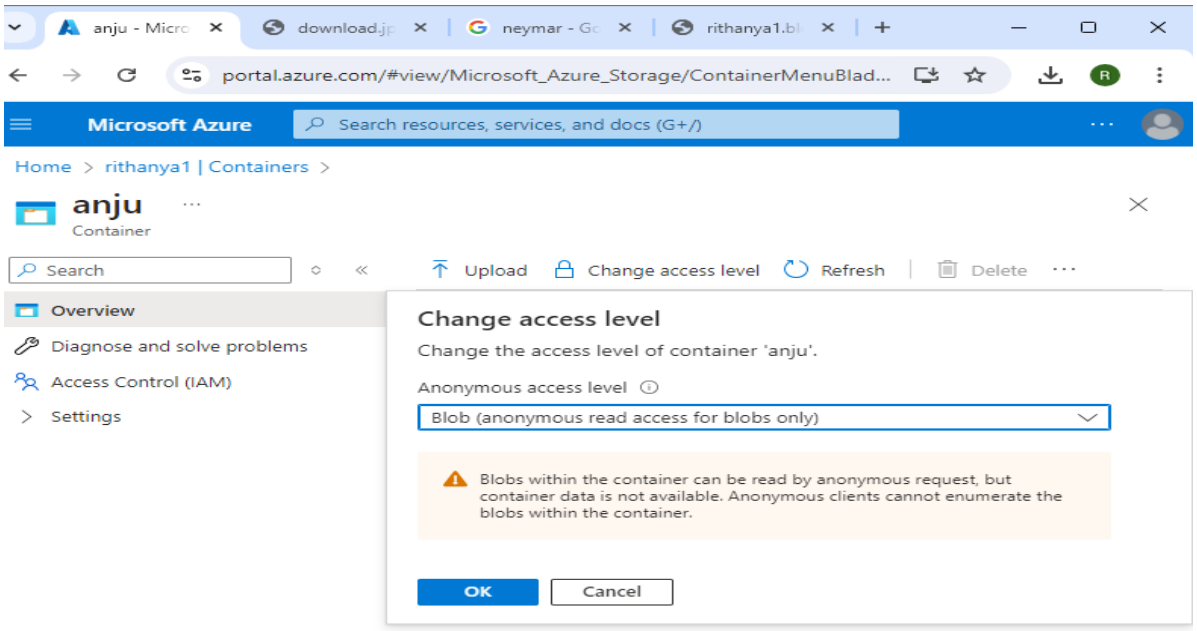
CONTENT-ENCODING
CONTENT-LANGUAGE


anju - Microsoft Azure
download.jpg (284×
neymar - Google Search
portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlad...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers >
anju
Container
Successfully uploaded blob(s)
Successfully uploaded 1 blob(s).
Search
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Upload
Change access level
Refresh
Delete
Authentication method: Access key (Switch to Microsoft Entra user account)
Location: anju
Search blobs by prefix (case-sensitive)
Show deleted blobs
Add filter
Name
Modified
Access tier
anju 1.jpg
8/9/2024, 4:37:44 PM
Hot (Inferred)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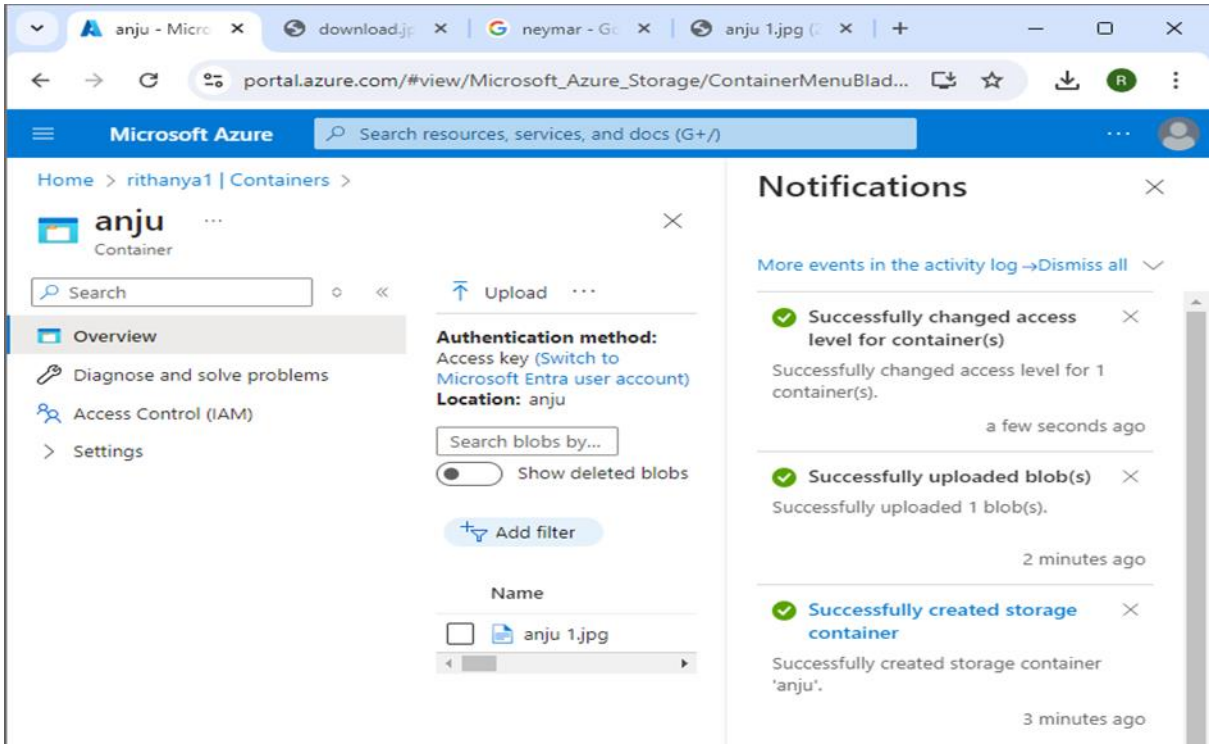
portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlad...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers >
anju
Container
Search
Upload
Change access level
Refresh
Delete
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Change access level
Change the access level of container 'anju'.
Anonymous access level
Blob (anonymous read access for blobs only)
Blobs within the container can be read by anonymous request, but container data is not available. Anonymous clients cannot enumerate the blobs within the container.
OK
Cancel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neymar - Go
anju 1.jpg
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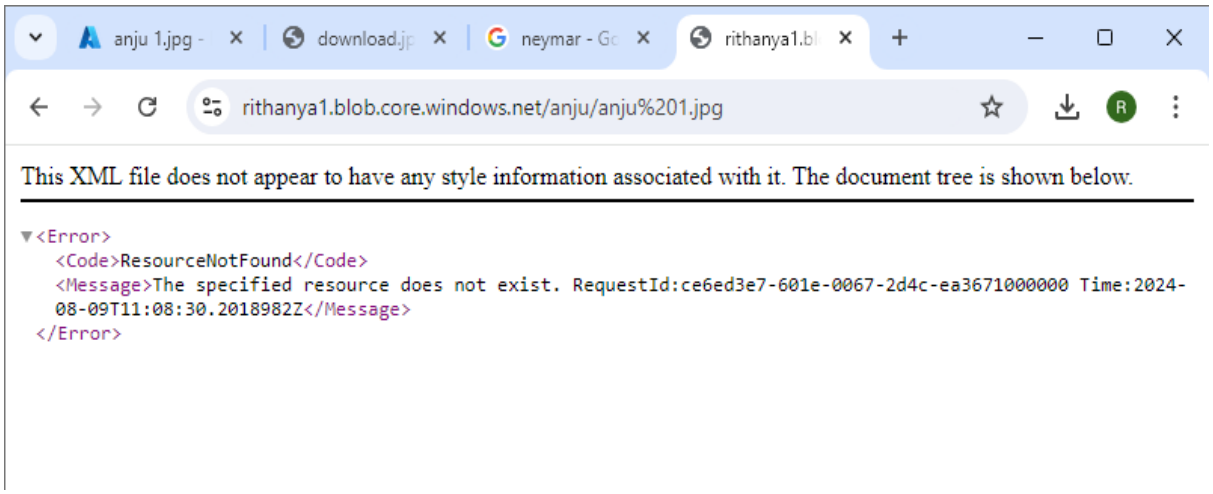
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers >
anju
Container
Search
Upload
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Authentication method:
Access key (Switch to Microsoft Entra user account)
Location: anju
Search blobs by...
Show deleted blobs
Add filter
Name
anju 1.jpg
Notifications
More events in the activity log → Dismiss all
Successfully changed access level for container(s)
Successfully changed access level for 1 container(s).
a few seconds ago
Successfully uploaded blob(s)
Successfully uploaded 1 blob(s).
2 minutes ago
Successfully created storage container
Successfully created storage container 'anju'.
3 minutes ago


anju 1.jpg -
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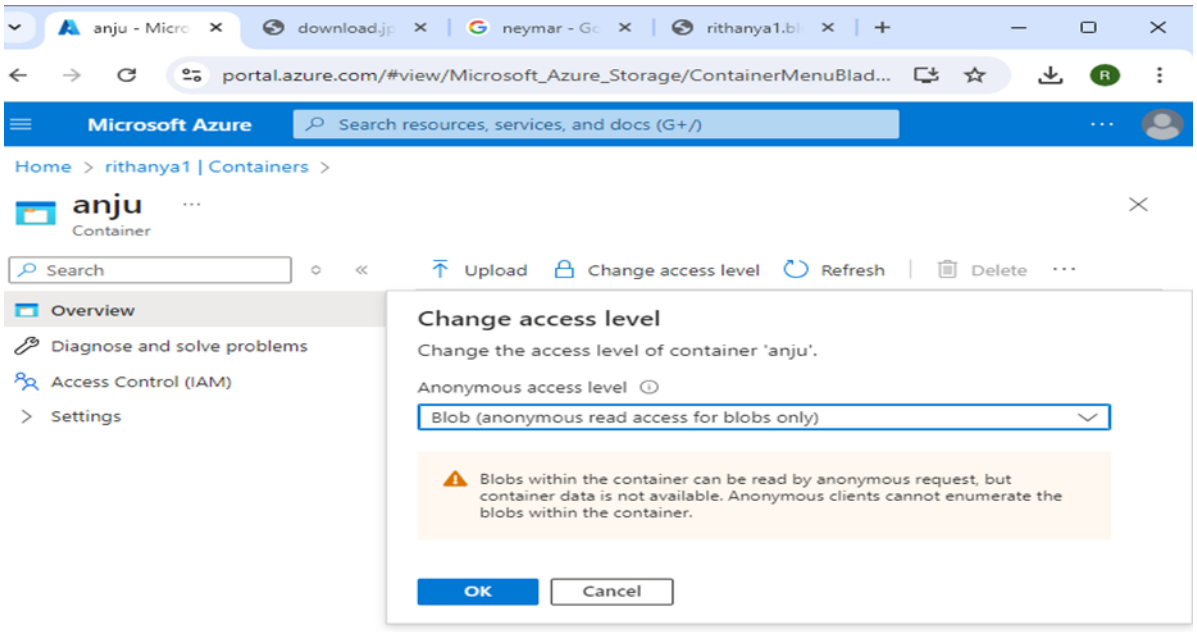
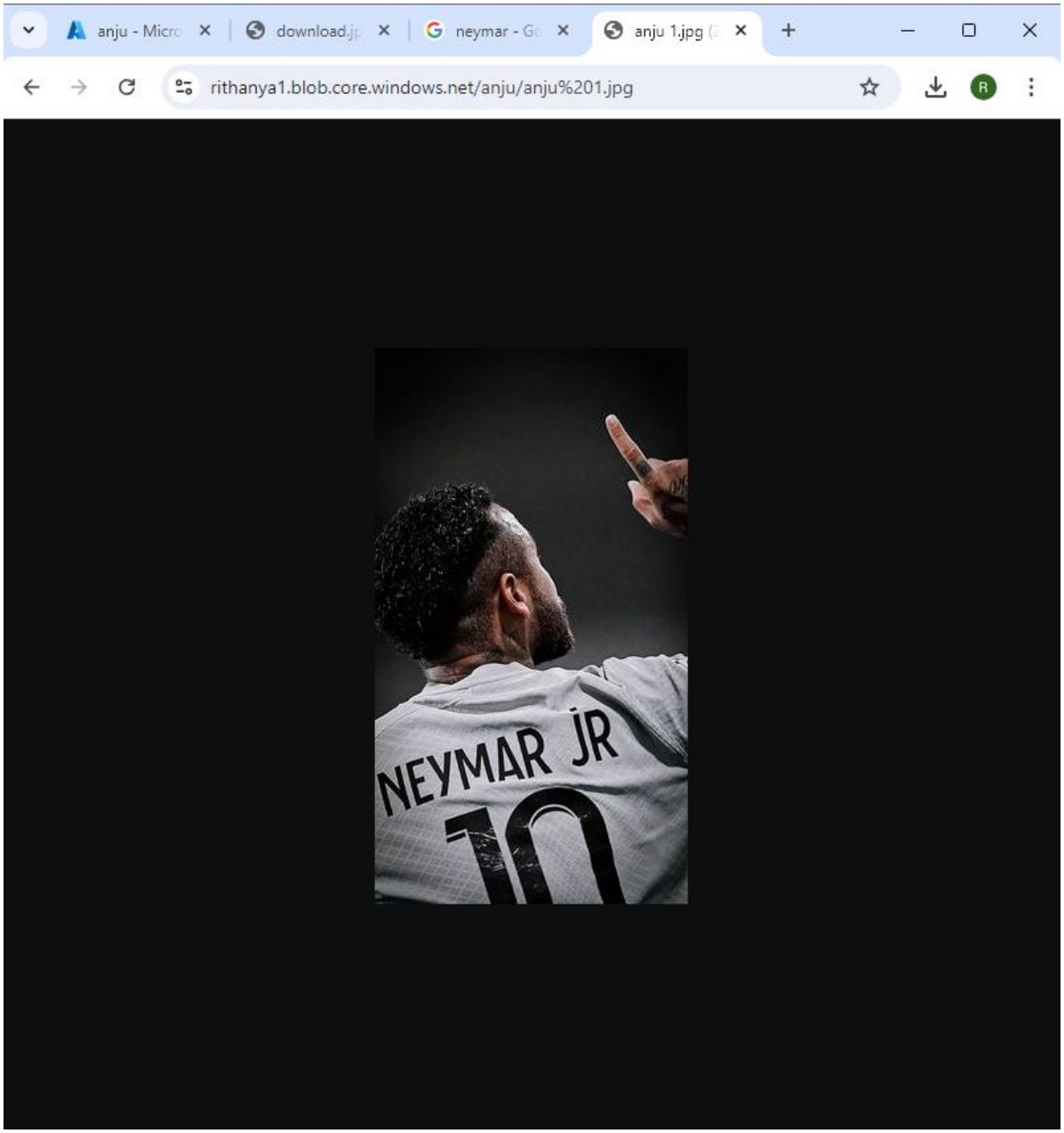
neymar - Go
rithanya1.bl
rithanya1.blob.core.windows.net/anju/anju%201.jpg
This XML file does not appear to have any style information associated with it. The document tree is shown below.
<Error>
<Code>ResourceNotFound</Code>
<Message>The specified resource does not exist. RequestId:ce6ed3e7-601e-0067-2d4c-ea3671000000 Time:2024-08-09T11:08:30.2018982Z</Message>
</Error>


anju - Micro
download.jp
neymar - Go
rithanya1.bl
portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlad...
Microsoft Azure
Search resources, services, and docs (G+/)
Home > rithanya1 | Containers >
anju
Container
Search
Upload
Change access level
Refresh
Delete
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Change access level
Change the access level of container 'anju'.
Anonymous access level
Blob (anonymous read access for blobs only)
Blobs within the container can be read by anonymous request, but container data is not available. Anonymous clients cannot enumerate the blobs within the container.
OK
Cancel


anju - Micro
download.jp
neymar - Go
anju 1.jpg
rithanya1.blob.core.windows.net/anju/anju%201.jpg
NEYMAR JR
10

3.ESTIMATE WORKLOAD COSTS BY USING THE PRICING CALCULATOR

EXPLORE THE PRICING CALCULATOR:

1. Go to the Pricing calculator.

2. Notice the following tabs:

- Products This is where you choose the Azure services that you want to include in your estimate. You'll likely spend most of your time here.

- Example scenarios Here you'll find several reference architectures, or common cloud-based solutions that you can use as a starting point.

- Saved estimates Here you'll find your previously saved estimates.

3. Estimate your solution

- Here you add each Azure service that you need to the calculator. Then you configure each service to fit your needs.

- Tip

- Make sure you have a clean calculator with nothing listed in the estimate. You can reset the estimate by selecting the trash can icon next to each item.

- Add services to the estimate

1. On the Products tab, select the service from each of these categories:

2. Scroll to the bottom of the page. Each service is listed with its default configuration.

- Configure services to match your requirements:

1. Under Virtual Machines, set values.

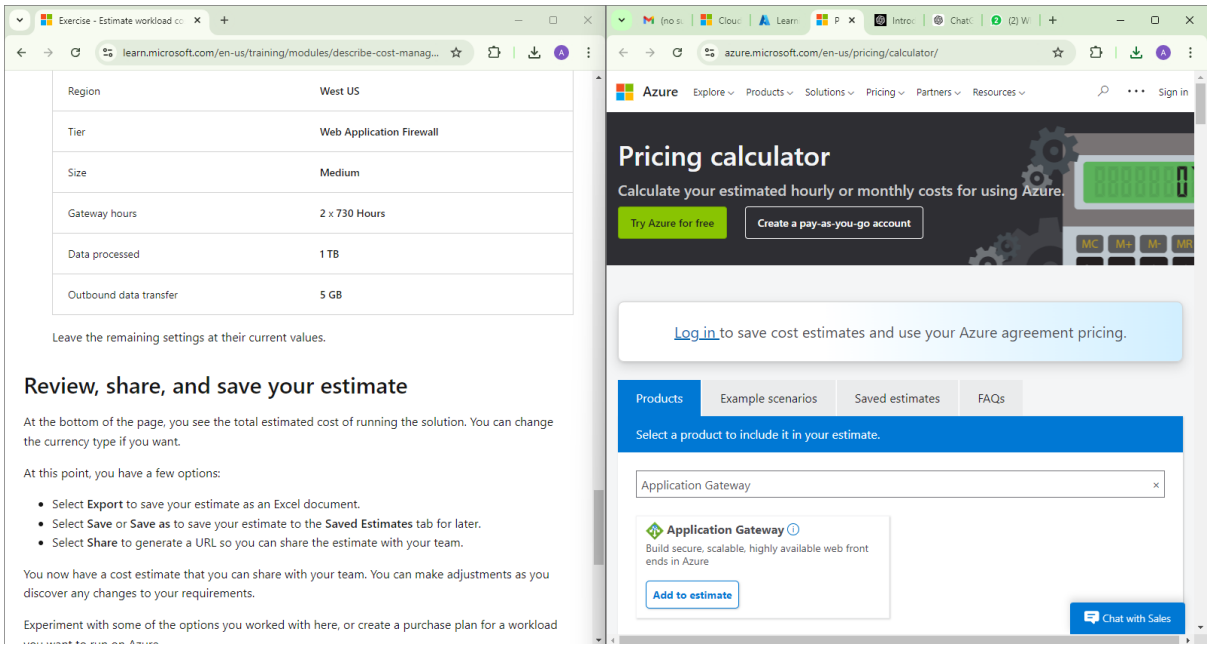
2. Under Azure SQL Database, set values.

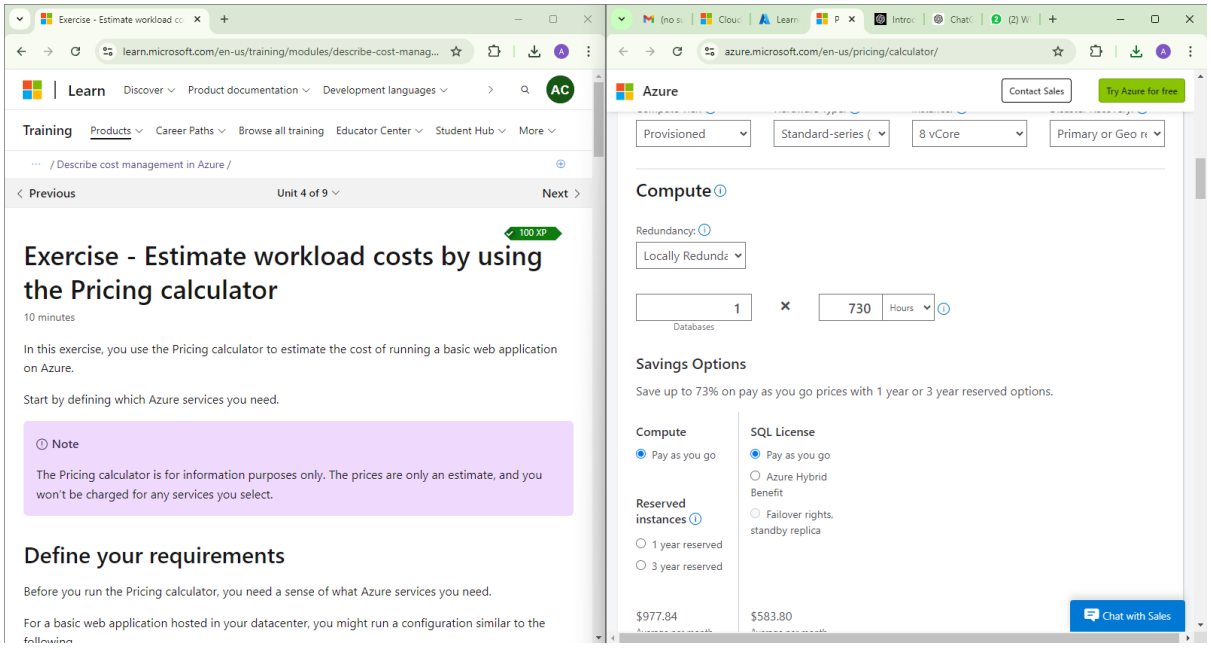
3. Under Application Gateway, set values.

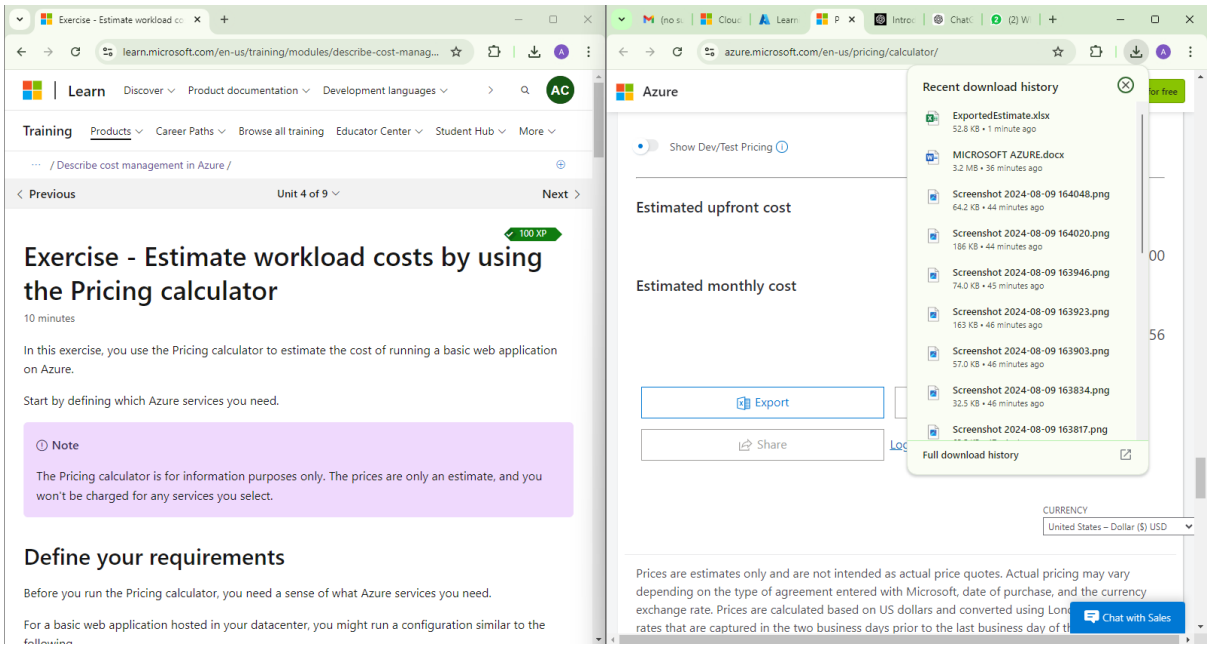
- Review, share, and save your estimate

- At the bottom of the page, you see the total estimated cost of running the solution. You can change the currency type if you want.
- At this point, you have a few options:
- Select Export to save your estimate as an Excel document.
- Select Save or Save as to save your estimate to the Saved Estimates tab for later.
- Select Share to generate a URL so you can share the estimate with your team.

WORKING :




Learn
Discover
Product documentation
Development languages
Training
Products
Career Paths
Browse all training
Educator Center
Student Hub
More
/ Describe cost management in Azure /
Previous
Unit 4 of 9
Next
100 XP
Exercise - Estimate workload costs by using the Pricing calculator
10 minutes
In this exercise, you use the Pricing calculator to estimate the cost of running a basic web application on Azure.
Start by defining which Azure services you need.
Note
The Pricing calculator is for information purposes only. The prices are only an estimate, and you won't be charged for any services you select.
Define your requirements
Before you run the Pricing calculator, you need a sense of what Azure services you need.
For a basic web application hosted in your datacenter, you might run a configuration similar to the
Azure
Contact Sales
Try Azure for free
Provisioned
Standard-series (
8 vCore
Primary or Geo r
Compute
Redundancy:
Locally Redunda
1
Databases
730
Hours
Savings Options
Save up to 73% on pay as you go prices with 1 year or 3 year reserved options.
Compute
Pay as you go
Reserved instances
1 year reserved
3 year reserved
SQL License
Pay as you go
Azure Hybrid Benefit
Failover rights, standby replica
$977.84
$583.80
Chat with Sales


Learn
Discover
Product documentation
Development languages
Training
Products
Career Paths
Browse all training
Educator Center
Student Hub
More
/ Describe cost management in Azure /
Previous
Unit 4 of 9
Next
100 XP
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10 minutes
In this exercise, you use the Pricing calculator to estimate the cost of running a basic web application on Azure.
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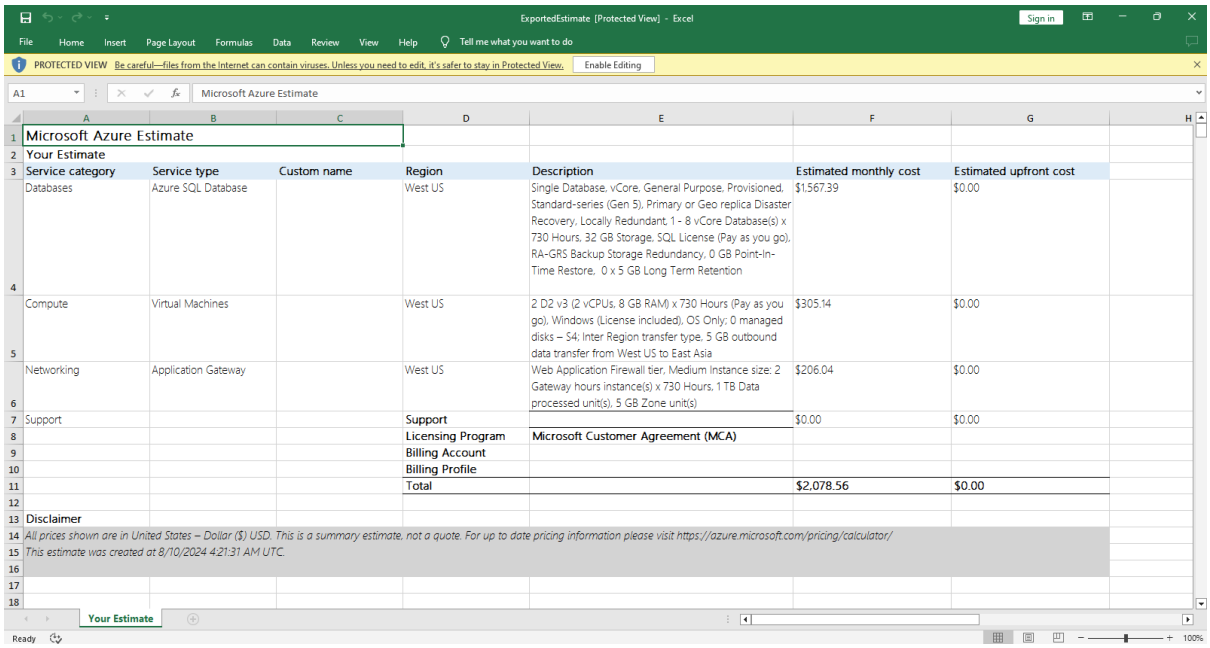
Define your requirements
Before you run the Pricing calculator, you need a sense of what Azure services you need.
For a basic web application hosted in your datacenter, you might run a configuration similar to the
Azure
Recent download history
ExportedEstimate.xlsx
52.8 KB • 1 minute ago
MICROSOFT AZURE.docx
3.2 MB • 36 minutes ago
Screenshot 2024-08-09 164048.png
64.2 KB • 44 minutes ago
Screenshot 2024-08-09 164020.png
186 KB • 44 minutes ago
Screenshot 2024-08-09 163946.png
74.0 KB • 45 minutes ago
Screenshot 2024-08-09 163923.png
163 KB • 46 minutes ago
Screenshot 2024-08-09 163903.png
57.0 KB • 46 minutes ago
Screenshot 2024-08-09 163834.png
32.5 KB • 46 minutes ago
Screenshot 2024-08-09 163817.png
Full download history
Show Dev/Test Pricing
Estimated upfront cost
Estimated monthly cost
Export
Share
CURRENCY
United States – Dollar ($) USD
Prices are estimates only and are not intended as actual price quotes. Actual pricing may vary depending on the type of agreement entered with Microsoft, date of purchase, and the currency exchange rate. Prices are calculated based on US dollars and converted using Lond
rates that are captured in the two business days prior to the last business day of th
Chat with Sales



Microsoft Azure Estimate

Your Estimate

Service category	Service type	Custom name	Region	Description	Estimated monthly cost	Estimated upfront cost
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
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
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 GB Zone unit(s)	$206.04	$0.00
Support			Support		$0.00	$0.00
			Licensing Program	Microsoft Customer Agreement (MCA)		
			Billing Account			
			Billing Profile			
			Total		$2,078.56	$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/

This estimate was created at 8/10/2024 4:21:31 AM UTC.

4. COMPARE WORKLOAD COSTS USING THE TCO CALCULATOR

DEFINE YOUR WORKLOADS:

Enter the specifications of your on-premises infrastructure into the TCO Calculator.

1. Go to the TCO Calculator.

2. Under Define your workloads, select Add server workload to create a row for your bank of Windows Server VMs.

3. Under Servers, set the value for each of these settings.

4. Select Add server workload to create a second row for your bank of Linux VMs. Then specify these settings.

5. Under Storage, select Add storage. Then specify these settings.

6. Under Networking, set Outbound bandwidth to 15 TB.

7. Select Next.

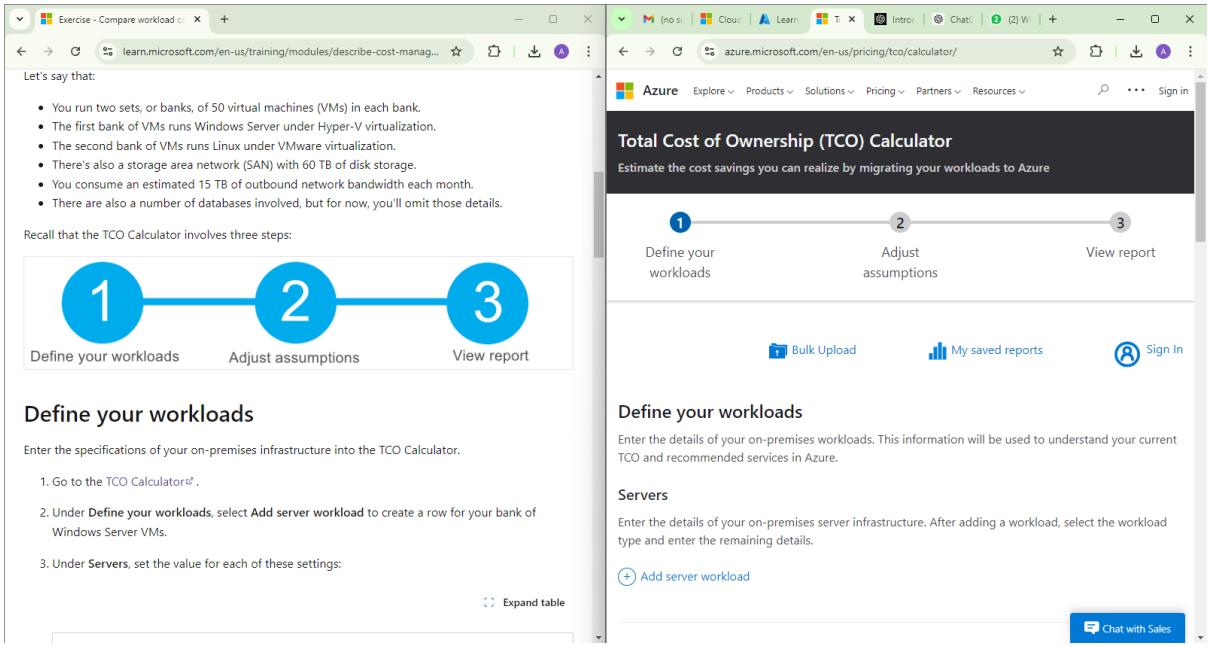
- In practice, you would adjust any cost assumptions and make any adjustments to match your current on-premises environment.
- At the top of the page, select your currency. This example uses US Dollar ($).
- Select Next.
- View the report
- Take a moment to review the generated report.
- Remember, you've been tasked to investigate cost savings for your European data center over the next three years.

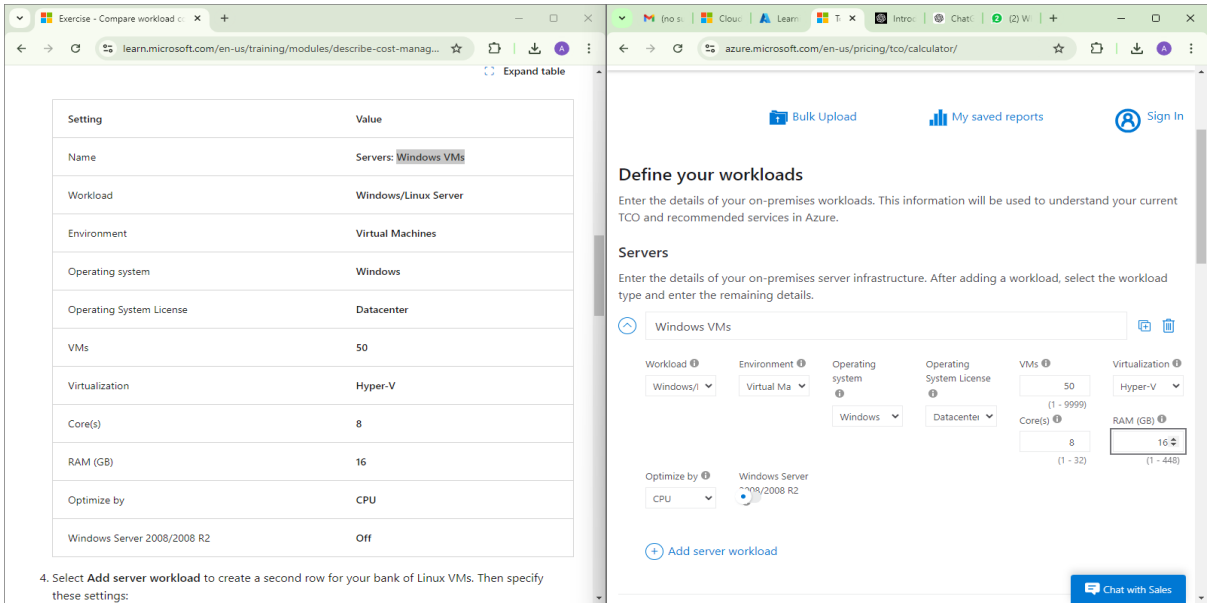
TO MAKE THESE ADJUSTMENTS:

1. Set Timeframe to 3 Years.
2. Set Region to North Europe.

Scroll to the summary at the bottom. You see a comparison of running your workloads in the data center versus on Azure.

WORKING:

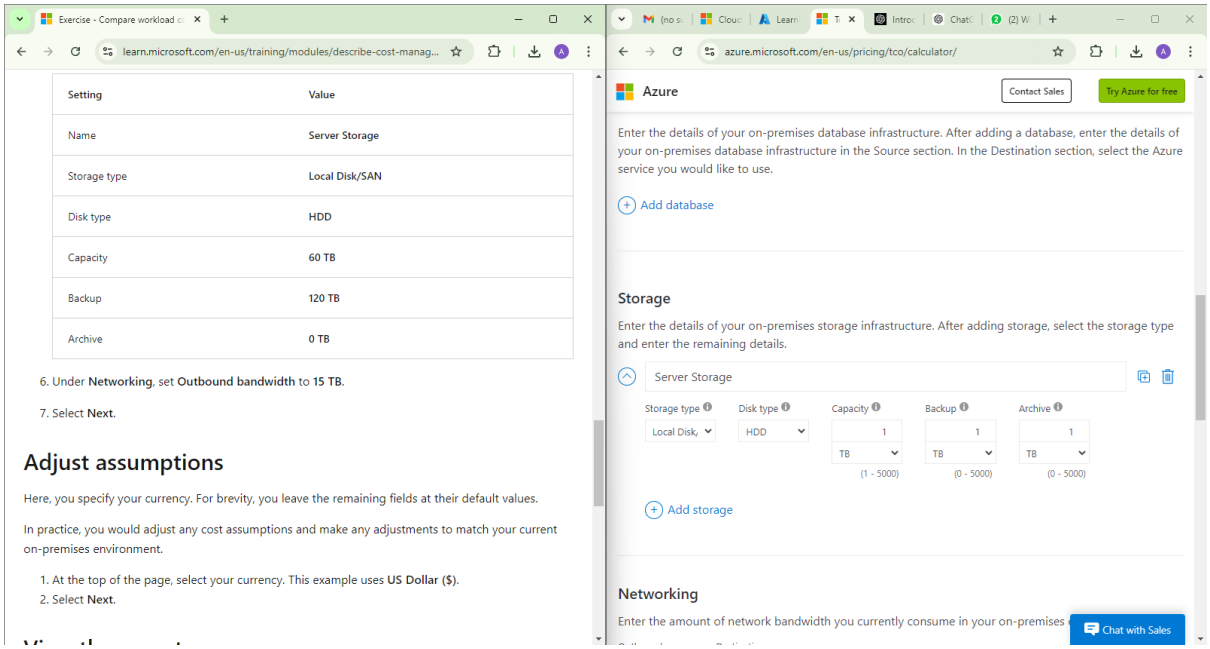




Expand table

Setting	Value
Name	Servers: Windows VMs
Workload	Windows/Linux Server
Environment	Virtual Machines
Operating system	Windows
Operating System License	Datacenter
VMs	50
Virtualization	Hyper-V
Core(s)	8
RAM (GB)	16
Optimize by	CPU
Windows Server 2008/2008 R2	Off

4. Select **Add server workload** to create a second row for your bank of Linux VMs. Then specify these settings:



Setting	Value
Name	Server Storage
Storage type	Local Disk/SAN
Disk type	HDD
Capacity	60 TB
Backup	120 TB
Archive	0 TB

6. Under **Networking**, set **Outbound bandwidth** to **15 TB**.

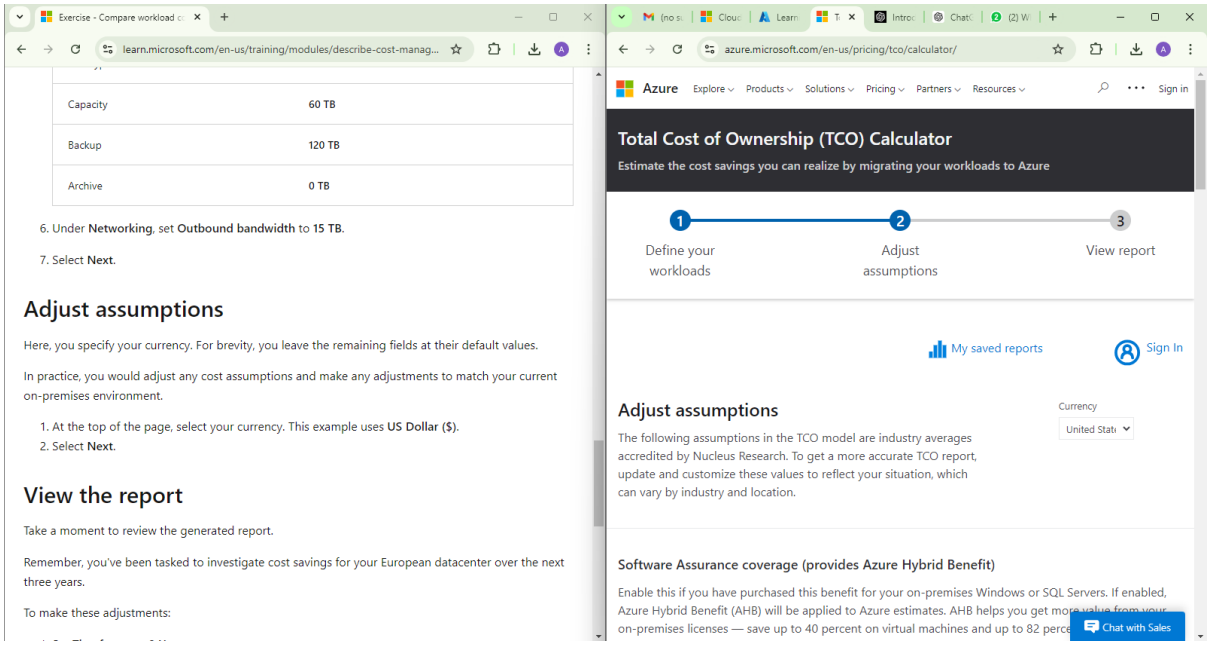
7. Select **Next**.

Adjust assumptions

Here, you specify your currency. For brevity, you leave the remaining fields at their default values.

In practice, you would adjust any cost assumptions and make any adjustments to match your current on-premises environment.

1. At the top of the page, select your currency. This example uses **US Dollar ($)**.
2. Select **Next**.



Capacity	60 TB
Backup	120 TB
Archive	0 TB

6. Under **Networking**, set **Outbound bandwidth** to **15 TB**.
7. Select **Next**.

Adjust assumptions

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In practice, you would adjust any cost assumptions and make any adjustments to match your current on-premises environment.

1. At the top of the page, select your currency. This example uses **US Dollar ($)**.
2. Select **Next**.

View the report

Take a moment to review the generated report.

Remember, you've been tasked to investigate cost savings for your European datacenter over the next three years.

To make these adjustments:

Azure Explore Products Solutions Pricing Partners Resources Sign in

Total Cost of Ownership (TCO) Calculator

Estimate the cost savings you can realize by migrating your workloads to Azure

1 Define your workloads — 2 Adjust assumptions — 3 View report

My saved reports | Sign In

Adjust assumptions

The following assumptions in the TCO model are industry averages accredited by Nucleus Research. To get a more accurate TCO report, update and customize these values to reflect your situation, which can vary by industry and location.

Currency: United State

Software Assurance coverage (provides Azure Hybrid Benefit)

Enable this if you have purchased this benefit for your on-premises Windows or SQL Servers. If enabled, Azure Hybrid Benefit (AHB) will be applied to Azure estimates. AHB helps you get more value from your on-premises licenses — save up to 40 percent on virtual machines and up to 82 perce

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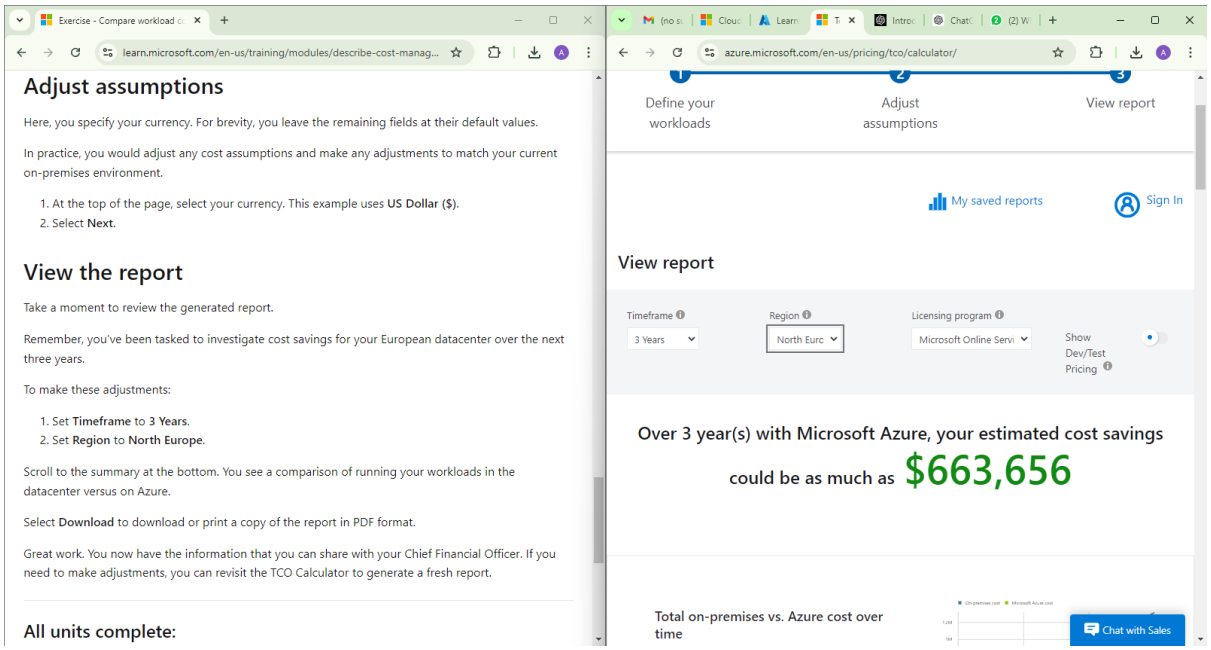


Adjust assumptions

Here, you specify your currency. For brevity, you leave the remaining fields at their default values.

In practice, you would adjust any cost assumptions and make any adjustments to match your current on-premises environment.

1. At the top of the page, select your currency. This example uses **US Dollar ($)**.
2. Select **Next**.

View the report

Take a moment to review the generated report.

Remember, you've been tasked to investigate cost savings for your European datacenter over the next three years.

To make these adjustments:

1. Set **Timeframe** to **3 Years**.
2. Set **Region** to **North Europe**.

Scroll to the summary at the bottom. You see a comparison of running your workloads in the datacenter versus on Azure.

Select **Download** to download or print a copy of the report in PDF format.

Great work. You now have the information that you can share with your Chief Financial Officer. If you need to make adjustments, you can revisit the TCO Calculator to generate a fresh report.

All units complete:

1 Define your workloads — 2 Adjust assumptions — 3 View report

My saved reports | Sign In

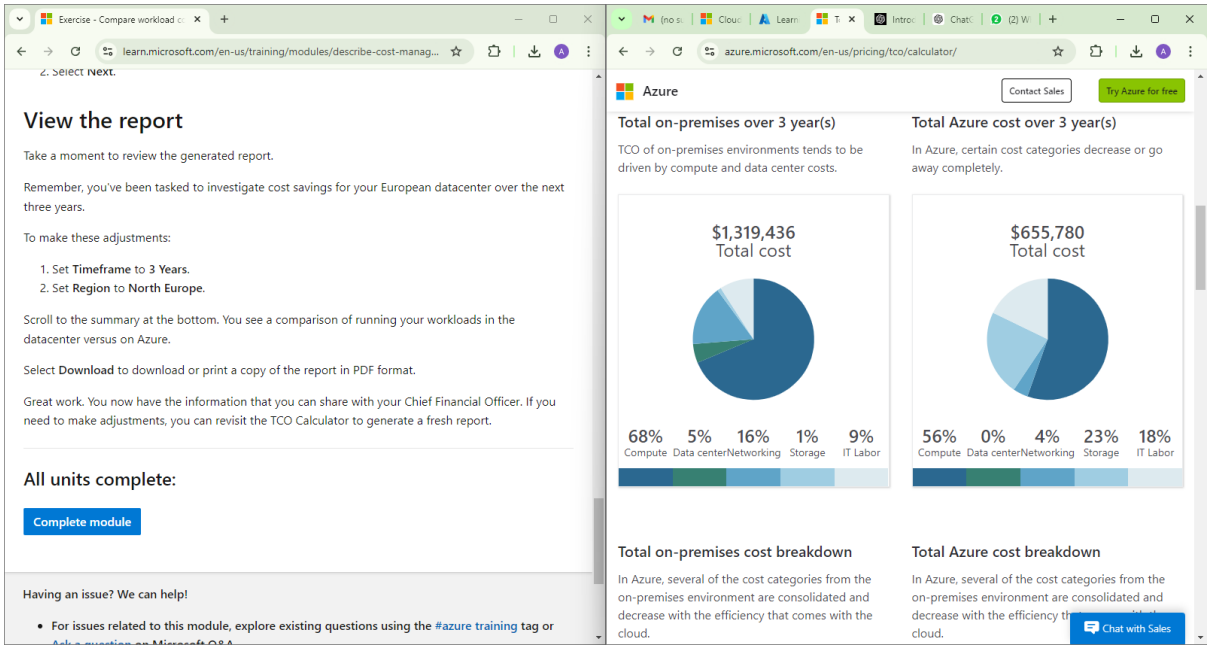
View report

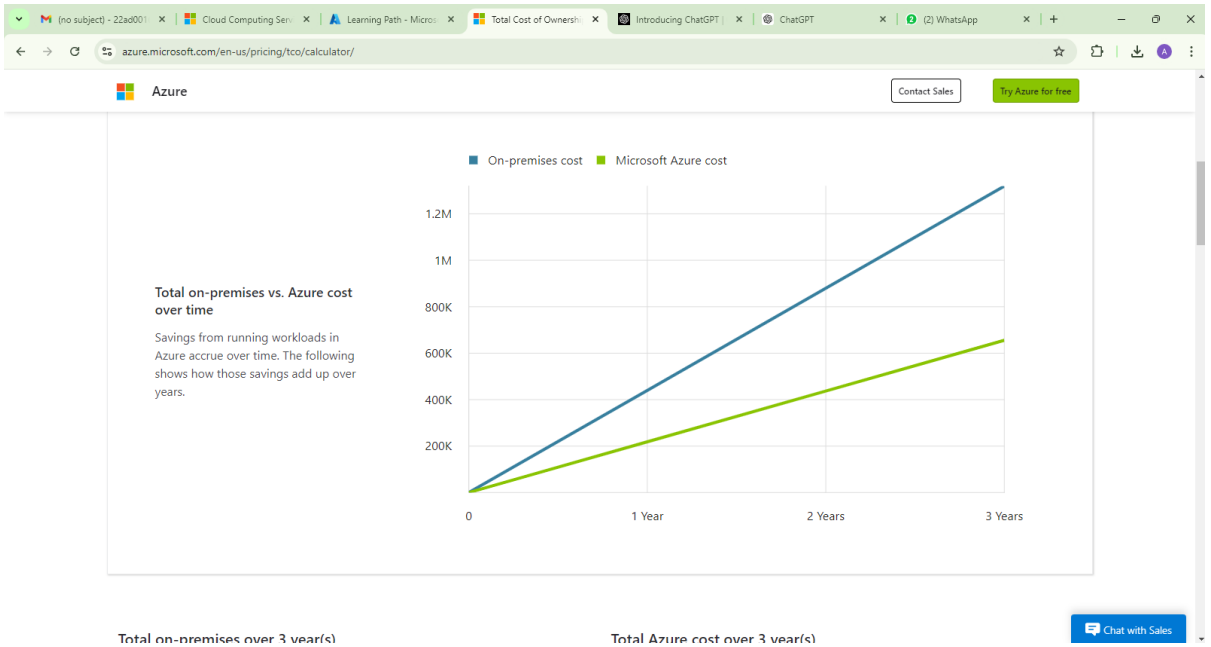
Timeframe: 3 Years | Region: North Eurc | Licensing program: Microsoft Online Servi | Show Dev/Test Pricing

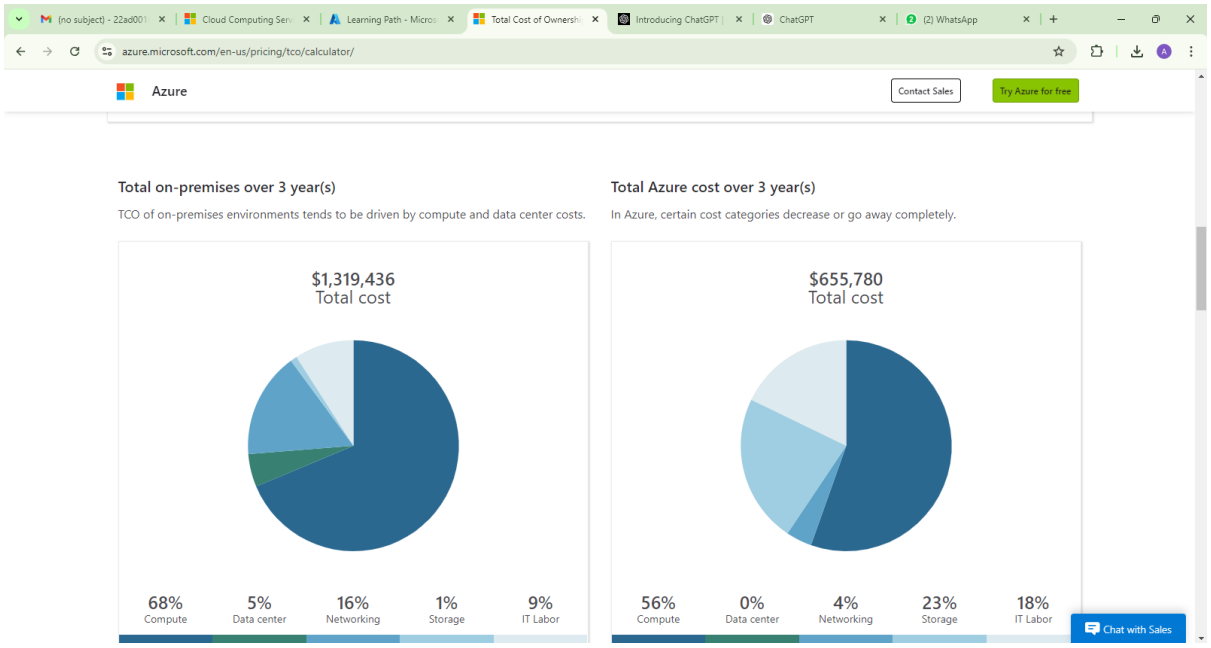
Over 3 year(s) with Microsoft Azure, your estimated cost savings could be as much as **$663,656**

Total on-premises vs. Azure cost over time

Chat with Sales


2. Select Next.
View the report
Take a moment to review the generated report.
Remember, you've been tasked to investigate cost savings for your European datacenter over the next three years.
To make these adjustments:
1. Set Timeframe to 3 Years.
2. Set Region to North Europe.
Scroll to the summary at the bottom. You see a comparison of running your workloads in the datacenter versus on Azure.
Select Download to download or print a copy of the report in PDF format.
Great work. You now have the information that you can share with your Chief Financial Officer. If you need to make adjustments, you can revisit the TCO Calculator to generate a fresh report.
All units complete:
Complete module
Having an issue? We can help!
For issues related to this module, explore existing questions using the #azure training tag or
Azure
Contact Sales
Try Azure for free
Total on-premises over 3 year(s)
TCO of on-premises environments tends to be driven by compute and data center costs.
$1,319,436
Total cost
68% Compute
5% Data center
16% Networking
1% Storage
9% IT Labor
Total Azure cost over 3 year(s)
In Azure, certain cost categories decrease or go away completely.
$655,780
Total cost
56% Compute
0% Data center
4% Networking
23% Storage
18% IT Labor
Total on-premises cost breakdown
In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency that comes with the cloud.
Total Azure cost breakdown
In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency
cloud.
Chat with Sales


azure.microsoft.com/en-us/pricing/tco/calculator/
Azure
Contact Sales
Try Azure for free
On-premises cost
Microsoft Azure cost
1.2M
1M
800K
600K
400K
200K
0
1 Year
2 Years
3 Years
Total on-premises vs. Azure cost over time
Savings from running workloads in Azure accrue over time. The following shows how those savings add up over years.
Total on-premises over 3 year(s)
Total Azure cost over 3 year(s)
Chat with Sales


azure.microsoft.com/en-us/pricing/tco/calculator/
Azure
Contact Sales
Try Azure for free
Total on-premises over 3 year(s)
TCO of on-premises environments tends to be driven by compute and data center costs.
$1,319,436
Total cost
68% Compute
5% Data center
16% Networking
1% Storage
9% IT Labor
Total Azure cost over 3 year(s)
In Azure, certain cost categories decrease or go away completely.
$655,780
Total cost
56% Compute
0% Data center
4% Networking
23% Storage
18% IT Labor
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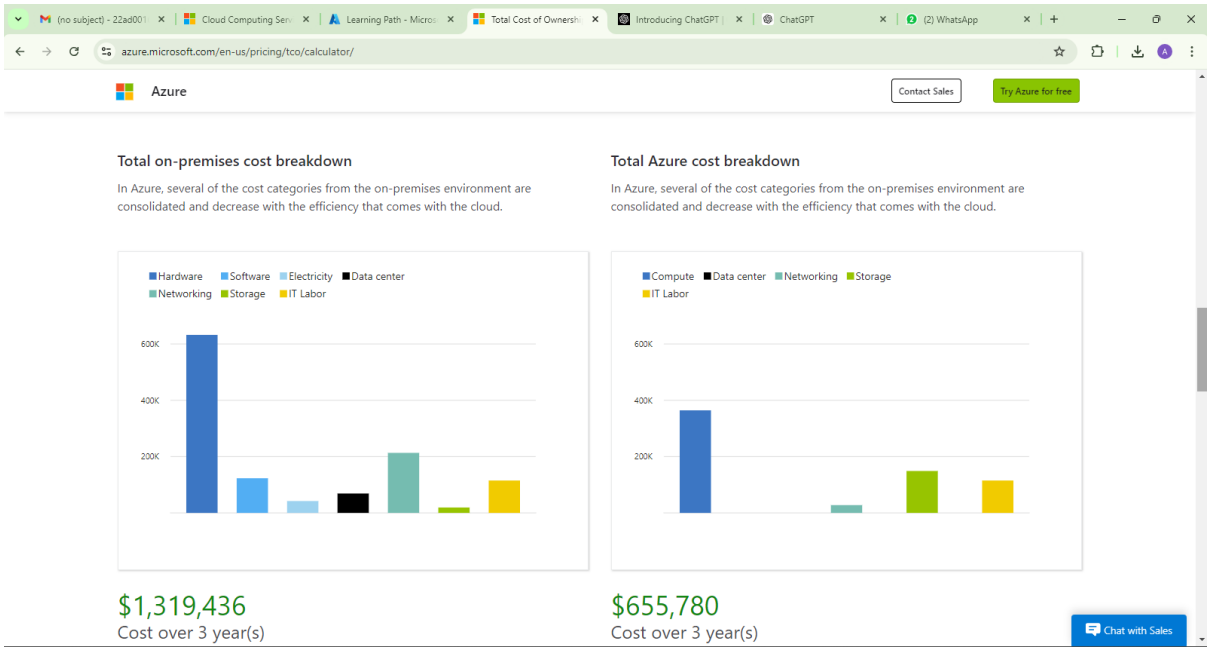
azure.microsoft.com/en-us/pricing/tco/calculator/
Azure
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Total on-premises cost breakdown
In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency that comes with the cloud.
Hardware
Software
Electricity
Data center
Networking
Storage
IT Labor
600K
400K
200K
Total Azure cost breakdown
In Azure, several of the cost categories from the on-premises environment are consolidated and decrease with the efficiency that comes with the cloud.
Compute
Data center
Networking
Storage
IT Labor
600K
400K
200K
$1,319,436
Cost over 3 year(s)
$655,780
Cost over 3 year(s)
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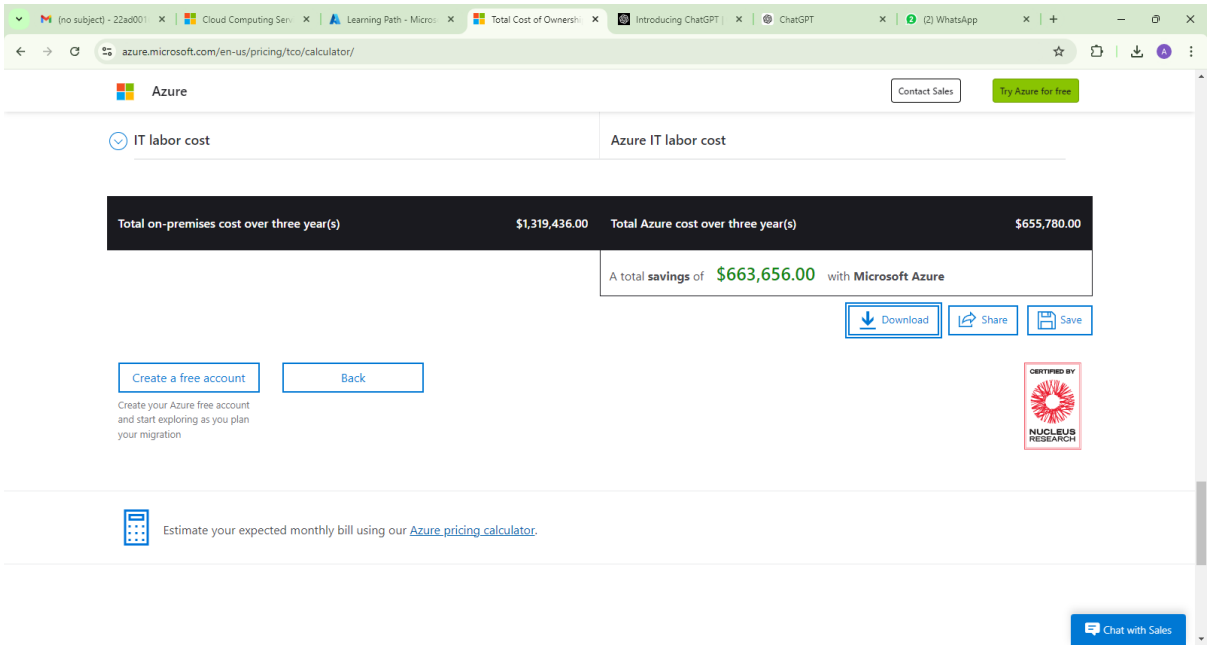
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IT labor cost
Azure IT labor cost
Total on-premises cost over three year(s)
$1,319,436.00
Total Azure cost over three year(s)
$655,780.00
A total savings of $663,656.00 with Microsoft Azure
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