

# **REPORT ON MICROSOFT AZURE FUNDAMENTALS**

Name	Sakthi.K M
Register No	710722104085
Department	III B.E CSE
Date	10.08.2024

# 1)Sandbox:

## Create a Linux virtual machine and install Nginx

LearnDiscoverProduct documentationDevelopment languagesTopics

TrainingProductsCareer PathsBrowse all trainingEducator CenterStudent HubFAQ & Help

LEVEL 42025 / 5299 XP

Learn / Training / Browse / Describe Azure compute and networking services /

< PreviousUnit 3 of 14Next >

100 XP

### Exercise - Create an Azure virtual machine

10 minutes

Sandbox activated! Time remaining: 33 min

You have used 1 of 10 sandboxes for today. More sandboxes will be available tomorrow.

In this exercise, you create an Azure virtual machine (VM) and install Nginx, a popular web server.

You could use the Azure portal, the Azure CLI, Azure PowerShell, or an Azure Resource Manager (ARM) template.

Azure Cloud Shell

Switch to PowerShellRestartManage filesNew session

```
"etag": "W/\"f84bf487-0478-4821-a1bb-cc06d3ff49d\"",
"id": "/subscriptions/293caa52-ebff-42e6-9e6f-48771148aeed/resourceGroups/learn-8c0a378b-8e13-44a2-9154-cb1e407143d8/providers/Microsoft.Network/networkSecurityGroups/my-vmNSG/securityRules/allow-http",
"name": "allow-http",
"priority": 100,
"protocol": "Tcp",
"provisioningState": "Succeeded",
"resourceGroup": "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8",
"sourceAddressPrefix": "*",
"sourceAddressPrefixes": [],
"sourcePortRange": "*",
"sourcePortRanges": [],
"type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
sakthikm833 [ ~ ]$ az network nsg rule list --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" --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
sakthikm833 [ ~ ]$
```

## Access your web server

LearnDiscoverProduct documentationDevelopment languagesTopics

TrainingProductsCareer PathsBrowse all trainingEducator CenterStudent HubFAQ & Help

LEVEL 42025 / 5299 XP

You have used 1 of 10 sandboxes for today. More sandboxes will be available tomorrow.

In this exercise, you configure the access to the virtual machine (VM) you created earlier in this module.

Important

The Microsoft Learn sandbox should still be running. If the sandbox timed out, you'll need to redo the previous exercise (Exercise - Create an Azure virtual machine).

To verify the VM you created previously is still running, use the following command:

Azure CLICopy

```
az vm list
```

Azure Cloud Shell

Switch to PowerShellRestartManage filesNew session

```
    },
    "storageAccountType": "Premium_LRS"
  },
  "name": "my-vm_disk1_b40931200dfa4f68a2ddd64cf038ef3a",
  "osType": "Linux",
  "vhd": null,
  "writeAcceleratorEnabled": null
}
},
"tags": {},
"timeCreated": "2024-08-10T05:20:55.205193+00:00",
"type": "Microsoft.Compute/virtualMachines",
"userData": null,
"virtualMachineScaleSet": null,
"vmId": "eb3bb3b1-4e8c-46a2-958e-d67e814a67a8",
"zones": null
}
}
sakthikm833 [ ~ ]$ IPADDRESS=$(az vm list-ip-addresses --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" --name my-vm --query "[.virtualMachine.network.k.publicIpAddresses[*].ipAddress]" --output tsv)
sakthikm833 [ ~ ]$ curl --connect-timeout 5 http://$IPADDRESS
curl: (28) Failed to connect to 104.42.128.98 port 80 after 5003 ms: Timeout was reached
sakthikm833 [ ~ ]$ curl: (28) Connection timed out after 5001 milliseconds
bash: syntax error near unexpected token `28'
```

# List the current network security group rules

TrainingProductsCareer PathsBrowse all trainingEducator CenterStudent HubFAQ & Help

LEVEL 42025 / 5299 XP

d. Keep this browser tab open for later.

## 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.

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

Azure CLI

```
az network nsg rule list \
  --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" \
  --query '[] .name' \
  --output tsv
```

You see this output:

Azure Cloud Shell

```
"protocol": "Tcp",
"provisioningState": "Succeeded",
"resourceGroup": "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8",
"sourceAddressPrefix": "*",
"sourceAddressPrefixes": [],
"sourcePortRange": "*",
"sourcePortRanges": [],
"type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
]
sakthikm833 [ ~ ]$ az network nsg rule list --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" --nsg-name my-vmNSG --query '[] .(Name, Priority:priority, Port:destinationPortRange, Access:access)' --output table
Name          Priority  Port  Access
-----
default-allow-ssh 1000    22    Allow
sakthikm833 [ ~ ]$ Name          Priority  Port  Access
-----
default-allow-ssh 1000    22    Allow
bash: Name: command not found
bash: -----: command not found
bash: default-allow-ssh: command not found
sakthikm833 [ ~ ]$ az network nsg rule create --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" --nsg-name my-vmNSG --name allow-http --protocol tcp --priority 100 --destination-port-range 80 --access Allow
```

## Create the network security rule

TrainingProductsCareer PathsBrowse all trainingEducator CenterStudent HubFAQ & Help

LEVEL 42025 / 5299 XP

By default, a Linux VM's NSG allows network access only on port 22. This port enables administrators to access the system. You need to also allow inbound connections on port 80, which allows access over HTTP.

## Task 3: Create the network security rule

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

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

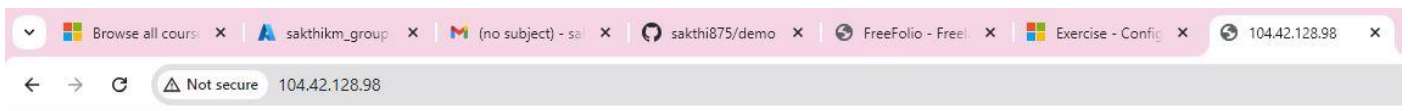
Azure CLI

```
az network nsg rule create \
  --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" \
  --nsg-name my-vmNSG \
  --name allow-http \
  --protocol tcp \
  --priority 100 \
  --destination-port-range 80 \
  --access Allow
```

Azure Cloud Shell

```
"name": "allow-http",
"priority": 100,
"protocol": "Tcp",
"provisioningState": "Succeeded",
"resourceGroup": "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8",
"sourceAddressPrefix": "*",
"sourceAddressPrefixes": [],
"sourcePortRange": "*",
"sourcePortRanges": [],
"type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
sakthikm833 [ ~ ]$ az network nsg rule list --resource-group "learn-8c0a378b-8e13-44a2-9154-cb1e407143d8" --nsg-name my-vmNSG --query '[] .(Name, Priority:priority, Port:destinationPortRange, Access:access)' --output table
Name          Priority  Port  Access
-----
default-allow-ssh 1000    22    Allow
allow-http      100     80    Allow
sakthikm833 [ ~ ]$ Name          Priority  Port  Access
-----
default-allow-ssh 1000    22    Allow
allow-http      100     80    Allow
bash: Name: command not found
bash: -----: command not found
bash: default-allow-ssh: command not found
```

Final output:



## 2) Azure Academic Services: Azure for Students

### Badges

The screenshot shows a web browser with multiple tabs open. The active tab is 'learn.microsoft.com/en-us/users/sakthkm-8718/'. The page displays the profile of 'SAKTH KM' with the email 'sakthikm833@gmail.com'. The profile includes a header with a large 'SK' logo and a background image of a glowing red cube on a blue circuit board. Below the header, there are statistics: 7 Badges, 1 Trophy, 0 Reputation points, 0 Accepted answers, 0 Following, and 0 Followers. A progress bar indicates 'LEVEL 4' with a green bar and '10,025/13,299 XP'. The 'Activity' section shows a list of activities, with the most recent one dated 'AUG 10' stating 'You earned a badge by completing a module.' Below this, a badge icon is shown with the text 'BADGE' and 'Describe features and tools for managing and deploying Azure resources'.

### Creation of resource groups

The screenshot shows the Azure portal interface for a resource group named 'sakthikm\_group'. The left sidebar contains a navigation menu with options: Home, Overview, Activity log, Access control (IAM), Tags, Resource visualizer, Events, Settings, Cost Management, Monitoring, Automation, and Help. The main content area shows the 'Overview' tab for the 'sakthikm\_group' resource group. It includes a search bar, a '+ Create' button, and a 'Manage view' dropdown. Below this, there are tabs for 'Resources' and 'Recommendations'. The 'Resources' tab is active, showing a list of resources. The list has columns for 'Name', 'Type', and 'Location'. The resources listed are: 'sakthikm' (Virtual machine), 'sakthikm-ip' (Public IP address), 'sakthikm-nsg' (Network security group), 'sakthikm-vnet' (Virtual network), 'sakthikm594\_z1' (Network Interface), and 'sakthikm\_disk1\_54fb1e82689a43f7b63907786d951542' (Disk). All resources are located in 'Central India'.

Name	Type	Location
sakthikm	Virtual machine	Central India
sakthikm-ip	Public IP address	Central India
sakthikm-nsg	Network security group	Central India
sakthikm-vnet	Virtual network	Central India
sakthikm594_z1	Network Interface	Central India
sakthikm_disk1_54fb1e82689a43f7b63907786d951542	Disk	Central India



## Creation of Virtual Machine

The screenshot displays the Azure portal interface for a Virtual Machine named 'sakthikm'. The top navigation bar includes 'Home >', the VM name 'sakthikm', and various action buttons like 'Connect', 'Start', 'Restart', 'Stop', 'Hibernate', 'Capture', 'Delete', 'Refresh', 'Open in mobile', 'Feedback', and 'CLI / PS'. The left sidebar shows the 'Overview' tab selected, with sub-tabs for 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Connect', 'Networking', 'Settings', and 'Availability + scale'. The main content area is divided into two sections: 'Essentials' and 'JSON View'. The 'Essentials' section provides a summary of the VM's configuration, including its resource group, status, location, subscription, and various identifiers. The 'JSON View' section shows the VM's configuration in a structured format, including its operating system, size, public IP address, virtual network, DNS name, health state, and creation time.

**Overview**

**Essentials**

Resource group (move) : sakthikm\_group

Status : Running

Location : Central India (Zone 1)

Subscription (move) : Azure for Students

Subscription ID : 13e74d19-bb05-4c6d-81d6-d15365a97da9

Availability zone : 1

Tags (edit) : Add tags

Operating system : Linux (ubuntu 24.04)

Size : Standard D2s v3 (2 vcpus, 8 GiB memory)

Public IP address : 20.244.89.227

Virtual network/subnet : sakthikm-vnet/default

DNS name : Not configured

Health state : -

Time created : 8/10/2024, 4:57 AM UTC

**Properties**

**Virtual machine**

Computer name : sakthikm

Operating system : Linux (ubuntu 24.04)

VM generation : V2

VM architecture : x64

Agent status : Ready

Agent version : 2.11.1.4

Hibernation : Disabled

Host group : -

Host : -

Proximity placement group : -

Colocation status : N/A

Capacity reservation group : -

Disk controller type : SCSI

**Networking**

Public IP address : 20.244.89.227 ( Network interface sakthikm594\_z1 )

Public IP address (IPv6) : -

Private IP address : 10.1.0.4

Private IP address (IPv6) : -

Virtual network/subnet : sakthikm-vnet/default

DNS name : Configure

**Size**

Size : Standard D2s v3

vCPUs : 2

RAM : 8 GiB

**Source image details**

Source image publisher : canonical

Source image offer : ubuntu-24\_04-lts

Source image plan : server

## Hosting my portfolio using Azure Cloud Services

The screenshot shows a web browser displaying a portfolio website for 'sakthikm'. The browser's address bar shows the URL '20.244.89.227'. The website has a green and white color scheme. The header includes the 'FreeFolio' logo and a navigation menu with links to 'Home', 'About', 'Quality', 'Skill', 'Service', 'Portfolio', 'Review', 'Blog', and 'Contact'. A 'Hire Me' button is visible in the top right corner. The main content area features a large profile picture of a woman with glasses and a bio section titled 'UI/UX Designer & Web Developer'. The bio includes a placeholder text and contact information. Below the bio, there are two buttons: 'Hire Me' and 'Learn More'.

**FreeFolio**

Home About Quality Skill Service Portfolio Review Blog Contact

Hire Me

**UI/UX Designer & Web Developer**

Tempor eos dolore amet tempor dolor tempor. Dolore ea magna sit amet dolor eirmod. Eos ipsum est tempor dolor. Clita lorem kasd sed ea lorem diam ea lorem eirmod duo sit ipsum. Amet dolor stet lorem diam dolor justo et dolor dolor dolor

Name: sakthi Birthday: 1 April 1990

Degree: Master Experience: 10 Years

Phone: +012 345 6789 Email: info@example.com

Address: 123 Street, New York, USA Freelance: Available

Hire Me Learn More

### 3)Cost Management

#### Pricing calculator

ExportedEstimate [Protected View] - Excel (Product Activation Failed)

File

Home

Insert

Page Layout

Formulas

Data

Review

View

Tell me what you want to do...

Sign in

Share

PROTECTED VIEW

Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View.

Enable Editing

A1

Microsoft Azure Estimate

	D	E	F	G	H	I	J	K
1								
2								
3	Region	Description	Estimated monthly cost	Estimated upfront cost				
	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				
4	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				
5	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				
6								
7	Support		\$0.00	\$0.00				
8	Licensing Program	Microsoft Customer Agreement (MCA)						
9	Billing Account							
10	Billing Profile							
11	Total		\$2,078.56	\$0.00				
12								
13								
14	not a quote. For up to date pricing information please visit <a href="https://azure.microsoft.com/pricing/calculator/">https://azure.microsoft.com/pricing/calculator/</a>							

Your Estimate

Ready

#### Total Cost of Ownership (TCO) Calculator

Azure		Contact Sales	Try Azure for free
\$1,319,436		\$655,780	
Cost over 3 year(s)		Cost over 3 year(s)	
On-premises cost breakdown summary		Azure cost breakdown summary	
Category	Cost	Category	Cost
Compute	\$903,106.08	Compute	\$364,284.00
Hardware	\$632,224.00	Data Center	\$0.00
Software	\$123,100.00	Networking	\$27,639.00
Electricity	\$42,166.08	Storage	\$148,856.83
Virtualization	\$105,616.00	IT Labor	\$115,000.23
Data Center	\$68,917.56		
Networking	\$213,237.39		
Storage	\$19,174.40		
IT Labor	\$115,000.23		
Total	\$1,319,436.00	Total	\$655,780.00

## 4) Blobs

### Creation of container

portal.azure.com/#@learn.docs.microsoft.com/resource/subscriptions/293caa52-ebff-42e6-9e6f-48771148aed/resourcegroups/learn-8c0a378b-8e13-44a2-9154-...

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

Home > learn\_1723270344494 | Overview > learn

learn | Containers Storage account

Search

+ Container Change access level Restore containers Refresh Delete Give feedback

Search containers by prefix

Show deleted containers

Name	Last modified	Anonymous access level	Lease state
<input type="checkbox"/> \$logs	8/10/2024, 11:43:28 AM	Private	Available ...
<input type="checkbox"/> sakthikm	8/10/2024, 11:44:41 AM	Private	Available ...

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data migration

Events

Storage browser

Storage Mover

Partner solutions

Data storage

Containers

File shares

Queues

Tables

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

Home > learn | Containers >

sakthikm Container

Search

Upload Change access level Refresh Delete Change tier Acquire lease Break lease View snapshots Create snapshot ...

Authentication method: Access key (Switch to Microsoft Entra user account)

Location: sakthikm

Search blobs by prefix (case-sensitive)

Show deleted blobs

Add filter

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
<input type="checkbox"/> fl.jpg	8/10/2024, 11:49:58 ...	Hot (Inferred)		Block blob	11.57 KiB	Available ...

Overview

Diagnose and solve problems

Access Control (IAM)

Settings



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="utf-8" ?>
<Error>
  <Code>ResourceNotFound</Code>
  <Message>The specified resource does not exist. RequestId:3b573204-501e-0024-14ed-eaf078000000 Time:2024-08-10T06:22:16.9085289Z</Message>
</Error>
```



Home

Recent

Manage view Refresh Export to CSV Clear Assign tags Group by none

Filter for any field... Subscription equals all Resource Group equals all Type equals all Location equals all Add filter

<input type="checkbox"/>	Name ↑	Type	Location	Resource Group	Subscription	Last accessed
<input type="checkbox"/>	learn	Storage account		learn-8c0a378b-8e13-44a...	Concierge Subscription	22 seconds ago
<input type="checkbox"/>	learn-8c0a378b-8e13-44a2-9154-cb1e40714...	Resource group	West US	learn-8c0a378b-8e13-44a...	Concierge Subscription	33 seconds ago