

Cloud Microsoft azure – assignment 1

Note: I am using a subscription method of pay-as-go model so I have done all the tasks with attentive manner, while creating firewall, I have charged nearly 150rs. So without taking risk I have done all the assignments with prior manner, if there is any task is in not complete I will mention the reason below that

1. Deploy a basic web application using Azure App Service.

What are the benefits of using deployment slots, and how can they be utilized in a real-world scenario?

- Choose a unique app name (e.g., "mywebapp").
- Select a runtime stack (e.g., Node.js, .NET).
- Configure other settings (region, operating system, etc.).
- Deploy a simple HTML or sample application.
- Access the web app's URL.

I have created the web app and deployed it, by using the website address I have access the website, but I was not able to authorize the GITHUB, its shown some error, so I not able to deploy any html code to make the website in better access.

The screenshot shows the Microsoft Azure portal interface for a Web App named 'demoaccoun'. The left sidebar lists navigation options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Deployment (with sub-options: Deployment slots and Deployment Center), and Settings (with sub-option: Environment variables). The main content area is titled 'demoaccoun' and shows the 'Overview' tab selected. It includes a search bar and several action buttons: Browse, Stop, Swap, Restart, Delete, Refresh, Download publish profile, Reset publish profile, Share to mobile, and more. A note says 'Click here to access Application Insights for monitoring and profiling for your app.' Below this is the 'Essentials' section, which provides detailed information about the app's configuration:

Setting	Value
Resource group	(move) newresource
Status	Running
Location	(move) East US
Subscription	(move) Pay-As-You-Go
Subscription ID	1d32cd9b-9d2b-444a-9950-a2b38360fa0b
Default domain	demoaccoun.azurewebsites.net
App Service Plan	ASP-newresource-9604
Operating System	Windows
Health Check	Cannot fetch health check data. Please try again later.

demoaccoun.azurewebsites.net

 Microsoft Azure

Your web app is running and waiting for your content

Your web app is live, but we don't have your content yet. If you've already deployed, it could take up to 5 minutes for your content to show up, so come back soon.



 Supporting Node.js, Java, .NET and more

Haven't deployed yet? Use the deployment center
Starting a new web site? Follow our Quickstart

demoaccoun | Deployment Center

Source*: GitHub
Building with GitHub Actions. [Change provider.](#)

Build
Runtime stack: .NET
Version: v7.0

Authentication settings
Select how you want your GitHub Action workflow to authenticate to Azure. If you choose user-assigned identity, the

demoaccoun | Console

```

</body>
</html>
The syntax of the command is incorrect.

C:\home\site\wwwroot>cd
C:\home\site\wwwroot

C:\home\site\wwwroot><!DOCTYPE html>
<html>
  <head>
    <title>My web page</title>
  </head>
  <body>
    <h1>Hello, world!</h1>
    <p>This is my first web page.</p>
    <p>It contains a
      <strong>main heading</strong> and <em>paragraph</em>.
    </p>
  </body>
</html>
The syntax of the command is incorrect.

C:\home\site\wwwroot>

```

2. Configure basic monitoring for an Azure virtual machine using Azure Monitor. Create custom alerts based on specific metrics.

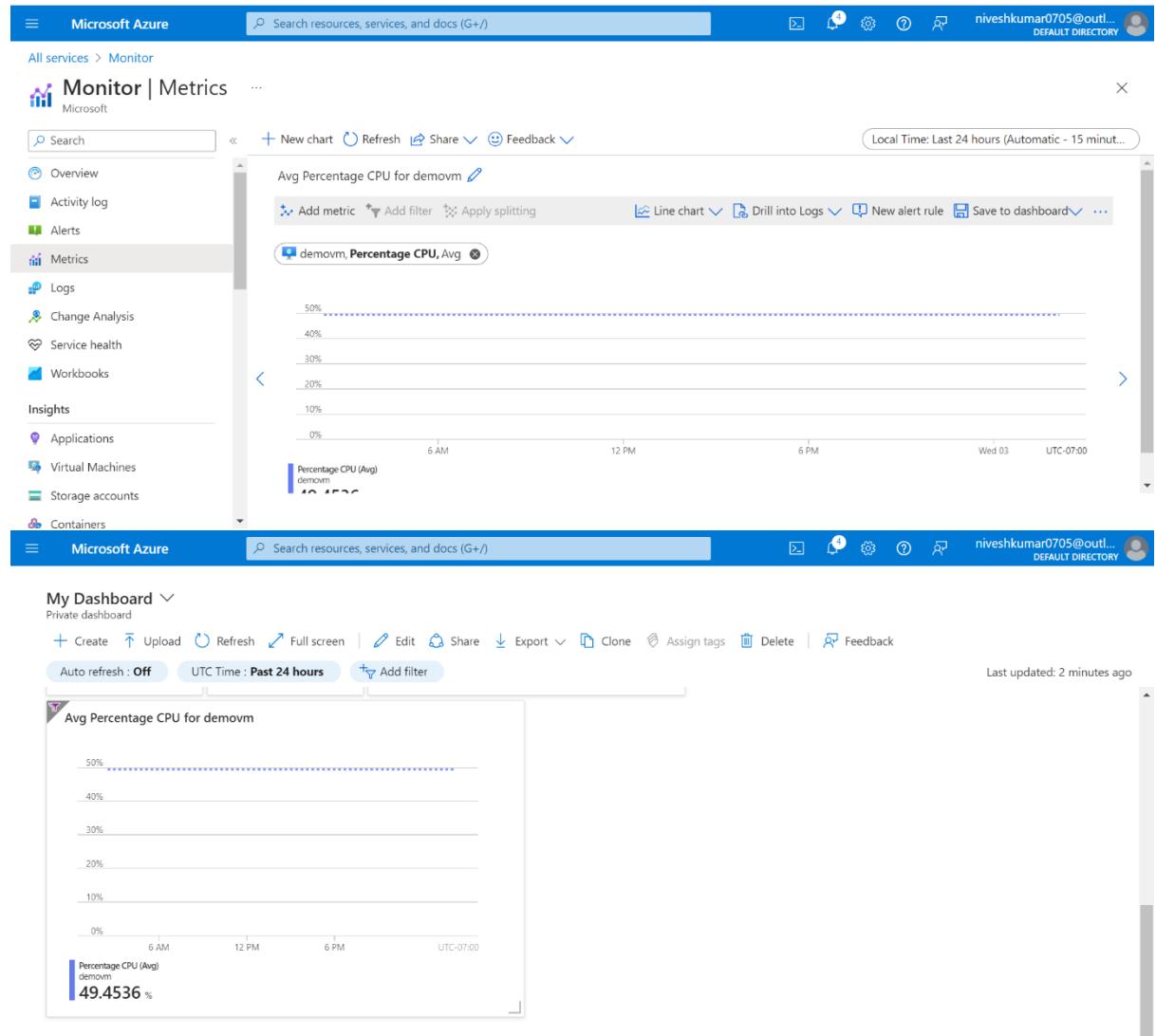
- Configure alerts based on CPU usage exceeding a defined threshold.
- Trigger the alert condition and receive notifications.

By using azure monitor I have created a custom alerts on specific metrics.

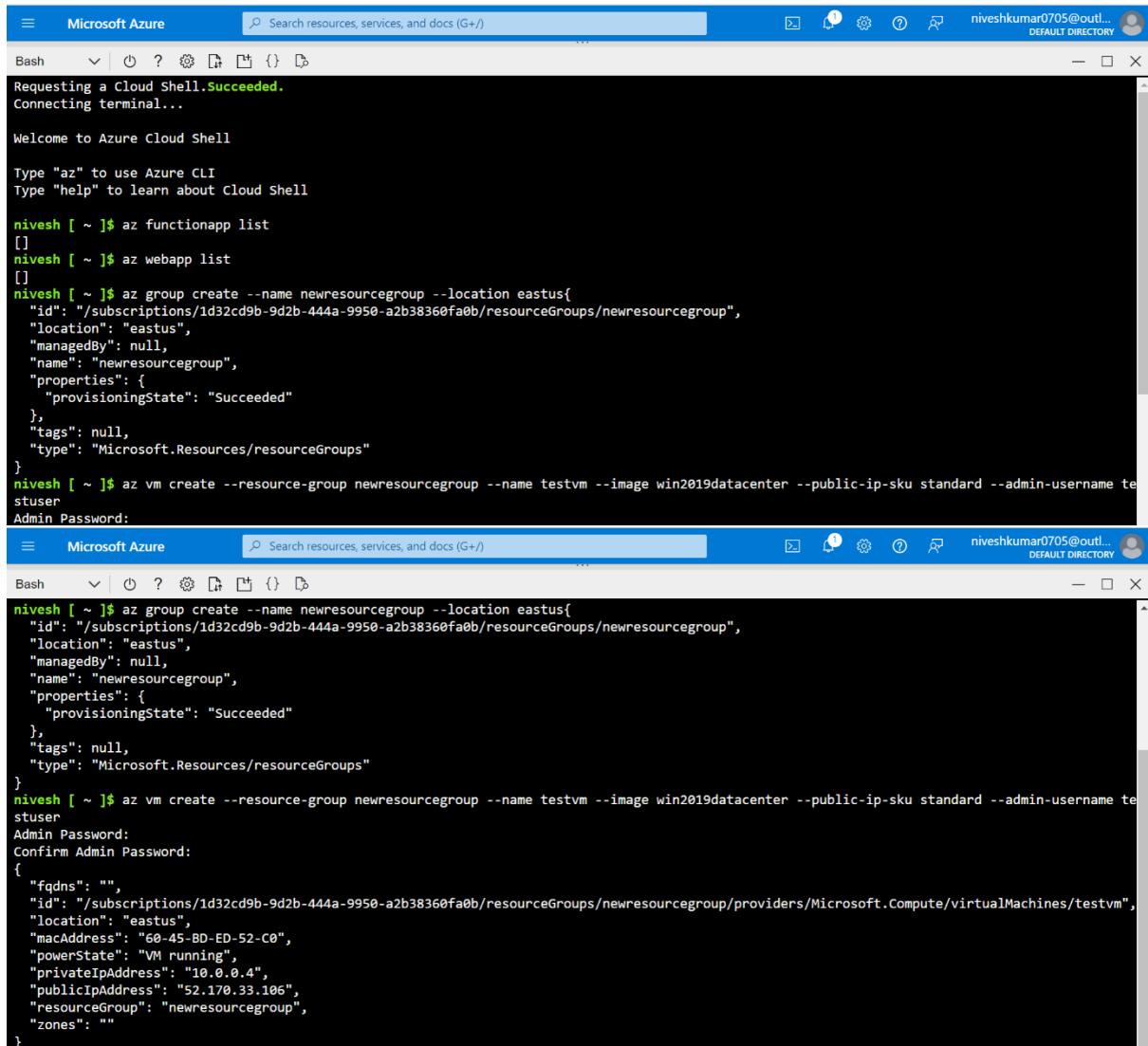
Added a new rule to check the CPU work.

Set a rule at condition of threshold value should be >50% if it exceeds it will give alert.

Finally placed the metric in dashboard



3. Install Azure CLI on your machine to list resources, get information about virtual machines.



The image shows two side-by-side terminal windows from the Microsoft Azure Cloud Shell. Both windows have a blue header bar with the Microsoft Azure logo, a search bar, and user information (niveshkumar0705@outlook.com, DEFAULT DIRECTORY). The left window shows a successful connection to the Cloud Shell and a welcome message. It then lists commands for the Azure CLI, such as 'az functionapp list' and 'az webapp list'. It also shows the creation of a new resource group named 'newresourcegroup' in the 'eastus' location, which has been successfully provisioned. The right window shows a similar sequence of commands, including creating the same resource group and a virtual machine named 'testvm' with specific properties like image, SKU, and admin credentials. Both windows show detailed JSON output for the created resources.

```
Bash    Search resources, services, and docs (G+)
```

```
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
```

```
nivesh [ ~ ]$ az functionapp list
[]
nivesh [ ~ ]$ az webapp list
[]
nivesh [ ~ ]$ az group create --name newresourcegroup --location eastus{
  "id": "/subscriptions/1d32cd9b-9d2b-444a-9950-a2b38360fa0b/resourceGroups/newresourcegroup",
  "location": "eastus",
  "managedBy": null,
  "name": "newresourcegroup",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
nivesh [ ~ ]$ az vm create --resource-group newresourcegroup --name testvm --image win2019datacenter --public-ip-sku standard --admin-username te
stuser
Admin Password:
```

```
Bash    Search resources, services, and docs (G+)
```

```
nivesh [ ~ ]$ az group create --name newresourcegroup --location eastus{
  "id": "/subscriptions/1d32cd9b-9d2b-444a-9950-a2b38360fa0b/resourceGroups/newresourcegroup",
  "location": "eastus",
  "managedBy": null,
  "name": "newresourcegroup",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
nivesh [ ~ ]$ az vm create --resource-group newresourcegroup --name testvm --image win2019datacenter --public-ip-sku standard --admin-username te
stuser
Admin Password:
Confirm Admin Password:
{
  "fqdns": "",
  "id": "/subscriptions/1d32cd9b-9d2b-444a-9950-a2b38360fa0b/resourceGroups/newresourcegroup/providers/Microsoft.Compute/virtualMachines/testvm",
  "location": "eastus",
  "macAddress": "60-45-BD-ED-52-C8",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "52.170.33.106",
  "resourceGroup": "newresourcegroup",
  "zones": ""
}
```

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

Home > Resource groups > newresourcegroup >

testvm Virtual machine

Search Connect Start Restart Stop Hibernate (preview) Capture Delete Refresh Open in mobile Feedback

Overview

Essentials

Resource group (move) newresourcegroup	Operating system Windows (Windows Server 2019 Datacenter)
Status Running	Size Standard DS1 v2 (1 vcpu, 3.5 GB memory)
Location East US	Public IP address 52.170.33.106
Subscription (move) Pay-As-You-Go	Virtual network/subnet testvmVNET/testvmSubnet
Subscription ID 1d32cd9b-9d2b-444a-9950-a2b38360fa0b	DNS name Not configured
	Health state -

Tags (edit)
Add tags

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

Home > Resource groups >

Resource groups Default Directory

+ Create Manage view

Filter for any field... Name ↑

Name	Type	Location
cloud-shell-storage-centralindia	Virtual machine	East US
NetworkWatcherRG	Disk	East US
newresourcegroup	Network security group	East US
testvm	Public IP address	East US
testvmOsDisk_1_10437f66283e4fb99d...	Network Interface	East US
testvmPublicIP	Virtual network	East US
testvmVMNic	Virtual network	East US
testvMVNET	Virtual network	East US

Page 1 of 1

<https://portal.azure.com/#@niveshkumar0705outlook.onmicrosoft.com/reso...>

4. Add and arrange tiles on the Azure dashboard to display information about your subscribed services

My Dashboard (2) ▾
Private dashboard

+ Create Upload Refresh Full screen | Edit Share Export Clone Assign tags Delete | Feedback

Last updated: 6 minutes ago

Auto refresh: Off Add filter

Users Sign-ins
Sign-ins for 'All Users' between 3/2/2024 and 4/1/2024.

Mar 3 Mar 10 Mar 17 Mar 24 Mar 31

All resources
All subscriptions Refresh

↳ mynetwork Virtual network

Security metric

Secure Score **0%**

Coverage
0 OF 0 subscriptions have full security coverage [Go to Defender for Cloud >](#)

My Dashboard (2) ▾
Private dashboard

+ Create Upload Refresh Full screen | Edit Share Export Clone Assign tags Delete | Feedback

Last updated: 7 minutes ago

Auto refresh: Off Add filter

Resource groups
All subscriptions Refresh

NetworkWatcherRG East US

My title

Nifty smlcap +2.42%

Search

ENG IN 01-04-2024 23:25

Microsoft Azure Search resources, services, and docs (G/+) niveshkumar0705@outl... DEFAULT DIRECTORY

My Dashboard (2) ▾ Private dashboard

+ Create Upload Refresh Full screen | Edit Share Export Clone Assign tags Delete | Feedback

Auto refresh : Off Add filter Last updated: 8 minutes ago

My title
My subtitle

My data

This tile lets you put custom content on your dashboard. It supports plain text, **Markdown**, and even limited HTML like images and links that open in a new tab.

Resource graph chart tile Private Resource Graph query

Nifty smicap +2.42% Microsoft Azure Search ENG IN 23:27 01-04-2024

My Dashboard (2) ▾ Private dashboard

+ Create Upload Refresh Full screen | Edit Share Export Clone Assign tags Delete | Feedback

Auto refresh : Off Add filter Last updated: 9 minutes ago

Resource graph chart tile Private Resource Graph query

Configure tile

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Dashboard > **Azure Resource Graph Explorer**

Scope More (1)

Categories Table Search

> General > AI + machine learning > Analytics > Compute > Containers > Databases > DevOps > Hybrid + multicloud > Identity > Integration > Internet of Things > Management and governance

Run query Set authorization scope View in Resource Graph Explorer

Query 1

```
1 // top ten resource types by number of resources
2 summarize ResourceCount=count() by type
3 | order by ResourceCount desc
4 | take 10
5 | project ["Resource Type"]=>type, ["Resource Count"]=>ResourceCount
```

Get started Results Charts Messages Bar chart Update pinned part on dashboard

microsoft.network/virtualnetworks microsoft.network/networkwatchers

Nifty smicap +2.42% Microsoft Azure Search ENG IN 23:27 01-04-2024

5. Create a new Azure Firewall and configure rules to control inbound and outbound traffic.

I have created the azure firewall and configure the DNAT rule. As I mentioned above I have charged while creating the firewall configuration. So I have created the rule for DNAT alone.

The screenshot shows two windows side-by-side. The left window is the Windows Settings app, specifically the 'System' section under 'Remote Desktop'. It displays a message stating 'Your Home edition of Windows 11 doesn't support Remote Desktop.' and a link to 'Learn how to upgrade your Windows 11 Edition'. The right window is the Microsoft Azure portal, showing the 'firewallpolicy | DNAT rules' page. The left sidebar of the Azure window lists various policy sections like Overview, Activity log, Access control (IAM), Tags, and several Rule collections (Parent policy, Rule collections, DNAT rules, Network rules, Application rules, DNS, Threat Intelligence). The 'DNAT rules' section is currently selected. The main pane shows a table of rules with one entry:

Rule Collection P..	Rule collection n...	Rule name	Source	Port	Protocol	Destination
100	policy	firewallvm	106.221.23.83	5000	TCP	52.186.52.66

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

firewallqq Firewall

Home > firewallqq Firewall

Search Delete Lock Change SKU

Essentials

Resource group (move) **firewall**
Location East US
Subscription (move) **Pay-As-You-Go**
Subscription ID 1d32cd9b-9d2b-444a-9950-a2b38360fa0b
Virtual network **firewall**
Firewall policy **firewallpolicy**
Provisioning state Succeeded

SKU Standard (change)
Subnet AzureFirewallSubnet
Public IP **firewallpolicy**
Private IP 10.2.0.4
Management subnet
Management public IP
Private IP Ranges Managed by Firewall Policy
Route Server (preview) Add

JSON View

Tags (edit)

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

firewallqq Firewall

Home > firewallqq Firewall

Search Delete Lock Change SKU

Firewall policy

Visit Azure Firewall Manager at the link below to edit the Firewall Policy on this firewall

Policy **firewallpolicy** (change)
Auto-learn IP Prefixes **Disabled**

Rules

DNAT rules	1 rule in 1 collection
Network rules	0 rules in 0 collections
Application rules	0 rules in 0 collections

Threat intelligence

Mode Alert

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

firewallpolicy | Network rules Firewall Policy

Home > firewallqq > firewallpolicy

Search Add a rule collection Add rule Edit Delete

Overview Activity log Access control (IAM) Tags

Settings Parent policy Rule collections DNAT rules **Network rules** Application rules DNS Threat Intelligence TLS inspection

Rules are shown in the order of execution below. Network rules take precedence over application rules regardless of priority. Within the same rule collection type, inherited rules take precedence over rule collection group priority and rule collection priority.

Search to filter items...

Rule Collection P...↑	Rule collection n...	Rule name	Source	Port	Protocol	Destination
200	network	firewallvm	10.6.221.23.83	6000	TCP	52.186.52.1

6. Set up an Azure Storage account with Blob storage and upload a file to the Azure Blob Container and configure access settings.

The screenshot shows two views of the Azure Storage Container Overview page for 'newcontainer'.

Top View (Detailed Blob Information):

- Authentication method:** Access key (Switch to Microsoft Entra user account)
- Location:** newcontainer
- Properties:**
 - URL: https://newstoragenameaccount... (Copy icon)
 - LAST MODIFIED: 4/4/2024, 9:04:04 AM
 - CREATION TIME: 4/4/2024, 9:04:04 AM
 - VERSION ID: -
 - TYPE: Block blob
 - SIZE: 18.67 KiB
 - ACCESS TIER: Hot (Inferred)
 - ACCESS TIER LAST MODIFIED: N/A
 - ARCHIVE STATUS: -
 - REHYDRATE PRIORITY: -
 - SERVER ENCRYPTED: true
 - ETAG: 0x8DC54C0D98EEA36
 - VERSION-LEVEL IMMUTABILITY POLICY: Disabled

Bottom View (List of Blobs):

- Authentication method:** Access key (Switch to Microsoft Entra user account)
- Location:** newcontainer
- Properties:**
 - Show deleted blobs (checkbox)
- Blob List:**

Name	Modified	Access tier	Archive status	Blob type	Size
CostManagement_Pay-As-You-Go_2024-04-04-0417.xls	4/4/2024, 9:04:04 AM	Hot (Inferred)	-	Block blob	18.6

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Home > newstoragenameaccount_1712246412851 | Overview > newstoragenameaccount

newstoragenameaccount | 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
\$logs	4/4/2024, 9:01:03 AM	Private	Available
newcontainer	4/4/2024, 9:02:20 AM	Private	Available

Access Control (IAM) Data migration Events Storage browser Storage Mover

Data storage

- Containers
- File shares
- Queues
- Tables

Security + networking

- Networking

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Home > newstoragenameaccount_1712246412851 | Overview >

newstoragenameaccount

Storage account

Search Upload Open in Explorer Delete Move Refresh Open in mobile CLI / PS Feedback

JSON View

Overview

Activity log Tags Diagnose and solve problems Access Control (IAM) Data migration Events Storage browser Storage Mover

Data storage

- Containers
- File shares
- Queues

Essentials

Resource group (move) newresource	Performance Standard
Location eastus	Replication Locally-redundant storage (LRS)
Subscription (move) Pay-As-You-Go	Account kind StorageV2 (general purpose v2)
Subscription ID 1d32cd9b-9d2b-444a-9950-a2b38360fa0b	Provisioning state Succeeded
Disk state Available	Created 4/4/2024, 9:00:36 AM

Tags ([edit](#)) [Add tags](#)

Properties Monitoring Capabilities (7) Recommendations (0) Tutorials Tools + SDKs

7. Create a new Azure Virtual Network with a defined IP address range and associated subnet.

- Name the virtual network (e.g., "MyVNet").
- Specify the IP address range (e.g., 10.0.0.0/16).
- Add a subnet named "MySubnet" with the address range (e.g., 10.0.0.0/24).

The screenshot shows the Microsoft Azure portal interface. At the top, there is a search bar and a user profile. Below the search bar, the URL indicates the user is viewing the overview of a resource group named 'myvnet-1712035741279'. The main content area displays the 'Essentials' section for the virtual network 'myvnet'. Key details shown include:

- Resource group: myresource
- Location: East US
- Subscription: Pay-As-You-Go
- Address space: 10.0.0.0/16
- DNS servers: Azure provided DNS service
- Flow timeout: Configure
- BGP community string: Configure
- Virtual network ID: 0d7a4b77-9db4-4159-a7b2-3a8aaf5950ad

The left sidebar shows navigation options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (Address space, Connected devices, Subnets, Bastion, DDoS protection, Firewall, Microsoft Defender for Cloud), and a notification for 'Nifty smicap +2.42%'. The 'Subnets' option is currently selected. The bottom of the screen shows the Windows taskbar with various pinned icons.

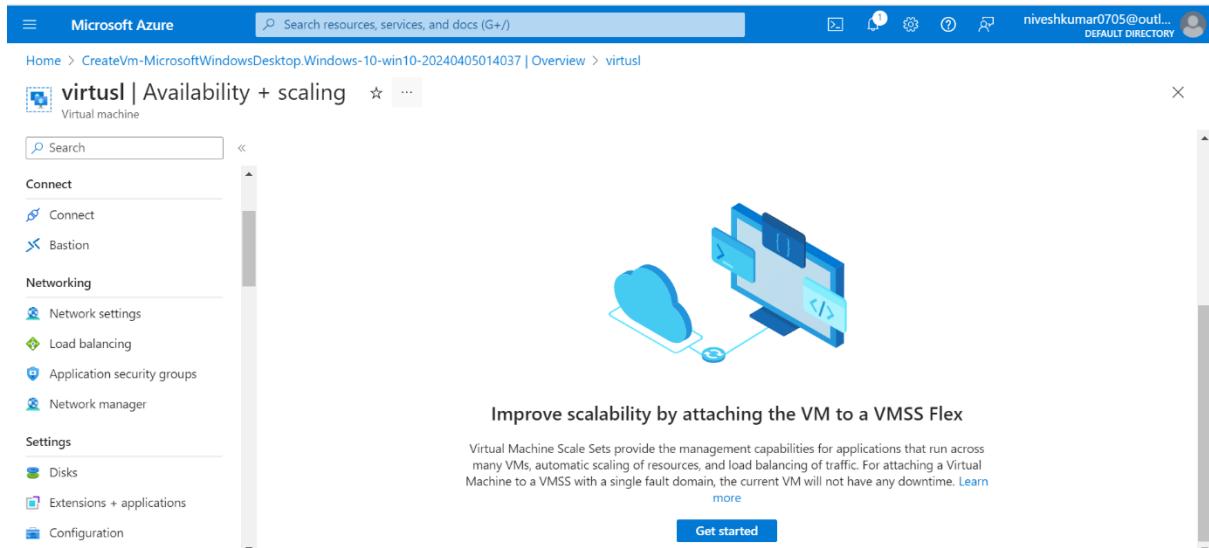
The screenshot shows the 'Subnets' section of the 'myvnet' virtual network configuration. The left sidebar has the 'Subnets' option selected. The main content area lists a single subnet named 'mysubnet' with the following details:

Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
mysubnet	10.0.1.0/24	-	251	-	-	-

The bottom of the screen shows the Windows taskbar with various pinned icons.

8. Implement a solution to automatically scale the virtual machine resources to handle higher workloads and scale back during periods of low demand.

I have didn't see the enough scale the resources of the VM to handle the higher and lower workload based on demands.



The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with 'Microsoft Azure', a search bar, and user information ('niveshkumar0705@outlook.com'). Below the navigation bar, the URL is 'Home > CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240405014037 | Overview > virtusl'. The main content area is titled 'virtusl | Availability + scaling' and 'Virtual machine'. On the left, there's a sidebar with links for 'Connect', 'Networking' (Network settings, Load balancing, Application security groups, Network manager), and 'Settings' (Disks, Extensions + applications, Configuration). The right side features a large illustration of a cloud and a server, with the text 'Improve scalability by attaching the VM to a VMSS Flex'. Below the illustration, it says 'Virtual Machine Scale Sets provide the management capabilities for applications that run across many VMs, automatic scaling of resources, and load balancing of traffic. For attaching a Virtual Machine to a VMSS with a single fault domain, the current VM will not have any downtime.' There's also a 'Learn more' link and a 'Get started' button.

9. Create a new Azure Storage account with Table storage.

- Create a table (e.g., "Employee") in Table storage.
 - Insert a record with sample data (e.g., EmployeeID, Name, Department).
 - Use Azure Storage Explorer or Azure portal to query and view the inserted data.

In Microsoft azure storage explorer I have not able to see the table that I have created, it's the only issue I have faced.

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Home > storageaccountname07_171222844198 | Overview > storageaccountname07

storageaccountname07 | Storage browser Storage account

Storage browser Storage Mover Data management Storage tasks (preview)

storageaccountname07 Favorites Recently viewed Blob containers File shares Queues Tables employee View all

Add entity Refresh Delete Edit columns

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

Add filter Advanced filters

Showing all 2 items

	PartitionKey	RowKey	Timestamp	employeeid
<input type="checkbox"/>	Employee	admin	2024-04-04T11:08:56.43...	1001
<input type="checkbox"/>	Employee	staff	2024-04-04T11:08:03.86...	1000

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Home > storageaccountname07_171222844198 | Overview > storageaccountname07

storageaccountname07 | Storage browser Storage account

Storage browser Storage Mover Data management Storage tasks (preview)

storageaccountname07 Favorites Recently viewed Blob containers File shares Queues Tables employee View all

Add entity Refresh Delete Edit columns

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

Add filter Advanced filters

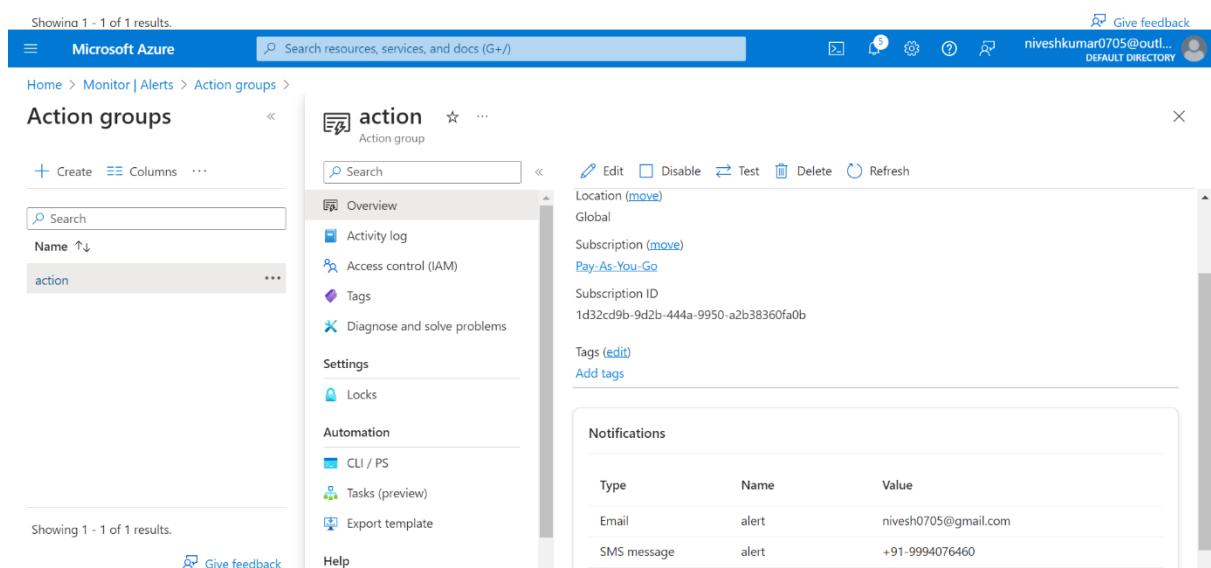
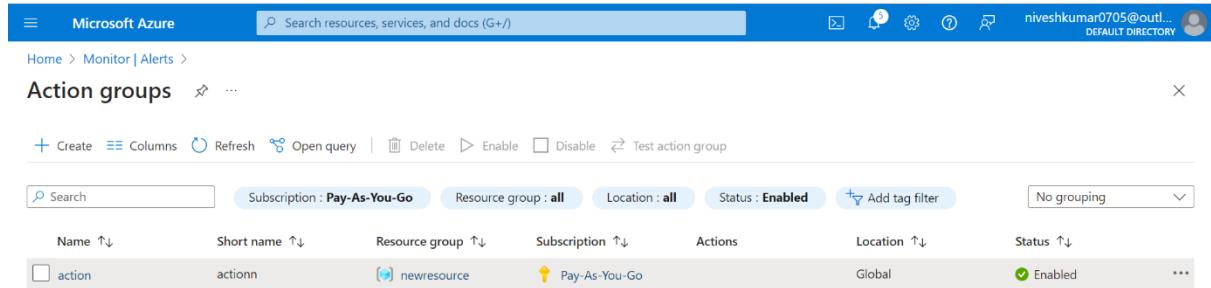
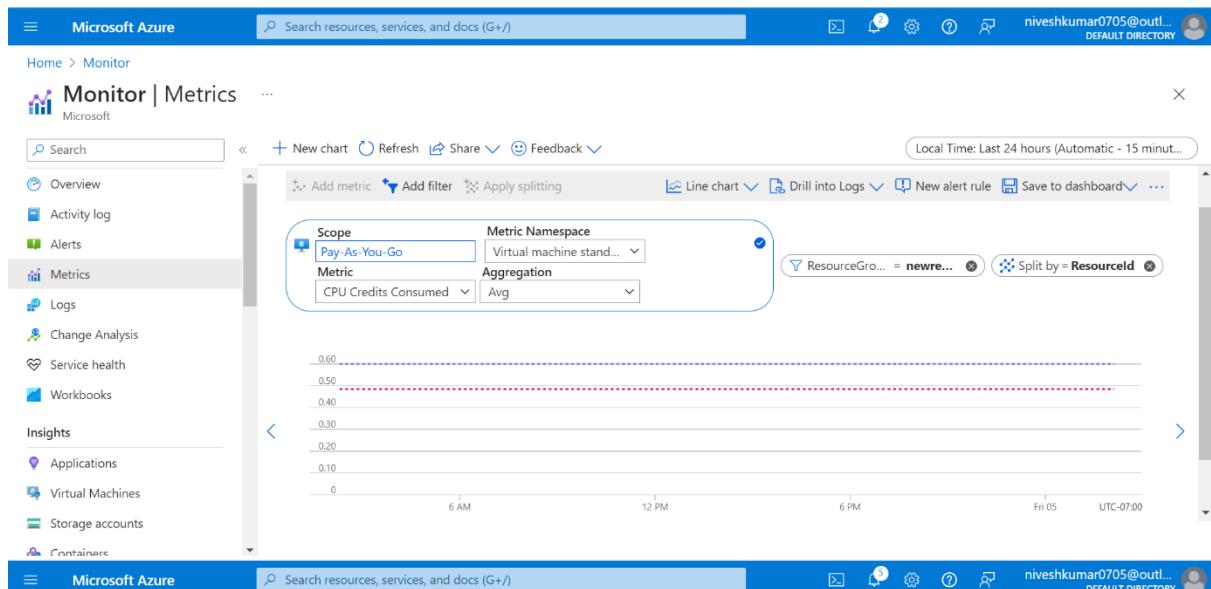
Showing all 2 items

Employeeid	name	department	designation	...
1	suresh	Accounts	executive	...
0	arun	IT	executive	...

The screenshot shows the Microsoft Azure Storage Explorer interface. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the URL 'storageaccountname07_171228444198 | Overview' is visible. The main area is titled 'storageaccountname07' and 'Storage account'. On the left, a sidebar lists various management options like Activity log, Tags, Diagnose and solve problems, Access Control (IAM), Data migration, Events, Storage browser, and Storage Mover. Below that is a 'Data storage' section with 'Containers', 'File shares', and 'Tables'. The central pane is titled 'Essentials' and provides key details about the storage account, such as Resource group (move to 'storageresource'), Location (eastus), Subscription (move to 'Pay-As-You-Go'), Account kind (StorageV2 (general purpose v2)), and Provisioning state (Succeeded). A 'Properties' tab is selected, along with 'Monitoring', 'Capabilities (7)', 'Recommendations (0)', 'Tutorials', and 'Tools + SDKs'. On the right, there's a 'JSON View' link. At the bottom, there's a 'Get Started' button and sections for 'Resources' (Documentation, Troubleshooting Guide) and 'Tasks' (View Azure resources). The bottom navigation bar includes 'Actions', 'Properties', and 'Activities' tabs, with the 'Activities' tab currently active. The activities list shows a single item: 'Added Azure account 'niveshkumar0705@outlook.com''. The overall theme is dark, with light-colored text and icons.

10. Ensure proactive monitoring of your Azure resources and receive alerts for potential issues.

- Set up Azure Monitor for key resources, such as virtual machines and databases.
- Configure custom metrics and log alerts based on specific thresholds.
- Create action groups to define notification methods (e.g., email, SMS) for alert responses.
- Validate the alerting system by intentionally triggering an alert condition.



Microsoft Azure

Search resources, services, and docs (G+)

Home > Monitor | Alerts >

Alert rules

Create | Columns | Refresh | Export to CSV | Open query | Delete | Enable | Disable

Subscription : Pay-As-You-Go Target scope : all Target resource type : all Add tag filter More (3) No grouping

Name ↑↓	Condition	Severity ↑↓	Target scope	Target resource type	Signal type ↑↓	Status ↑↓
ruleee	Previous resource status=... 4 - Verbose	All resources in 'newresou...' All	Resource health	Enabled	...	

Showing 1 - 1 of 1 results.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Monitor | Alerts > Alert rules >

Alert rules

Create | Columns | ...

Search

Name ↑↓
ruleee

ruleee Activity log alert rule

Overview

Activity log | Access control (IAM) | Tags | Diagnose and solve problems | History | Settings | Locks | Alert rule configuration | Action groups | Automation | CLI / PS

Edit | Disable | Duplicate | Delete | Refresh

Essentials

Resource group (move) newresource Severity 4 - Verbose
Location (move) Global Description -
Subscription (move) Pay-As-You-Go
Subscription ID 1d32cd9b-9d2b-444a-9950-a2b38360fa0b
Tags (edit) Add tags

JSON View

Scope

Showing 1 - 1 of 1 results.

Give feedback