

Name: Muhammad Osama

Reg no: 2280151

Section: B

LAB: 11

## Task 1: Use a template to provision an infrastructure:

The screenshot shows the 'Custom deployment' page in the Microsoft Azure portal. The header includes the Microsoft logo, a search bar, and the user's name 'muhammadosama0661...'. The page title is 'Custom deployment' with a subtitle 'Deploy from a custom template'. There are three tabs: 'Select a template', 'Basics', and 'Review + create'. The 'Select a template' tab is active. Below the tabs, there is a section 'Common templates' with links to 'Create a Linux virtual machine', 'Create a Windows virtual machine', 'Create a web app', 'Create a SQL database', and 'Azure landing zone'. A link 'Build your own template in the editor' is also present. On the right side, there is a user profile card for 'muhammadosama...' with a 'Sign out' button and a 'Sign in with a different account' button.

The screenshot shows the 'Edit template' page in the Microsoft Azure portal. The header is the same as the previous screenshot. The page title is 'Edit template' with a subtitle 'Edit your Azure Resource Manager template'. There are three tabs: 'Add resource', 'Quickstart template', and 'Load file'. The 'Load file' tab is active. Below the tabs, there is a code editor showing the JSON template for a deployment. The template includes parameters for 'adminUsername' and 'adminPassword', and resources for 'vmNamePrefix' and 'vmNameSuffix'. The code is as follows:

```
1 {
2   "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "adminUsername": {
6       "type": "string",
7       "metadata": {
8         "description": "Admin username"
9       }
10    },
11    "adminPassword": {
12      "type": "securestring",
13      "metadata": {
14        "description": "Admin password"
15      }
16    },
17    "vmNamePrefix": {
18      "type": "string",
```

Microsoft Azure

Upgrade

Search resources, services, and docs (G+)

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Sign out

Home

Custom deployment

Deploy from a custom template

Help me generate Terraform template

How do ARM templates work?

Can I deploy multiple resources within a

Basics

Subscription

Resource group

Region

Admin Username

Admin Password

Vm Name Prefix

Pip Name Prefix

Nic Name Prefix

Image Publisher

Image Offer

Image SKU

Vm Size

Virtual Network Name

Address Prefix

Azure subscription 1

az104-rg11

Central India

localadmin

\*\*\*\*\*

az104-vm

az104-pip

az104-nic

MicrosoftWindowsServer

WindowsServer

2019-Datacenter

Standard\_D2s\_v3

az104-vnet

10.0.0.0/24

Previous

Next

Create

Microsoft Azure

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Sign out

Home

Microsoft.Template-20260111103939 | Overview

az104-rg11

Resource group

How to manage changes with deployment tools?

Generate Bicep code to duplicate this resource group.

+1

Search

Create

Manage view

Delete resource group

Refresh

Export to CSV

Open query

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Cost Management

Monitoring

Automation

Help

Resources

Recommendations

Filter for any field...

Type equals all

Location equals all

Add filter

Name

Type

Location

az104-nic0

Network Interface

Central India

az104-nsg01

Network security gr...

Central India

az104-pip0

Public IP address

Central India

az104-vm0

Virtual machine

Central India

az104-vm0\_disk1\_9faee9c0b1874c60adt

Disk

Central India

az104-vnet

Virtual network

Central India

az10411jbe72rm4xfee

Storage account

Central India

Add or remove favorites by pressing Ctrl+Shift+F

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Sign out

Home

Monitor

Monitor | Virtual Machines

Microsoft

Search

Refresh

Provide Feedback

Filter by name...

Subscription : Azure subscription 1

Resource group : All resource groups

Location : All locations

Group by : Subscription, Resource group

Overview

Activity log

Alerts

Issues (preview)

Metrics

Logs

Change Analysis

Service health

Workbooks

Dashboards with Grafana

Insights

Onboarding now supports OpenTelemetry metrics. If you enable only OpenTelemetry metrics, your VM will still collect data but will not appear as "Monitored" in this view. [Learn more](#)

Monitored (0)

Not monitored (1)

Workspace configuration

Other onboarding options

Name

Monitor Coverage

Workspace

Azure subscription 1

1 of 1

az104-rg11

1 of 1

az104-vm0

Not enabled

Enable

Microsoft Azure... Upgrade Search resources, services, and docs (G+ /) Copilot muhammadosama0661... DEFAULT DIRECTORY (MUHAMM...)

Home > Monitor | Virtual Machines > Configure monitor | az104-vm0

Capabilities Review + enable

Infrastructure monitoring  
Collect health and performance data from the operating system running on your virtual machine for improved troubleshooting, alerts, and visualizations.  
[Customize infrastructure monitoring](#)

Enable detailed metrics

☒ [Preview] OpenTelemetry metrics [See metrics](#) At no additional cost

Azure Monitor workspace: (New) defaultazuremonitorworkspace-cid

☒ [Classic] Log-based metrics

Log Analytics workspace: (New) defaultworkspace-b27ea303-a842-43a4-8123-8bdf4aec006b-cid

Next Review + enable Give Feedback

Microsoft Azure... Upgrade Search resources, services, and docs (G+ /) Copilot muhammadosama0661... DEFAULT DIRECTORY (MUHAMM...)

Home > Monitor | Virtual Machines > Configure monitor | az104-vm0

Capabilities Review + enable

Infrastructure monitoring

Enable detailed metrics Yes

OpenTelemetry metrics (preview) Enabled

Azure Monitor workspace (New) defaultazuremonitorworkspace-cid

Performance counters Metrics collected:  
filesystem usage, disk usage, disk operation time, disk operations, memory usage, network io, cpu time, network dropped, network errors, system uptime

Log-based metrics (classic) Enabled

Log Analytics workspace (New) defaultworkspace-b27ea303-a842-43a4-8123-8bdf4aec006b-cid

Previous Enable Give Feedback

Microsoft Azure... Upgrade Search resources, services, and docs (G+ /) Copilot muhammadosama0661... DEFAULT DIRECTORY (MUHAMM...)

Home > Monitor Monitor | Virtual Machines

Search Refresh Provide Feedback

Filter by name... Subscription : Azure subscription 1 Resource group : All resou

Location : All locations Group by : Subscription, Resource group

Onboarding now supports OpenTelemetry metrics. If you enable only OpenTelemetry metrics, your VM will still collect data but will not appear as "Monitored" in this view. [Learn more](#)

Monitored (1) Not monitored (0) Workspace configuration Other onboarding options

Name	Monitor Coverage	Data collection rule
Azure subscription 1	1 of 1	
az104-rg11	1 of 1	
az104-vm0	Enabled	MSVMI-centralindia-az104-vm0

### Task 2: Create an alert:

Microsoft Azure Monitor

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📄

🔔

⚙️

🔍

🗨️

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Sign out

Home > Monitor | Alerts >

Create an alert rule

...

Scope

Condition

Actions

Details

Tags

Review + create

Create an alert rule to identify and address issues when important conditions are found in your monitoring data. [Learn more](#)

Scope level ⓘ

Subscription

▼

+ Select scope

Resource

Hierarchy

📌 Azure subscription 1

✕

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🔔

⚙️

🔍

🗨️

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Home > Monitor | Alerts >

Create an alert rule

Scope

Condition

Actions

Details

Tags

Review +

Configure when the alert rule should trigger by selecting a signal and

Signal name \*

Select a signal

See all signals

Select a signal

Delete Virtual Machine

Signal type : All

Signal source

Signal name

Activity log

Delete Virtual Machine (Virtual Machines)

Delete Virtual Machine and Virtual Machine scale sets in a Azure Fleet resource (Fle... Administrative

Delete Virtual Machine Associated Network Security Group (Virtual Machine Associa... Administrative

Delete Virtual Machine diagnostic run command (Virtual Machine Diagnostic RunCo... Administrative

Delete Virtual Machine Extension (Virtual Machine Extensions) Administrative

Delete Virtual Machine Image (Virtual Machine Image) Administrative

Microsoft

Sign out

muhammadosama...  
muhammadosama0661@gm...  
My Microsoft account  
Switch directory

Sign in with a different account

Review + create

Previous

Next: Actions >

Apply

Cancel

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Sign out

Home > Monitor | Alerts >

Create an alert rule

activityLogHistoryBarSeries

5 AM

View events in Azure Monitor - Activity Log

Alert logic

Event Level ⓘ  
All selected

Status ⓘ  
All selected

Event initiated by ⓘ  
\* (All services and users)

Add event initiator

Condition preview

Whenever the Activity Log has an event with Category='Administrative', Signal name='Delete Virtual Machine (Virtual Machines)'

Review + create

Previous

Next: Actions >

### Task 3: Configure action group notifications:

Microsoft Azure Monitor

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Sign out

Home > Monitor | Alerts > Create an alert rule >

Create action group

This is a summary of your action group. Please review to ensure the information is correct and consider [Azure Monitoring Pricing](#) and the [Azure Privacy Statement](#).

Basics

Subscription

Azure subscription 1

Resource group

az104-rg11

Region

global

Action group name

Alert the operations team

Display name

AlertOpsTeam

Notifications

Notification type

Name

Selected

Email/SMS message/Push/Voice

VM was deleted

Email

Create

Previous



**Microsoft Azure** <azure-noreply@microsoft.com>  
to me ▾

11:09 AM (0 minutes ago)



## You've been added to an Azure Monitor action group

You are now in the AlertOpsTeam action group and will receive notifications sent to the group.

[View details on Azure Monitor action groups >](#)

### Account information

← Reply

→ Forward



Microsoft Azure... Upgrade Search resources, services, and docs (G+/) Copilot

Home > Monitor | Alerts >

Create an alert rule ...

Scope Condition Actions Details Tags Review + create

Scope

Scope level Subscription

Resource Azure subscription 1

Condition

Condition preview Whenever the Activity Log has an event with Category='Administrative', Signal name='Delete Virtual Machine (Virtual Machines)'

Actions

Action group name Contains actions

Create Previous

Microsoft

Sign out

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Sign in with a different account

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

Home > Monitor

Monitor | Alerts

Which alerts require my immediate attention Help me setup a new alert rule Catch me up on alerts fired th

Search View as timeline (preview) Create Alert rules Action groups Alert processing r

Overview Activity log Alerts

Issues (preview) Metrics Logs Change Analysis Service health Workbooks Dashboards with Grafana

Subscription : b27ea303-a842-43a4-8123-8bdf4aec006b Time rang

Alert condition : Fired Severity : all Add filter

Total alerts Critical Error Warning Informational Verbose

0 0 0 0 0 0

Name ↑↓ Severity ↑↓ Affected resource ↑↓ Alert condition ↑↓ User response ↑↓ Fire time ↑↓

Microsoft

Sign out

muhammadosama... muhammadosama0661@gm... My Microsoft account Switch directory ...

Sign in with a different account

No grouping

## Task 4: Trigger an alert and confirm it is working:

The screenshot is divided into two main horizontal sections. The top section shows the Azure portal interface for deleting a virtual machine named 'az104-vm0'. The bottom section shows a Gmail inbox with an alert from Microsoft Azure.

**Azure Portal: Delete az104-vm0**

The 'Delete az104-vm0' dialog box is displayed. It includes the following elements:

- Apply force delete:** A checkbox that is checked.
- Associated resource type:** A list of resources associated with the VM:

Associated resource type	Quantity	Delete with VM
OS disk	1	<input type="checkbox"/>
Network interfaces	1	<input type="checkbox"/>
Public IP addresses	1	<input type="checkbox"/>
- Confirmation:** A checkbox labeled 'I have read and understand that this virtual machine as well as any selected associated resources listed above will be deleted.' is checked.
- Buttons:** 'Delete' and 'Cancel' buttons.

**Gmail: Important notice: Azure Monitor alert VM was deleted was activated**

The email is from Microsoft Azure <azure-noreply@microsoft.com> and was received at 11:24 AM (0 minutes ago). The subject is 'Important notice: Azure Monitor alert VM was deleted was activated'. The body of the email states:

**Azure Monitor alert 'VM was deleted' was activated for 'az104-vm0' at January 11, 2026 6:18 UTC**

You're receiving this notification as a member of the AlertOpsTeam action group because an Azure Monitor alert was activated.

Microsoft Azure Monitor Alerts

Home > Monitor

Monitor Alerts

Search

View as timeline (preview) | Create | Alert rules | Action groups | Alert processing rules

Subscription: b27ea303-a842-43a4-8123-8bdf4aec006b | Time range

Alert condition: Fired | Severity: all | Add filter

Total alerts: 3 | Critical: 0 | Error: 0 | Warning: 0 | Informational: 0 | Verbose: 3

Name	Severity	Affected resource	Alert condition	User response	Fire time
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM

Showing 1 - 3 of 3 results.

Give feedback

Microsoft

Sign out

muhammadosama...

muhammadosama0661@gm...

My Microsoft account

Switch directory

Sign in with a different account

No grouping

Microsoft Azure Monitor Alerts

Home > Monitor

Monitor Alerts

Search

View as timeline (p

Subscription: b27ea303-a842-43a4-8123-8bdf4aec006b | Time range

Alert condition: Fired | Severity: all | Add filter

Total alerts: 3 | Critical: 0 | Error: 0 | Warning: 0 | Informational: 0 | Verbose: 3

Name	Severity	Affected resource	Alert condition	User response	Fire time
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM
VM was deleted	4 - Verbose	az104-vm0	Fired	New	1/11/2026, 11:24 AM

Showing 1 - 3 of 3 results

VM was deleted

Activity log alert details

Copy link | Go to alert rule

Summary | History

General details

Severity	Fired time	Affected resource	Monitor service	Alert condition	User response
4 - Verbose	1/11/2026, 11:24 AM	az104-vm0	ActivityLog Administrative	Fired	New

The target resource az104-vm0 has been moved or deleted.

Why did this alert fire?

The following event occurred: Microsoft.Compute/virtualMachines/delete

Event level	Category	Initiated by
-------------	----------	--------------

Microsoft

Sign out

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muhammadosama0661@gm...

My Microsoft account

Switch directory

Sign in with a different account



## Task 5: Configure an alert processing rule:

The screenshot shows the 'Create an alert processing rule' page in the Microsoft Azure portal. The page is divided into several sections: Scope, Rule settings, Scheduling, and Details. The Scope section shows 'Azure subscription 1' as the resource. The Rule settings section shows 'Suppress notifications' as the rule type. The Scheduling section shows 'At a specific time' as the rule type, with a schedule from '01/11/2026 at 11:00 AM to 01/12/2026 at 9:00 AM (UTC+05:00 Islamabad, Karachi)'. The Details section has 'Create' and 'Previous' buttons. A user profile dropdown is visible on the right side of the page.

Microsoft Azure portal interface showing the 'Create an alert processing rule' page. The page is divided into sections: Scope, Rule settings, Scheduling, and Details. The Scope section shows 'Azure subscription 1' as the resource. The Rule settings section shows 'Suppress notifications' as the rule type. The Scheduling section shows 'At a specific time' as the rule type, with a schedule from '01/11/2026 at 11:00 AM to 01/12/2026 at 9:00 AM (UTC+05:00 Islamabad, Karachi)'. The Details section has 'Create' and 'Previous' buttons. A user profile dropdown is visible on the right side of the page.

## Task 6: Use Azure Monitor log queries:

The screenshot shows the 'Monitor | Logs' page in the Microsoft Azure portal. The page is divided into sections: Overview, Activity log, Alerts, Issues (preview), Metrics, and Logs. The Logs section is selected, showing a list of logs. A 'Queries hub' overlay is visible, showing 'Virtual machines' as the resource type. The 'Queries hub' overlay has a search bar and a 'Run' button. The 'Queries hub' overlay also shows a list of queries, including 'Count heartbeats' and 'Last heartbeat of each computer'. A user profile dropdown is visible on the right side of the page.

Microsoft Azure portal interface showing the 'Monitor | Logs' page. The page is divided into sections: Overview, Activity log, Alerts, Issues (preview), Metrics, and Logs. The Logs section is selected, showing a list of logs. A 'Queries hub' overlay is visible, showing 'Virtual machines' as the resource type. The 'Queries hub' overlay has a search bar and a 'Run' button. The 'Queries hub' overlay also shows a list of queries, including 'Count heartbeats' and 'Last heartbeat of each computer'. A user profile dropdown is visible on the right side of the page.

Microsoft Azure

Search resources, services, and docs (G+)

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Home > Monitor

Monitor | Logs

Search

Overview  
Activity log  
Alerts  
Issues (preview)  
Metrics  
Logs  
Change Analysis  
Service health

New Query 1\*  
User Query  
Time range: Set in query  
Show: 1000 results  
Add  
Results  
Computer  
count  
az104-vm0 30

Microsoft  
Sign out  
muhammadosama...  
muhammadosama0661@gm...  
My Microsoft account  
Switch directory  
Sign in with a different account

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

muhammadosama0661...  
DEFAULT DIRECTORY (MUHAMM...)

Home > Monitor

Monitor | Logs

Search

Overview  
Activity log  
Alerts  
Issues (preview)  
Metrics  
Logs  
Change Analysis  
Service health  
Workbooks  
Dashboards with Grafana  
Insights  
Managed Services

New Query 1\*  
Run  
Time range: Set in query  
Show: 1000 results  
KQL mode  
1 // Count heartbeats  
2 // Count all computers heartbeats from the last hour.  
3 // Count computers heartbeats in the last hour.  
4 // Normally, agents on VMs generate Heartbeat event every minute.  
5 InsightsMetrics  
6 | where TimeGenerated > ago(1h)  
7 | where Name == "UtilizationPercentage"  
8 | summarize avg(Val) by bin(TimeGenerated, 5m), Computer  
9 | render timechart  
Results  
TimeGenerated [UTC] ↑↓ Computer avg\_Val  
> 1/11/2026, 6:15:00.000 AM az104-vm0 0.21432600000000002  
> 1/11/2026, 6:10:00.000 AM az104-vm0 0.23346619999999998

Save  
Share  
Queries hub

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

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Home > Monitor

Monitor | Logs

Search

Overview  
Activity log  
Alerts  
Issues (preview)  
Metrics  
Logs  
Change Analysis  
Service health  
Workbooks  
Dashboards with Grafana  
Insights  
Managed Services

4 // Normally, agents on VMs generate Heartbeat event every minute.  
5 InsightsMetrics  
6 | where TimeGenerated > ago(1h)  
7 | where Name == "UtilizationPercentage"  
8 | summarize avg(Val) by bin(TimeGenerated, 5m), Computer  
9 | render timechart  
Results  
Chart  
avg\_Val  
TimeGenerated [UTC]  
5:45 AM 5:50 AM 5:55 AM 6:00 AM 6:05 AM 6:10 AM 6:15 AM  
az104-vm0  
1s 955ms Display time (UTC+00:00) Query details 7 records

Microsoft  
Sign out  
muhammadosama...  
muhammadosama0661@gm...  
My Microsoft account  
Switch directory  
Sign in with a different account

Chart forming