

Platform Engineering Assignment-3

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1433832

1) Create and Configure an Azure SQL Database:

Step -1: Create a new Azure SQL Database.


Microsoft Azure

Search resources, services, and docs (G+)

[Home](#) > [Select SQL deployment option](#) >

Create SQL Database Server

Microsoft

 Changing Basic options may reset selections you have made. Review all options prior to creating the resource.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Azure Pass - Sponsorship

Resource group *

ResourceMoverRG-eastus-centralindia-inc

[Create new](#)

Server details

Enter required settings for this server, including providing a name and location.

Server name *

nithinser

.database.windows.net

Location *


(Asia Pacific) Central India


Authentication

[Home](#) > [Select SQL deployment option](#) >

Create SQL Database Server

Microsoft

 Changing Basic options may reset selections you have made. Review all options prior to creating the resource.

 Azure Active Directory (Azure AD) is now Microsoft Entra ID. [Learn more](#)

Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) or using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#) , or select both SQL and Microsoft Entra authentication.

Authentication method

☐ Use Microsoft Entra-only authentication

☐ Use both SQL and Microsoft Entra authentication

☒ Use SQL authentication

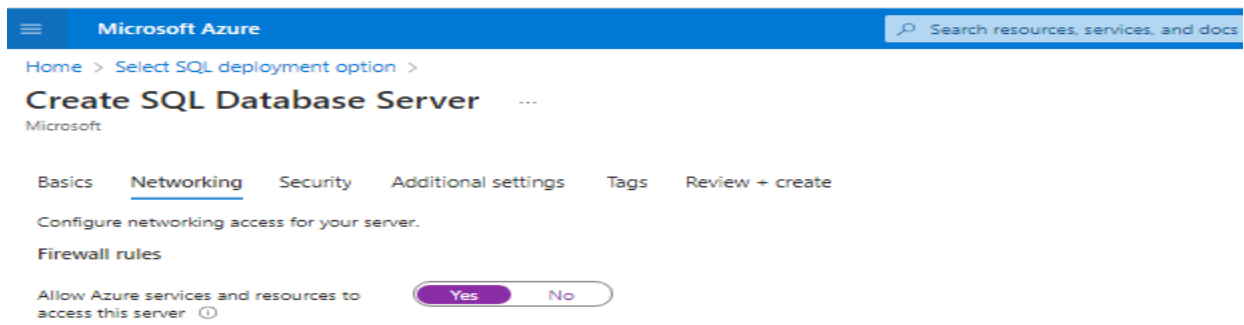
Server admin login *

nithinser

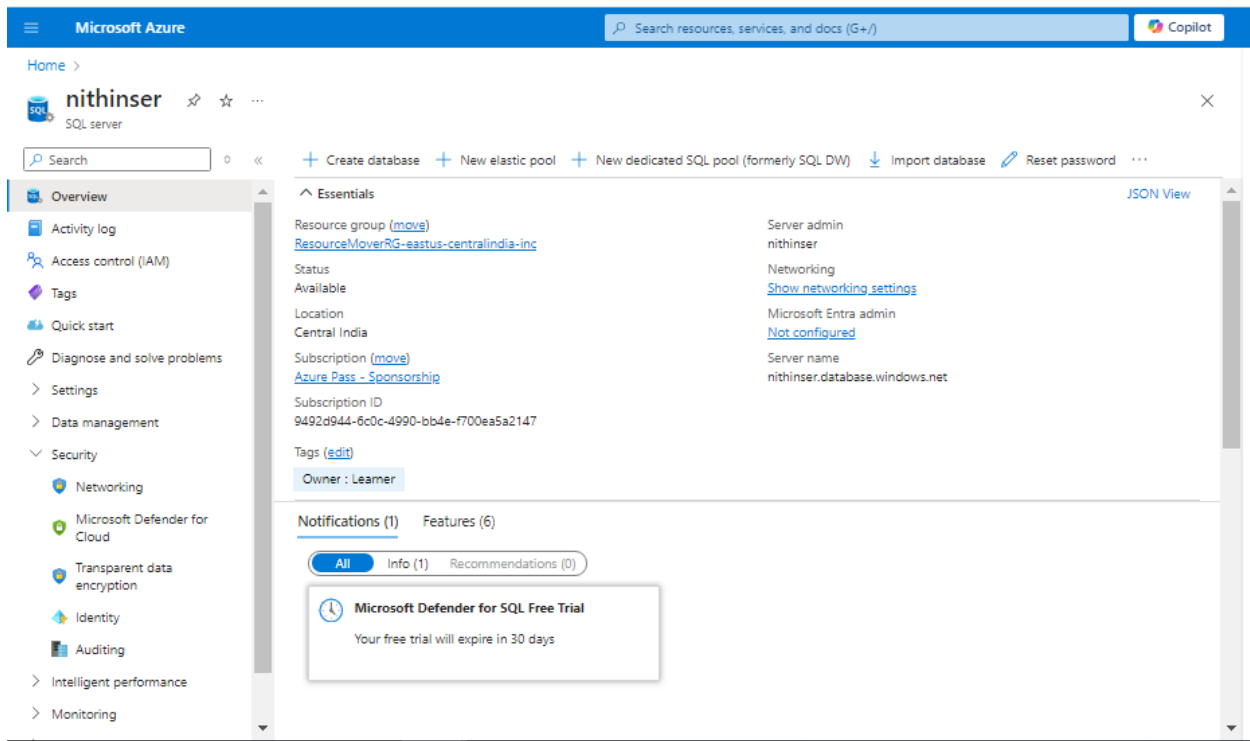
Password *

Confirm password *

- Change the firewall rules to yes for allowing the IP address



- Now click Review and create.



Step-2: Click on the create database and create one database with sample data.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a search bar and a 'Copilot' button. The breadcrumb trail indicates the path: Home > Microsoft SQL Database > newDatabaseExistingServer_c7659aa9682b4ee9 | Overview. The main heading is 'nithindb (nithinser/nithindb)' with a sub-label 'SQL database'. Below this, there's a search bar and a row of action buttons: Copy, Restore, Export, Set server firewall, Delete, Connect with..., and Feedback. A left-hand navigation pane lists various options: Overview (selected), Activity log, Tags, Diagnose and solve problems, Query editor (preview), Mirror database in Fabric (preview), Favorites, Logs, Settings, Data management, Integrations, Power Platform, Security, Intelligent performance, Monitoring, and Automation. The main content area displays a 'Mirror databases in Microsoft Fabric' notification, followed by an 'Essentials' section with details like Resource group, Status (Online), Location (Central India), Subscription, and Subscription ID. On the right, there's a 'JSON View' section with details like Server name, Elastic pool, Connection strings, Pricing tier, and Earliest restore point. At the bottom, there's a navigation bar with links: Getting started, Monitoring, Properties, Features, Notifications (1), Integrations, and Tutorials.

Step-3: After creation of DB login to it.

The screenshot shows the 'Welcome to SQL Database Query Editor' page. At the top, there's a navigation bar with links: Login, New Query, Open query, Feedback, and Getting started. Below this, there's a descriptive text about the Query editor (preview) tool. The main content area features a large 'SQL' logo and the text 'Welcome to SQL Database Query Editor'. There are two authentication options: 'SQL server authentication' and 'Microsoft Entra authentication'. The 'SQL server authentication' section has fields for 'Login' (containing 'nithinser') and 'Password' (masked with dots and a green checkmark), followed by an 'OK' button. The 'Microsoft Entra authentication' section has a blue button that says 'Continue as nithin.namburi10703@outl...'. An 'OR' separator is placed between the two authentication sections.

Step-4: Create tables, insert sample data, and run basic SQL queries.

Feedback Getting started

Query 1 × Query 2 × Query 3 ×

Run Cancel query Save query Export data as Show only Editor

```
1 CREATE TABLE departments (name VARCHAR(100), location VARCHAR(100));
```

Results Messages

Query succeeded: Affected rows: 0

Feedback Getting started

Query 1 × Query 2 × Query 3 ×

Run Cancel query Save query Export data as Show only Editor

```
1 INSERT INTO departments (name, location) VALUES ('Human Resources', 'New York');
2 INSERT INTO departments (name, location) VALUES ('Finance', 'San Francisco');
3 INSERT INTO departments (name, location) VALUES ('IT', 'Chicago');
4 INSERT INTO departments (name, location) VALUES ('Marketing', 'Los Angeles');
5
```

Results Messages

Query succeeded: Affected rows: 4

Query 1 × Query 2 × Query 3 × Query 4 ×

Run Cancel query Save query Export data as Show only Editor

```
1 SELECT * FROM departments;
2
```

Results Messages

Search to filter items...

name	location
Human Resources	New York
Finance	San Francisco
IT	Chicago
Marketing	Los Angeles

Step-5: Create Employees and Departments tables and demostorate INNER JOIN, LEFT OUTER JOIN and RIGHT OUTER JOIN.

Query 1 × Query 2 × Query 3 × Query 4 × Query 5 ×

Run ☐ Cancel query Save query Export data as

```
1 CREATE TABLE Departments4 (  
2     DepartmentID INT PRIMARY KEY,  
3     DepartmentName VARCHAR(50)  
4 );  
5  
6
```

Query 1 × Query 2 × Query 3 × Query 4 × Query 5 × Query 6 × Query 7 ×

Run ☐ Cancel query Save query Export data as Show only Editor Launch

```
1  
2 CREATE TABLE Employees (  
3     EmployeeID INT PRIMARY KEY,  
4     EmployeeName VARCHAR(50),  
5     DepartmentID INT,  
6     FOREIGN KEY (DepartmentID) REFERENCES Departments4(DepartmentID)  
7 );
```

Results Messages

- Inner Join

Query 1 × Query 2 × Query 3 × Query 4 × Query 5 × Query 6 × Query 7 × Query 8 × Query 9 × Query 10 ×

Run ☐ Cancel query Save query Export data as Show only Editor Launch inline copilot

```
1 SELECT Employees.EmployeeID, Employees.EmployeeName, Departments4.DepartmentName  
2 FROM Employees  
3 INNER JOIN Departments4  
4 ON Employees.DepartmentID = Departments4.DepartmentID;  
5
```

Results Messages

Search to filter items...

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
2	Bob	Finance
3	Charlie	HR

- Left Outer join

Query 1 × Query 2 × Query 3 × Query 4 × Query 5 × Query 6 × Query 7 × Query 8 × Query 9 × Query 10 ×

Run Cancel query Save query Export data as Show only Editor Launch inline copilot

```

1 SELECT Employees.EmployeeID, Employees.EmployeeName, Departments4.DepartmentName
2 FROM Employees
3 LEFT OUTER JOIN Departments4
4 ON Employees.DepartmentID = Departments4.DepartmentID;
5

```

Results Messages

Search to filter items...

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
2	Bob	Finance
3	Charlie	HR
4	Diana	

- Right outer join.

Query 1 × Query 2 × Query 3 × Query 4 × Query 5 × Query 6 × Query 7 × Query 8 × Query 9 × Query 10 ×

Run Cancel query Save query Export data as Show only Editor Launch inline copilot

```

1 SELECT Employees.EmployeeID, Employees.EmployeeName, Departments4.DepartmentName
2 FROM Employees
3 RIGHT OUTER JOIN Departments4
4 ON Employees.DepartmentID = Departments4.DepartmentID;
5

```

Results Messages

Search to filter items...

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
3	Charlie	HR
2	Bob	Finance
		IT

Step-6 :Create a backup for the database.

The screenshot shows the 'Backups' page for a SQL server named 'nithinser'. The left sidebar contains navigation options: Overview, Activity log, Access control (IAM), Tags, Quick start, Diagnose and solve problems, Favorites, Logs, Settings, and Data management. The main content area is titled 'Available backups' and 'Retention policies'. It includes a search bar for databases and a filter for 'Show Databases' (Active/Deleted). Below this is a table listing available backups.

Database	Earliest PITR rest...	Available LTR bac...	Last LTR backup t...	Action
nithindb	2024-08-21 15:02 UTC	None	None	Restore
nithindb_2024-08-21T15-11Z	No restore point avail...	None	None	Restore

Step-7: Crate replica for it.

The screenshot shows the 'nithindb (nithinrep/nithindb)' database page. The left sidebar contains navigation options: Overview, Activity log, Tags, Diagnose and solve problems, Query editor (preview), Mirror database in Fabric (preview), Favorites, Settings, Compute + storage, Connection strings, and Properties. The main content area displays the 'Mirror databases in Microsoft Fabric' section, which includes a table of database properties.

Property	Value
Resource group	nithin
Status	Online
Location	Central India
Subscription	Azure Pass - Sponsorship
Subscription ID	9492d944-6c0c-4990-bb4e-f700ea5a2147

Here when you try to crete or update any of the query its not going to happen because it is just a read replica.

The screenshot shows the 'Query editor' for the 'nithindb' database. The left sidebar contains navigation options: Tables, Views, and Stored Procedures. The main content area displays the 'Query editor' with a SQL query that attempts to update a department name. The query is as follows:

```
5
6 -- Update a department name
7 UPDATE departments
8 SET department_name = 'HR'
9 WHERE department_id = 1;
10
```

Below the query editor, the 'Results' and 'Messages' tabs are visible. The 'Messages' tab shows an error message: 'Failed to execute query. Error: Failed to update database "harshadb" because the database is read-only.'

2) Create and Configure an Azure MYSQL Database.

Step-1: Create a new Azure SQL Database.

Flexible server Microsoft

⚠ Server names, networking connectivity method, zone redundant HA and backup redundancy cannot be changed after server is created. Re

⚠ Changing Basic options may reset selections you have made. Review all options prior to creating the resource.

[Create new](#)

Server details

Enter required settings for this server, including picking a location and configuring the compute and storage resources.

Server name * ⓘ ✓

Region * ⓘ ▼

MySQL version * ⓘ ▼

Workload type ⓘ

☒ For small or medium size databases

☐ Tier 1 Business Critical Workloads

☐ For development or hobby projects

Compute + storage ⓘ

General Purpose, D2ads_v5
2 vCores, 8 GiB RAM, 20 GiB storage, Auto scale IOPS
Geo-redundancy : Disabled
[Configure server](#)

Availability zone ⓘ ▼

High availability

[Review + create](#) [Next : Networking >](#)

Book1 - Excel

Step-2: In Networking setting change the firewall rules to allow the specific IP addresses.
Configuring firewall rules to allow access to your database from specific IP addresses.

Home > Azure Database for MySQL servers > Select Azure Database for MySQL deployment option >

Flexible server

Microsoft

⚠ Server names, networking connectivity method, zone redundant HA and backup redundancy cannot be changed after server is created.

Connectivity method ⓘ

- ☒ Public access (allowed IP addresses) and Private endpoint
☐ Private access (VNet Integration)

ℹ Connections from the IP addresses configured in the Firewall rules section below will have access to this server. By default, no public IP addresses are allowed. [Learn more](#) ⓘ

Public access

☒ Allow public access to this resource through the internet using a public IP address ⓘ

Firewall rules

Inbound connections from the IP addresses specified below will be allowed to port 3306 on this server. [Learn more](#) ⓘ

☒ Allow public access from any Azure service within Azure to this server ⓘ

+ Add current client IP address (103.172.93.212) + Add 0.0.0.0 - 255.255.255.255

Firewall rule name	Start IP address	End IP address
ClientIPAddress_2024-8-19-9-7-48	103.172.93.212	103.172.93.212
Firewall rule name	Start IP address	End IP address

Review + create

< Previous

Next : Security >

Step-3: Click on Review and create and go to the resource.

Home > MySqlFlexibleServer_42b9aba4636646bdafae29771e696bca | Overview >

chanduser ☆ ☆ ...
Azure Database for MySQL flexible server

🔍 Search 0 << [Connect](#) [View process list](#) [Delete](#) [Reset password](#) [Restore](#) [Restart](#) [Stop](#) [Refresh](#) [Feedback](#)

Overview

Activity log

Access control (IAM)

Tags

✖ Diagnose and solve problems

📖 Learning center

> Settings

> Power Platform

> Security

> Monitoring

> Automation

> Help

🔗 Azure Database for MySQL – Live Webinar series: Learn about the latest updates (with demos) and interact directly with product group on the 2nd Wednesday of every month! [Subscribe to our YouTube channel](#) ⓘ today!

Essentials

Subscription ([move](#)) : [Azure Pass - Sponsorship](#)
Subscription ID : 9492d944-60c-4990-bb4e-f700ea5a2147
Resource group ([move](#)) : [chandu](#)
Status : Available
Location : Central India

Tags ([edit](#)) : Owner : Learner

Server name : chanduser.mysql.database.azure.com
Server admin login name : chanduser
Configuration : [General Purpose_D2ads_v5_2_vCores_8_GiB_RAM_20_GiB_storage](#)
MySQL version : 8.0
Availability zone : 1
Created On : 2024-08-19 16:14:25.2236846 UTC

Getting started Properties Recommendations Monitoring Tutorials

Start your project

Connect to your database for the first time with a few simple steps.



Learn

Learn about MySQL Flexible Server through a



Allow access

Configure network access to your MySQL



Connect

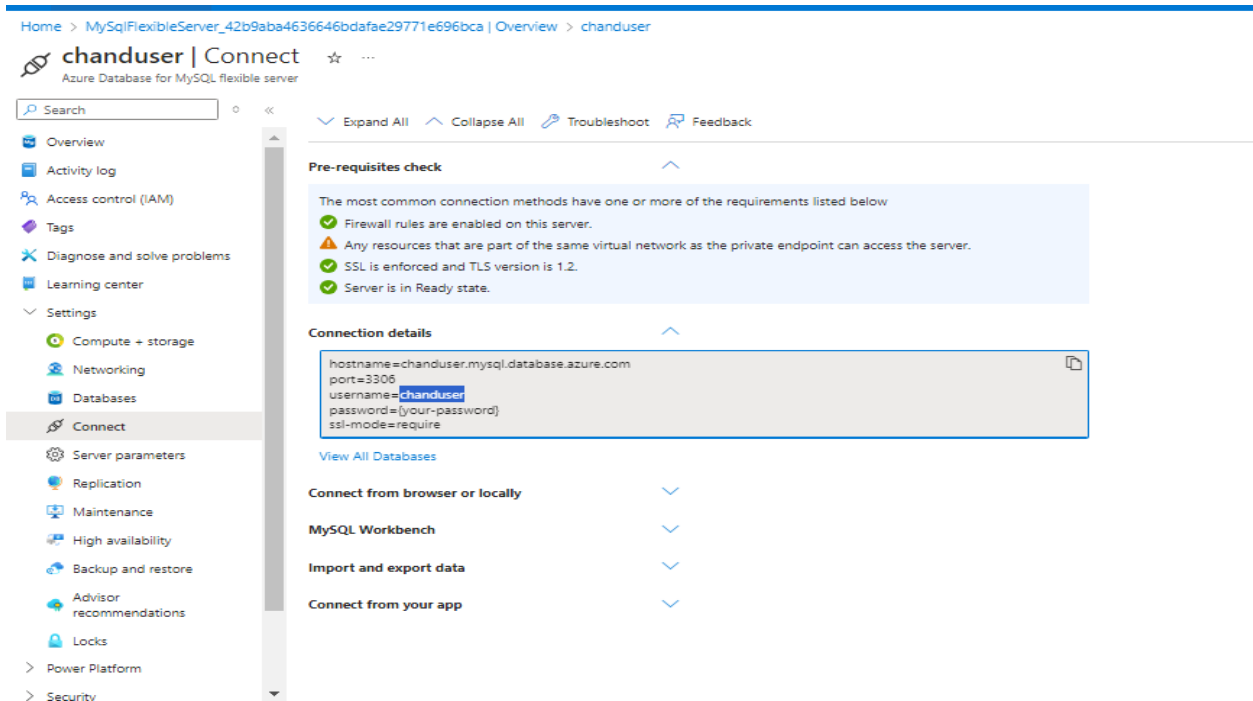
View interactive steps to learn how to



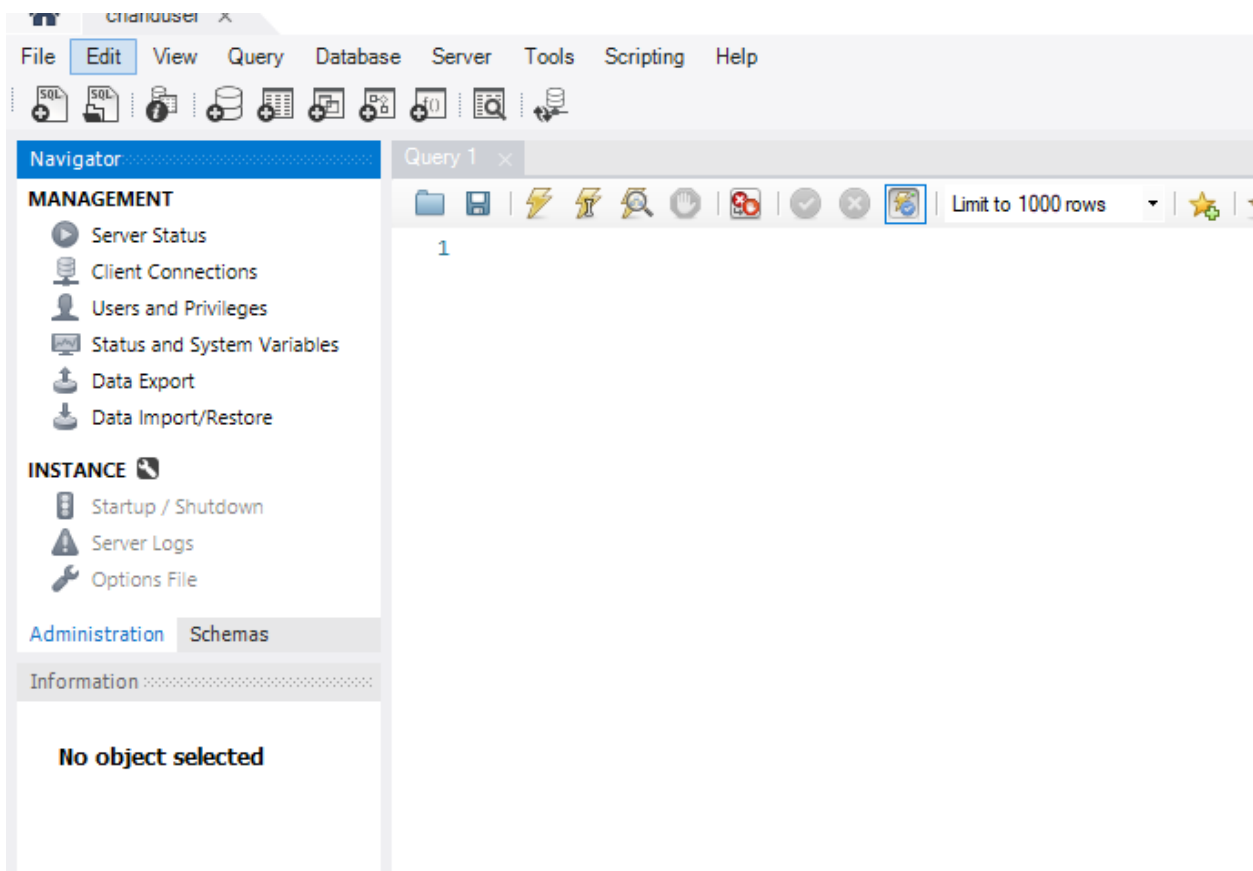
Samples

Get in a sample database online to test

Step-4 : Now open the Mysql workbench and create a new sql connection with the below details.

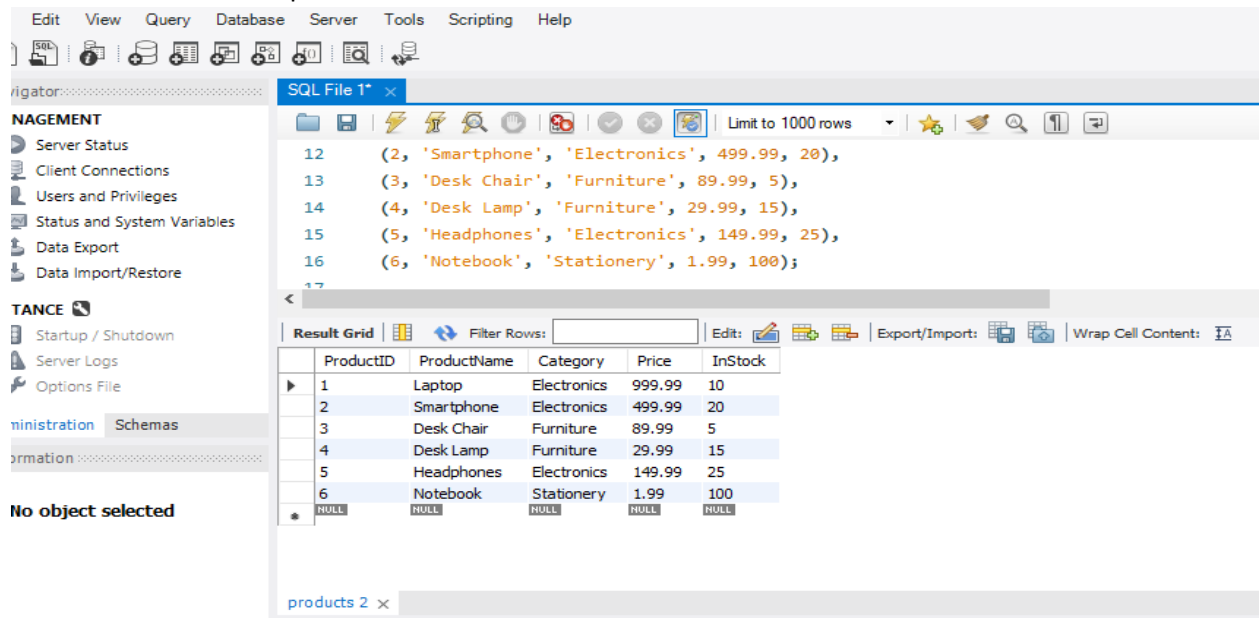


Step-5: Now click on the new SQL editor created.



Step-6: Now you can perform the queries of your interest.

- Create tables, insert sample data, and run basic SQL queries.
- Created a table named products under the chandudb database and inserted data to it.



Step-7: Perform some queries on it.

```

19
20 • SELECT ProductID, ProductName, Price
21 FROM Products
22 WHERE Price > 100;
23

```

ProductID	ProductName	Price
1	Laptop	999.99
2	Smartphone	499.99
5	Headphones	149.99
NULL	NULL	NULL

```

20
21 • SELECT ProductID, ProductName, Price
22 FROM Products
23 WHERE Category = 'Electronics';
24

```

Result Grid | Filter Rows: | Edit: | Export

ProductID	ProductName	Price
1	Laptop	999.99
2	Smartphone	499.99
5	Headphones	149.99
NULL	NULL	NULL

- Create Employees and Departments tables and demonstrate INNER JOIN, LEFT OUTER JOIN and RIGHT OUTER JOIN.

```

1 • CREATE TABLE Departments (
2     DepartmentID INT PRIMARY KEY,
3     DepartmentName VARCHAR(50)
4 );
5
6 • CREATE TABLE Employees (
7     EmployeeID INT PRIMARY KEY,
8     EmployeeName VARCHAR(50),
9     DepartmentID INT,
10    FOREIGN KEY (DepartmentID) REFERENCES Departments(DepartmentID)
11 );
12

```

- Inner Join

```

24
25 • SELECT Employees.EmployeeID, Employees.EmployeeName, Departments.DepartmentName
26 FROM Employees
27 INNER JOIN Departments
28 ON Employees.DepartmentID = Departments.DepartmentID;
29

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
3	Charlie	HR
2	Bob	Finance

- Left Outer Join

The screenshot shows a SQL query window with the following query:

```

27 • SELECT Employees.EmployeeID, Employees.EmployeeName, Departments.DepartmentName
28 FROM Employees
29 LEFT OUTER JOIN Departments
30 ON Employees.DepartmentID = Departments.DepartmentID;
31
32
33

```

Below the query, the 'Result Grid' is displayed with the following data:

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
2	Bob	Finance
3	Charlie	HR
4	Diana	NULL

- Right Outer Join

The screenshot shows a SQL query window with the following query:

```

28 • SELECT Employees.EmployeeID, Employees.EmployeeName, Departments.DepartmentName
29 FROM Employees
30 RIGHT OUTER JOIN Departments
31 ON Employees.DepartmentID = Departments.DepartmentID;
32
33
34

```

Below the query, the 'Result Grid' is displayed with the following data:

EmployeeID	EmployeeName	DepartmentName
1	Alice	HR
3	Charlie	HR
2	Bob	Finance
NULL	NULL	IT

Step-8 : Configure automated backups and test restoring a database from a backup

The screenshot shows the Azure portal interface for configuring backups. At the top, there are buttons for 'Backup now', 'Export now (preview)', 'Refresh', 'Feedback', and 'FAQs'. Below this, a message states: 'Azure Database for MySQL flexible servers are backed up automatically. Available full backups for restores are listed below. [Learn more](#)'.

A warning icon and text indicate: 'Azure Database for MySQL flexible server takes full backups once daily. You may fail to see your daily backup if the transactional load on your server instance is high throughout the day. If a backup fails, our backup service will attempt to retry. If at some point in time a forced or automatic failover is performed, you may lose viewing rights to the server's backups. Despite the invisibility of backups on the portal the flexible server is successfully taking daily aut within the retention period.'

Below the warning, the 'Earliest restore point' is shown as '2024-08-19 16:16:41.016 UTC'. There are also dropdown menus for 'Completion timestamp range' (set to 'All') and 'Backup types' (set to 'All').

The main section displays a table of backups:

Name	Status	Completion timestamp (UTC) ↓	Retained till (UTC)	Type	Actions
manbackup	Completed	2024-08-19 17:30:23.363	2024-08-26 17:30:23.363	On-Demand backup	Fast restore
Automated backup #1	Completed	2024-08-19 16:17:16.323	2024-08-26 16:17:16.323	Automated full backup	Fast restore

Step-9: Now we try to restore the initial backup. Go to settings and click on the backup and restore option and click fast restore on the oldest backup available.

Microsoft Azure

Home > RestoreMySQLFlexibleServer_186b7ec6b69f44cd812afd440266c6b2 | Overview >

chandubcup
Azure Database for MySQL flexible server

Search

Connect View process list Delete Reset password Restore Restart Stop Refresh Feedback

Overview
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Settings
Compute + storage
Networking
Databases
Connect
Server parameters
Replication
Maintenance
High availability
Backup and restore

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Essentials

Subscription (move)	: Azure Pass - Sponsorship	Server name	: chandubcup
Subscription ID	: 9492d944-6c0c-4990-bb4e-f700ea5a2147	Server admin login name	: chanduse
Resource group (move)	: chandu	Configuration	: General F
Status	: Available	MySQL version	: 8.0
Location	: Central India	Availability zone	: 1
		Created On	: 2024-08-

Tags (edit) : Owner : Learner

Getting started Properties Recommendations Monitoring Tutorials

Start your project
Connect to your database for the first time with a few simple steps.

Learn
Learn about MySQL Flexible Server through a curated list of modules to take you from zero

Allow access
Configure network access to your MySQL database

Connect
View connection string to learn how to connect with the application driver you use

Sample
Setup a sample

Now connect to the workbench for the backup database and check point of time backup.

Query 1

show databases;

Result Grid

Database
information_schema
mysql
performance_schema
sys

Step-10: Set up and configure geo-replication to create readable secondary replicas in different regions.

- For creating a replica go to the replication settings and click on the create replica.

Home > MySQLFlexibleServer_bf2430d698dd48f2ba59ac6852e4540d | Overview >

chandurep
Azure Database for MySQL flexible server

Search

Connect View process list Delete Reset password Restore Restart Stop Refresh Feedback

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
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- Settings
 - Compute + storage
 - Networking
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 - High availability
 - Backup and restore

Azure Database for MySQL – Live Webinar series: Learn about the latest updates (with demos) and interact directly with product group on the 2nd Wednesday of every month! [Subscribe to our YouTube channel](#)

Essentials

Subscription (move) : Azure Pass - Sponsorship	Server name : chandurep
Subscription ID : 9492d944-6c0c-4990-bb4e-f700ea5a2147	Server admin login name : chanduser
Resource group (move) : chandy	Configuration : General Purpose
Status : Available	MySQL version : 8.0
Location : Central India	Availability zone : 1
	Created On : 2024-08-1

Tags (edit) : Owner : Learner

Getting started Properties Recommendations Monitoring Tutorials

Start your project

Connect to your database for the first time with a few simple steps.

Learn
Learn about MySQL Flexible Server through a series of articles and videos.

Allow access
Configure network access to your MySQL database.

Connect
View connection string to learn how to connect with the replication driver you use.

Sample
Setup a sample database.

Open the replica SQL connection and then try to create or update anything.

Output

Action Output

#	Time	Action	Message
1	11:00:33	show databases	4 row(s) returned
2	11:01:15	create database mydb	Error Code: 1290. The MySQL server is running with the --read-only option so it cannot execute this statement

- We use replicas to only read the databases but not to manipulate the databases.

3) Host a Jenkins image on azure container instance.

Ans)

Step-1: Create a Container instance.

Home > Container instances >

Create container instance

Basics Networking Advanced Tags Review + create

Azure Container Instances (ACI) allows you to quickly and easily run containers on Azure without managing servers or having to learn new tools. ACI offers per-second billing to minimize the cost of running containers on the cloud.
[Learn more about Azure Container Instances](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Azure Pass - Sponsorship

Resource group * ⓘ nithin
[Create new](#)

Container details

Container name * ⓘ nithinco ✓

Region * ⓘ (Asia Pacific) Central India

Availability zones (Preview) ⓘ None

SKU Standard

Standard SKU is available for all regions. Confidential SKU is only available for

Step-2: On the basics page change the image resource to the other registry and configure the size to 2 cpu's , 2GB memory.

Microsoft Azure

Home > Container instances >

Create container instance

Image source * ⓘ

☐ Quickstart images

☐ Azure Container Registry

☒ Other registry

Please be aware that Docker Hub has recently introduced a pull rate limit on Docker images. When specifying an image from the Docker Hub registry, this may impact the creation of your container instance. [Learn more](#)

Run with Azure Spot discount ⓘ

☐

Spot containers are not available in the selected region. [Learn more](#)

Image type * ⓘ

☒ Public ☐ Private

Image * ⓘ

Example: mydockerregistry/hello-world

If not specified, Docker Hub will be used for the container registry and the latest version of the image will be pulled.

OS type *

☒ Linux ☐ Windows

This selection must match the OS of the image chosen above.

Size * ⓘ

1 vcpu, 1.5 GB memory, 0 gpus

[Change size](#)

Change container ...

Configure the resource requirements for your container. The available values are based on region, OS type, and networking options.
[Learn more about resource requirements in ACI](#)

Number of CPU cores * ⓘ

2 ✓

1-32

Memory (GiB) * ⓘ

2 ✓

1-256

GPU type (preview) * ⓘ

None

Step-3: Give the image path as jenkins/Jenkins it will automatically retrieve from the docker hub.

Run with Azure Spot discount ⓘ ☐

Spot containers are not available in the selected region. [Learn more](#) ➤

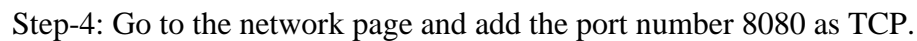
Image type * ⓘ ☒ Public ☐ Private

Image * ⓘ ✓

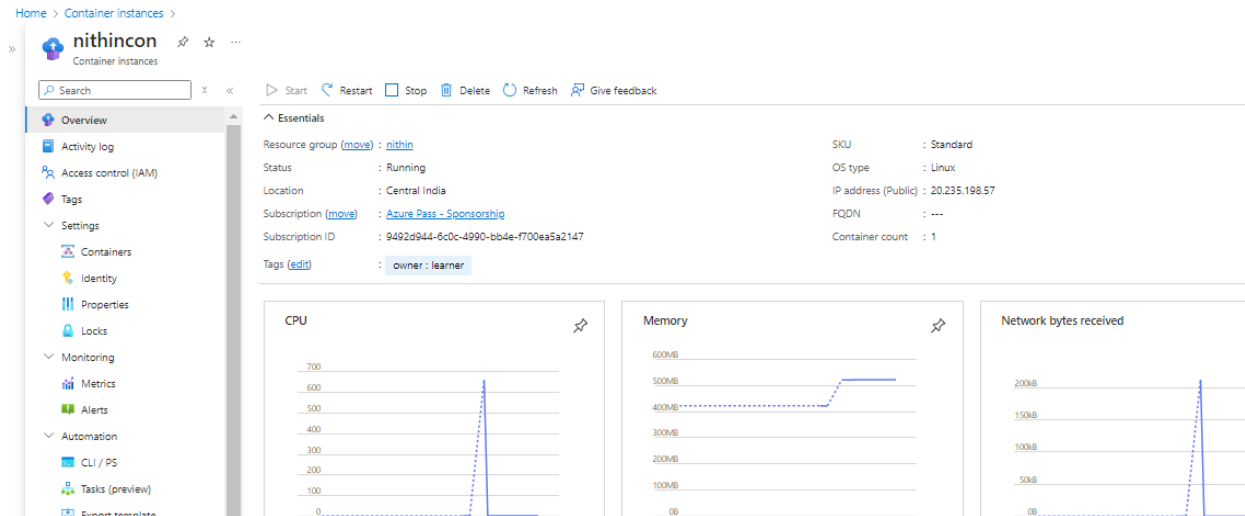
ⓘ If not specified, Docker Hub will be used for the container registry and the latest version of the image will be pulled.

OS type * ☒ Linux ☐ Windows

✓ The image name should follow the Docker image naming protocol (for example "myacr.azurecr.io/tomcat")



Step-5: Now click review and create.



Step-6: Copy the IP address and check for the Instance.

← → ↺ ⚠ Not secure 20.235.198.57:8080/login?from=%2F ☆ 👤 Relaunch to L

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
/var/jenkins_home/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

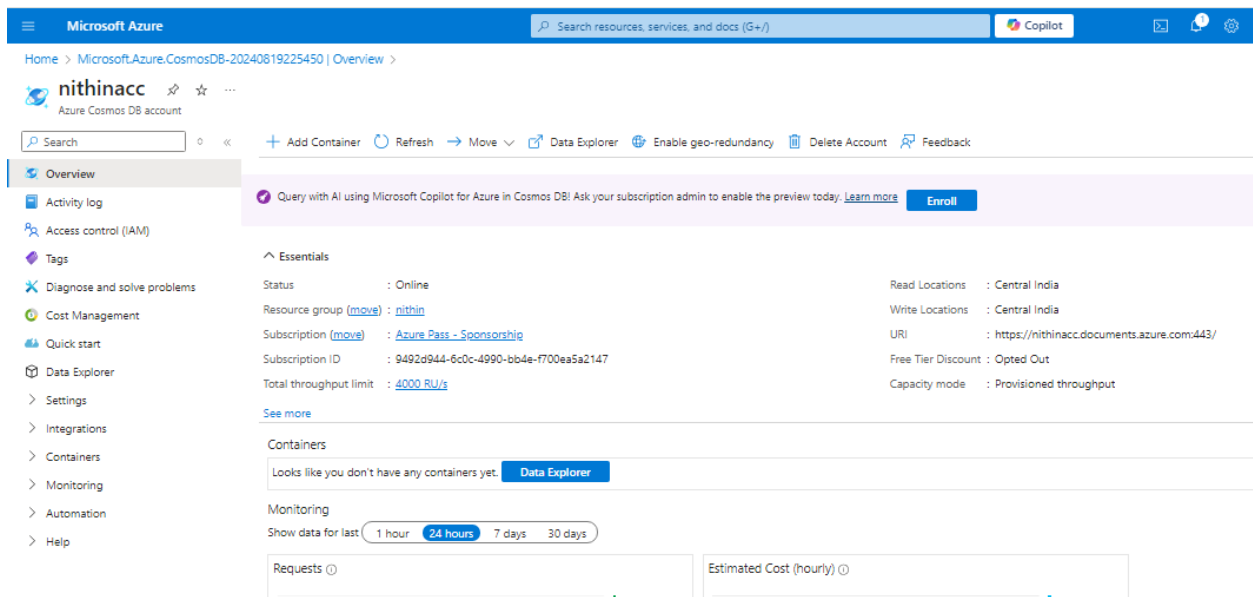
Administrator password

Continue

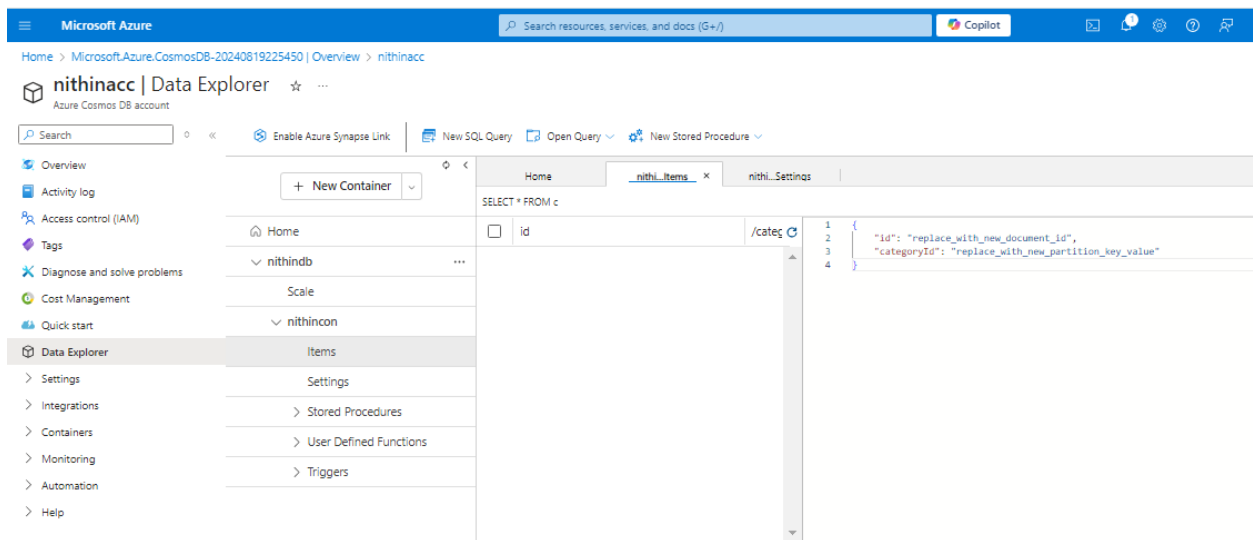
4) Create and Configure a Cosmos DB Account and demonstrate CRUD (Create, Read, Update, Delete) operations.

Ans)

Step-1: Create a cosmos Db account in azure with the location Central India.



Step-2 : Goto Data explorer and click on create new container.



Step-3 : click on the new item in items setting and some data to it.

Create Operation:

X

Query with AI using Microsoft Copilot for Azure in Cosmos DB! Ask your subscription admin to enable the preview today. [Learn more](#) [Enroll](#)

Home
 nithi_Items

Home
 nithindb
 Scale
 nithincon
 Items
 Settings
 Stored Procedures
 User Defined Functions

SELECT * FROM c

	id	/categ
<input type="checkbox"/>	022d6284-08eb-4c7e-a1d1-3bc84e86ac...	
<input type="checkbox"/>	3da057b2-d87c-4076-ba71-6f7978e1f017	
<input type="checkbox"/>	ea74f130-08a9-432d-a3bf-709eea9baaec	
<input checked="" type="checkbox"/>	7b7d8a7b-feeb-4fb5-84d6-091e6e9e57ce	

```

1 {
2   "heroId": "4",
3   "name": "Thor",
4   "realName": "Thor Odinson",
5   "powers": [
6     "superhuman strength",
7     "control over lightning",
8     "immortality"
9   ],
10  "team": "Avengers",
11  "id": "7b7d8a7b-feeb-4fb5-84d6-091e6e9e57ce",
12  "_rid": "6AtZANEIcFQEAAAAAAAAA==",
13  "_self": "dbs/6AtZAA==/colls/6AtZANEIcFQ=/docs/6AtZANEIcFQEAAAAAAAAA==/",
14  "_etag": "\"0b00190c-0000-2000-0000-66c458d40000\"",
15  "_attachments": "attachments/",
16  "_ts": 1724143828
17 }
  
```

Read-Operation:

Home
 nithi_Items

SELECT * FROM c where c.name="Spider-Man"

	id	/categoryId
<input checked="" type="checkbox"/>	022d6284-08eb-4c7e-a1d1-3bc84e86acb5	

```

1 {
2   "heroId": "1",
3   "name": "Spider-Man",
4   "realName": "Peter Parker",
5   "powers": [
6     "wall-crawling",
7     "enhanced strength",
8     "spider-sense"
9   ],
10  "team": "Avengers",
11  "id": "022d6284-08eb-4c7e-a1d1-3bc84e86acb5",
12  "_rid": "6AtZANEIcFQBAAAAAAAAA==",
13  "_self": "dbs/6AtZAA==/colls/6AtZANEIcFQ=/docs/6AtZANEIcFQBAAAAAAAAA==/",
14  "_etag": "\"0b00170b-0000-2000-0000-66c457cb0000\"",
15  "_attachments": "attachments/",
16  "_ts": 1724143563
17 }
  
```

Update Operation: we updated the name from captain america to hulk.

Item Update Discard Delete Upload Item

To prevent queries from using excessive RUs, Data Explorer has a 5,000 RU default limit. To modify or remove the limit, go to the Settings cog on the right and find "RU Threshold" [Learn More](#)

Home nithi...Items x

SELECT * FROM c

<input checked="" type="checkbox"/>	id	/categ
<input type="checkbox"/>	3da057b2-d87c-4076-ba71-8f7978e1f017	
<input checked="" type="checkbox"/>	ea74f130-08a9-432d-a3bf-709eea9baaec	
<input type="checkbox"/>	7b7d8a7b-feeb-4fb5-84d6-091e6e9e57ce	

```
1 {
2   "heroId": "3",
3   "name": "Hulk",
4   "realName": "Steve Rogers",
5   "powers": [
6     "super soldier strength",
7     "enhanced agility",
8     "strategic genius"
9   ],
10  "team": "Avengers",
11  "id": "ea74f130-08a9-432d-a3bf-709eea9baaec",
12  "_rid": "6AtZANEIcFQAAAAAAAAA==",
13  "_self": "dbs/6AtZAA==/colls/6AtZANEIcFQ=/docs/6AtZANEIcFQAAAAAAAAA==/",
14  "_etag": "\"0b080e11-0000-2000-0000-66c45e9a0000\"",
15  "_attachments": "attachments/",
16  "_ts": 1724145306
17 }
```

Delete Operation:
before deletion: we have four rows.

New Item Update Discard Delete Upload Item

+ New Container

Home nithi...Items x

SELECT * FROM c

<input checked="" type="checkbox"/>	id	/categ
<input type="checkbox"/>	3da057b2-d87c-4076-ba71-8f7978e1f017	
<input type="checkbox"/>	ea74f130-08a9-432d-a3bf-709eea9baaec	
<input type="checkbox"/>	7b7d8a7b-feeb-4fb5-84d6-091e6e9e57ce	
<input checked="" type="checkbox"/>	912ce11d-b3cb-40a1-886b-ee37a79c62a	

```
1 {
2   "heroId": "1",
3   "name": "Spider-Man",
4   "realName": "Peter Parker",
5   "powers": [
6     "wall-crawling",
7     "enhanced strength",
8     "spider-sense"
9   ],
10  "team": "Avengers",
11  "id": "912ce11d-b3cb-40a1-886b-ee37a79c62a",
12  "_rid": "6AtZANEIcFQAAAAAAAAA==",
13  "_self": "dbs/6AtZAA==/colls/6AtZANEIcFQ=/docs/6AtZANEIcFQAAAAAAAAA==/",
14  "_etag": "\"0b080e11-0000-2000-0000-66c45e9a0000\"",
15  "_attachments": "attachments/",
16  "_ts": 1724144965
17 }
```

After deletion: we will have only three rows.

New Item Upload Item

+ New Container

Home nithi...Items x

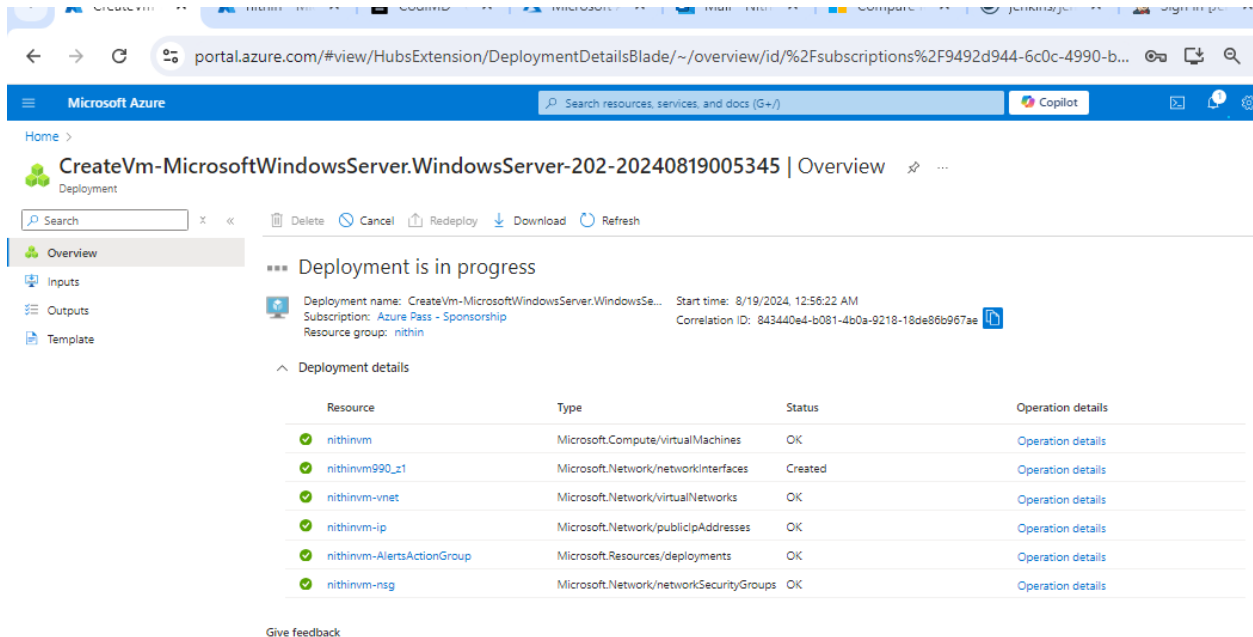
SELECT * FROM c

<input type="checkbox"/>	id	/categ
<input type="checkbox"/>	3da057b2-d87c-4076-ba71-8f7978e1f017	
<input type="checkbox"/>	ea74f130-08a9-432d-a3bf-709eea9baaec	
<input type="checkbox"/>	7b7d8a7b-feeb-4fb5-84d6-091e6e9e57ce	

5) create alert for the high cpu usage with email notification on windows server.

Ans)

Step-1: Create a VM with windows as the image and change the size to the D2Sv3 and with enabling the alerts in the monitoring section.



The screenshot shows the Azure portal interface for a deployment named "CreateVm-MicrosoftWindowsServer.WindowsServer-202-20240819005345". The deployment is in progress. The left sidebar shows the navigation menu with "Overview" selected. The main content area displays the deployment status and details.

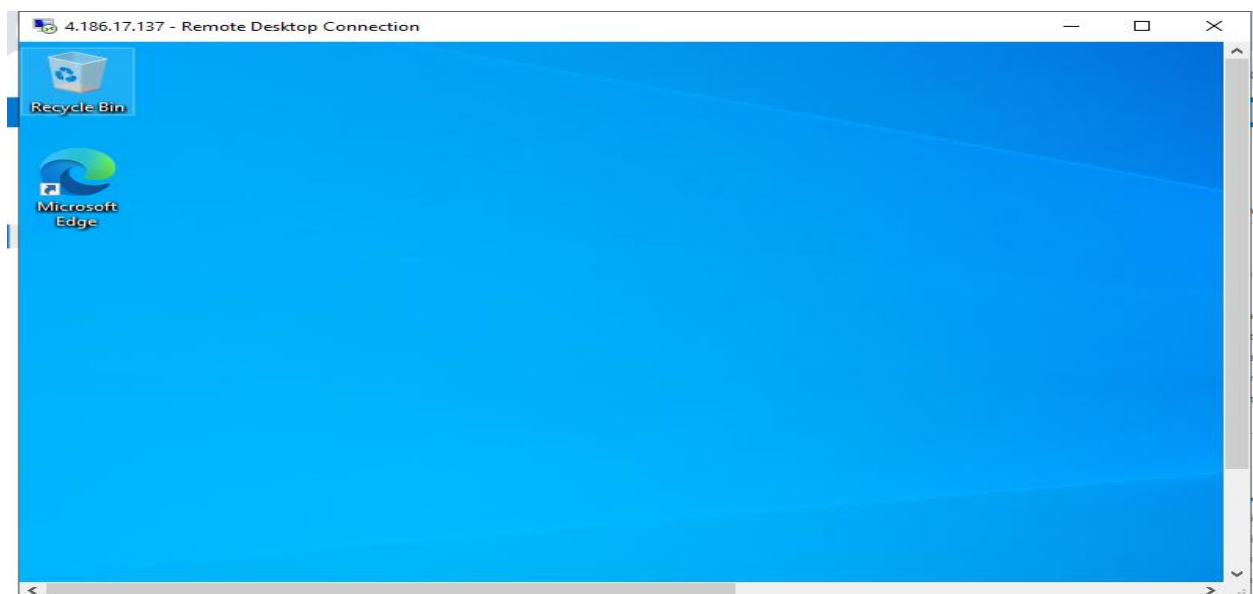
Deployment name: CreateVm-MicrosoftWindowsServer.WindowsSe... Start time: 8/19/2024, 12:56:22 AM
Subscription: Azure Pass - Sponsorship Correlation ID: 843440e4-b081-4b0a-9218-18de86b967ae
Resource group: nithin

Deployment details

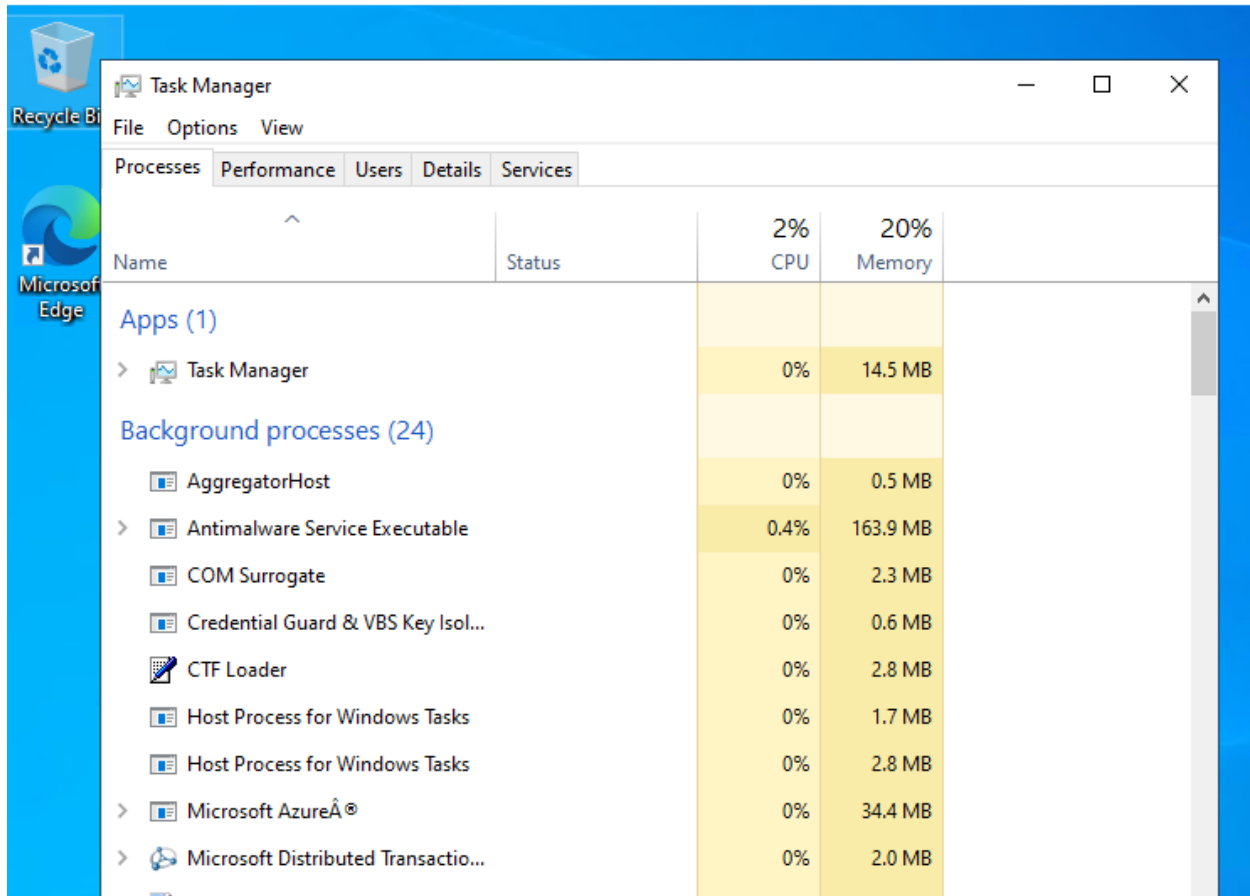
Resource	Type	Status	Operation details
nithinvm	Microsoft.Compute/virtualMachines	OK	Operation details
nithinvm990_z1	Microsoft.Network/networkInterfaces	Created	Operation details
nithinvm-vnet	Microsoft.Network/virtualNetworks	OK	Operation details
nithinvm-ip	Microsoft.Network/publicIPAddresses	OK	Operation details
nithinvm-AlertsActionGroup	Microsoft.Resources/deployments	OK	Operation details
nithinvm-nsg	Microsoft.Network/networkSecurityGroups	OK	Operation details

Give feedback

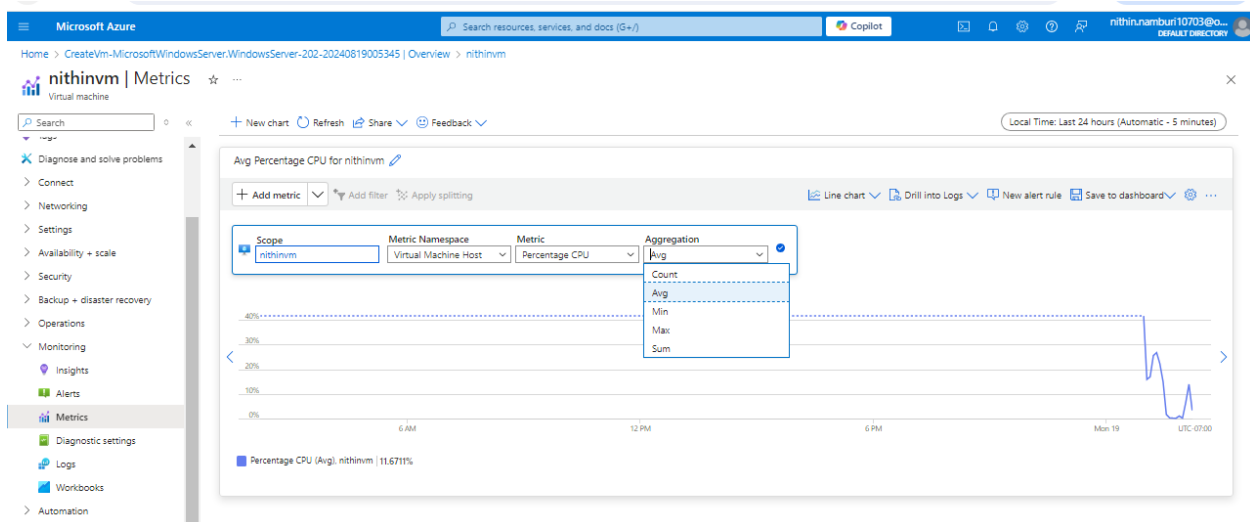
Step-2: Now connect the VM (IP address) to the RDP.



Step-3: Open the task manager and check for the CPU utilization.



Step-4: go to the monitoring in the VM and set a metric for CPU percentage

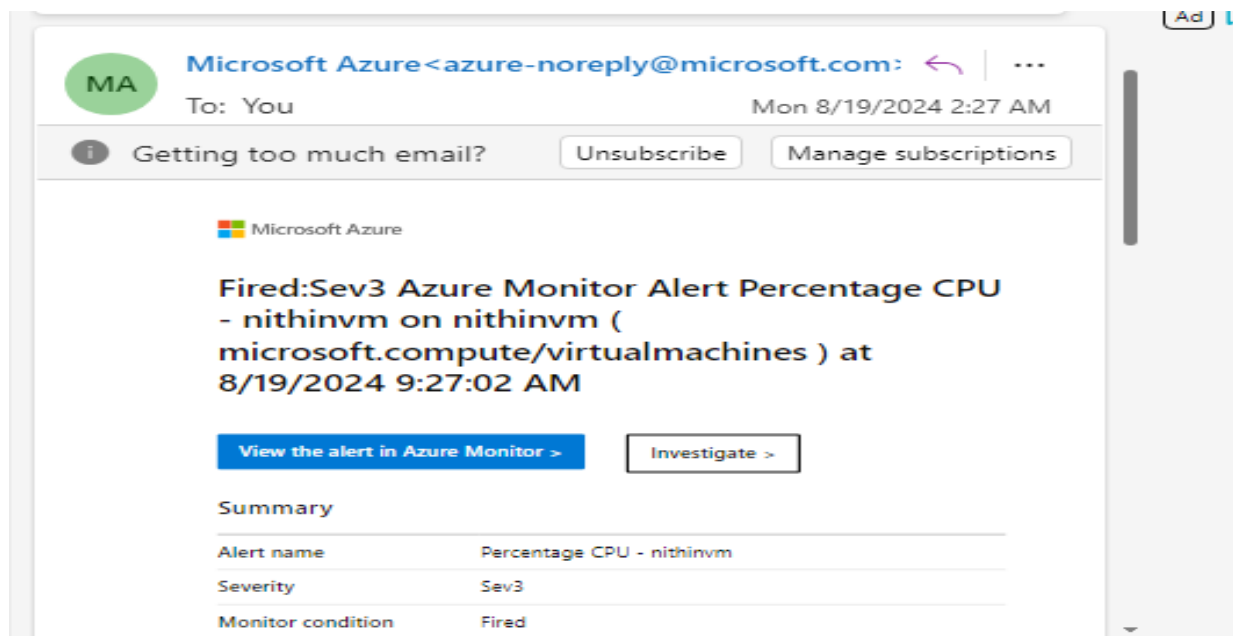


Step-5: Install a stress increasing tool in the RDP and maximize the stress.

The screenshot shows the Windows Task Manager Performance tab. The CPU usage is 100% and Memory usage is 82%. Below the usage bars, a list of processes is shown with their respective CPU and Memory usage.

Name	Status	CPU	Memory
Apps (4)			
CPU Stress		45.9%	1.8 MB
PRIME95 Application		50.8%	5,069.6 MB
Task Manager		0.3%	16.6 MB
Windows Explorer (3)		0%	28.2 MB
Background processes (23)			
AggregatorHost		0%	0.5 MB
Antimalware Service Executable		0%	161.9 MB
COM Surrogate		0%	2.1 MB
Credential Guard & VBS Key Isol...		0%	0.7 MB
CTF Loader		0%	2.9 MB
Host Process for Windows Tasks		0%	2.5 MB
Host Process for Windows Tasks		0%	1.8 MB

Step-6: Because we enabled the alerts options available in the monitoring we will get an email stating the CPU utilization is more.



Step-7: Now check the CPU metric that you created in the VM it is also Increased than 80%.

