

CS489:

Applied Software Development

Lesson 12:

Software Delivery

Wholeness

- After design and development is complete, it comes time to deliver the finished working software product to the consumer
- In modern software development practice, Cloud-based services are the most preferred option for deploying enterprise web applications
- Science of Consciousness: Action leads to Achievement. *Achievement leads to Fulfillment.*

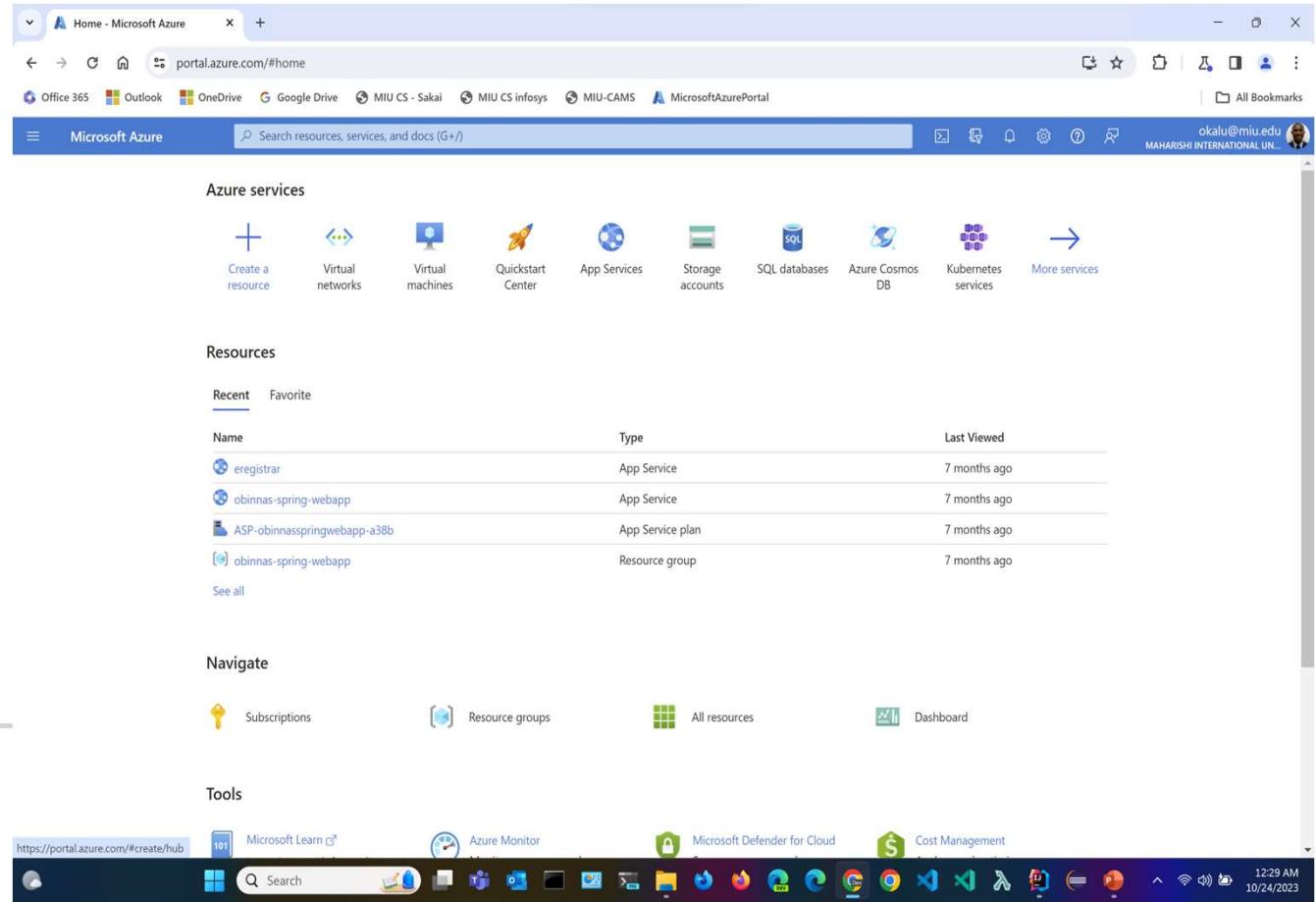
Microsoft Azure Cloud

- Azure offers a global distributed cloud computing platform for enterprise application development, hosting and management.
- Delivered by Microsoft, it is currently the 2nd largest market share provider of cloud services. It has great support for many application devt platforms, including Java

Deploy Spring Boot Application to Azure

First, login to
<https://portal.azure.com>

No account? Then, create new
account using your miu.edu
email address



The screenshot shows the Microsoft Azure portal homepage. At the top, there's a navigation bar with links for Office 365, Outlook, OneDrive, Google Drive, MIU CS - Sakai, MIU CS infosys, MIU-CAMS, and MicrosoftAzurePortal. The main search bar says "Search resources, services, and docs (G+)". On the right, it shows the user's email (okalu@miu.edu) and profile picture, with "MAHARISHI INTERNATIONAL UN..." next to it. Below the navigation bar, there's a "Microsoft Azure" logo and a "More services" button. A "Create a resource" button is also visible. The main content area is titled "Azure services" and includes icons for Virtual networks, Virtual machines, Quickstart Center, App Services, Storage accounts, SQL databases, Azure Cosmos DB, Kubernetes services, and a "More services" link. Below this, there's a "Resources" section with a "Recent" tab selected, showing a table of recent resources:

Name	Type	Last Viewed
egistrar	App Service	7 months ago
obinnas-spring-webapp	App Service	7 months ago
ASP-obinnasspringwebapp-a38b	App Service plan	7 months ago
obinnas-spring-webapp	Resource group	7 months ago

Below the table, there's a "See all" link. Further down, there's a "Navigate" section with links for Subscriptions, Resource groups, All resources, and Dashboard. At the bottom, there's a "Tools" section with links for Microsoft Learn, Azure Monitor, Microsoft Defender for Cloud, Cost Management, and a taskbar with various application icons. The status bar at the bottom right shows the time as 12:29 AM and the date as 10/24/2023.

A screenshot of the Microsoft Azure portal interface. The top navigation bar shows tabs for "Upgrade - Microsoft Azure" and "Home - Microsoft Azure". The address bar displays "portal.azure.com/#home". The header includes links to Office 365, Outlook, OneDrive, Google Drive, MIU CS - Sakai, MIU CS infosys, MIU-CAMS, MicrosoftAzurePortal, and a "Create a resource" button. The user's email "okalu@miu.edu" and name "MAHARISHI INTERNATIONAL UN..." are shown on the right.

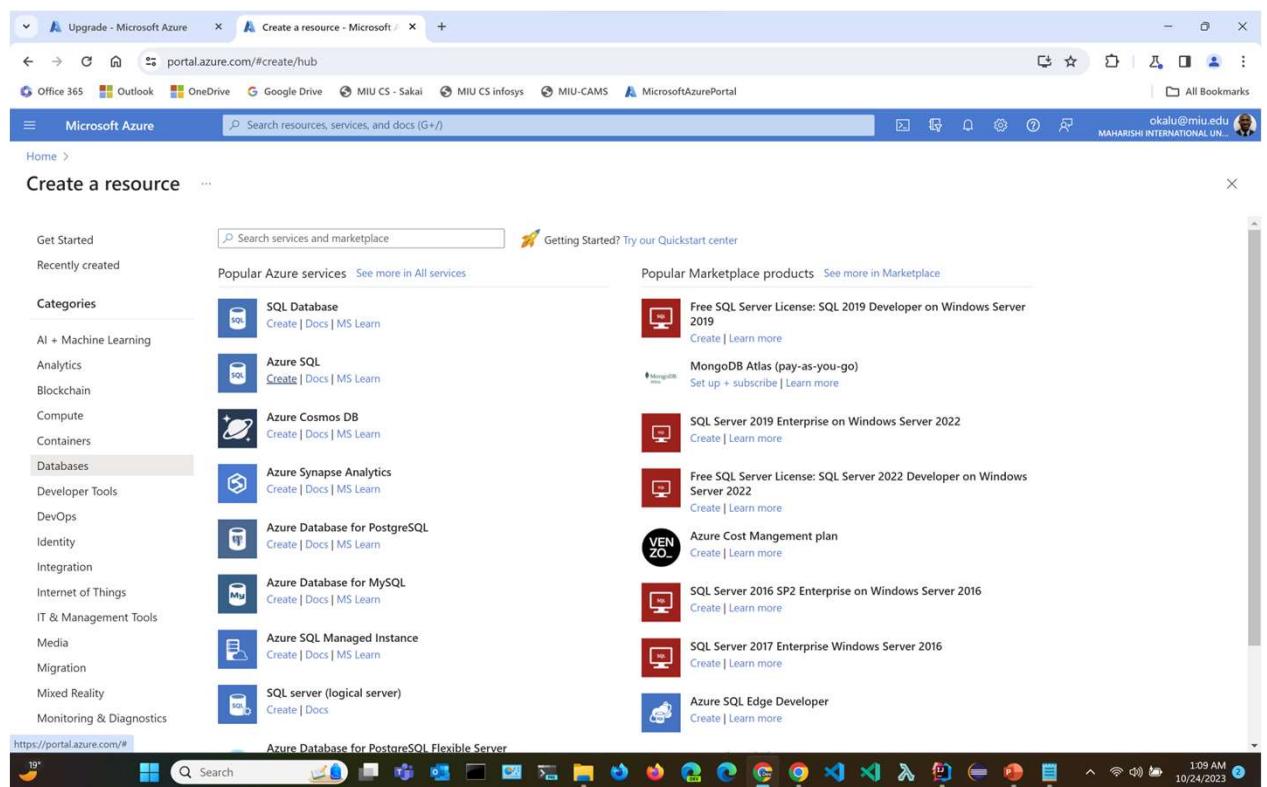
The main content area is titled "Azure services" and features a grid of icons for various services: Create a resource, Virtual networks, Virtual machines, Quickstart Center, App Services, Storage accounts, SQL databases, Azure Cosmos DB, Kubernetes services, and More services. Below this is a section titled "Resources" with tabs for "Recent" (selected) and "Favorite". A table lists recent resources:

Name	Type	Last Viewed
okalu-cs489-demos	Resource group	8 minutes ago
eregistrar	App Service	7 months ago
obinnas-spring-webapp	App Service	7 months ago
ASP-obinnasspringwebapp-a38b	App Service plan	7 months ago
obinnas-spring-webapp	Resource group	7 months ago

Below the table are "See all" and "Navigate" sections with links to Subscriptions, Resource groups, All resources, and Dashboard. The bottom of the screen shows the Windows taskbar with various pinned icons and the date/time "10/24/2023 1:07 AM".

Create a new Database on Azure

Select Databases tab and click Create on Azure SQL



A Create a resource - Microsoft A Upgrade - Microsoft Azure +

portal.azure.com/#view/Microsoft_Azure_Billing/SubscriptionUpgradeBlade/collectorBindingInternals-inputs~/%7B"options">%3A%7B"galleryOptions">%3A%7B"uiDefinitio... All Bookmarks

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

Microsoft Azure Search resources, services, and docs (G+) okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Upgrade ...

Feedback

Your subscription is eligible for a Free Trial upgrade.

Simply enter a friendly name for your subscription and then click Upgrade

Subscription name *

By upgrading, you agree to the [subscription agreement](#), [offer details](#), and [privacy statement](#)

A Select SQL deployment option

portal.azure.com/#create/Microsoft.AzureSQL

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

Microsoft Azure Upgrade Search resources, services, and docs (G+) okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Select SQL deployment option

How do you plan to use the service?

SQL databases
Best for modern cloud applications. Hyperscale and serverless options are available.
Resource type: Single database
[Create](#) [Hide details](#)

SQL managed instances
Best for most migrations to the cloud. Lift-and-shift ready.
Resource type: Single instance
[Create](#) [Show details](#)

SQL virtual machines
Best for migrations and applications requiring OS-level access. Lift-and-shift ready.
Image: [Create](#) [Show details](#) High availability

Single database
Single databases are a great fit for modern, cloud-born applications that need a fully managed database with predictable performance.
Featured capabilities:

- ✓ Hyperscale storage (up to 100TB)
- ✓ Serverless compute
- ✓ Easy management

Elastic pool
Elastic pools provide a cost-effective solution for managing the performance of multiple databases with variable usage patterns.
Featured capabilities:

- ✓ Resource sharing for cost optimization
- ✓ Simplified performance management

Database server
Database servers are used to manage groups of single databases and elastic pools.
Featured capabilities:

- ✓ Access management
- ✓ Backup management
- ✓ Business continuity management

19° Search                      1:17 AM 10/24/2023

New Azure SQL Database

The screenshot shows the Microsoft Azure portal interface for creating a new SQL database server. The browser title bar reads "Create SQL Database Server". The address bar shows the URL "portal.azure.com/#create/Microsoft.SQLServer". The top navigation bar includes links for Office 365, Outlook, OneDrive, Google Drive, MIU CS - Sakai, MIU CS infosys, MIU-CAMS, MicrosoftAzurePortal, and a user profile for "okalu@miu.edu" from "MAHARISHI INTERNATIONAL UN...". The main content area is titled "Create SQL Database Server" under the "Microsoft" logo. It features tabs for "Basics", "Networking", "Additional settings", "Tags", and "Review + create". The "Basics" tab is selected, displaying instructions: "SQL database server is a logical container for managing databases and elastic pools. Complete the Basic tab, then go to Review + Create to provision with smart defaults, or visit each tab to customize." Below this, the "Project details" section asks to select a subscription and resource group. A dropdown for "Subscription" shows "Free Trial" and a dropdown for "Resource group" shows "okalu-cs489-demos" with a "Create new" option. The "Server details" section requires entering a "Server name" ("okalu-demo-db-server") and a "Location" ("(US) Central US"). The "Authentication" section is partially visible below. At the bottom, there are buttons for "Review + create" and "Next : Networking >". The taskbar at the bottom of the screen shows various pinned icons and the system clock indicating "1:20 AM 10/24/2023".

A Create SQL Database Server - +

portal.azure.com/#create/Microsoft.SQLServer

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource > Select SQL deployment option >

Create SQL Database Server

Microsoft

Basics Networking Additional settings Tags Review + create

Configure networking access for your server.

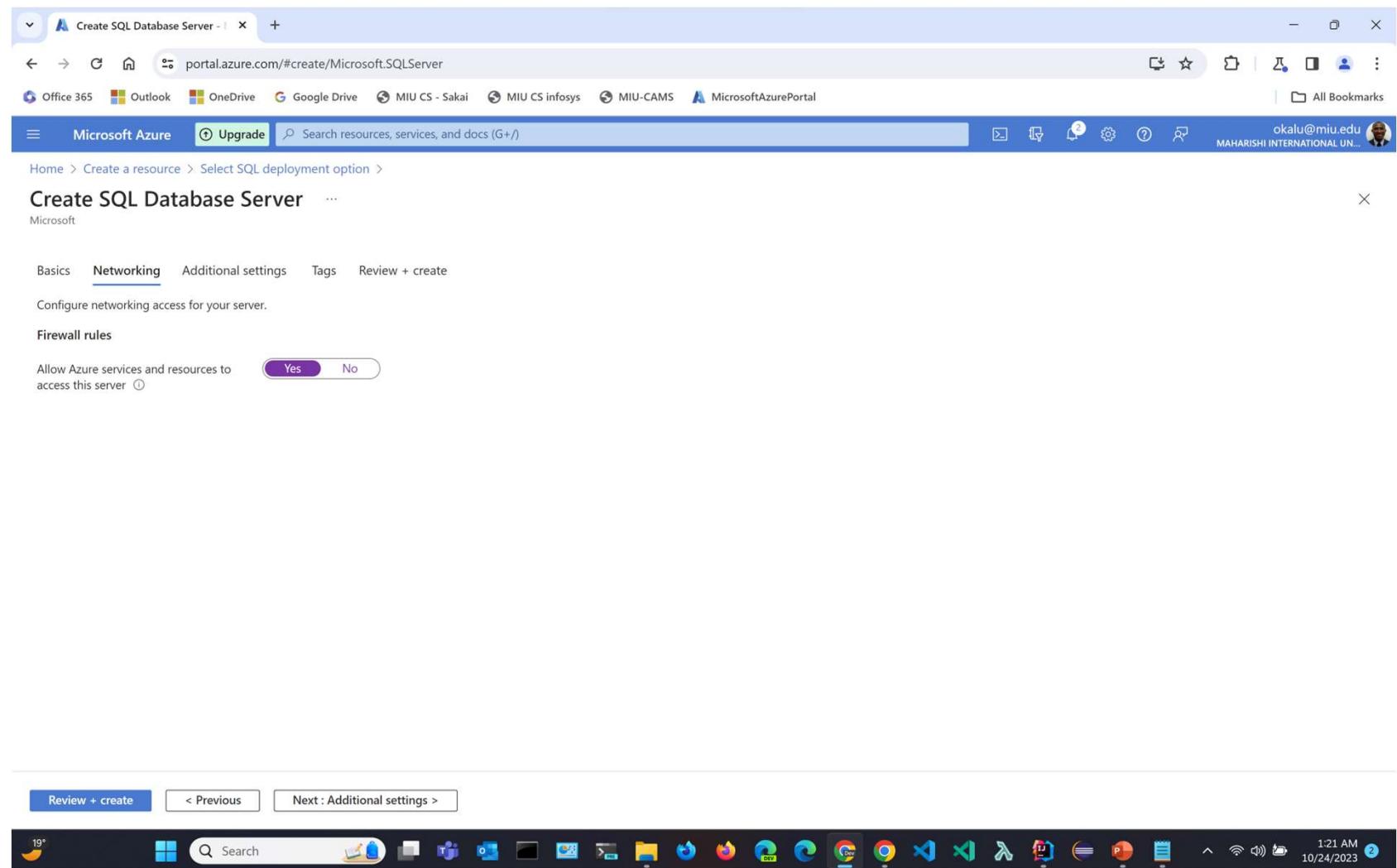
Firewall rules

Allow Azure services and resources to access this server Yes No

Review + create < Previous Next : Additional settings >

19° Search

1:21 AM 10/24/2023



A Microsoft.SQLServer.createServer_... x +

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2fsubscriptions%2f62b5d463-316a-4870-ad72-64bd5d6f0203%2fresourceGroups%2f... 🛡 ⚡ 🌐 🏷️ 🎯 🌐 🌐 🌐 🌐 🌐

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

Microsoft Azure Upgrade Search resources, services, and docs (G+/) okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.SQLServer.createServer_e15414c4bc40441abf5c72656a83e16 | Overview ✖️ ...

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Deployment is in progress

Deployment name : Microsoft.SQLServer.createServer_e15414c4bc40441a... Start time : 10/24/2023, 1:23:09 AM Correlation ID : 1a10e27c-ec55-4d91-b416-7ce43477d01c Subscription : Free Trial Resource group : okalu-cs489-demos

Deployment details

Resource	Type	Status	Operation details
okalu-demo-db-server	SQL server	Accepted	Operation details

Give feedback Tell us about your experience with deployment

Microsoft Defender for Cloud Secure your apps and infrastructure Go to Microsoft Defender for Cloud >

Free Microsoft tutorials Start learning today >

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >



1:23 AM 10/24/2023

A Microsoft.SQLServer.createServer... +

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2F62b5d463-316a-4870-ad72-64bd5d6f0203%2FresourceGroups%2Fo...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

Microsoft Azure Upgrade Search resources, services, and docs (G+) okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.SQLServer.createServer_e15414c4bc40441abf5c72656a83e16 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview

Inputs Outputs Template

Deployment name : Microsoft.SQLServer.createServer_e15414c4bc40441a... Start time : 10/24/2023, 1:23:09 AM Correlation ID : 1a10e27c-ec55-4d91-b416-7ce43477d01c Resource group : okalu-cs489-demos

Your deployment is complete

Deployment details Next steps Go to resource

Give feedback Tell us about your experience with deployment

Cost management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

Microsoft Defender for Cloud Secure your apps and infrastructure. Go to Microsoft Defender for Cloud >

Free Microsoft tutorials Start learning today >

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >

1:24 AM 10/24/2023

- Click Show Networking Settings

The screenshot shows the Microsoft Azure portal interface for managing an Azure SQL Server named "okalu-demo-db-server". The URL in the browser is <https://portal.azure.com/#/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/okalu-demo-db-server>.

The main page displays the server's overview, including its resource group (okalu-cs489-demos), status (Available), location (Central US), and subscription information (Free Trial). On the right, under the "Networking" section, there is a link labeled "Show networking settings".

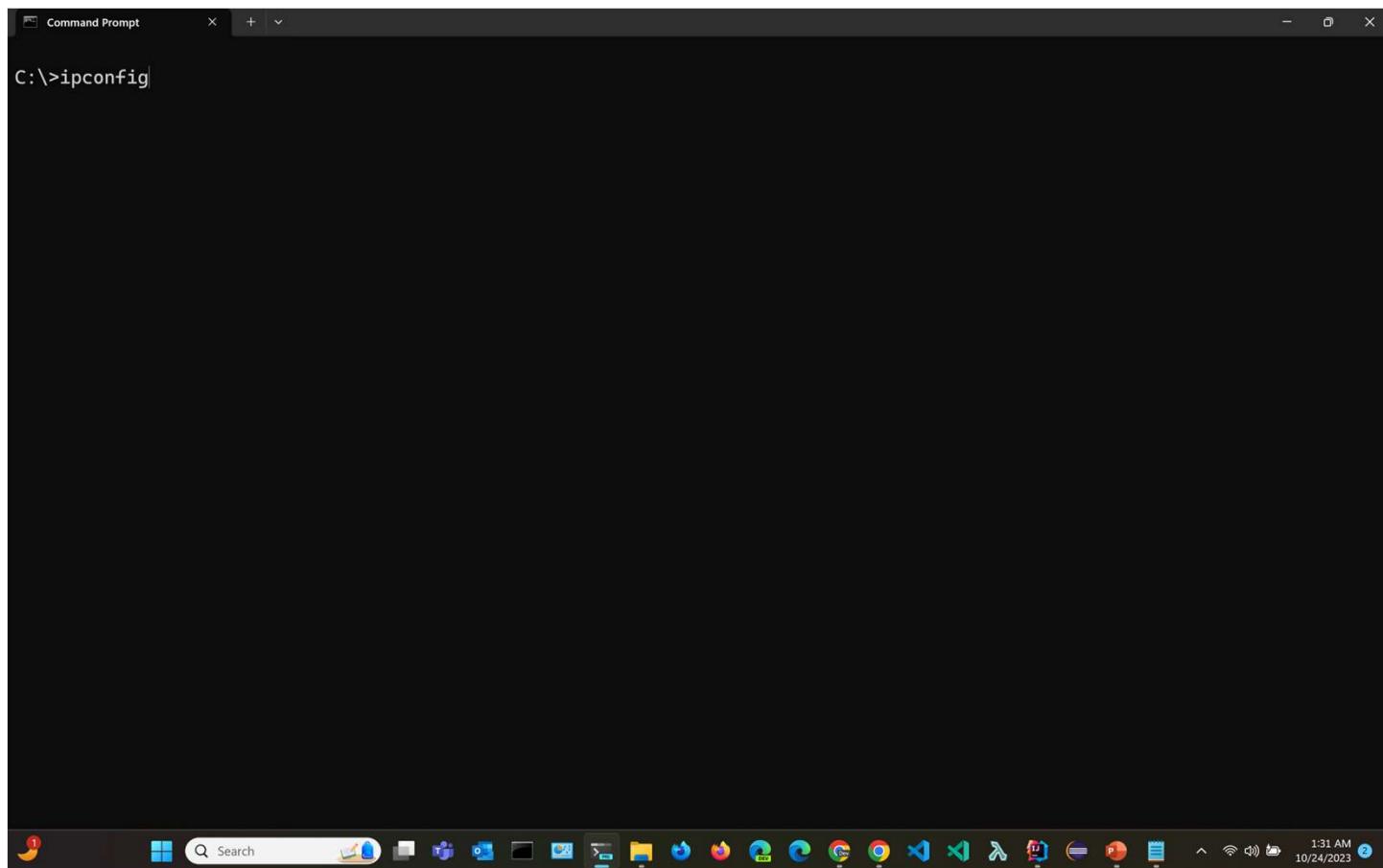
The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Quick start, Diagnose and solve problems, Settings (Microsoft Entra ID, SQL databases, SQL elastic pools, DTU quota, Properties, Locks), Data management (Backups, Deleted databases, Failover groups, Import/Export history), and Security.

The "Features" section is currently selected, showing six cards:

- Microsoft Entra admin**: Allows you to centrally manage identity and access to your Azure SQL databases. Status: NOT CONFIGURED.
- Microsoft Defender for SQL**: Vulnerability Assessment and Advanced Threat Protection. Status: NOT CONFIGURED.
- Automatic tuning**: Monitors and tunes your database automatically to optimize performance. Status: CONFIGURED.
- Auditing**: Track database events and writes them to an audit log in Azure storage. Status: NOT CONFIGURED.
- Failover groups**: Automatically manages replication, connectivity, and failover for a set of databases. Status: NOT CONFIGURED.
- Transparent data encryption**: Encryption at rest for your databases, backups, and logs. Status: SERVICE-MANAGED KEY.

At the bottom, there is a search bar and a toolbar with various icons.

- Obtain your Client IPv4 address



- Add your Client IPv4 address

Selected networks

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

Virtual networks

Allow virtual networks to connect to your resource using service endpoints. [Learn more](#)

+ Add a virtual network rule

Rule	Virtual network	Subnet	Address range	Endpoint status	Resource group	Subscription	State
ClientIPAddress_2023-10-24_1-28-10							

Firewall rules

Allow certain public internet IP addresses to access your resource. [Learn more](#)

+ Add your client IPv4 address + Add a firewall rule

Rule name	Start IPv4 address	End IPv4 address
ClientIPAddress_2023-10-24_1-28-10		

Exceptions

Allow Azure services and resources to access this server

Save **Discard**

- Select Create Database

The screenshot shows the Microsoft Azure portal interface for managing a SQL server. The URL in the address bar is <https://portal.azure.com/#/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/okalu-demo-db-server>. The page title is "okalu-demo-db-server - Microsoft Azure". The main content area displays the "Essentials" tab for the "okalu-demo-db-server" SQL server. Key details shown include:

- Resource group (move) : [okalu-cs489-demos](#)
- Status : Available
- Location : Central US
- Subscription (move) : [Free Trial](#)
- Subscription ID : 62b5d463-316a-4870-ad72-64bd5d6f0203
- Tags (edit) : [Add tags](#)
- Server admin : okalu-demo-db-sys
- Networking : [Show networking settings](#)
- Microsoft Entra admin : [Not configured](#)
- Server name : okalu-demo-db-server.database.windows.net

The "Features" section lists several optional features with their current configuration status:

Feature	Status
Microsoft Entra admin	NOT CONFIGURED
Microsoft Defender for SQL	NOT CONFIGURED
Automatic tuning	CONFIGURED
Auditing	NOT CONFIGURED
Failover groups	NOT CONFIGURED
Transparent data encryption	SERVICE-MANAGED KEY

At the bottom, there is a "Available resources" section with a search bar and a "Filter by name" dropdown.

- Click “Apply Offer (Preview)”

Create SQL Database

Basics Networking Security Additional settings Tags Review + create

Create a SQL database with your preferred configurations. Complete the Basics tab then go to Review + Create to provision with smart defaults, or visit each tab to customize. [Learn more](#)

Want to try Azure SQL Database for free? Create a free serverless database with the first 100,000 vCore seconds, 32GB of data, and 32GB of backup storage free per month for the lifetime of the subscription. [Learn more](#)

Project details

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

Subscription: Free Trial

Resource group: okalu-cs489-demos

Database details

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

Database name * Enter database name

Cost summary

General Purpose (GP_S_Gen5_1)	
Cost per GB (in USD)	0.14
Max storage selected (in GB)	x 32
ESTIMATED STORAGE COST / MONTH	4.42 USD
COMPUTE COST / VCORE SECOND ¹	0.000174 USD

NOTES

¹ Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

Review + create **Next : Networking >**

A Create SQL Database - Microsoft Azure

portal.azure.com/#create/Microsoft.SQLDatabase

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.SQLServer.createServer_e15414c4bc40441abf5c72656a83e16 | Overview > okalu-demo-db-server >

Create SQL Database

Basics Networking Security Additional settings Tags Review + create

Create a SQL database with your preferred configurations. Complete the Basics tab then go to Review + Create to provision with smart defaults, or visit each tab to customize. [Learn more](#)

Free database offer applied! You got first 100,000 vCore seconds and 32GB of data & 32GB of backup storage free per month for lifetime of the subscription. [Learn more](#)

Remove offer

Project details

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

Subscription: Free Trial

Resource group: okalu-cs489-demos

Database details

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

Database name * Enter database name

Review + create Next : Networking >

Cost summary

General Purpose (GP_S_Gen5_2)

Cost per GB (in USD)	0.00
Max storage selected (in GB)	x 32
First 32 GB storage free	
First 100,000 vCore seconds free	

Overage billing: Disabled

ESTIMATED STORAGE COST / MONTH: 0.00 USD

COMPUTE COST / VCORE SECOND: 0.0000000 USD

1 There will be no charges for usage within the free limits. The database will be paused automatically when the free limits are reached.
2 Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. Learn more about serverless billing

1:42 AM 10/24/2023

A Create SQL Database - Microsoft Azure

portal.azure.com/#create/Microsoft.SQLDatabase

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.SQLServer.createServer_e15414c4bc40441abf5c72656a83e16 | Overview > okalu-demo-db-server >

Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags Review + create

Configure network access and connectivity for your server. The configuration selected below will apply to the selected server 'okalu-demo-db-server' and all databases it manages. [Learn more](#)

Firewall rules

The settings displayed below are read-only. They can be modified from the "Firewalls and virtual networks" blade for the selected server after database creation. [Learn more](#)

Allow Azure services and resources to access this server No Yes

Add current client IP address * No Yes

Private endpoints

Private endpoint connections are associated with a private IP address within a Virtual Network. The list below shows all the private endpoint connections for this server. Note that private endpoint connections are defined at the server level and they provide access to all databases in the server. [Learn more](#)

+ Add private endpoint

Name	Subscription	Resource group	Region	Subnet
Click on add to create private endpoint				

Connection policy

[Review + create](#) [< Previous](#) [Next : Security >](#)

Cost summary

General Purpose (GP_S_Gen5_2)

Cost per GB (in USD)	0.00
Max storage selected (in GB)	x 32
First 32 GB storage free	
First 100,000 vCore seconds free	

Overage billing! Disabled

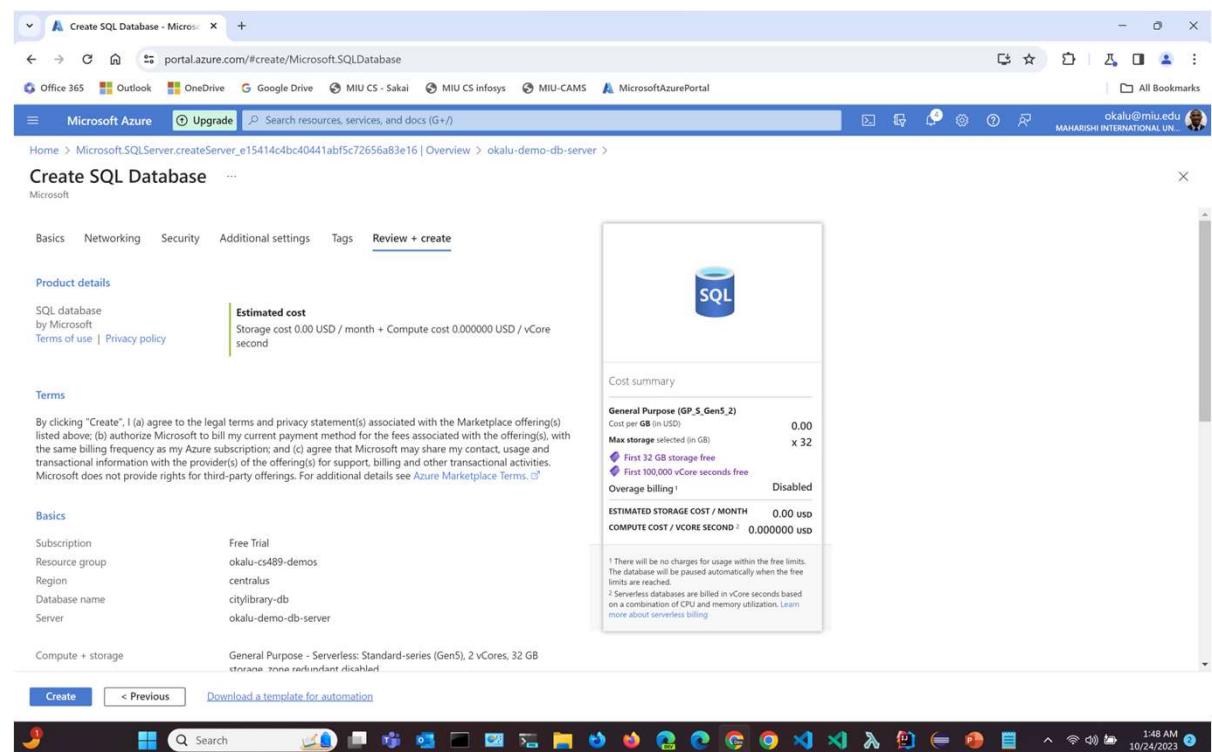
ESTIMATED STORAGE COST / MONTH	0.00 USD
COMPUTE COST / VCORE SECOND ²	0.000000 USD

1 There will be no charges for usage within the free limits. The database will be paused automatically when the free limits are reached.

2 Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

Create new SQL database

- Click Create



Microsoft.SQLDatabase.newDatabaseExistingServer_c0ac9917c0484f7a | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Deployment is in progress

Deployment name : Microsoft.SQLDatabase.newDatabaseExistingServer_c... Start time : 10/24/2023, 1:50:30 AM
Subscription : Free Trial Correlation ID : d347a61d-7603-4ae3-b50e-c82abaf76fad
Resource group : okalu-CS489-demos

Deployment details

Resource	Type	Status	Operation details
okalu-demo-db-server/citylibrary-db	SQL database	Accepted	Operation details
okalu-demo-db-server	SQL server	OK	Operation details

Give feedback

Tell us about your experience with deployment

Microsoft Defender for Cloud
Secure your apps and infrastructure
Go to Microsoft Defender for Cloud >

Free Microsoft tutorials
Start learning today >

Work with an expert
Azure experts are service provider partners
who can help manage your assets on Azure
and be your first line of support.
Find an Azure expert >



1:50 AM 10/24/2023

Microsoft.SQLDatabase.newDatabaseExistingServer_c0ac9917c0484f7a | Overview

Your deployment is complete

Deployment name : Microsoft.SQLDatabase.newDatabaseExistingServer_c... Start time : 10/24/2023, 1:50:30 AM
Subscription : Free Trial Correlation ID : d347a61d-7603-4ae3-b50e-c82abaf76fad
Resource group : okalu-CS489-demos

Deployment succeeded Deployment 'Microsoft.SQLDatabase.newDatabaseExistingServer_c0...' to resource group 'okalu-CS489-demos' was successful.

Next steps

[Go to resource](#)

Give feedback

[Tell us about your experience with deployment](#)

Cost management
Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
Start learning today >

Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
[Find an Azure expert >](#)

1:51 AM 10/24/2023

A citylibrary-db (okalu-demo-db) +

portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/oka...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > citylibrary-db (okalu-demo-db-server/citylibrary-db)

citylibrary-db (okalu-demo-db-server/citylibrary-db) SQL database

Search Copy Restore Export Set server firewall Delete Connect with... Feedback

Overview Activity log Tags Diagnose and solve problems Query editor (preview)

Tags (edit) : Add tags

Getting started Monitoring Properties Features Notifications (0) Integrations Tutorials

JSON View

Essentials

Resource group (move) :	okalu-cs489-demos	Server name :	okalu-demo-db-server.database.windows.net
Status :	Online	Connection strings :	Show database connection strings
Location :	Central US	Pricing tier :	Free - General Purpose - Serverless: Gen5, 2 vCores
Subscription (move) :	Free Trial	Overage billing :	Disabled
Subscription ID :	62b5d463-316a-4870-ad72-64bd5d6f0203	Auto-pause delay :	1 hour
		Free monthly vCore amount :	100,000 vCore seconds remaining
		Earliest restore point :	No restore point available

Start working with your database

Connect to your database and start working with data with a few simple steps. [Learn more](#)

Configure access
Configure network access to your SQL server. [Learn more](#)

Connect to application
Use connection strings to connect to your SQL database from your applications and favorite tools.

Start developing
Work in your database by using tools to add, modify and query data. [Compare tools](#)

Configure See connection strings Open Azure Data Studio

1 Search

10:52 AM 10/24/2023

A citylibrary-db (okalu-demo-db) +

portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/oka... 🔍 ⭐ 🗑️ 🔍

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > citylibrary-db (okalu-demo-db-server/citylibrary-db)

citylibrary-db (okalu-demo-db-server/citylibrary-db) | Connection strings ⚡ ⋮

SQL database

Search

ADO.NET JDBC ODBC PHP Go

ADO.NET (Microsoft Entra passwordless authentication)

Microsoft.Data.SqlClient Quickstart ↗ Entity Framework Core Quickstart ↗

```
Server=tcp:okalu-demo-db-server.database.windows.net,1433;Initial Catalog=citylibrary-db;Encrypt=True;TrustServerCertificate=False;Connection Timeout=30;Authentication="Active Directory Default";
```

ADO.NET (SQL authentication)

```
Server=tcp:okalu-demo-db-server.database.windows.net,1433;Initial Catalog=citylibrary-db;Persist Security Info=False;User ID=okalu-demo-db-sys;Password={your_password};MultipleActiveResultSets=False;Encrypt=True;TrustServerCertificate=False;Connection Timeout=30;
```

Download ADO.NET driver for SQL server ↗

Compute + storage

Connection strings

Properties Locks

Replicas Sync to other databases

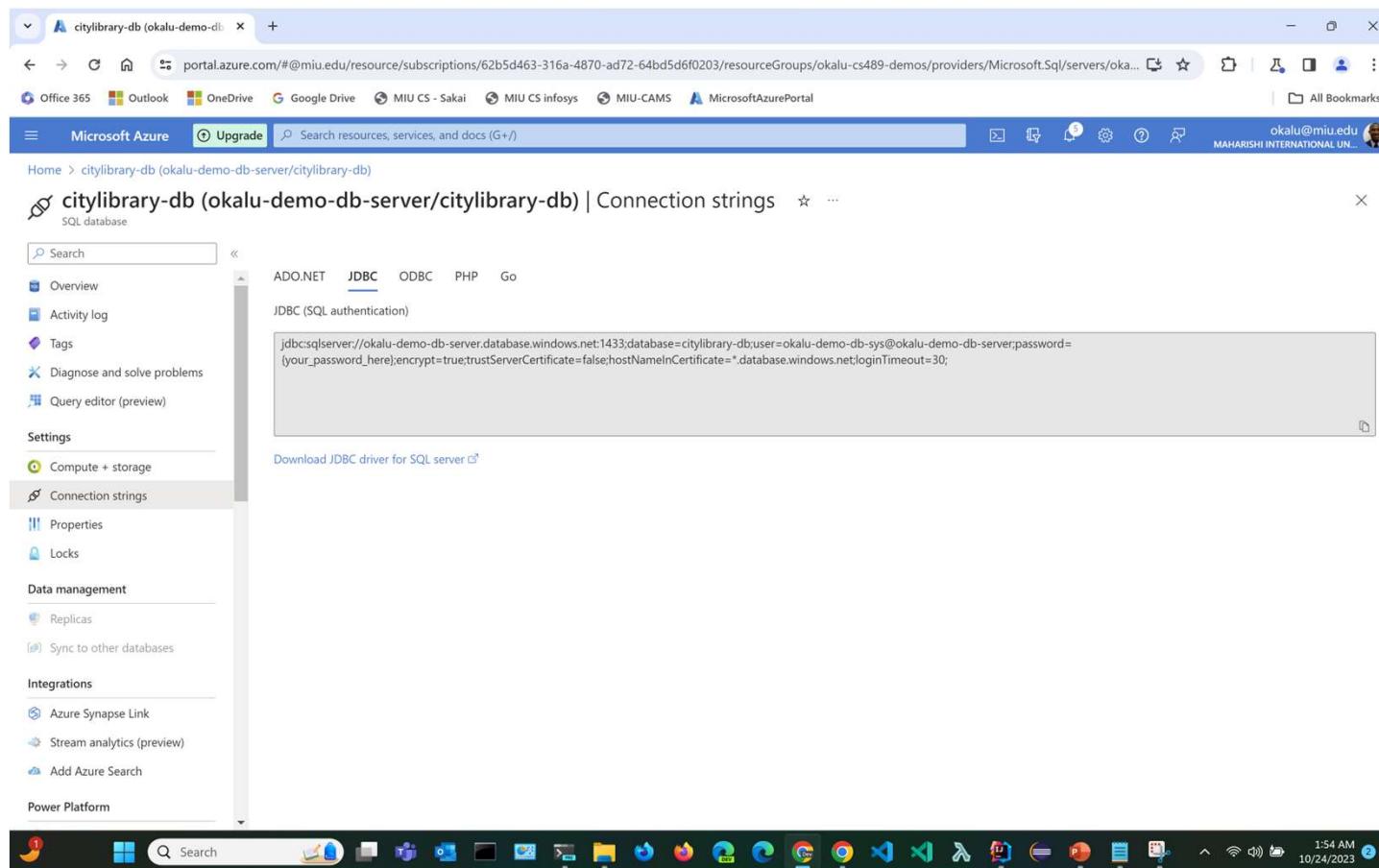
Azure Synapse Link Stream analytics (preview) Add Azure Search

Power Platform

1 10:53 AM 10/24/2023

The screenshot shows the Microsoft Azure portal interface. The user is viewing the connection strings for a SQL database named 'citylibrary-db' located in the 'okalu-demo-db-server' resource group. The left sidebar contains navigation links for Compute + storage, Properties, Locks, Replicas, Sync to other databases, Integrations (Azure Synapse Link, Stream analytics (preview), Add Azure Search), and Power Platform. The main content area displays two connection string examples for ADO.NET. The first example uses Microsoft Entra passwordless authentication, and the second example uses SQL authentication. Both examples include the server name (tcp:okalu-demo-db-server.database.windows.net), port (1433), initial catalog (citylibrary-db), and various connection parameters like Encrypt=True, TrustServerCertificate=False, and Connection Timeout=30. The 'ADO.NET' tab is selected in the top navigation bar.

- Select the JDBC tab and copy the Database connection string given



Azure portal screenshot showing the SQL databases page for the 'okalu-demo-db-server' server.

The browser address bar shows: `portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/okalu-demo-db-server/databases/citylibrary-db`

The Microsoft Azure header bar includes: Microsoft Azure, Upgrade, Search resources, services, and docs (G+), and a user profile for okalu@miu.edu.

The left sidebar navigation menu includes:

- Overview
- Activity log
- Access control (IAM)
- Tags
- Quick start
- Diagnose and solve problems
- Settings**
 - Microsoft Entra ID
 - SQL databases** (selected)
 - SQL elastic pools
 - DTU quota
 - Properties
 - Locks
- Data management
 - Backups
 - Deleted databases
 - Failover groups
 - Import/Export history
- Security

The main content area displays the 'Database' table with one entry:

Database	Status	Pricing tier
citylibrary-db	Online	General Purpose - Serverless: Standard-series (Gen5), 2 vCores

Showing 1 - 1 of 1 results.

The taskbar at the bottom shows various pinned application icons including File Explorer, Task View, Microsoft Edge, and others.

lecture-slides - OneDrive x

A citylibrary-db (okalu-demo-db) x

portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/oka... Copy Star Open More

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS Infosys MIU-CAMS MicrosoftAzurePortal All Bookmarks

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

Home > citylibrary-db (okalu-demo-db-server/citylibrary-db) > okalu-demo-db-server | SQL databases >

citylibrary-db (okalu-demo-db-server/citylibrary-db)

SQL database

Search Copy Restore Export Set server firewall Delete Connect with... Feedback

Overview Activity log Tags Diagnose and solve problems Query editor (preview)

Settings Compute + storage Connection strings Properties Locks

Data management Replicas Sync to other databases

Integrations Azure Synapse Link Stream analytics (preview) Add Azure Search

Power Platform

Essentials

Resource group ([move](#)) : [okalu-cs489-demos](#) Server name : [okalu-demo-db-server.database.windows.net](#)
Status : Online Connection strings : Show database connection strings
Location : Central US Pricing tier : Free - General Purpose - Serverless: Gen5, 2 vCores
Subscription ([move](#)) : [Free Trial](#) Overage billing : Disabled
Subscription ID : 62b5d463-316a-4870-ad72-64bd5d6f0203 Auto-pause delay : 1 hour
Tags ([edit](#)) : Add tags Free monthly vCore amount : 99,668 vCore seconds remaining
Earliest restore point : 2023-10-24 06:54 UTC

JSON View

Getting started Monitoring Properties Features Notifications (0) Integrations Tutorials

Start working with your database

Connect to your database and start working with data with a few simple steps. [Learn more](#)

Configure access Connect to application Start developing

Configure network access to your SQL server. [Learn more](#) Use connection strings to connect to your SQL database from your applications and favorite tools. Work in your database by using tools to add, modify and query data. [Compare tools](#)

Configure See connection strings Open Azure Data Studio

2:06 AM 10/24/2023

lecture-slides - OneDrive x A citylibrary-db (okalu-demo-db) x + portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/oka... ...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal All Bookmarks

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

Home > citylibrary-db (okalu-demo-db-server/citylibrary-db) > okalu-demo-db-server | SQL databases > citylibrary-db (okalu-demo-db-server/citylibrary-db)

citylibrary-db (okalu-demo-db-server/citylibrary-db) | Query editor (preview)

SQL database

Search Login New Query Open query Feedback Getting started

Overview Activity log Tags Diagnose and solve problems Query editor (preview)

Settings

Compute + storage Connection strings Properties Locks

Data management

Replicas Sync to other databases

Integrations

Azure Synapse Link Stream analytics (preview) Add Azure Search

Power Platform

Query editor (preview) is a tool to run SQL queries against Azure SQL Database in the Azure portal. It is designed for lightweight querying and object exploration in your database. For more information and troubleshooting, [Learn more](#)

SQL

Welcome to SQL Database Query Editor

SQL server authentication

Login * Continue as okalu@miu.edu

OR

Password *

OK



2:07 AM 10/24/2023

lecture-slides - OneDrive x A citylibrary-db (okalu-demo-db) x + portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourceGroups/okalu-cs489-demos/providers/Microsoft.Sql/servers/oka... ...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal All Bookmarks

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

Home > citylibrary-db (okalu-demo-db-server/citylibrary-db) > okalu-demo-db-server | SQL databases > citylibrary-db (okalu-demo-db-server/citylibrary-db)

citylibrary-db (okalu-demo-db-server/citylibrary-db) | Query editor (preview) ...

SQL database

Search Login New Query Open query Feedback Getting started

Overview Activity log Tags Diagnose and solve problems Query editor (preview)

Settings

Compute + storage Connection strings Properties Locks

Data management

Replicas Sync to other databases

Integrations

Azure Synapse Link Stream analytics (preview) Add Azure Search

Power Platform https://portal.azure.com/#

Query editor (preview) is a tool to run SQL queries against Azure SQL Database in the Azure portal. It is designed for lightweight querying and object exploration in your database. For more information and troubleshooting, [Learn more](#)

Welcome to SQL Database Query Editor

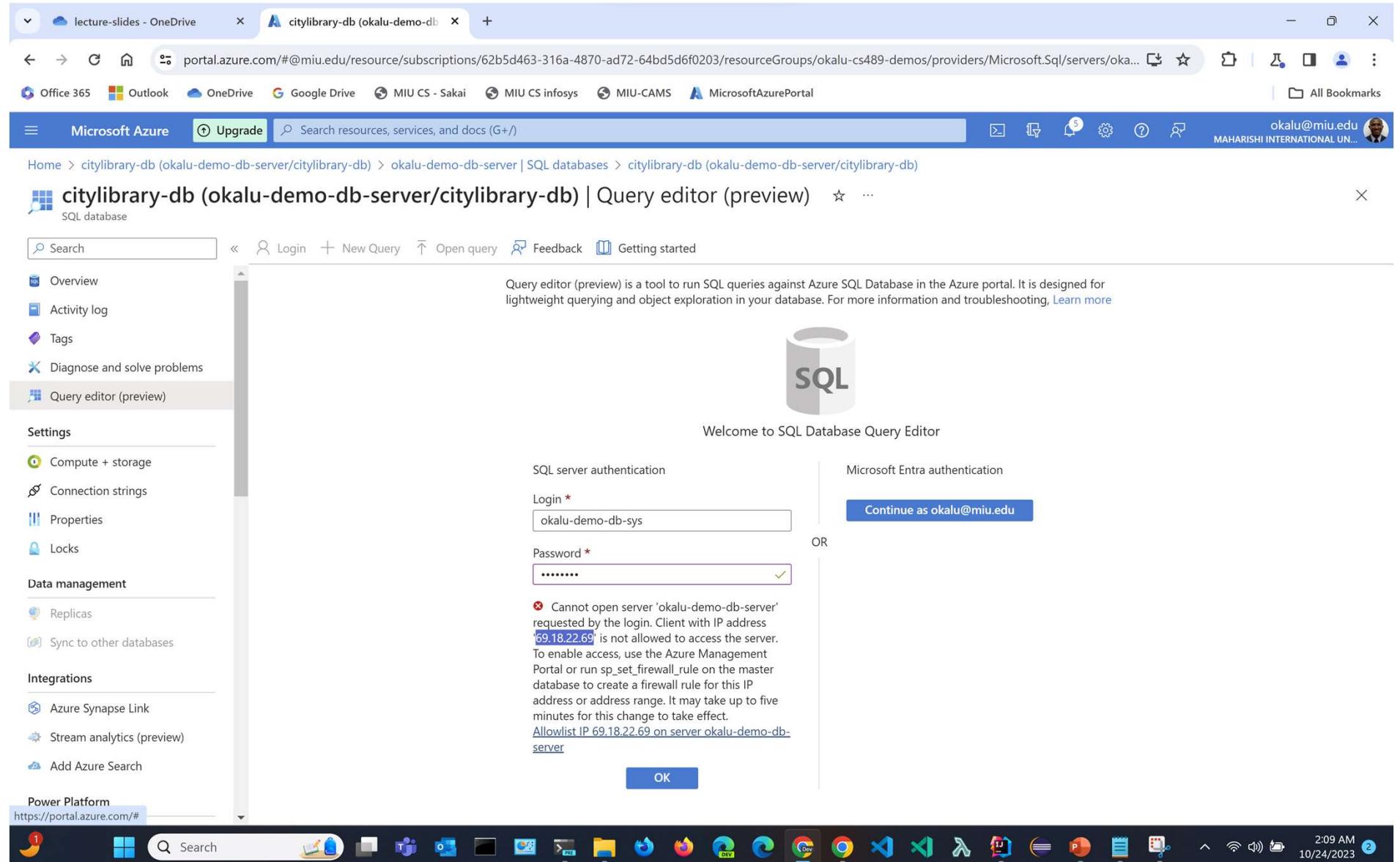
SQL server authentication

Login * Continue as okalu@miu.edu

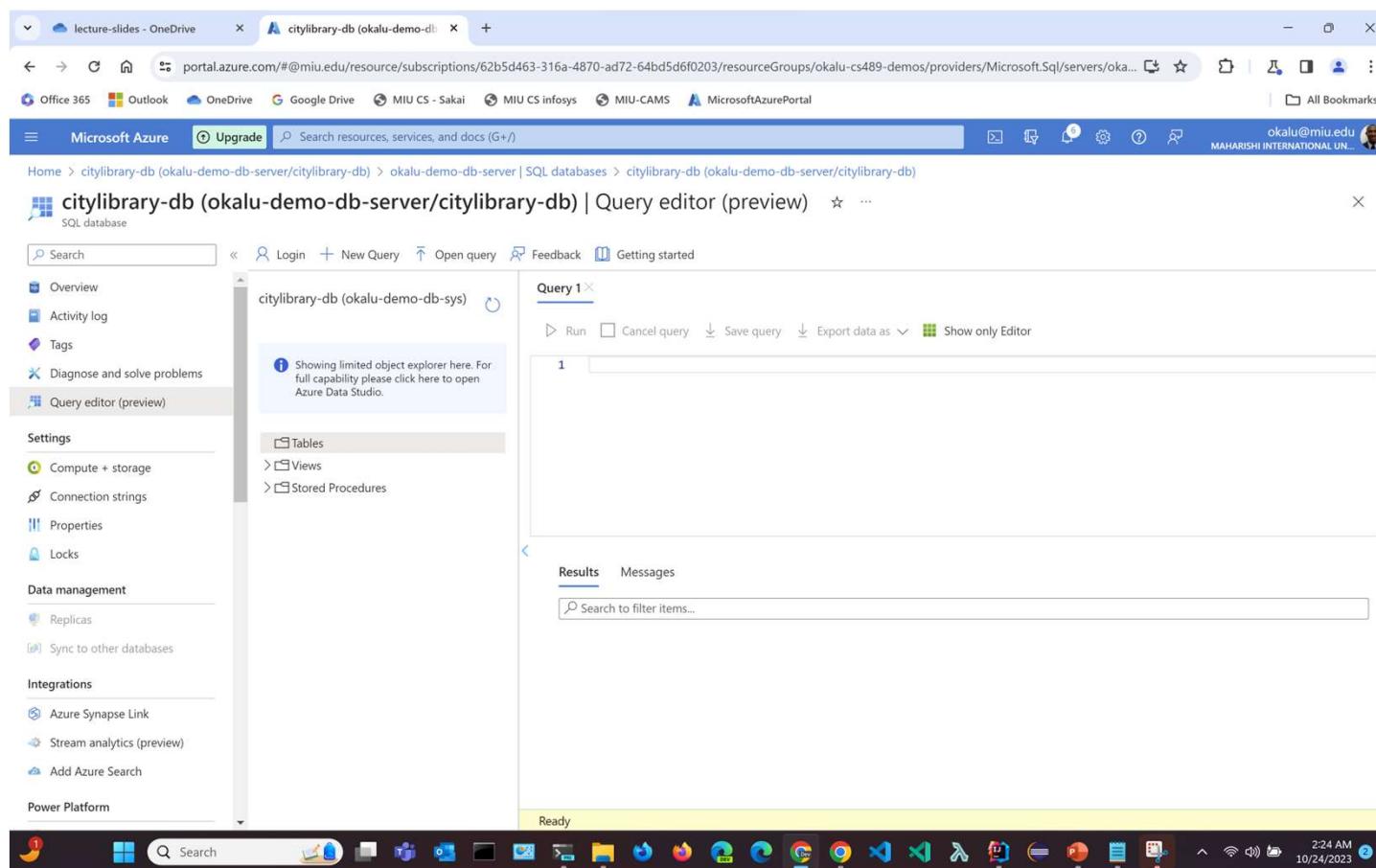
Password * OR

Cannot open server 'okalu-demo-db-server' requested by the login. Client with IP address '69.18.22.69' is not allowed to access the server. To enable access, use the Azure Management Portal or run sp_set_firewall_rule on the master database to create a firewall rule for this IP address or address range. It may take up to five minutes for this change to take effect.
[Allowlist IP 69.18.22.69 on server okalu-demo-db-server](#)

OK



- Upon successful login to the Azure SQL Database instance



- Add the <dependency> for JDBC Driver for Microsoft SQL Server to your pom.xml

```
<dependency>
    <groupId>com.microsoft.sqlserver</groupId>
    <artifactId>mssql-jdbc</artifactId>
    <scope>runtime</scope>
</dependency>
```

spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.SQL
ServerDialect

Execute your project

The screenshot shows a Java development environment with the following details:

- Project Explorer:** Displays the project structure under "lesson12-software-delivery-to-azure". The "citylibrarywebapi" module is selected. Inside "src/main/resources", the "application.properties" file is open.
- application.properties Content:**

```
10 #spring.datasource.password=test1234
11
12 # MySQL8-On-local Docker Container named MySQL80nDocker
13 #spring.datasource.url=jdbc:mysql://localhost:3307/cs489-citylibrary-db
14 #spring.datasource.username=cs489-db-sys
15 #spring.datasource.password=test1234
16
17 # Microsoft Azure SQL database
18 spring.datasource.url=jdbc:sqlserver://okalu-demo-db-server.database.windows.net
19 spring.datasource.username=okalu-demo-db-sys
20 spring.datasource.password=Test1234
21
22 # JPA/Hibernate Properties
23 spring.jpa.show-sql=true
24 spring.jpa.hibernate.ddl-auto=update
25 spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.SQLServerDialect
26 #spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQLDialect
27 spring.jpa.properties.hibernate.format_sql=true
28
```
- Status Bar:** Shows the path "cs489-apsd-202310 > Lessons > lesson12-software-delivery-to-azure > citylibrarywebapi > src > main > resources > application.properties", along with system information like "21:1 LF ISO-8859-1 4 spaces" and the date/time "231 AM 10/24/2023".

Create a MySQL db on Azure

- <https://azure.microsoft.com/free/>

The screenshot shows the Microsoft Azure portal interface for creating a MySQL flexible server. The browser address bar displays portal.azure.com/#create/Microsoft.MySQLServer. The page title is "Flexible server".

Basics tab selected. Key sections include:

- Did you know?**: New users can use MySQL - Flexible Server free for up to 750 hours using Azure free account. [Learn more](#).
- Project details**: Subscription is set to "Free Trial" and Resource group is "okalu-cs489-demos".
- Server details**: Enter required settings for the server.

Estimated costs sidebar:

- Compute Sku**: USD 12.41/month (Standard_B1ms (1 vCore))
- Storage**: USD 2.30/month (Free upto 32 GB, Storage selected 20 GiB (USD 0.12 per GiB))
- Auto scale IOPS**: Auto scale IOPS is billed on usage in per million request increments. [Learn more](#).
- Backup Retention**: Backup retention is billed based on additional storage used for retaining.

A Flexible server - Microsoft Azure +

portal.azure.com/#create/Microsoft.MySQLServer

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a... All Bookmarks

Microsoft Azure Search resources, services, and docs (G+/-) Microsoft Azure Home > Create a resource >

Flexible server

Microsoft

⚠️ Server names, networking connectivity method, zone redundant HA and backup redundancy cannot be changed after server is created. Review these options carefully before provisioning.

Connectivity method Public access (allowed IP addresses) and Private endpoint Private access (VNet Integration)

ⓘ 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 (69.18.22.69) + Add 0.0.0 - 255.255.255.255

Firewall rule name	Start IP address	End IP address
Firewall rule name	Start IP address	End IP address

Private endpoint

[Review + create](#) < Previous Next : Security > https://portal.azure.com/#

Estimated costs

Compute Sku USD 12.41/month

Free upto 750 hours Standard_B1ms (1 vCore) 12.41

Storage USD 2.30/month

Free upto 32 GB Storage selected 20 GiB (USD 0.12 per GiB) 20 x 0.12

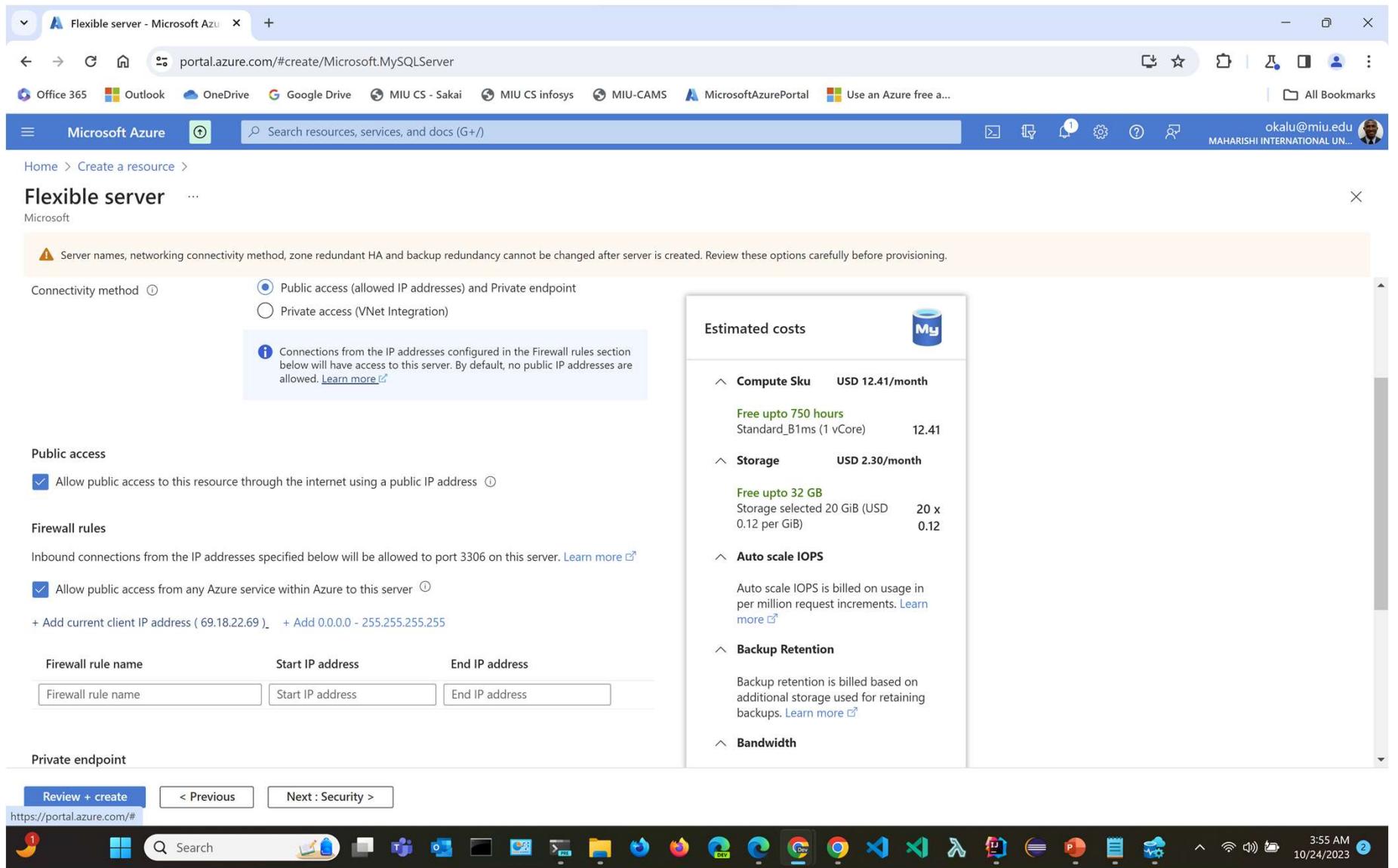
Auto scale IOPS

Auto scale IOPS is billed on usage in per million request increments. [Learn more](#)

Backup Retention

Backup retention is billed based on additional storage used for retaining backups. [Learn more](#)

Bandwidth



A Flexible server - Microsoft Azure +

portal.azure.com/#create/Microsoft.MySQLServer

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a... All Bookmarks

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

Home > Create a resource >

Flexible server

No preference

Not Enabled

8.0

Burstable, B1ms, 1 vCores, 2 GiB RAM, 20 storage, Auto scale IOPS

7 day(s)

Enabled

Not Enabled

Networking (Change)

Public access (allowed IP addresses) and Private endpoint

Yes

Yes

1

SSL is enforced and TLS version is 1.2. This can be changed after server is created. [Learn more](#)

Security (Change)

Service-managed key

Tags (Change)

Storage USD 2.30/month

Free upto 32 GB Storage selected 20 GiB (USD 0.12 per GiB) 20 x 0.12

Auto scale IOPS

Auto scale IOPS is billed on usage in per million request increments. [Learn more](#)

Backup Retention

Backup retention is billed based on additional storage used for retaining backups. [Learn more](#)

Bandwidth

For outbound data transfer across services in different regions will incur additional charges. Any inbound data transfer is free. [Learn more](#)

Estimated total USD 14.71/month

Charges will apply if you use above the free monthly limits. Please check your [usage](#) of free services. Final charges will appear in your local currency.

Create < Previous Download a template for automation



MySQLFlexibleServer_53764539aa8c40c19afad817645968d5 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Deployment is in progress

Deployment name: MySQLFlexibleServer_53764539aa8c40c19afad8... Start time: 10/24/2023, 3:56:43 AM
Subscription: Free Trial Correlation ID: 7be89369-317e-4be5-886e-013e91438462

Deployment details

Resource	Type	Status	Operation details
firewallRules-788c337c2eb9423ba33	Microsoft.Resources/deployments	Created	Operation details
okalu-mysql-on-azure	Microsoft.DBforMySQL/flexibleSer...	Created	Operation details

Give feedback Tell us about your experience with deployment

Get started with MySQL Flexible Server

Free Microsoft tutorials Create PHP + MySQL App

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >



A MySqlFlexibleServer_53764539aa8c40c19afad817645968d5 x +

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2F62b5d463-316a-4870-ad72-64bd5d6f0203%2FresourceGroups%2Fo...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a... All Bookmarks

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

Home > MySqlFlexibleServer_53764539aa8c40c19afad817645968d5 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Your deployment is complete

Deployment name: MySqlFlexibleServer_53764539aa8c40c19afad8... Start time: 10/24/2023, 3:56:43 AM
Subscription: Free Trial Correlation ID: 7be89369-317e-4be5-886e-013e91438462

Deployment details

Next steps

Learn how to manage your server Recommended
For public access connectivity, setup a firewall rule to connect to the server Recommended
Learn about private access connectivity method Recommended
Setup monitoring alerts Recommended

Go to resource

Give feedback Tell us about your experience with deployment

Deployment succeeded Deployment 'MySqlFlexibleServer_53764539aa8c40c19afad817645968d5' to resource group 'okalu-cs489-demos' was successful.

Go to resource Pin to dashboard

\$ Cost Management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

My Get started with MySQL Flexible Server

Free Microsoft tutorials Create PHP + MySQL App

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >



MySQL Connections + ⚙

Local instance MySQL80
root
localhost:3306

Setup New Connection

Connection Name: MySQL8-On-Azure
Type a name for the connection

Connection Method: Standard (TCP/IP)
Method to use to connect to the RDBMS

Parameters SSL Advanced

Hostname: /sql-on-azure.mysql.database.azure.com Port: 3306
Name or IP address of the server host - and TCP/IP port.

Username: okalu_sys
Name of the user to connect with.

Password: Store in Vault ... Clear
The user's password. Will be requested if not set.

Default Schema:
The schema to use as default schema. Leave blank to select it later.

MySQL Workbench

Successfully made the MySQL connection!

Information related to this connection:

Host: okalu-mysql-on-azure.mysql.database.azure.com
Port: 3306
User: okalu_sys
SSL: enabled with ECDHE-RSA-AES128-GCM-SHA256

A successful MySQL connection was made with the parameters defined for this connection.

Configure Server Management... Test Connection Cancel OK

This screenshot shows the MySQL Workbench interface. On the left, there's a sidebar with icons for Edit, View, Database, Tools, Scripting, and Help. Below that is a 'MySQL Connections' section with a local instance MySQL80 listed. In the center, a 'Setup New Connection' dialog is open, prompting for connection details like Hostname, Username, and Password. To the right of the dialog, a success message box is displayed, stating that the connection was successfully made. At the bottom, a taskbar shows various application icons, including Microsoft Edge, File Explorer, and the Start button.

MySQL workbench

MySQL8-On-Azure

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

citylibrary-db

- Tables
- Views
- Stored Procedures
- Functions

sys

Administration - Users and Privileges

MySQL8-On-Azure

Users and Privileges

User Accounts

User	From Host
azure_superuser	127.0.0.1
azure_superuser	localhost
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
okalu_sys	%

Details for account okalu_sys@%

Login Account Limits Administrative Roles Schema Privileges

Schema Privileges

Schema	Privileges
citylibrary-db	ALTER, ALTER ROUTINE, CREATE, CREATE ROUTINE, CREATE TEMPORARY TABLES, CREATE VIEW, DELETE, EVENT, INDEX, INSERT, REFERENCES, SHOW VIEW, TRIGGER

Schema and Host fields may use % and _ wildcards.
The server will match specific entries before wildcarded ones.

Revoke All Privileges De

Object Rights

- SELECT
- INSERT
- UPDATE
- DELETE
- EXECUTE
- SHOW VIEW

DDL Rights

- CREATE
- ALTER
- REFERENCES
- INDEX
- CREATE VIEW
- CREATE ROUTINE
- ALTER ROUTINE
- EVENT
- DROP
- TRIGGER

Other Rights

- GRANT OPTION
- CREATE TEMPORARY TABLES
- LOCK TABLES

Add Account Delete Refresh

Administration Schemas

No object selected

Action Output

#	Time	Action
1	04:12:46	Apply changes to citylibrary-db

Message

Changes applied

Object Info Session

Search

Icons for various applications: Mail, File Explorer, Task Manager, Edge, Firefox, Chrome, VS Code, etc.

Project

- lesson12-software-delivery-to-azure
- citylibrarywebapi [citylibrarywebapi (1)]
 - .mvn
 - src
 - main
 - java
 - edu.miu.cs.cs489.lesson7.citylibrary
 - advice
 - controller
 - dto
 - exception
 - model
 - repository

Services

- Spring Boot
- Running
- L12-CitylibrarywebapiApplication [devtools] :8080/
- Not Started

Console

```
2023-10-24T04:24:16.487-05:00 INFO 1256 --- [ restartedMain] j.LocalCont ↑  
2023-10-24T04:24:16.724-05:00 INFO 1256 --- [ restartedMain] o.s.d.j.r.c ↓  
2023-10-24T04:24:16.869-05:00 WARN 1256 --- [ restartedMain] JpaBaseConf ↵  
2023-10-24T04:24:17.107-05:00 INFO 1256 --- [ restartedMain] o.s.b.d.a.C ↗  
2023-10-24T04:24:17.133-05:00 INFO 1256 --- [ restartedMain] o.s.b.w.emt ↘  
2023-10-24T04:24:17.140-05:00 INFO 1256 --- [ restartedMain] e.m.c.c.l.c  
Hello, Lesson12-SoftwareDelivery to Azure – RESTful Web API  
CityLibrary WebAPI server. Starting ...  
CityLibrary WebAPI server. Started.  
Running Apache Tomcat service and Listening for HTTP Request on Port number  
To see list of Publishers, send HTTP GET Request to the URI,  
http://localhost:8080/citylibrary/api/v1/publisher/list
```

cs489-apsd-202310

17°C Clear Search

4:25 AM 10/24/2023



Navigator:

SCHEMAS

Filter objects

citylibrary-db

Tables

- addresses
- authors
- books
- books_authors
- publishers

Views

Stored Procedures

Functions

sys

addresses ×

1 • **SELECT * FROM `citylibrary-db`.addresses;**

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

address_id	city	state	street	zip_code
NULL	NULL	NULL	NULL	NULL
*				

Administration Schemas

Information

Schema: citylibrary-db

addresses1 ×

Output

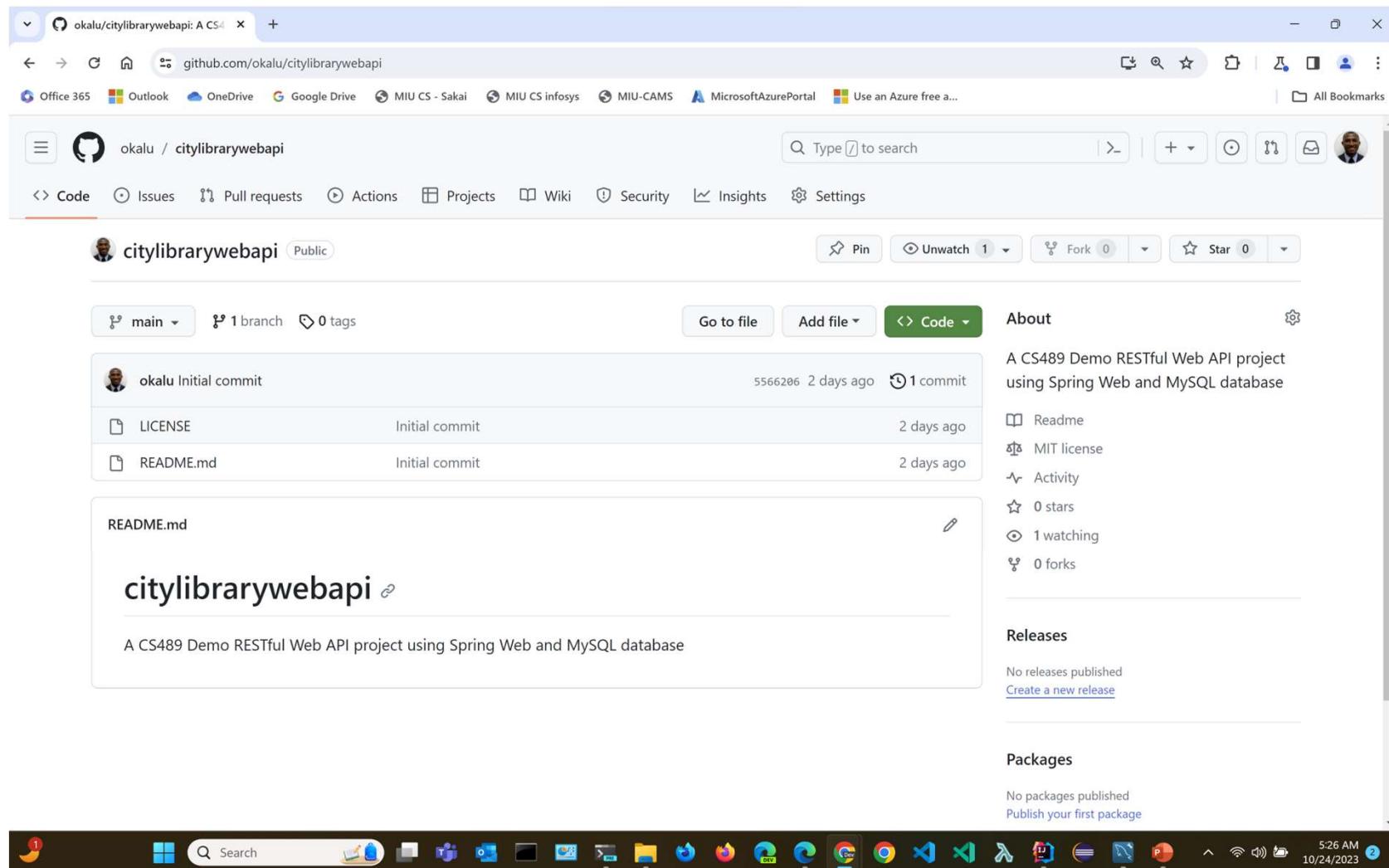
Action Output

#	Time	Action
1	04:26:59	SELECT * FROM `citylibrary-db`.addresses LIMIT 0, 1000

Message

0 row(s) returned

Push the app to github repo



rywebapi: A CS49

github.com/okalu/citylibrarywebapi

book OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a... All Bookmarks

lu / citylibrarywebapi Type / to search

sues Pull requests Actions Projects Wiki Security Insights Settings

citylibrarywebapi (Public)

ain ▾ 1 branch 0 tags Go to file Add file ▾ <> Code ▾

kalu Merge branch 'main' of https://github.com/okalu/citylibrarywebapi 8a4e102 1 minute ago 3 commits

rc	First version to be deployed to azure	3 minutes ago
.gitignore	First version to be deployed to azure	3 minutes ago
.LICENSE	Initial commit	2 days ago
README.md	Initial commit	2 days ago
pom.xml	First version to be deployed to azure	3 minutes ago

ME.md

citylibrarywebapi

CS489 Demo RESTful Web API project using Spring Web and MySQL database

About

A CS489 Demo RESTful Web API project using Spring Web and MySQL database

Readme MIT license Activity 0 stars 1 watching 0 forks

Releases

No releases published Create a new release

Packages

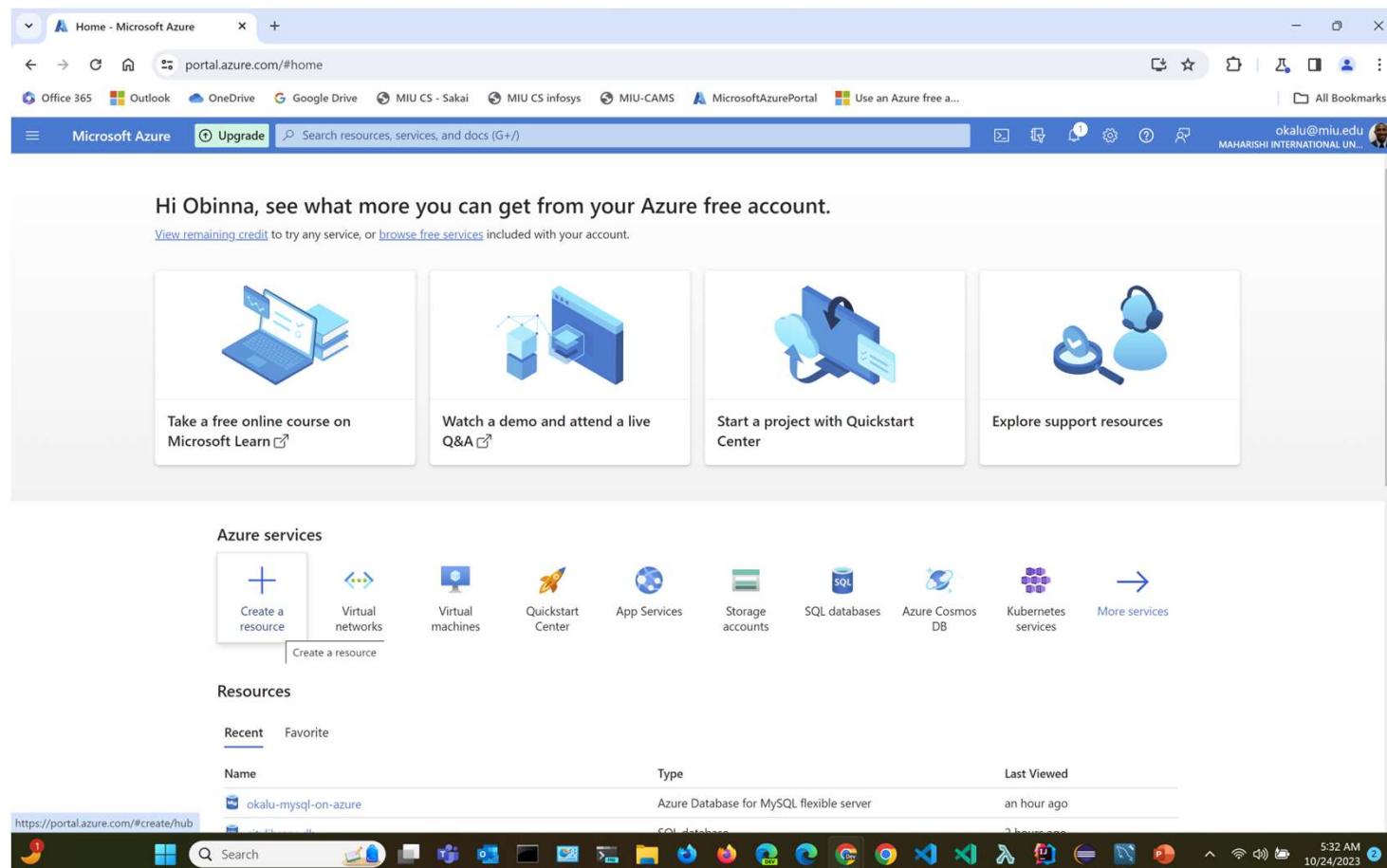
No packages published Publish your first package

Search

5:28 AM 10/24/2023

Deploy the app to azure

- On Azure portal homepage, select “Create a resource”



Deploy the app to azure

- Select “Create” under Web App

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes links for Office 365, Outlook, OneDrive, Google Drive, MIU CS - Sakai, MIU CS Infosys, MIU-CAMS, MicrosoftAzurePortal, and a link to "Use an Azure free account". The user's email, okalu@miu.edu, and name, MAHARISHI INTERNATIONAL UN..., are visible on the right. The main content area is titled "Create a resource". On the left, there's a sidebar with "Get Started" and a "Recently created" section. Below that is a "Categories" list: AI + Machine Learning, Analytics, Blockchain, Compute, Containers, Databases, Developer Tools, DevOps, Identity, Integration, Internet of Things, IT & Management Tools, Media, Migration, Mixed Reality, and Monitoring & Diagnostics. To the right of the sidebar are two sections: "Popular Azure services" (Virtual machine, Web App, SQL Database, Function App, Key Vault, Data Factory, Template deployment (deploy using custom templates), Logic App) and "Popular Marketplace products" (Windows Server 2019 Datacenter, Microsoft Windows 10, Windows 11 Pro, version 21H2, Ubuntu Server 20.04 LTS, Ubuntu Server 22.04 LTS, Red Hat Enterprise Linux 7.4, Essentials 50K, MongoDB Atlas (pay-as-you-go)). A search bar at the top says "Search resources, services, and docs (G+)".

A Create Web App - Microsoft A... X +

portal.azure.com/#create/Microsoft.WebSite

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a...

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Create Web App

Basics Deployment Networking Monitoring Tags Review + create

App Service Web Apps lets you quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. Meet rigorous performance, scalability, security and compliance requirements while using a fully managed platform to perform infrastructure maintenance. [Learn more](#)

Project Details

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

Subscription * ⓘ Free Trial

Resource Group * ⓘ okalu-CS489-demos

Create new

Instance Details

Need a database? [Try the new Web + Database experience.](#)

Name * okalu-CS489-citylibrarywebapi.azurewebsites.net

Publish * Code Docker Container Static Web App

Runtime stack * Java 17

Java web server stack * Java SE (Embedded Web Server)

Operating System * Linux Windows

Region * East US

Review + create < Previous Next : Deployment >



5:36 AM 10/24/2023

A Create Web App - Microsoft A... X +

portal.azure.com/#create/Microsoft.WebSite

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a...

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Create Web App

Basics Deployment Networking Monitoring Tags Review + create

Enable GitHub Actions to continuously deploy your app. GitHub Actions is an automation framework that can build, test, and deploy your app whenever a new commit is made in your repository. If your code is in GitHub, choose your repository here and we will add a workflow file to automatically deploy your app to App Service. If your code is not in GitHub, go to the Deployment Center once the web app is created to set up your deployment. [Learn more](#)

GitHub Actions settings

Continuous deployment Disable Enable

GitHub Actions details

Select your GitHub details, so Azure Web Apps can access your repository. You must have write access to your chosen repository to deploy with GitHub Actions.

GitHub account okalu [Change account](#)

Organization * okalu

Repository * citylibrarywebapi

Branch * main

Workflow configuration

File with the GitHub Actions workflow configuration.

[Preview file](#)

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



5:39 AM 10/24/2023

A Create Web App - Microsoft A... X +

portal.azure.com/#create/Microsoft.WebSite

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a...

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Web Apps can be provisioned with the inbound address being public to the internet or isolated to an Azure virtual network. Web Apps can also be provisioned with outbound traffic able to reach endpoints in a virtual network, be governed by network security groups or affected by virtual network routes. By default, your app is open to the internet and cannot reach into a virtual network. These aspects can also be changed after the app is provisioned. [Learn more](#)

Enable public access * On Off

⚠️ Network injection is only available in Basic, Standard, Premium, Premium V2, and Premium V3 Dedicated App Service plans.

Enable network injection On Off

Review + create < Previous Next : Monitoring >

5:41 AM 10/24/2023



A Create Web App - Microsoft A... X +

portal.azure.com/#create/Microsoft.WebSite

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a...

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Create a resource >

Create Web App ...

Basics Deployment Networking Monitoring Tags Review + create

Summary

Web App by Microsoft **Free sku** Estimated price - Free

Details

Subscription	62b5d463-316a-4870-ad72-64bd5d6f0203
Resource Group	okalu-CS489-demos
Name	okalu-CS489-citylibrarywebapi
Publish	Code
Runtime stack	Java 17
Java web server stack	Java SE (Embedded Web Server)

App Service Plan (New)

Name	ASP-okalucs489demos-a5d6
Operating System	Windows
Region	East US
SKU	Free
ACU	Shared infrastructure
Memory	1 GB memory

Create < Previous Next > Download a template for automation

Search

5:44 AM 10/24/2023

Microsoft.Web-WebApp-Portal

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2F62b5d463-316a-4870-ad72-64bd5d6f0203%2FresourceGroups%2Fo...

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a...

All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.Web-WebApp-Portal-64d33bd7-9ac0 | Overview

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Deployment is in progress

Deployment name: Microsoft.Web-WebApp-Portal-64d33bd7-9ac0 Start time: 10/24/2023, 5:45:15 AM
Subscription: Free Trial Correlation ID: e83d63dc-28af-448a-bcde-beaf7bfae9cb

Deployment details

Resource	Type	Status	Operation details
ASP-okablecs489demos-a5d6	Microsoft.Web/serverfarms	OK	Operation details

Give feedback Tell us about your experience with deployment

Microsoft Defender for Cloud Secure your apps and infrastructure Go to Microsoft Defender for Cloud >

Free Microsoft tutorials Start learning today

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >

5:45 AM 10/24/2023



A Microsoft.Web-WebApp-Portal X +

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2F62b5d463-316a-4870-ad72-64bd5d6f0203%2FresourceGroups%2Fo... 🔍 ⚡ 🌐 🏷️ 📁 🎯 🛡️ 🌐 🏷️ 📁 🎯 🛡️

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS infosys MIU-CAMS MicrosoftAzurePortal Use an Azure free a... All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN...

Home > Microsoft.Web-WebApp-Portal-64d33bd7-9ac0 | Overview ✖ ...

Deployment

Search Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

✓ Your deployment is complete

Deployment name: Microsoft.Web-WebApp-Portal-64d33bd7-9ac0 Start time: 10/24/2023, 5:45:15 AM
Subscription: Free Trial Correlation ID: e83d63dc-28af-448a-bcde-beaf7bfae9cb

Deployment details Next steps

Manage deployments for your app. Recommended
Protect your app with authentication. Recommended

Go to resource

Give feedback Tell us about your experience with deployment

Cost Management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

Microsoft Defender for Cloud Secure your apps and infrastructure Go to Microsoft Defender for Cloud >

Free Microsoft tutorials Start learning today

Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >



5:46 AM 10/24/2023

A okalu-CS489-citylibrarywebapi +

portal.azure.com/#@miu.edu/resource/subscriptions/62b5d463-316a-4870-ad72-64bd5d6f0203/resourcegroups/okalu-CS489-demos/providers/Microsoft.Web/sites/okalu-CS489-citylibrarywebapi

Office 365 Outlook OneDrive Google Drive MIU CS - Sakai MIU CS Infosys MIU-CAMS Microsoft Azure Portal Use an Azure free account All Bookmarks

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

okalu@miu.edu MAHARISHI INTERNATIONAL UN.

Home > Microsoft.Web-WebApp-Portal-64d33bd7-9ac0 | Overview >

okalu-CS489-citylibrarywebapi

Web App

Search

Browse Stop Swap Restart Delete Refresh Download publish profile Reset publish profile Share to mobile Send us your feedback

Click here to access Application Insights for monitoring and profiling for your app.

Copy to clipboard JSON View

Essentials

Resource group (move) : [okalu-CS489-demos](#) Default domain : [okalu-CS489-citylibrarywebapi.azurewebsites.net](#)

Status : Running App Service Plan : ASP-okalucS489demos-a5d6

Location (move) : East US Operating System : Windows

Subscription (move) : [Free Trial](#) Health Check : Not Configured

Subscription ID : 62b5d463-316a-4870-ad72-64bd5d6f0203 GitHub Project : <https://github.com/okalu/citylibrarywebapi>

Tags (edit) : Add tags

Properties Monitoring Logs Capabilities Notifications Recommendations

Web app

Name	okalu-CS489-citylibrarywebapi	Deployment logs	View logs
Publishing model	Code	Last deployment	In Progress, building your application Refresh
Runtime Stack	Java - 17	Deployment provider	GitHubAction

Domains

Default domain	okalu-CS489-citylibrarywebapi.azurewebsites.net	Name	Enable Application Insights
Custom domain	Add custom domain	Virtual IP address	20.119.8.37

Application Insights

Networking

Deployment Center

View logs

In Progress, building your application Refresh

GitHubAction

Enable Application Insights

5:48 AM 10/24/2023



okalu-cs489-citylibrarywebapi.azurewebsites.net

```
[{"publisherId": 2, "name": "Apress, Inc.", "primaryAddress": {"addressId": 2, "street": "200 North Street", "city": "Los Angeles", "state": "CA", "zipCode": "90210-0002"}, "primaryAddress": null}, {"publisherId": 7, "name": "Dummy Pub to be deleted", "primaryAddress": null}, {"publisherId": 8, "name": "Holtzbrinck Publishing Group", "primaryAddress": {"addressId": 7, "street": "1234 Avenue of the Americas", "city": "New York", "state": "NY", "zipCode": "10221-0002"}, "primaryAddress": null}, {"publisherId": 5, "name": "John Wiley and Sons", "primaryAddress": {"addressId": 5, "street": "1097 S King's Avenue", "city": "Seattle", "state": "WA", "zipCode": "98123-0193"}, "primaryAddress": null}, {"publisherId": 1, "name": "McGraw-Hill, Inc.", "primaryAddress": {"addressId": 1, "street": "2000 South Porter Road", "city": "Culver City", "state": "CA", "zipCode": "95612-0001"}, "primaryAddress": null}, {"publisherId": 3, "name": "Penguin-RandomHouse, Inc.", "primaryAddress": {"addressId": 3, "street": "12 14th Street", "city": "New York", "state": "NY", "zipCode": "10927"}, "primaryAddress": null}],
```

CS489:

Software Development