

CIS 552: Database Design
Lab Homework- 5

Submitted by – Yashika Patil

Student ID – 02115374

Creating an Azure SQL Database Account:

I created a student account on Azure following the lab manual. Then I created an SQL database providing necessary details.

The screenshot shows the 'Create SQL Database' page in the Microsoft Azure portal. The page is titled 'Create SQL Database' and includes a 'Microsoft' logo. It features a search bar at the top and a navigation menu on the left. The main content area is divided into sections: 'Subscription', 'Resource group', 'Database details', and 'Workload environment'. The 'Subscription' section shows 'Azure for Students' selected. The 'Resource group' section shows '(New) Umass_source' selected. The 'Database details' section includes fields for 'Database name' (database1) and 'Server' ((new) umass-database-1 (Central US)). The 'Workload environment' section has radio buttons for 'Yes' and 'No' under 'Want to use SQL elastic pool?' and 'Development' and 'Production' under 'Workload environment'. A 'Review + create' button is at the bottom left, and a 'Next: Networking >' button is at the bottom right.

Microsoft Azure

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

ypatil1@umassd.edu
UNIVERSITY OF MASSACHUSETT...

Home > SQL databases >

Create SQL Database

Microsoft

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

Subscription * ⓘ Azure for Students

Resource group * ⓘ (New) Umass_source
[Create new](#)

Database details

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

Database name * database1 ✓

Server * ⓘ (new) umass-database-1 (Central US)
[Create new](#)

Want to use SQL elastic pool? ⓘ ☐ Yes ☒ No

Workload environment ☒ Development ☐ Production

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

Default settings provided for Development workloads. Configurations can be modified as needed.

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

Set up the server: I created a new server with a unique name, selected the region and set the admin login credentials.

The screenshot shows the 'Create SQL Database Server' page in the Microsoft Azure portal. The page is titled 'Create SQL Database Server' and includes a 'Microsoft' logo. It features a search bar at the top and a navigation menu on the left. The main content area is divided into sections: 'Authentication', 'Set Microsoft Entra admin', 'Server admin login', 'Password', and 'Confirm password'. The 'Authentication' section has a note about Azure Active Directory (Azure AD) being now Microsoft Entra ID. The 'Set Microsoft Entra admin' section shows 'ypatil1@umassd.edu' as the admin user. The 'Server admin login' section shows 'umassd-server' as the login. The 'Password' and 'Confirm password' sections show masked passwords. An 'OK' button is at the bottom left.

Microsoft Azure

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

ypatil1@umassd.edu
UNIVERSITY OF MASSACHUSETT...

Home > SQL databases > Create SQL Database >

Create SQL Database Server

Microsoft

Authentication

NOTE 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

Set Microsoft Entra admin ypatil1@umassd.edu
Admin Object/App ID: 2aac762e-edeb-482f-a650-f3151b82fc91
[Set admin](#)

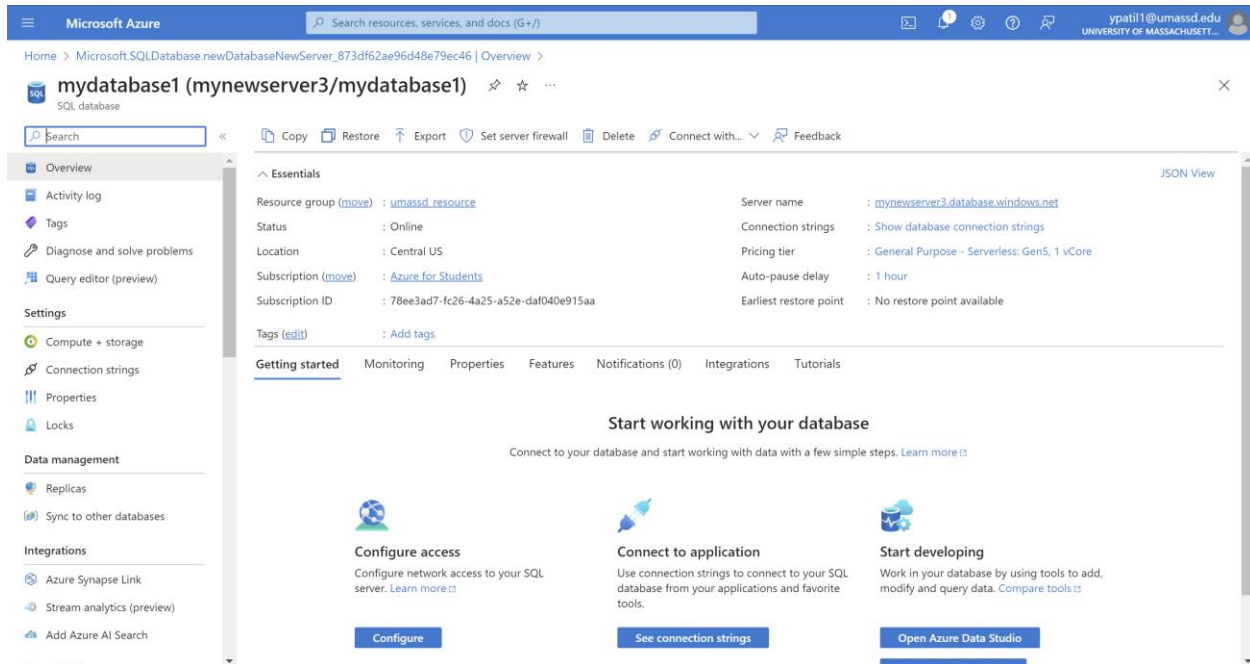
Server admin login * umassd-server ✓

Password * ✓

Confirm password * ✓

[OK](#)

The details of the newly created SQL server database are displayed in the following screenshot:

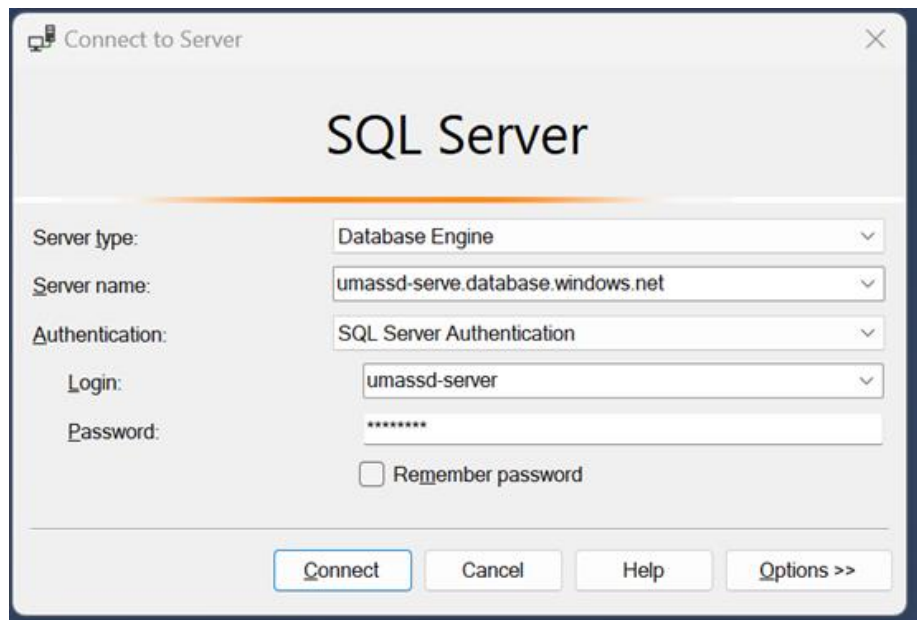


Then I navigated to the SQL database server settings, selected to set server firewall where I added my local IP address to the allowed list.

The SQL Server database is hence created on Azure Cloud.

Creating Tables and populating data using SSMS on local computer:

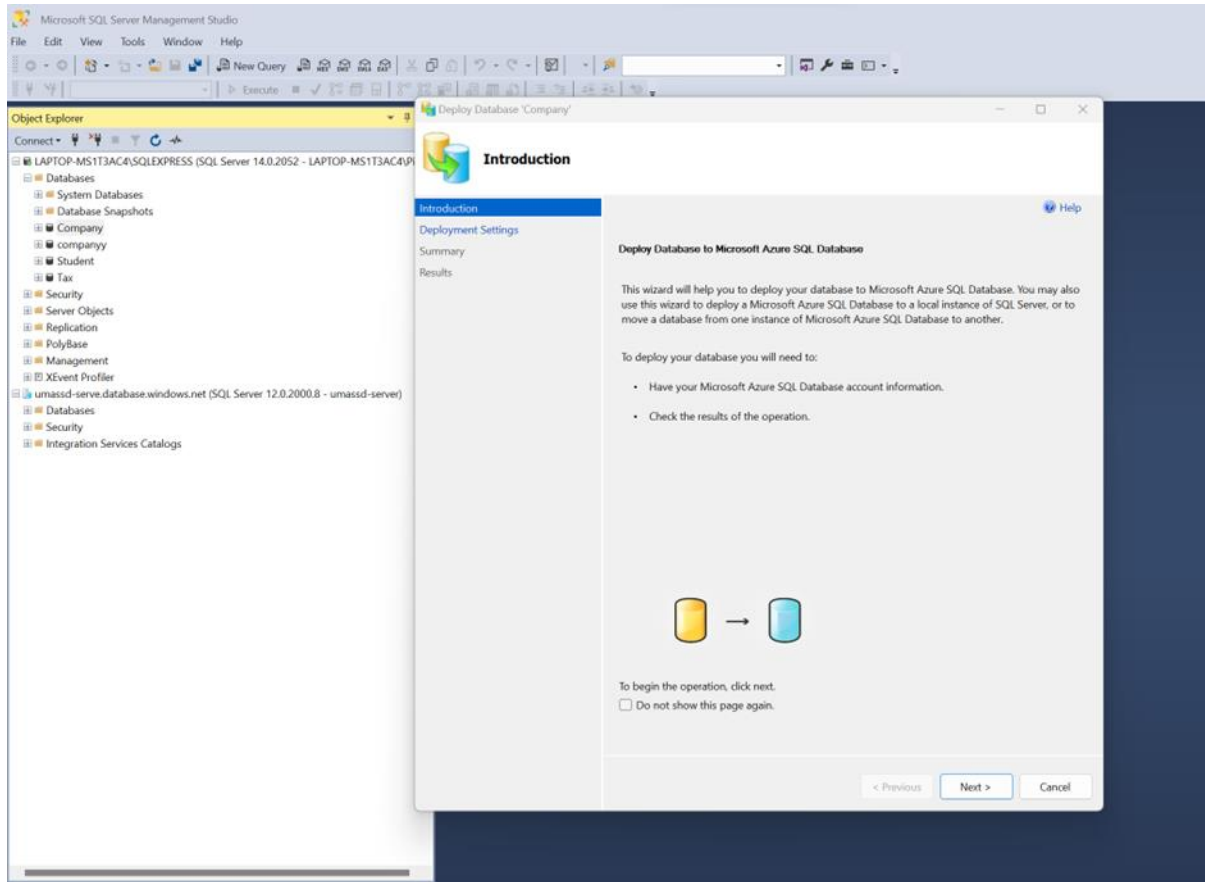
Connecting to Azure SQL Database from Local SSMS: I launched SSMS on my laptop and entered the SQL Azure SQL Database server name, chose SQL Server Authentication, and provided the admin login details.



Linking local database to the Azure SQL Database: After selecting Database Engine, I entered details like server name, server authentication, and login credentials to connect to the cloud database.

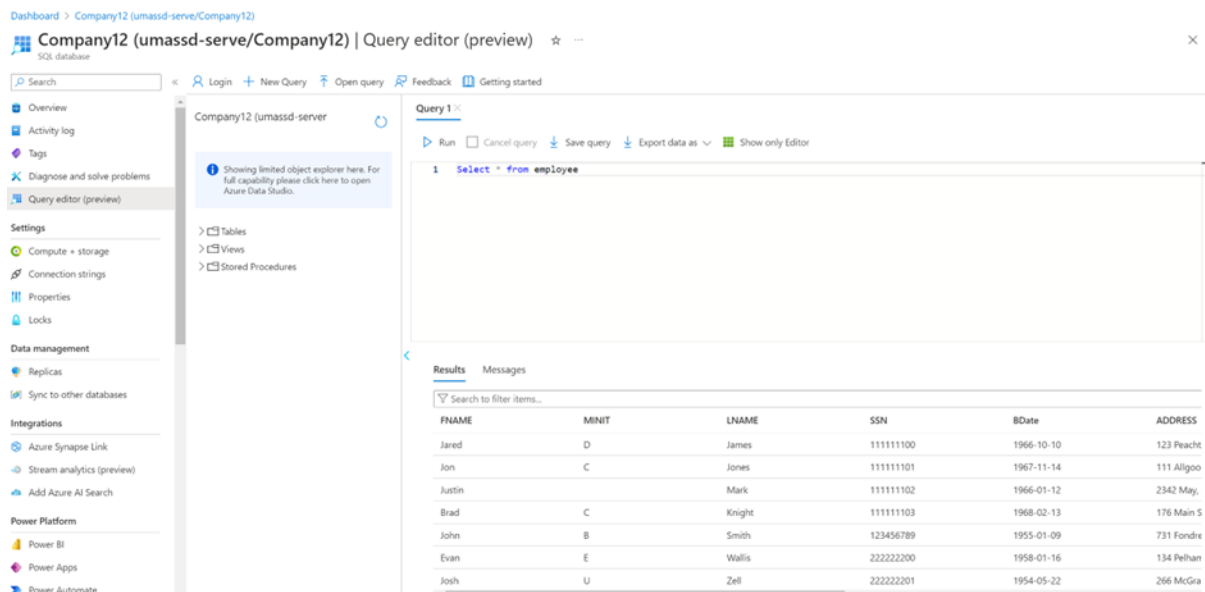
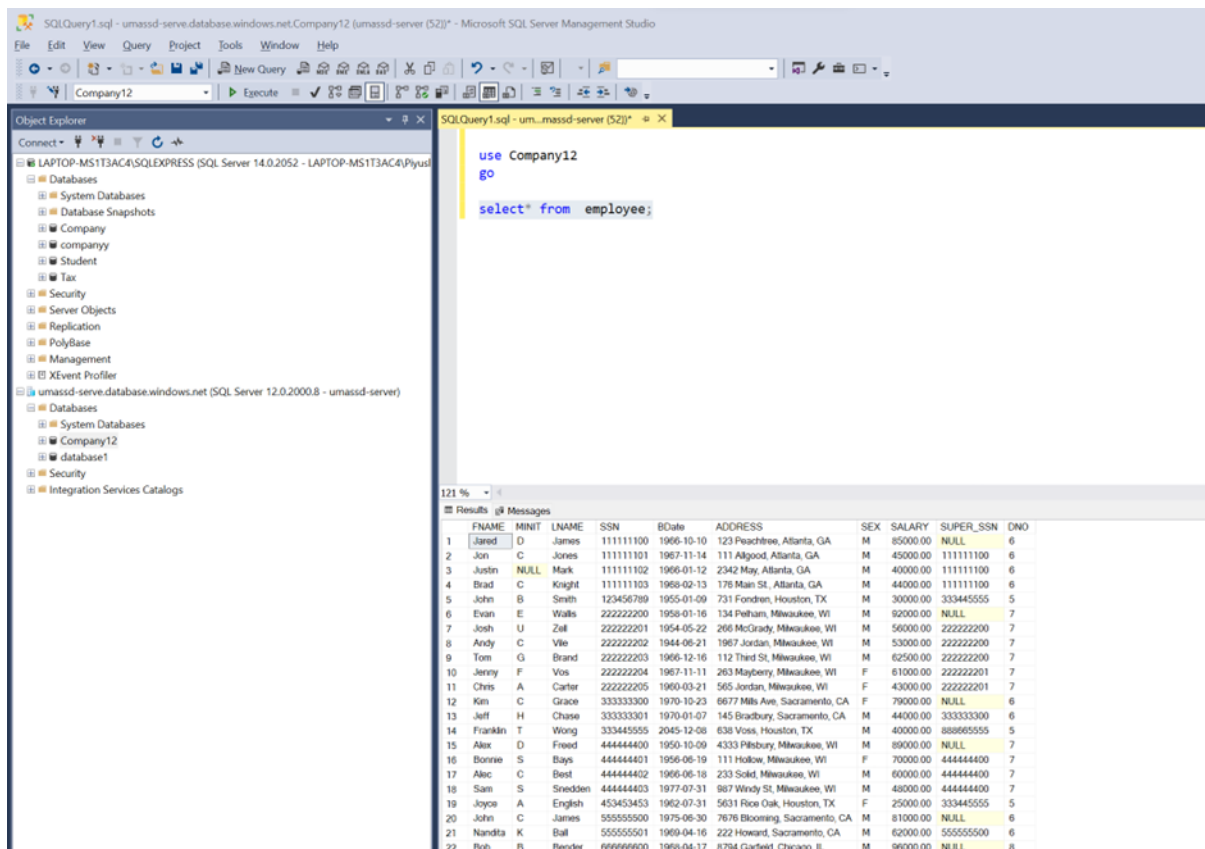
Using COMPANY database to deploy:

I clicked on 'Deploy Database to Microsoft Azure SQL Database', which opened the 'Deployment Settings' window, where I entered the necessary login details to connect to the Azure Cloud SQL Server for database migration.



I specified the new database name to be migrated as 'Company12'.

Then I chose the SQL query to be executed on the 'Company12' database. The following screenshot shows the Select statement executed on the database on the cloud server.

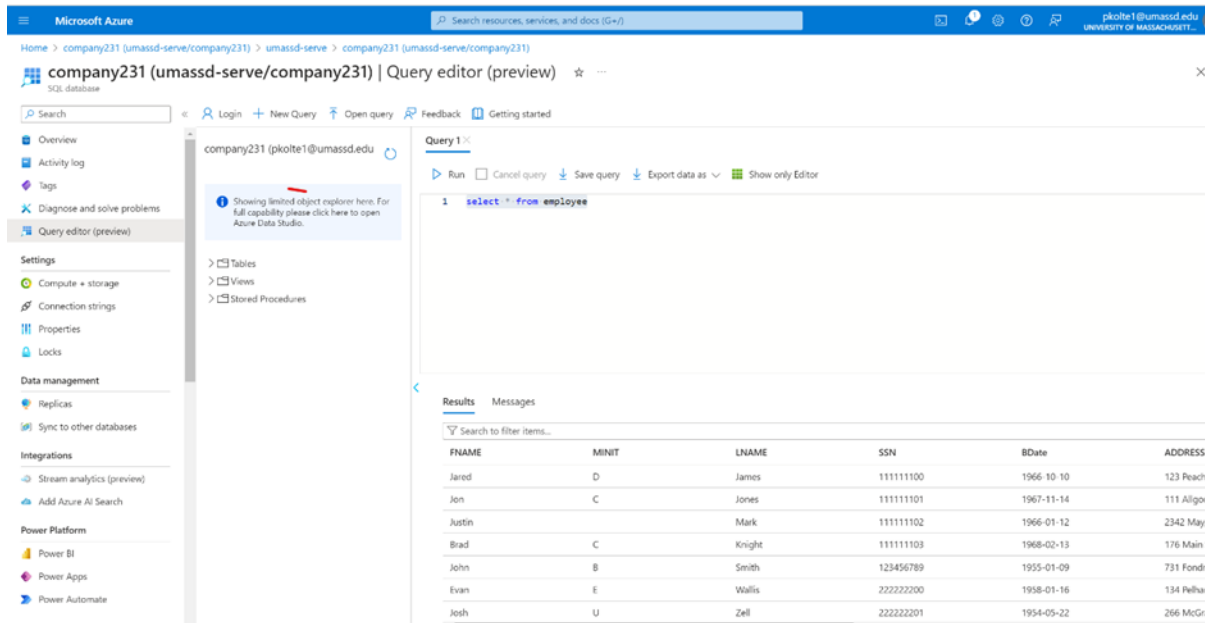


Creating new database from the local computer to cloud database:

Now, to create new tables and populate the data on the cloud, right click on the databases folder in the cloud and select 'New Database'.

I queried the data from the newly created 'EMPLOYEE' table within the Azure 'Company231' database. To do this, I navigated to 'Query editor (Preview)' and expanded the Tables section. Under the Tables section, I located the 'EMPLOYEE' table.

I executed a select query on the 'EMPLOYEE' table in Azure, just as I would in SQL Server Management Studio (SSMS).



The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo and a search bar. The main content area is titled 'company231 (umassd-serve/company231) | Query editor (preview)'. On the left, there is a sidebar with various options like Overview, Activity log, Tags, and Settings. The main area displays a query editor with a text input field containing the SQL query 'select * from employee'. Below the query editor, there is a 'Results' tab showing a table of data. The table has six columns: FNAME, MINIT, LNAME, SSN, BDate, and ADDRESS. The data is as follows:

FNAME	MINIT	LNAME	SSN	BDate	ADDRESS
Jared	D	James	111111100	1966-10-10	123 Peach
Jon	C	Jones	111111101	1967-11-14	111 Allgoo
Justin		Mark	111111102	1966-01-12	2342 May
Brad	C	Knight	111111103	1968-02-13	176 Main S
John	B	Smith	123456789	1955-01-09	731 Fondre
Evan	E	Wallis	222222200	1938-01-16	134 Pelhan
Josh	U	Zell	222222201	1954-09-22	266 McGra

Conclusion:

In this homework assignment, I successfully set up an Azure SQL Database server, configured firewall settings to allow access from my local machine, and connected to the server using SQL Server Management Studio (SSMS). I also exported an existing local database and imported it into the Azure SQL Database server.

This exercise clearly demonstrates the ease and efficiency of using cloud services for database management and highlights the significant advantages of Azure's Platform for scalable and accessible database solutions.

Additionally, I explored key features of Azure SQL Database, such as creating new tables, inserting data, and executing queries directly within the cloud environment.

Through this process, I gained valuable practical experience in cloud database administration and strengthened my understanding of cloud computing concepts, particularly in database services. This hands-on experience also improved my ability to manage databases in a cloud environment, ensuring data accessibility and scalability.