



Azure SQL Databases

Azure SQL Database is a fully managed relational database service provided by Microsoft Azure. It's based on the latest stable version of the Microsoft SQL Server database engine, which means it offers all the features and capabilities of SQL Server with the added benefits of cloud computing.

Here are some key points about Azure SQL Database:

1. **Managed Service:** Azure SQL Database is a fully managed service, which means Microsoft takes care of database management tasks such as backups, patching, and high availability, allowing you to focus on your application development.
2. **Scalability:** Azure SQL Database allows you to scale your database resources up or down based on demand. You can easily adjust compute and storage resources without downtime, allowing your database to handle varying workloads efficiently.
3. **High Availability:** Azure SQL Database ensures high availability with built-in features such as automatic backups, replication, and failover. It also offers options for geo-replication to provide disaster recovery capabilities.
4. **Security:** Azure SQL Database provides robust security features to protect your data, including encryption at rest and in transit, threat detection, firewall rules, and role-based access control (RBAC).
5. **Performance:** Azure SQL Database offers various performance tiers to meet different performance requirements. You can choose between basic, standard, and premium service tiers, each offering different levels of performance, scalability, and features.
6. **Compatibility:** Azure SQL Database is fully compatible with SQL Server, which means you can easily migrate your existing SQL Server databases to Azure with minimal changes to your applications.
7. **Advanced Features:** Azure SQL Database supports advanced features such as in-memory OLTP, columnstore indexes, and automatic tuning to help you optimize the performance of your databases.
8. **Integration:** Azure SQL Database integrates seamlessly with other Azure services such as Azure Active Directory, Azure Key Vault, Azure Monitor, and Azure Logic Apps, allowing you to build comprehensive solutions on the Azure platform.



To begin with the Lab:

1. On your Azure Portal open All Resources. Then click on the hamburger icon.
2. There you will see the option for SQL databases. Click on it and from its dashboard click on create.

★ FAVORITES

All resources

Resource groups

App Services

Function App

SQL databases

Azure Cosmos DB

3. As always first select your subscription and resource group.

Project details

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

Subscription *	<input type="text" value="Azure Pass - Sponsorship (9e3f0cae-8274-4931-b16b-95242092e301)"/>
Resource group *	<input type="text" value="demo-resource-group"/> Create new

4. Now you have to give the database name then for the server click on create new and create a new server.

Database details

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

Database name *	<input type="text" value="demodb"/> ✓
Server *	<input type="text" value="Select a server"/> Create new

✖ The value must not be empty.

5. While creating your server first give it a unique name the select your location.

Server details

Enter required settings for this server, including providing a name and location. This server will be created in the same subscription and resource group as your database.

Server name *	demoserver102	✓
	.database.windows.net	
Location *	(Europe) North Europe	▼

6. After that select the authentication method and create your user id and password.

Authentication method	<input type="radio"/> Use Microsoft Entra-only authentication <input type="radio"/> Use both SQL and Microsoft Entra authentication <input checked="" type="radio"/> Use SQL authentication	
Server admin login *	sqladmin	✓
Password *	*****	✓
Confirm password *	*****	✓

7. Now in the compute and storage option click on configure and select basic DTU for the workload.

Configure ...

Feedback

Service and compute tier

Select from the available tiers based on the needs of your workload. The vCore model provides a wide range of configuration controls and offers Hyperscale and Serverless to automatically scale your database based on your workload needs. Alternately, the DTU model provides set price/performance packages to choose from for easy configuration. [Learn more](#)

 SQL Database Hyperscale: Low price, high scalability, and best feature set. [Learn more](#)

Service tier	Basic (For less demanding workloads)	▼
	Compare service tiers	
DTUs	Compare DTU options	
5 (Basic)		
Data max size (GB)	2	

Cost summary

Basic (Basic)	
Cost per DTU (in INR)	81.49
DTUs selected	x 5
ESTIMATED COST / MONTH	407.46 INR

8. Choose LRS for your backup storage.

Backup storage redundancy

Choose how your PITR and LTR backups are replicated. Geo restore or ability to recover from regional outage is only available when geo-redundant storage is selected.

- Backup storage redundancy ⓘ
- Locally-redundant backup storage
 - Zone-redundant backup storage
 - Geo-redundant backup storage

9. Now in the networking enable the public endpoint and say yes to both of the firewall rules.
10. After that directly jump to the review page and create your database.

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 'demoserver102' and all databases it manages. [Learn more ↗](#)

Network connectivity

Choose an option for configuring connectivity to your server via public endpoint or private endpoint. Choosing no access creates with defaults and you can configure connection method after server creation. [Learn more ↗](#)

Connectivity method * ⓘ

- No access
- Public endpoint
- Private endpoint

Firewall rules

Setting 'Allow Azure services and resources to access this server' to Yes allows communications from all resources inside the Azure boundary, that may or may not be part of your subscription. [Learn more ↗](#)

Setting 'Add current client IP address' to Yes will add an entry for your client IP address to the server firewall.

Allow Azure services and resources to access this server *

No Yes

Add current client IP address *

No Yes



Cost summary

Basic (Basic)	
Cost per DTU (in INR)	81.49
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11. Now, this particular wizard is going to create two resources for us. One is a SQL database server and the other is a SQL database. This might take around three to five minutes.
12. Once the deployment is completed go to resources and open query editor.
13. Here you have to enter the password that you mentioned earlier while creating your database.

14. Below you can see the commands to create a table in this query editor.
15. Now the link mentioned for Emojis here can be obtained from your Storage Account.
For this you have to go to your storage account and then open your container there you will see your files. So, now you have to click on them and you will get the URL for your files.

Name	URL
emoji 1.jpg	https://demostorage1221.blob.core.windows.net/emojis/emoji1.jpg
emoji 2.jpg	
emoji 3.jpg	

```

CREATE TABLE DemoTable (
    ID INT PRIMARY KEY,
    Emoji VARCHAR(200),
    Name VARCHAR(50),
    Age INT
);

-- Insert three entries into the table
INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (1,
'https://demostorage1221.blob.core.windows.net/emojis/emoji1.jpg', 'John', 30);

```

```

INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (2,
'https://demostorage1221.blob.core.windows.net/emojis/emoji2.jpg', 'Jane', 25);

INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (3,
'https://demostorage1221.blob.core.windows.net/emojis/emoji3.jpg', 'Bob', 35);
SELECT*FROM ExampleTable

```

16. Below you can see the results that you will get after running these SQL commands in your editor.

Query 1 ×

Run Cancel query Save query Export data as Show only Editor

```

5     Age INT
6 );
7
8 -- Insert three entries into the table
9 INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (1, 'https://demostorage1221.blob.core.windows.net/emojis/emoji2.jpg', 'Jane', 25)
10 INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (2, 'https://demostorage1221.blob.core.windows.net/emojis/emoji3.jpg', 'Bob', 35)
11 INSERT INTO DemoTable (ID, Emoji, Name, Age) VALUES (3, 'https://demostorage1221.blob.core.windows.net/emojis/emoji2.jpg', 'Jane', 25)
12
13 SELECT*FROM DemoTable

```

Results Messages

Search to filter items...

ID	Emoji	Name	Age
1	https://demostorage1221.blob.core...	John	30
2	https://demostorage1221.blob.core...	Jane	25
3	https://demostorage1221.blob.core...	Bob	35