



## Creating SQL Database

Azure SQL Database is a fully managed relational database service provided by Microsoft Azure. It's a cloud-based version of Microsoft SQL Server that offers similar features and functionality but with the benefits of cloud computing, such as scalability, high availability, and automatic backups.

Key features of Azure SQL Database include:

1. **Managed Service:** The Azure SQL Database is fully managed by Microsoft, which means that Microsoft handles tasks such as patching, backups, and maintenance, allowing you to focus on building and managing your applications.
2. **Scalability:** Azure SQL Database allows you to easily scale your database resources up or down based on demand. You can adjust compute and storage resources dynamically to accommodate changes in workload without downtime.
3. **High Availability:** Azure SQL Database offers built-in high availability features such as automatic failover and geo-replication, ensuring that your database remains accessible and resilient to failures.
4. **Security:** Azure SQL Database provides robust security features including encryption at rest and in transit, threat detection, firewall rules, and role-based access control (RBAC) to help protect your data.
5. **Compatibility:** Azure SQL Database is compatible with existing SQL Server tools, libraries, and applications, making it easy to migrate your on-premises SQL Server databases to the cloud.
6. **Integration:** Azure SQL Database integrates seamlessly with other Azure services such as Azure Active Directory, Azure Monitor, Azure Data Factory, and Power BI, enabling you to build end-to-end solutions in the cloud.



### To begin with the Lab:

1. In your Azure Portal navigate to SQL Databases and there you have to create a new database.
2. First you have to select your subscription and then choose your 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"/> <a href="#">Create new</a>

3. Then in the database details give it a database name then for the server click on create new.

## Database details

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

Database name \*

 ✓

Server \* ⓘ

 ✓

[Create new](#)

The value must not be empty.

- Now you are going to create your server for that give it a unique server name and then 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 \*

 ✓

.database.windows.net

Location \*

 ✓

## Authentication

- After that you have to authenticate your server and give it a username and password.

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](#) 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 \*

 ✓

### Password \*

 ✓

### Confirm password \*

 ✓

- 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

Service tier: Basic (For less demanding workloads) [Compare service tiers](#)

DTUs: Compare DTU options

**5 (Basic)**

Data max size (GB): 2

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

## 7. Now in the Backup storage you have to choose LRS.

### 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

## 8. Now in the networking enable the public endpoint and say yes to both of the firewall rules.

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

## 9. Now for additional settings you have to choose Sample in existing data.

## 10. Then you can jump to review page and create your SQL Database.

Customize additional configuration parameters including collation & sample data.

#### Data source

Start with a blank database, restore from a backup or select sample data to populate your new database.

Use existing data \*

None Backup Sample

AdventureWorksLT will be created as the sample database.

#### Database collation

Database collation defines the rules that sort and compare data, and cannot be changed after database creation. The default database collation is SQL\_Latin1\_General\_CI\_AS. [Learn more](#)

Collation ⓘ

SQL\_Latin1\_General\_CI\_AS

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. Now you can navigate to Storage account and create a new Storage account.
13. First you have to choose the same resource group. Then give it a name and choose your location.
14. In redundancy choose Locally-redundant storage (LRS).

Basics    Advanced    Networking    Data protection    Encryption    Tags    Review + create

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

#### Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription \* Azure Pass - Sponsorship (9e3f0cae-8274-4931-b16b-95242092e301) ▾

Resource group \* demo-resource-group ▾  
[Create new](#)

#### Instance details

Storage account name \* sqlstorage1010

Region \* (Europe) North Europe ▾  
[Deploy to an edge zone](#)

Performance \*  Standard: Recommended for most scenarios (general-purpose v2 account)

Premium: Recommended for scenarios that require low latency.

Redundancy \* Locally-redundant storage (LRS) ▾

15. Now in the advanced section turn on the hierarchical namespace. This option will convert your storage to Data Lake gen2.

#### Hierarchical Namespace

Hierarchical namespace, complemented by Data Lake Storage Gen2 endpoint, enables file and directory semantics, accelerates big data analytics workloads, and enables access control lists (ACLs) [Learn more](#)

Enable hierarchical namespace

16. Then just jump to the review page and create your storage account.
17. Once your storage has been deployed then you go to the container and there you have to create 2 containers one for the CSV file and one for the parquet file that you are going to upload in these 2 containers.
18. Below you can see the two containers now you have to upload files into them.
19. You can get these files from **GitHub**.
20. Below you can see both the files uploaded to their respective containers.

Name	Last modified	Anonymous access level	Lease state
\$logs	3/29/2024, 12:20:13 PM	Private	Available
csv	3/29/2024, 12:23:15 PM	Private	Available
parquet	3/29/2024, 12:23:25 PM	Private	Available

CSV Container Overview

Authentication method: Access key (Switch to Microsoft Entra user account)  
Location: CSV

Name	Modified	Access tier	Archive status
Log.csv	3/29/2024, 12:24:52 PM	Hot (Inferred)	

parquet Container Overview

Authentication method: Access key (Switch to Microsoft Entra user account)  
Location: parquet

Name	Modified	Access tier	Archive status
log.parquet	3/29/2024, 12:25:52 PM	Hot (Inferred)	

21. Now you can go back to your SQL Database and open the query editor on it.
22. Once you enter your password and login to your database. Now if you expand tables, you can see the existing sample data in it.

 Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

✓  Tables

- >  dbo.BuildVersion ...
- >  dbo.ErrorLog ...
- >  SalesLT.Address ...
- >  SalesLT.Customer ...
- >  SalesLT.CustomerAddress ...
- >  SalesLT.Product ...
- >  SalesLT.ProductCategory ...
- >  SalesLT.ProductDescription ...
- >  SalesLT.ProductModel ...
- >  SalesLT.ProductModelProductDes... ...
- >  SalesLT.SalesOrderDetail ...
- >  SalesLT.SalesOrderHeader ...

>  Views

>  Stored Procedures

1

 Results Messages

 Search to filter items...