

Azure SQL Database

In this study, you will help us to understand the tasks and time required for completing various database and developer related tasks using Azure SQL Database.

Prerequisites and general guidance

For this exercise, you should stay completely in a browser. Feel free to use Google, Bing, or other search services. There will be a quiz at the end of each task, to ensure you have properly completed the task. This is the first in a series of tasks, you must complete this task in order to proceed to the remaining tasks.

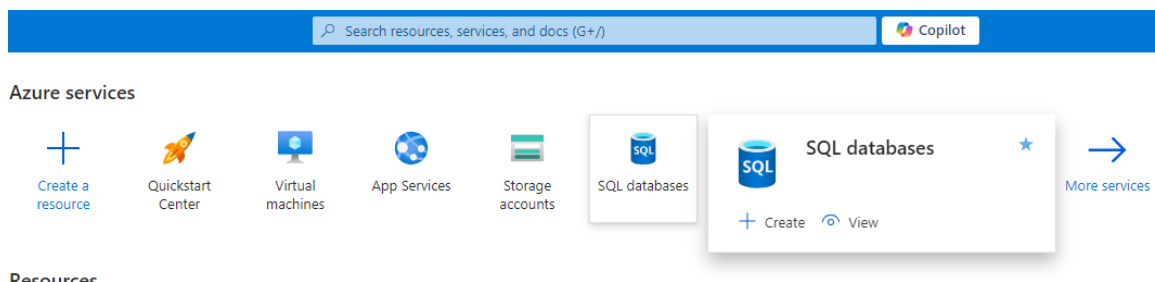
You have been given access to a Microsoft Entra account and the Azure portal. Please login at <https://portal.azure.com>.

Task 1: Create a database with sample data

In this task, you'll deploy a database and load sample data into it, querying the database to confirm.

Instructions

1. Navigate to <https://portal.azure.com> and confirm you are logged into Azure with the credentials provided. If you are logging in for the first time you may be presented with a Welcome screen, click Cancel to dismiss the window and continue into the portal.
2. Navigate to SQL databases from the Azure services menu at the top. If you do not see SQL databases, you can search for it in the search box at the top of the screen.



3. Create a new SQL Database with the name "AdventureWorks."

- a. Click the **Create SQL database** button on the SQL databases screen.

[Home](#) >

SQL databases

SQLFabricStudy (SQLFabricStudy.onmicrosoft.com)

[+ Create](#) [🕒 Reservations](#) [⚙️ Manage view](#) [🔄 Refresh](#) [⬇️ Export to CSV](#) [🔗 Open query](#) | [🏷️ Assign tags](#) [🗑️](#)

[Subscription equals all](#) [Resource group equals all](#) [Location equals all](#) [+ Add](#)

Showing 0 to 0 of 0 records. [No grouping](#) [List](#)

Name ↑↓	Server ↑↓	Replica type ↑↓	Pricing tier ↑↓	Location ↑↓
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No SQL databases to display

Utilize a fully managed relational database service, perfect for accelerating application development and simplifying management tasks.

[Create SQL database](#)

- b. Use the subscription and resource group you were provided with for the exercise.
- c. The *Database name* should be **AdventureWorks**.

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Create SQL Database ...

Microsoft

[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](#)

[Apply offer \(Preview\)](#)

SQL Database Hyperscale: Low price, high scalability, and best feature set. [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 * ⓘ

Subscription 1



Resource group * ⓘ

studyuser100-rg

[Create new](#)

Database details

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

Database name *

AdventureWorks

Server * ⓘ

Select a server

[Create new](#)

- d. Click **Create new** under the *Server* dropdown to create a new Server with a unique name. Use the same location (region) as the resource group that has been provided. Use Microsoft Entra-only authentication. Make yourself the Microsoft Entra admin by clicking **Set admin** and searching for and selecting your username in the Microsoft Entra ID search window. Once you have set yourself as the admin, click OK to return to the Create SQL database window.

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Create SQL Database Server

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 *

Location *

Authentication

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, 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 * **Not Selected**
[Set admin](#)

Microsoft Entra ID

Microsoft Entra ID

Try changing or adding filters if you don't see what you're looking for.

Search

1 result found

All Users Groups Enterprise applications

	Name	Type	Details
<input checked="" type="checkbox"/>	Study User100	User	StudyUser100@SQLFabricStudy.onmicrosoft.com


Selected item (1)

Reset


Study User100
StudyUser100@SQLFabricStudy.onmicrosoft.com


- e. In the *Compute + storage* section, click **Configure database** to select a General Purpose - Serverless database with a Max vCores of 4 and Min vCores of 0.5. Auto-pause delay should be enabled.

Configure ...

 Feedback

Service tier

General Purpose (Most budget friendly) 

[Compare service tiers](#) 

Compute tier

☐ **Provisioned** - Compute resources are pre-allocated. Billed per hour based on vCores configured.

☒ **Serverless** - Compute resources are auto-scaled. Billed per second based on vCores used.


Compute Hardware

Select the hardware configuration based on your workload requirements. Availability of compute optimized, memory optimized, and confidential computing hardware depends on the region, service tier, and compute tier.

Hardware Configuration


Standard-series (Gen5)
up to 80 vCores, up to 240 GB memory
[Change configuration](#)

Max vCores



4

Min vCores



0.5 vCores

2.1 GB MIN MEMORY

12 GB MAX MEMORY

Auto-pause delay


The database automatically pauses if it is inactive for the time period specified here, and automatically resumes when database activity recurs. Alternatively, auto-pausing can be disabled.


☒ Enable auto-pause


Days


Hours

Minutes

0 

1 

0 

Data max size (GB) 

Apply

f. For *Backup storage redundancy*, select **Zone-redundant backup storage**.

Create SQL Database ...

Microsoft

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="AdventureWorks"/> ✓
Server * ⓘ	<input type="text" value="studyuser100 (West US 2)"/> ▼ Create new
Want to use SQL elastic pool? ⓘ	<input type="radio"/> Yes <input checked="" type="radio"/> No
Workload environment	<input checked="" type="radio"/> Development <input type="radio"/> Production

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

Compute + storage * ⓘ

General Purpose - Serverless

Standard-series (Gen5), 4 vCores, 32 GB storage

[Configure database](#)

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 ⓘ	<input type="radio"/> Locally-redundant backup storage
	<input checked="" type="radio"/> Zone-redundant backup storage
	<input type="radio"/> Geo-redundant backup storage

- g. Click **Next: Networking** to move to the Networking section. Set the *Connectivity method* to **Public endpoint**. Set *Allow Azure services and resources to access this server* and *Add current client IP address* to **Yes**. Use the default *Connection Policy* and *TLS*.

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 'studyuser100' 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

Connection policy

Configure how clients communicate with your SQL database server. [Learn more](#)

Connection policy ⓘ
☒ Default - Uses Redirect policy for all client connections originating inside of Azure (except Private Endpoint connections) and Proxy for all client connections originating outside Azure
☐ Proxy - All connections are proxied via the Azure SQL Database gateways
☐ Redirect - Clients establish connections directly to the node hosting the database

- h. Click **Next: Security** to move to the Security tab and keep the defaults.
- i. Click **Next: Additional settings** to move to the Additional settings tab, for the *Use existing data* option choose **Sample** and click **OK** when prompted.

Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags Review + create

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.

AdventureWorksLT

Selecting this sample will modify the "Compute + Storage" settings configured in Basics, for backup compatibility. Visit "Basics" or "Review + Create" tabs to review the changes.

Do you want to continue?

OK Cancel

- j. Click **Review + create**, review your selections, then click **Create** to create the database.
4. The database will take several minutes to deploy. Then the AdventureWorksLT sample database is imported into the database. You should see a notification once complete. Select **Go to resource**.
Tip: If you are unable to create a database because the vCore quota has been exceeded, try creating your database in a different region (location).
5. Navigate to the **Query editor** in the left menu bar and click **Continue as <username>** to log in with your Microsoft Entra account.
6. Create a new query, and paste in the following:

```
SELECT pc.Name AS CategoryName, SUM(sod.OrderQty * sod.UnitPrice) AS TotalSales
FROM SalesLT.ProductCategory pc
JOIN SalesLT.Product p ON pc.ProductCategoryID = p.ProductCategoryID
JOIN SalesLT.SalesOrderDetail sod ON p.ProductID = sod.ProductID
JOIN SalesLT.SalesOrderHeader soh ON sod.SalesOrderID = soh.SalesOrderID
WHERE p.ProductCategoryID = 36
GROUP BY pc.Name, p.ProductCategoryID
ORDER BY TotalSales DESC;
```
7. View the results of the query and answer the question in the quiz.