

# **Azure Development**

## **Lab 4**

### **Introduction of Azure SQL DB and Cosmos DB**

## **DISCLSIMER**

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## Lab 1 – Introduction of Azure SQL DB and Cosmos DB (40min)

<b>Objective(s)</b>	<ul style="list-style-type: none"><li>• To deploy Azure SQL Database</li><li>• To Connect to Azure SQL DB from your selected tool(s)</li><li>• To deploy Cosmos DB in Azure Portal</li><li>• To create new Database and Container in your Cosmos DB</li><li>• To add data to your Cosmos dB</li></ul>
<b>Duration of Lab</b>	<ul style="list-style-type: none"><li>• 40min</li></ul>
<b>Tool(s)</b>	<ul style="list-style-type: none"><li>• Azure Portal</li><li>• Visual Studio 2022</li></ul>
<b>Exercises</b>	<ol style="list-style-type: none"><li>1. Deploy Azure SQL Database</li><li>2. Create Azure Cosmos DB in Azure Portal</li></ol>
<b>Subscription</b>	[Selected Subscription]
<b>Resource Group</b>	[Selected RG]
<b>Navigation</b>	Throughout this Lab, we will open and use several Browser tabs for easy access. Until the end of the Lab, keep your Browser tabs open.
<b>References</b>	<ul style="list-style-type: none"><li>• <a href="#">Introduction to Azure for developers   Microsoft Learn</a></li></ul>

### Naming Convention for Labs

For completing various labs during the workshops, we will use this naming convention. It is slightly different from Microsoft online guidance ([Define your naming convention - Cloud Adoption Framework | Microsoft Learn](#)).

The naming convention below is designed to group your Azure resources together for easy access.

**[you name/initials]-[short name for Azure service]-[service description]**

## Exercise 1- Deploy Azure SQL Database (20min)

Topics	In this exercise, we will cover the following topics. <ul style="list-style-type: none"> <li>Deploy Azure SQL Database</li> <li>Connect to Azure SQL DB</li> </ul>
Duration	<ul style="list-style-type: none"> <li>30 min</li> </ul>
Tool(s)	<ul style="list-style-type: none"> <li>Azure portal</li> </ul>
Subscription	[selected subscription]
Resource Group	[selected RG]

### Module 1 – Deploy Azure SQL DB

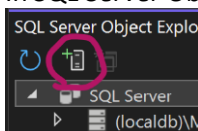
- Follow the instructions on [Exercise - Deploy Azure SQL Database - Training | Microsoft Learn - Deploy Azure SQL Database by using the Azure portal only](#)

Note: Select **Development** tier for the **Workload environment** field, instead of **Production** specified in the instruction.

- Complete the section


### Module 2 – Connect to Azure SQL DB

- When connecting to Azure SQL Database, there are a number of tools available:
  - SQL Server Management Studio (SSMS)** – best for DBAs and developers who want to do heavy database development
  - Azure Data Studio** – best for cross-platform users (Windows, macOS, Linux)
  - Visual Studio/Visual Studio Code** – best for developers integrating SQL with .NET or web apps
    - VS Code: Use **SQL Server (mssql) extension**
    - Visual Studio: Built-in **SQL Server Object Explorer**
  - Azure Portal query Editor** – best for quick access without installing tools
  - PowerShell/Azure CLI** – best for automation and scripting
  - Power BI** – best for data analysts and reporting
  - Programmatic access (SDKs)**
    - System.Data.SqlClient* or *Microsoft.Data.SqlClient* (.NET)
    - pyodbc* or *sqlalchemy* (Python)
    - mssql* (Node.js)
- If you cannot download database tools easily (e.g. Network constraints, organisation restriction on your machine etc...), open Visual Studio
- Go to **View > SQL Server Object Explorer**, or press Ctrl+\, Ctrl+S
- In **SQL Server Object Explorer**, click the “**Add SQL Server**” icon (plug icon)



- In the Connect to Server dialog:
  - Server Name:** Use the fully qualified server name (e.g., **yourserver.database.windows.net**). You can get the value from your **SQL Database blade** in the **Overview** in Azure portal



- b. **Authentication:** SQL Server Authentication
  - c. **Username/Password:** (enter your credentials)
  - d. **Database Name:** (optional – you can select it after connecting)
6. Click **Connect**
7. Once connected, expand the server node
8. Right-click a database > **New Query**
9. Write and execute  T-SQL queries directly – e.g. *“select top 10 \* from SalesLT.Product”*
10. **DO NOT clean up your resource** yet. You will use this SQL DB for developing .NET application in the later exercise

### Module 3 – Verify Deployment

1. Follow the instructions on [Exercise - Verify Azure SQL Database - Training | Microsoft Learn](#) and complete all the sections

### Summary



#### ACHIEVEMENTS

After you have completed the exercise, you are now able to:

- ✓ Deploy Azure SQL Database
- ✓ Connect to Azure SQL DB from your selected tool(s)
- ✓ Execute T-SQL queries
- ✓ Check SQL Database settings

## Exercise 2- Create Azure Cosmos DB in Azure Portal (20min)

Topics	<p>In this exercise, we will cover the following topics.</p> <ul style="list-style-type: none"> <li>• Create Cosmos DB</li> <li>• Add a Database and Container</li> <li>• Add Data to Your Database</li> </ul>
Duration	<ul style="list-style-type: none"> <li>• 20 Min</li> </ul>
Tool(s)	<ul style="list-style-type: none"> <li>• Azure portal</li> </ul>
Subscription	[selected subscription]
Resource Group	[selected RG]

### Module 1 – Create Cosmos DB

1. Follow the instructions on [Exercise: Create Azure Cosmos DB resources by using the Azure portal - Training | Microsoft Learn](#) – **Create an Azure Cosmos DB account section**
2. Select **Development/Testing** for *Workload Type*
3. Complete the section

### Module 2 – Add a Database and Container

1. Continue following the instructions on the **Add a database and a container** section
2. Your Database and Container (as in Document Table) are created successfully

### Module 3 – Add Data to Your Database

1. Continue following the instructions on the **Add data to your database** section
2. **DO NOT clean up your resource** yet. You will use this Cosmos DB for developing .NET application in the later exercise

### Summary



#### ACHIEVEMENTS

After you have completed the exercise, you are now able to:

- ✓ Deploy Azure Cosmos DB in Azure portal
- ✓ Create new Cosmos DB and Container
- ✓ Understand partition key in Cosmos DB
- ✓ Add data to your Cosmos DB