
Lab Guide: Deploy & Connect Azure SQL Database

◆ Lab Objective

Students will learn how to:

1. Create an Azure SQL Database (PaaS).
2. Configure networking & firewall rules.
3. Connect using **Azure Data Studio / SSMS**.
4. Run basic SQL queries.

◆ Prerequisites

- Azure subscription.
- Azure Portal access.
- **Azure Data Studio** or **SQL Server Management Studio (SSMS)** installed on local machine.

◆ Step 1: Create SQL Database

1. Sign in to the **Azure Portal** → <https://portal.azure.com>.
2. Search **SQL Database** → Click **Create**.

3. Fill in the details:

- **Subscription** → Select your Azure subscription.
- **Resource Group** → Create new (SQLLab-RG).
- **Database name** → StudentDB.
- **Server** → Create new server:
 - Server name: studentserver123 (unique name).
 - Admin login: sqladmin.
 - Password: Password@12345.
 - Region: (Select nearest to you).
- **Compute + Storage** → Use **Basic / Standard (2 vCore)** for lab.

✓ Click **Review + Create** → **Create**.

◆ Step 2: Configure Networking

1. After deployment → Go to your new **SQL Database**.
 2. In **Networking** tab:
 - **Public Endpoint** → Enabled.
 - Firewall rules → Add your client IP (so you can connect).
 - Check: **Allow Azure services and resources to access this server** ✓.
-

◆ Step 3: Connect to Database

1. Open **Azure Data Studio** (or SSMS).
 2. Click **New Connection**.
 - Server: `studentserver123.database.windows.net`.
 - Username: `sqladmin`.
 - Password: `Password@12345`.
 - Database: `StudentDB`.
 3. Click **Connect**.
-

◆ Step 4: Run Queries

Run the following queries:

```
-- Create Table
CREATE TABLE Students (
    StudentID INT PRIMARY KEY,
    Name NVARCHAR(100),
    Course NVARCHAR(50)
);

-- Insert Sample Data
INSERT INTO Students VALUES (1, 'Asha', 'Azure');
INSERT INTO Students VALUES (2, 'Ravi', 'DevOps');
INSERT INTO Students VALUES (3, 'John', 'AI/ML');

-- Retrieve Data
SELECT * FROM Students;
```

✅ Students should see data inserted successfully.

◆ Step 5: Explore Features

- Go to **Query Performance Insights** in portal → see usage.
 - Enable **Automatic tuning** → let Azure optimize queries.
 - Explore **Geo-Replication** option.
-

◆ Clean Up (Important!)

- Delete the **Resource Group (SQLLab-RG)** to avoid charges.
-

Lab Summary

- You deployed a **PaaS Azure SQL Database**.
 - Configured networking/firewall.
 - Connected via **Azure Data Studio/SSMS**.
 - Ran SQL queries to manage data.
-