



# Lab Guide: Deploy & Connect Azure SQL Database

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## ◆ 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.
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## ◆ Prerequisites

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

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## ◆ 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** .

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## ◆ 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**.
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## ◆ 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.

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## ◆ Step 5: Explore Features

- Go to **Query Performance Insights** in portal → see usage.
  - Enable **Automatic tuning** → let Azure optimize queries.
  - Explore **Geo-Replication** option.
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## ◆ **Clean Up (Important!)**

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

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