Connecting to Azure Databases

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What's in this module?

- Azure Storage Services
- Network Security Options
- Authentication and Authorization
- Available Permissions

Azure SQL Databases

A cloud-first family of relational database services based on the SQL Server engine

Offerings

Azure SQL Database (single database and elastic pools)

Azure SQL Managed Instance

Service Name

Protocol: TCP

Port: 1433

Server name: *****.database.windows.net

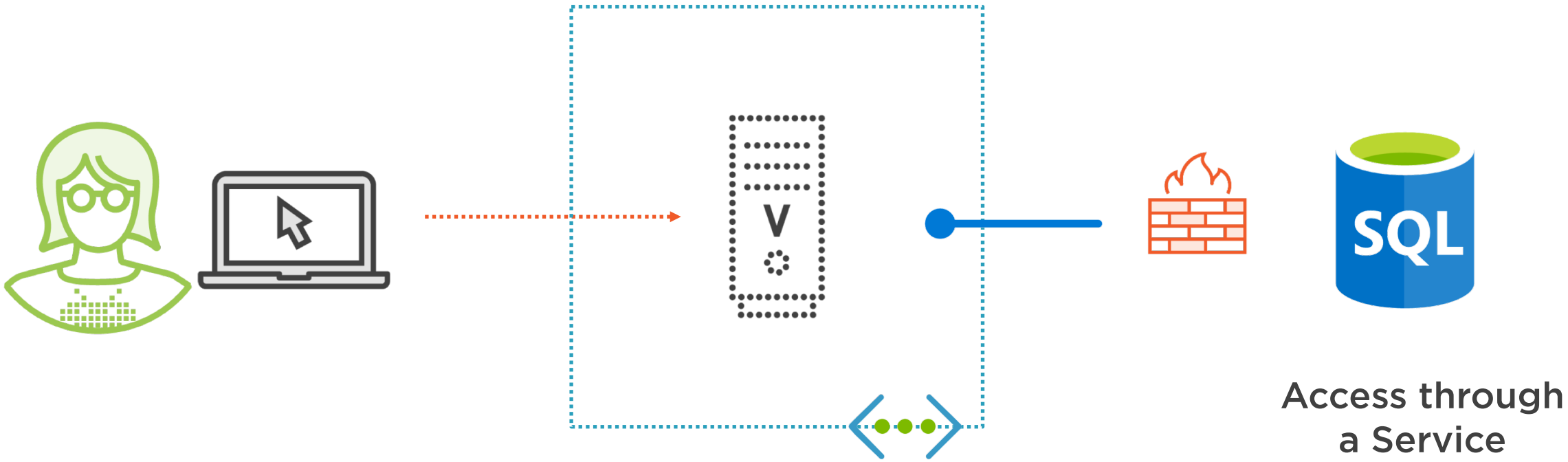
Database name

Network Security Options

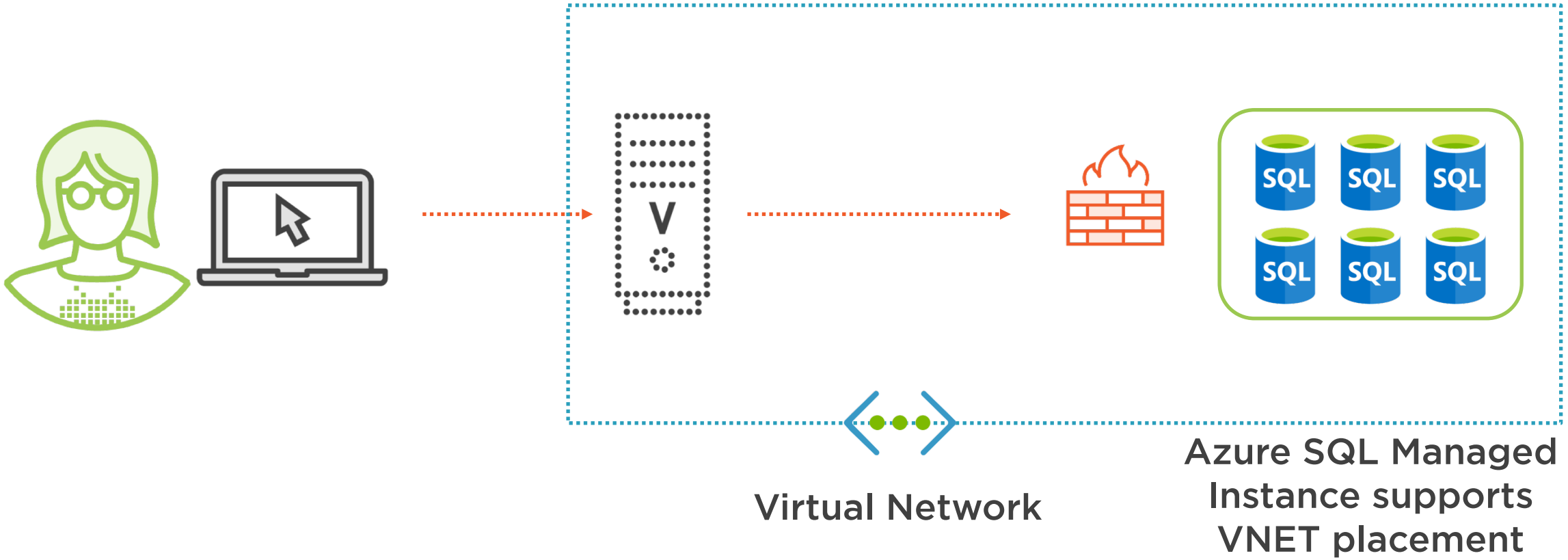
Public Endpoint

Internet facing endpoint

Service Endpoint



Resource Inside the VNET



Proper firewall configuration is critical, especially for public endpoint databases

Authentication and Authorization

Authorizing Access

Azure Active Directory (AAD)

SQL Authentication

Role-based access control

Users, Groups or Applications

High security with ease of use

Role-based access control

Users, Groups or Applications

Lower security

Legacy

Azure AD Advantages

Reuse identities across servers

Password rotation in one place

Easier to manage at scale

Can be synchronized with Windows AD

Supports MFA

Azure AD should be used over SQL Authentication whenever possible

SQL Database closes connections that remain idle for more than 30 minutes

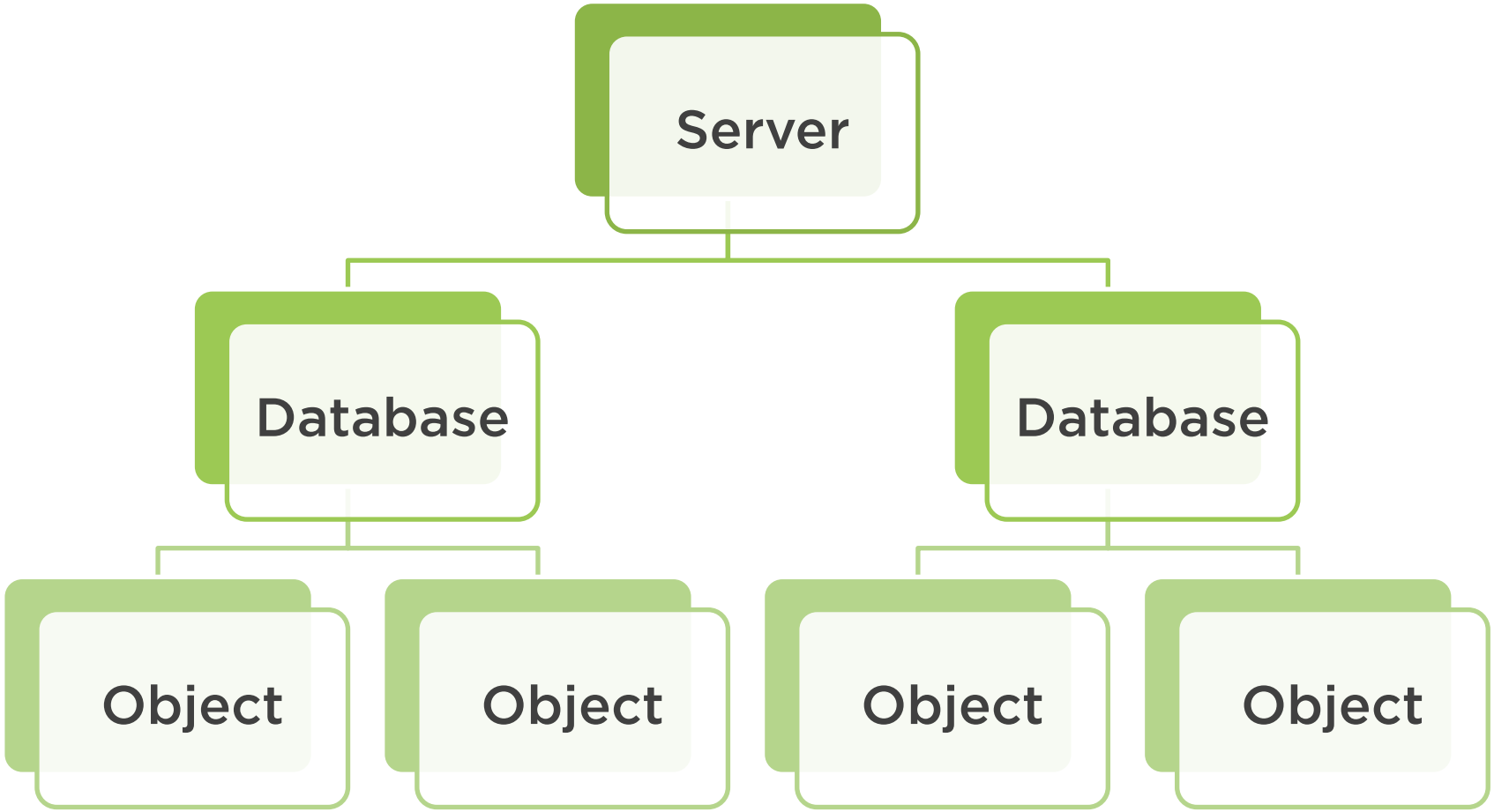
Available Permissions

Fine-grained Access

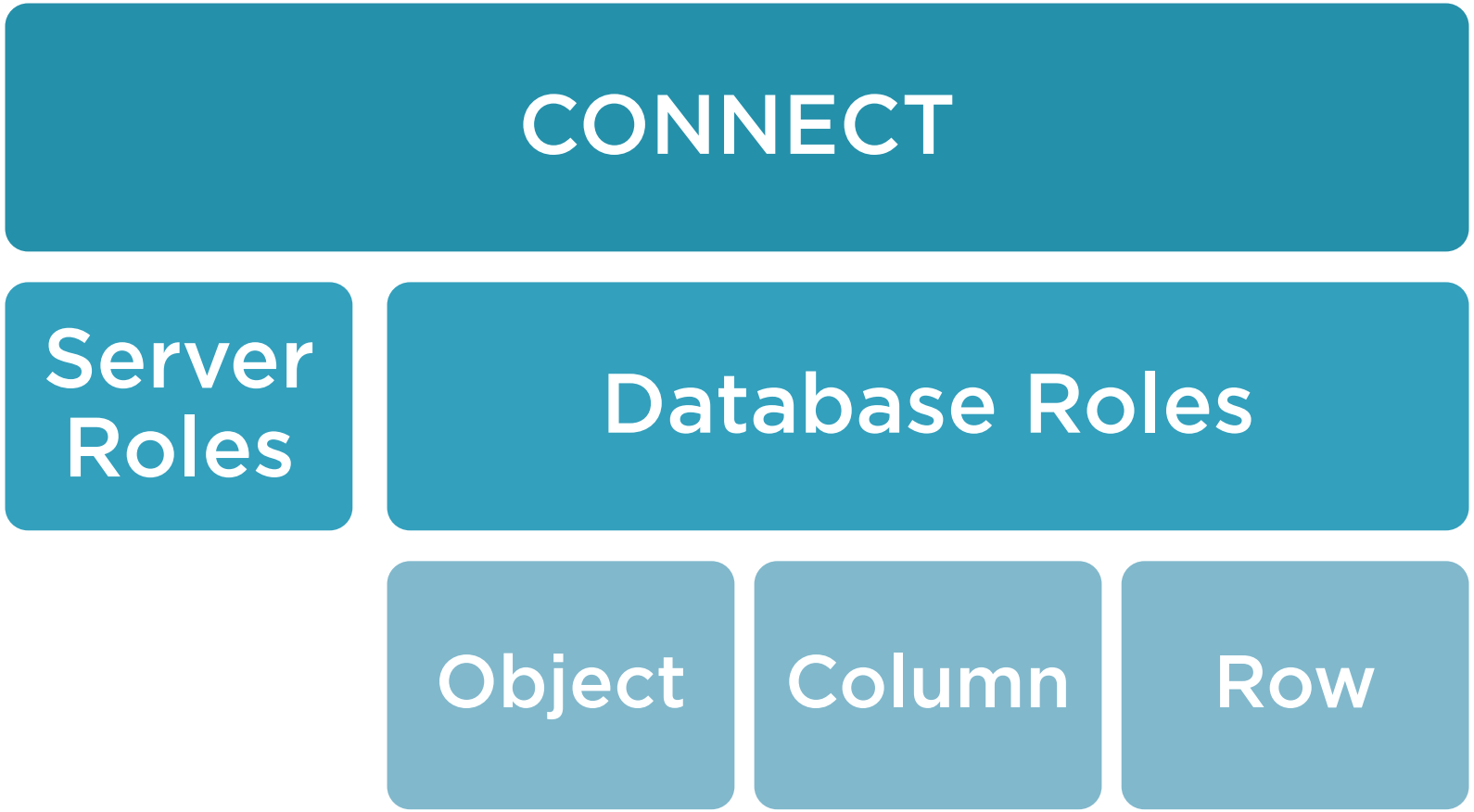
Azure Active Directory (AAD)

SQL Authentication

Scope



Permissions



SQL Database Built-in Server Roles

- **Administrator**
- **Login Manager**
- **Database Creator**

Database Roles and Permissions

Database Reader

Database Writer

SELECT – INSERT – UPDATE – DELETE

Execution Permissions

Column and Row Permissions

And more...

Putting Everything Together

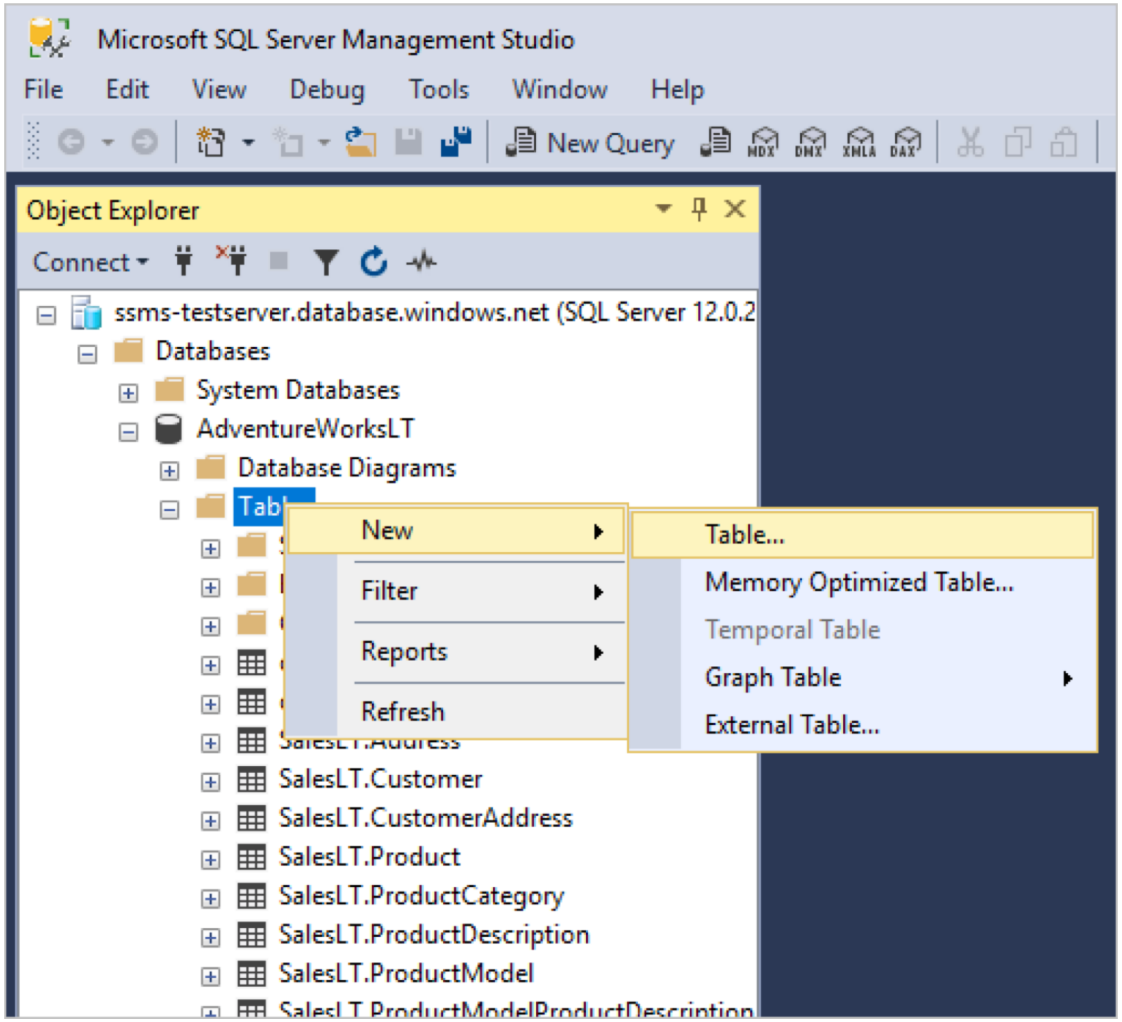
It has a public endpoint and our client is on the Firewall

We have the server and database name

We have an AAD account

We want to connect with SQL Server Management Studio

SQL Server Management Studio (SSMS)



Demo

Connecting SSMS to Azure SQL Database using Azure Active Directory

Summary

The services include public, VNET service endpoints and VNET placement

Authentication and authorization can be done through AAD or SQL Authentication

Lots of options in terms of controlling permissions

Put it all together to connect SSMS to Azure SQL Database

Next Module:
Connect to Redis Cache