

AZURE SQL

<https://vikasrajput.github.io>

Azure SQL is a family of managed, secure, and intelligent data service in cloud. Azure SQL DB is a pivotal & ever evolving Azure service since 2010, includes a serverless mode, and part of Azure SQL family.

FOUNDATIONS

- [Pages and Extents](#)
- [Index Architecture](#)
- [Memory Management](#)
- [Query Processing](#)
- [Thread Architecture](#)
- [Transaction Log](#)
- [Transaction Locking](#)
- [Execution Plans](#)
- [Statistics](#)
- [Query Profile](#)
- SQL DB: [Single Database](#), [Elastic Pool](#), [Hyperscale](#), [SQL Serverless](#). [SQL MI](#). Pricing: [vCore](#), [DTU](#), [Reserve](#), [Hybrid](#)
- Tier: [General Purpose](#), [Business Critical](#)
- [SQL DB vs MI Comparison](#)
- [Multi model Features](#)
- [In-Memory OLTP](#)
- [Read Scaleout](#), [Scale Up/Down](#)
- [Temporal Table \(ref\)](#) + [Retention](#)
- [Planned Maintenance](#)
- [What's New](#)
 - [Synapse link for SQL](#)
 - [Ledger](#)
 - [Elastic \[jobs, queries, transactions\]](#)
 - [Migrate from Hyperscale](#)
 - [Zone redundant Hyperscale](#)
 - [SQL Insights](#)
 - [SQL Analytics](#)
 - [SQL DB Emulator](#)

SECURITY

Shared

- [Azure Security Baseline + Policy Controls](#). AAD, MFA, [Managed Identity](#), [Policy](#), [Securables](#)
- [Credential, Principal, Permission + Hierarchy](#). [Conditional Access + APIs](#). RBAC: [DB](#), [App](#).
- [Encryption, Hierarchy](#). [Always Encrypted](#). [TDE](#), [RLS](#). [Data Masking](#), [Data Discovery](#).
- [Defender for SQL](#), [Advanced Threat Protection](#), [Vulnerability Assessment](#).

SQL DB

- [Ledger](#), [Security Enclaves](#), [DNS Alias](#)
- [Connectivity Arch](#), [Network Controls](#)
- [VNET Endpoint](#), [Private Link](#), [Firewall Rule](#), [Server Role](#), [SQL Audit](#)

SQL MI

- [Instance Audit](#), [Public Endpoints](#)
- [Server Trust Groups](#), [Linked Server](#)
- [Windows Auth for AAD Principals](#)

COST OPTIMIZATION

Shared

- [Software Assurance to save on SQL Licenses](#). [Right Size](#). [Dev/Test](#). [Azure Backup](#).
- [Shift Capex to Opex](#). [Azure Hybrid](#). [Azure Advisor](#). [Cost Management](#). [Understand billing](#).

SQL DB

- [Reserved Capacity](#), [Azure SQL Serverless](#), [SQL Elastic Pool](#).

SQL MI

- [Reserved Instances](#), [Fine tune backups](#).

OPERATIONS EXCELLENCE

Shared

- [Database Lifecycle Management](#). [Data Compression: Row, Page, Unicode](#).
- [SQL Server PowerShell](#), [Maintenance Window](#), [Azure SQL Analytics](#), [SQL Insights](#).
- [CD with Azure DevOps \(lab\)](#), [DACPAC \(lab\)](#), [ARM Templates](#), [SSDT](#), [Retry Logic](#).

SQL DB

- [Local Dev Experience](#), [Emulator](#), [Data Sync Agent](#), [Move Shared Data](#)
- [Database Sharding](#), [Shard Map](#), [Elastic Query](#), [Query Routing](#)

SQL MI

- [Resource Governor](#), [SQL Assessment API](#), [Managing Operations](#)
- [Service Broker](#), [Database Mail](#)

REFERENCES

- [Azure SQL Status – Right Now!](#)
- [Azure SQL – Committed SLA](#)
- [Azure SQL by Region](#)
- [Microsoft Learn Path – Azure SQL](#)
- [YouTube Mechanics Channel - SQL](#)
- [Azure Virtual Training Days - SQL](#)
- [Microsoft SQL Server Blog](#)
- [Microsoft Tech Community Channel](#)
- [Managing Azure SQL – Free eBook](#)
- [Microsoft Well Architected Framework](#)
- [Cloud Data Migration Strategy Guide](#)
- [Economics of Azure SQL Migration](#)
- [App Modernization with Azure SQL](#)
- [SQL Server Migration Enablement](#)
- [Microsoft Partner Resources for SQL](#)

RELIABILITY

Shared

- [Target SLA and Achieved SLA](#). [Accelerated DB Recovery](#), [Long-term Backup retention](#)
- Recover with [Temporal tables](#). Plan and Develop for [Transient Errors](#).

SQL DB

- [General \(local, zone-redundant\)](#). [Biz Critical \(local, zone-redundant\)](#).
- [Hyperscale \(local, zone-redundant\)](#).
- [Scale DB](#), [Pool resource](#), [Serverless](#)

SQL MI

- [General \(local\)](#). [Biz Critical \(local\)](#)

PERFORMANCE

Shared

- [Batching for Performance](#). Optimize for [Memory](#). Config [App/DB](#) and [Server](#).
- [Log Diagnostic Telemetry](#). [Query Performance](#). [Query Store](#), [Intelligent Insights](#) + [flow](#).

SQL DB

- [Query Perf Bottlenecks](#), [Query Tuning Assistant](#), [Automatic Tuning](#)

SQL MI

- [Query Performance Bottlenecks](#), [ML Service on SQL MI](#).