

Azure SQL Database Training

Complete Practical & Real-time Trainings



A Unit of Sequel Gate Innovative Technologies Pvt. Ltd.

AZURE SQL / DBA Training consists of TWO Modules:

Module 1: Azure SQL Database

Module 2: Azure SQL Database Administration

Training Highlights

- ✓ Complete Practical and Real-time Scenarios
- ✓ Session wise Material and Practice Labs
- ✓ Session wise Notes & Doubts Clarifications
- ✓ Certification Material & Resume Preparation
- ✓ Interview Preparation and Guidance
- ✓ Technical Support and Placements Assistance
- ✓ One Real-time Project and FAQs with Answers
- ✓ Mock Interview and Course Completion Certificate

SQL School (SequelGate Innovative Technologies Pvt. Ltd.), #108/2RT, St # 2, Road# 1, : SR Nagar, Hyderabad - 38, India. CREDITS: ISO Certified Learning Center. Microsoft Certified Learning Partner.

www.sqlschool.com

AZURE SQL DATABASE (Database Design, Dev in Azure)

DAY 1: AZURE CLOUD INTRO

- Introduction to Cloud. Need for Cloud, Advantages
- Cloud Architecture Basics - IaaS, PaaS and SaaS
- Operational Advantages of Cloud, Cloud Providers
- Advantages of Microsoft Cloud - Azure Platform
- Service Models, Private and Public Clouds
- SQL Databases in Microsoft Azure and Advantages
- Azure SQL & Databases - Need, Importance
- Azure Sources - Types, Microsoft Market Place
- Azure SQL Database, Azure SQL Data Warehouse
- Azure Analysis Services, BLOB and TABLE Storage
- Virtual Machines and Apps, Programs in Azure
- Azure Cloud Architecture for OMS, Shell, Vaults
- Advantages of Azure SQL Databases & Tools
- Comparing Azure with AWS and Google Cloud
- Microsoft Azure Price Tiers & Subscription
- Course Plan and Examples. Cloud Account Config.

DAY 2: AZURE CLOUD CONFIGURATIONS

- Azure Cloud Subscription, Azure Portal Options
- Azure Resources, Marketplace and Dashboards
- Azure SQL Database Architecture Components - in detail
- Price Tiers: Basic, Standard, Premium, PremiumRS
- Isolated Price Trier - Advantages, Performance
- Creating SQL Servers in Azure and in Virtual Machines
- Elastic Pools and Configuration Options - Advantages
- DTU : Data Transaction Units : Architecture, Pools
- eDTUs and Elastic Pool, per Database Settings
- EDTU Cost, eDTU max/min Limits and Performance
- Azure Services, Resource Groups and Pricing
- Azure SQL Databases : Technical Features, Benefits
- Built-In Intelligence and Scalability, Tools For Usage
- Advanced Security Compliance, ARM and ASM Topologies
- Need for OSM Workspace - Operations Management Suite

DAY 3: AZURE SQL DATABASE CONFIGURATION

- Creating Azure SQL Server Instances
- Creating Azure SQL Databases, Price Tiers
- SQL Database – Cloud Database as a Service
- Subscription Options and Database Sources
- Elastic Pools & Tier Selection - Recommendations
- Database Name Identifiers, Naming rules & restrictions
- Server Names - Locations, Admin Users, Passwords
- Firewall Rules, IP Configuration Ranges
- Azure Dashboard - Metrics, Notification Options
- Azure SQL Database Collation, Connection Options, Tools
- SQL Server Management Studio (SSMS) & Visual Studio
- SQL Server Data Explorer Tool in Azure Cloud
- .NET, PHP, Node.js, Java, Ruby, Python Connections
- Creating Azure SQL Databases in SSMS Tool
- T-SQL Scripts for Azure SQL Database

DAY 4: PERFORMANCE TUNING in AZURE SQL DB

- Manage database workload in SQL Server
- Scaling Options - Horizontal and Vertical
- Sharding Technique for Performance Tuning
- SaaS approach with single / multi user tenants
- Shard Maps & Shardlets: List Mapping, Range Mapping
- Shard Map Manager and Data Dependent Routing
- Query Routing and Shard Querying. Elastic Tools
- Using DMVs and DMFs in Azure Databases
- Monitor Azure SQL Database Query Plans
- Split-Merge Tool and Split Merge Service
- Performance Monitoring Counters For Azure SQL DB
- CPU, DTU Limits. Data IO and Size Factors
- In-Memory OLTP Tables and Performance Impact
- Active Recommendations, Tuning History
- FORCE PLAN, CREATE, DROP INDEX. ON, OFF INHERITS
- Azure Search Service and Indexer Operations
- Indexing Types and Real-time Usage. Indexing Schedules
- Automated Tuning Options in Azure Database Cloud

DAY 5: AZURE SQL DATABASE MIGRATIONS

- Database Scripting Wizard in SSMS
- Scripting On-Premise Databases in T-SQL
- Data Migration Assistant (DMA) Tool
- Schema Generation and Compatibility Issues
- Generating Data Scripts, Assessment, Schema Options
- Prepare and Deploy Fixes. Database Snapshots
- Resolving Database Migration Compatibility Issues
- Partially Supported and Unsupported Functions
- non SQL Server Database Migrations : MS Access, Oracle
- SQL Server Migration Assistant (SSMA) Tool
- Import from a BACPAC file using Azure portal
- Import from a BACPAC file using SQLPackage
- Import from a BACPAC file using PowerShell
- Data Discovery and Classification Options. Locks

DAY 6: POWERSHELL WITH AZURE SQL DATABASE (Dev)

- PowerShell - Purpose, Vocabulary and Configuration
- Azure Power Shell - Install and Configure
- Installing and Scripting with Power Shell
- cmdlets and Azure Resource Manager (ARM)
- PowerShellGet and Version Paths
- Cloud Shell to run the Azure Power Shell
- Linux (BASH) Commands @ Power Shell
- Powershell Operations for Azure RM & PSSQL
- Powershell Operations for Azure SQL Database
- Azure SQL Database Tables, Views in Excel
- Excel Pivot Tables and Chart Reports with Azure SQL DB
- Connection Drivers in Azure Cloud - Options
- Azure SQL Database Query Batching - Advantages

AZURE SQL DBA (Database Administration in Azure)

DAY 7: AUTOMATED DB RECOVERY, GEO REPLICATION

- Automated Backups in Azure SQL Database
- Cloud Shell Storage and Creating Containers
- Blob Data and File Data Uploads into Azure Storage
- Long Term Backup Retentions. Backup cost, Frequency
- Recovery Service Vaults, Policies with RA-GRS
- Automated Backups - Retentions, Audits. LTR Policy
- Restore Points and Azure SQL Database Recovery
- Failover Groups and Active Geo-Replication
- Read-Write Failover Policy, Automated Failover
- Geo Replication Configurations - Azure Locations
- Primary-Secondary and Read / Write Modes
- Upgrading / Downgrading Primary Database
- Perform Disaster Recovery (DR) Drills
- Performance Dashboard and Database Level Failover
- Power Shell For Geo Replication and Failback Options
- Backup Errors, Geo Replication Errors - Solutions

DAY 8: DATABASE SYNCHRONIZATION

- SYNCHRONIZATION with Azure SQL Databases
- SQL Data Sync Service and Sync Groups
- bi-directional data transfer with Azure SQL DBs
- Sync Schema, Sync Direction and Sync Interval
- Conflict Resolution Policy with HUB and MEMBER
- Metadata Database and Synchronization Topologies
- Real-time Advantages of Azure DB Synchronization
- LOAD BALANCING & Automated FAILOVER with DB Sync
- Cloud to Cloud and Cloud to On-Premise Synchronization
- HA - DR with Geo Replication & Database Synchronization
- Azure Database Integration. Elastic Query Plans
- Requirements &a,p; Limitations with Database Synchronization
- Azure Dashboards and Report Pins. Server Health Reports
- SQL Server Stretch Databases and Purpose
- Configuring, Using, Monitoring Stretch Databases in Azure

DAY 9: SERVER FAILOVER AND OMS

- Azure SQL Server Level Failover and Recovery
- Auto Failover Settings and Geo Configuration
- Auto-Failover Group Capabilities
- Active Geo Replication and Always-On
- Read Committed Snapshot Isolation (RCSI)
- Best practices of building highly available service
- Upgrading or downgrading a primary database
- Preventing the loss of critical data
- Manage SQL database failover using Transact-SQL
- Manage SQL database failover using PowerShell
- Manage SQL database failover using the REST API
- DB Migration, Application Upgrades with Azure SQL DB
- Configuring OMS (Operations Management Suite)
- Log Analytics and Azure Service Auditing
- Azure SQL Server and Database Properties

DAY 10: AUDITS and THREAT DETECTION

- Activity Logs and OMS Server Configuration
- OMS Workspace and Log Analytics. Operational Logs
- Instance Audits and Threat Detection Process
- Audit Storage Configuration, Service Tiers with Azure
- LRS, GRS, and "RA - GRS" Storage Modes in Azure
- Azure Resource Manager (ARM) Scripts with Power Shell
- Threat Detection Types : SQL Injection & Vulnerability
- Audit Types: Server Audits and Database Audits
- Events, Principals, Types and Action Parameters
- DMVs and DMFs for Audits (T-SQL). Power Shell Scripts
- Merging and Reading Audit Files. Analyzing Audit Reports
- Vulnerability Assessment (VA) Reports, Notifications
- Security Risk Reports and Summaries : HIGH/MEDIUM/LOW
- Azure SQL Database Recovery from Availability Groups
- Azure SQL Database Recovery from Deleted Databases
- Manage SQL database auditing using Azure Power Shell
- Manage SQL database auditing using REST API

DAY 11: SECURITY MANAGEMENT - AZURE SQL DB

- SQL Server Firewall & SQL Database Firewall with T-SQL
- Authorization and Authentication Techniques
- Owner, Contributor and Reader Roles in Azure SQL Server
- Logins, Users, Roles and Permissions using T-SQL
- GRANT, DENY, REVOKE and WITH GRANT using T-SQL
- SQL Database Auditing and SQL Database Threat Detection
- Transparent Database Encryptions (TDE) & Security
- Service Keys and TDE for Security, AD Authentication
- Row Level Security (RLS) and Security Roles
- User Functions and Security Policies for RLS
- Azure IAM Controls, Manage SMB File Shares in Azure
- Dynamic Data Masking (DDM) and Encryption Functions
- T-SQL Scripts & Portal to Implement Data Mask Functions
- Data Discovery and Classification Feature - Real-time Use

DAY 12: AZURE CLI & POWERSHELL WITH SQL DATABASE

- PowerShell for Disaster Recovery and DB Management
- PowerShell for Schedules & Routine Maintenance Tasks
- Windows Virtual Machines with PowerShell
- Important ARM Commands for DB Admins in PowerShell
- Plan for IaaS, Azure VM. Install Azure Virtual Machines
- Azure SQL Database in VM to SQL Cloud
- Power Shell Scripts to Implement DDM - MASK / UNMASK
- SQL Databases in Google Cloud, AWS Cloud
- Azure CLI Integration & Configuration
- Azure CLI with Azure Portal. Telemetry, ASM, ARM
- SQL Server Creation, DB Creation with Azure CLI
- MFA and Virtual Machines in Azure. REST API
- Power BI Workspace with Azure SQL Database

This AZURE Training Course includes one Real-time Project (Starbucks Cloud)

Deployments to SQL Azure * Azure Database Integration * Azure Cloud Versus AWS Cloud * Azure Cloud Versus Google Cloud * Pricing and Server Tiers * Elastic Pools and Config * Elastic Query Plans * Geo Replication Issues * Azure Interview FAQs * Resume Preparation * Mock Interviews

Course includes Study Material, Interview & Certification Guidance included in this course.

Pre-requisites for this Azure SQL Database / Azure SQL DBA / Azure DWH Course:

Prior knowledge on T-SQL needed for this course. Participant needs to have knowledge on SQL Server Installation, Database Design, Table Design, T-SQL Data Types and Stored Procedures.

Azure SQL Database (Module 1) is mandatory to proceed for Module 2 (Azure SQL DBA) & Module 3 (Azure SQL DWH).

About Trainer:

Mr. Sai Phanindra Tholeti is a Database Consultant working for his own company - *SequelGate Innovative Technologies Pvt. Ltd.* With more than 12 years of expertise and passion for SQL Server, Database Administration, Business Intelligence (MSBI) and Data Warehouse Management - Mr. Sai provides Data Hosting, Business Consulting and Technical Support

Services for Corporate Clients. All his training sessions are completely practical, real-time and highly interactive.

Complete profile of the trainer available @ <http://www.linkedin.com/in/saiphanindra> For Free Demo / Further Clarifications, please reach us.

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Why Choose Us?

- ✓ Complete Practical and Real-time Sessions
- ✓ Study Material and Practice Labs
- ✓ Detailed Practice Material
- ✓ Session wise notes & Doubts Clarifications
- ✓ Certification Material & Resume Preparation
- ✓ Interview Questions and Guidance
- ✓ Technical Support and Placements Assistance
- ✓ Videos for Missing Sessions and Support



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ALL OUR TRAININGS SESSIONS ARE COMPLETELY PRACTICAL & REALTIME