

Course 50592: Advanced SQL Azure

Four days, Instructor – led

About this course

This 4-day Instructor Led course This class is an in-depth look at SQL Azure, the database cloud offering in Windows Azure. Learn the basics around server and database provisioning, valid Azure TSQL, and how security is implemented and managed. Advanced topics include partitioning with sharding, database design optimization, backup and synchronization via Synchronization Framework and Azure Data Sync and migrating various database scenarios to SQL Azure.

Audience profile

IT Pros that want to learn to maintain SQL Azure databases and architects that want to learn to leverage SQL Azure in their applications.

At course completion

After completing this course, students will be able to:

Learn to design high performance cloud based data storage solutions using SQL Azure. Topics include security, programming, maintaining, optimizing, migrating and synchronizing with SQL Azure. SQL Azure Reporting is also explored.

Pre-requisite:

Before attending this course, students must have:

- Understanding of basic SQL concepts (TSQL and tables)

Course Outline

Module 1: Overview

A simple introduction module.

After completing this module, students will be able to:

Understand your course, classroom, classmates, facility and instructor.

Module 2: Introduction to SQL Azure

In this module we will explore what SQL Azure is, it's architecture, ways that you can use it in your applications and most importantly how much it costs!

Lessons

- Introduction to SQL Azure

Lab : Setup Azure Account

- Create a LiveID
- Setup Azure Account
- Add SQL Azure subscription
- Create SQL Azure server
- Create SQL Administrators

After completing this module, students will be able to:

- Determine the cost of storing data in Windows Azure

- Setup SQL Azure databases through Developer Portal

Module 3: SQL Azure RDBMS Support

In this module we take a look at supported Azure T-SQL including creating tables, columns and indexes. We will also explore how to work with temp tables and transactions.

Lessons

- RDBMS Support

Lab : Creating Databases and Tables

- Create SQL Azure Databases
- Create SQL Azure Tables

Lab : Exploring Valid SQL Azure TSQL

- Create Tables
- Create Views
- Create Stored Procedures
- Create Indexes
- Create Transactions
- Working with Temp Tables
- Invalid Azure TSQL statements

After completing this module, students will be able to:

- Create SQL Azure Databases and Tables
- Understand what TSQL is supported
- Create SQL Azure views and stored procedures

Module 4: SQL Azure Security

In this module we take a look at the lessons of the module!

Lessons

- SQL Azure Security

Lab : SQL Azure Security

- Creating Logins and Users

- Assigning Roles
- Assigning Rights to Objects

After completing this module, students will be able to:

- Describe how SQL Azure security works
- Create and assign firewall rules
- Create server logins
- Assign permissions to users
- Assign rights to objects

Module 5: Programming SQL Azure

In this module we take a look at the various ways to access SQL Azure, some of the tools that make working with SQL Azure easier (Entity Framework and LINQ), and an advanced coverage of Sharding.

Lessons

- Programming SQL Azure
- Accessing SQL Azure

Lab : Connecting to SQL Azure

- Use SQL Server Management Studio
- Use SQLCMD
- Use Visual Studio 2010

Lab : Programming SQL Azure

- Connecting to SQL Azure from code (.NET)
- Working with LINQ
- Working with Entity Framework

Lab : Securing Data at Rest

- Secure data at Rest

Lab : Implementing Partitions and Shards

- Implementing Horizontal Partitions
- Implementing Vertical Partitions
- Programming with Enzo SQL Shared

After completing this module, students will be able to:

- Connect to SQL Azure from your favorite tools
- Program SQL Azure with Entity Framework
- Secure your SQL Azure Data at Rest
- Implement partitions using sharding
- Understand how to use Enzo SQL Shard SDK

Module 6: Maintaining and Optimizing SQL Azure

In this module we take a look at how to maintain SQL Azure databases, how to optimize databases and how to troubleshoot connectivity problems (DoS and Throttling).

Lessons

- Optimizing
- Maintaining
- Troubleshooting

Lab : Maintaining SQL Azure

- Measure Latency to SQL Azure
- Find database size
- Monitor database sessions
- Find top 5 queries (CPU and IO)
- Rebuild a database index

Lab : Performing Baselines

- Use Enzo SQL to perform baselines

Lab : Backup SQL Azure

- Backup SQL Azure (Azure Storage Account)
- Backup SQL Azure (SQL Management Studio)
- Backup SQL Azure (BCP)

- Backup SQL Azure (RedGate)

Lab : Restore SQL Azure

- Restore SQL Azure (Azure)
- Restore SQL Azure (SQL Management Studio)
- Restore SQL Azure (BCP)

Lab : Using Query Analyzer and Client Statistics

- Using Query Analyzer
- Using Client Statistics

After completing this module, students will be able to:

- Maintain SQL Azure
- Perform baselines for on-premise and SQL Azure Databases
- Perform backups of SQL Azure using various tools
- Perform a restore of SQL Azure
- Use Query Analyzer and Client Statistics

Module 7: Migrating and Synchronizing to SQL Azure

In this module we take a look at how to migrate your databases to SQL Azure and how you can use Microsoft Synchronization Framework and Azure Data Sync to synchronize your Azure databases with on-premise databases.

Lessons

- Synchronizing to SQL Azure
- Migrating to SQL Azure

Lab : Migrating to SQL Azure

- Migrating the database schema
- Migrating database data
- Migrating with SQL Server Migration Assistant

- Migration with SQL Azure Migration Wizard
- Migrating with DAC Import/Export 2.0
- Migrating with SQL Server Integration Services (SSIS)

Lab : Using Microsoft Sync Framework

- Working with Microsoft Sync Framework

Lab : Using Azure Data Sync

- Working with SQL Azure Data Sync

After completing this module, students will be able to:

- Export your on-premise database schemas for SQL Azure
- Migrate data to SQL Azure using various tools
- Synchronize data with SQL Azure using Azure Data Sync
- Synchronize data with SQL Azure using Microsoft Synchronization Framework

Module 8: Business Intelligence with SQL Azure

In this module we take a look at SQL Azure Reporting Services and how to use PowerPivot to connect Excel 2010 to SQL Azure data.

Lessons

- PowerPivot and SQL Azure
- SQL Azure Reporting

Lab : Business Intelligence with SQL Azure

- Working with SQL Azure Reporting

Lab : PowerPivot with SQL Azure

- Integrating PowerPivot and SQL Azure

After completing this module, students will be able to:

- Create SQL Azure Reporting Services Server instances
- Create data sources in SQL Azure Reporting
- Create reports and deploy them to SQL Azure Reporting

Course Inclusions:

- Microsoft Official Curriculum (MOC) and/or Wizards Learning Courseware (WLC)
- Microsoft Certified Trainer (MCT)
- Lunch, AM and PM Snacks
- Certificate of Achievement
- Course Notes



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