

<b>Workshop</b>	
Name	Synergetics SQL Server 2014-Administration
Duration	4 Days
Objective	SQL 2014 provides the foundation to the cloud-ready information platform and will help customers unlock breakthrough insights across the organization and quickly build solutions that extend data across on-premises and public cloud backed by capabilities for mission critical confidence.
Participants' Entry Profile	Participants attending this course must have: <ul style="list-style-type: none"> <li>• Concepts of Relational Database Design &amp; Implementation</li> <li>• Working Experience/Knowledge of SQL and TSQL.</li> </ul>
Training Methodology	The workshop will follow Synergetics methodology of <b>Concept Visualization</b> <b>Active Experimentation</b> <b>Application Development.</b> The workshop will be <b>100% Hands-On</b> with each participant having access to system during the session

<b>Setup Requirements</b>	
Hardware and Software Requirements	<b>Hardware Requirement</b> Pentium I3, I5, I7 64-Bit Systems, 8 GB RAM 180 GB Free Hard Disk Space  <b>Software Requirement</b> Operating System - Windows Server 2008 R2 Windows Server 2012, Windows Server 2012 R2. Windows PowerShell 3.0 Microsoft IIS 7.x or above Internet Explorer 8.0 or above .Net Framework 4.5 SP1 Ms-Office 2013 Visual Studio 2012 Microsoft SQL Server 2014 Enterprise Edition Sample Databases for SQL Server 2014
Training Lab Requirements	Whiteboard Recommended size - 6 feet by 4 feet Whiteboard markers – Red, Blue, Green, Black Video Projector (1024 X 768 resolutions)

**Course Contents****Day 1**

- **Operating System Support and Prerequisites**
  - Windows Server 2012 R2
  - Windows Server 2012 R2 Server Core
  - All Operating Systems
  
- **Using SQL Server Administrative Tools**
  - Microsoft Management Studio (SSMS)
  - Using Sqlcmd
  - Using Windows PowerShell with SQL Server
  
- **Installing and Configuring SQL Server 2014**
  - Preparing to Install SQL Server
  - Installing SQL Server
  - Performing Post-Installation Configuration
  
- **Working with Databases and Storage**
  - Introduction to Data Storage with SQL Server
  - Managing Storage for System Databases
  - Managing Storage for User Databases
  - Creating a Database
  - Attaching a Database
  - Moving Database files
  - Significance of TempDB
  - Configuring the Buffer Pool Extension

**Day 2**

- **Planning and Implementing Backup Strategy**
  - Understanding SQL Server Recovery Models
  - Planning a Backup Strategy
  - Backing up Databases and Transaction Logs
  - Using Backup Options
  - Ensuring Backup Reliability
  - Performing a Partial Backup
  
- **Restoring SQL Server 2014 Databases**
  - Understanding the Restore Process
  - Restoring Databases
  - Working with Point-in-Time Recovery
  - Restoring a Database Backup
  - Restoring Database, Differential, and Transaction Log Backups
  - Perform a point-in-time recovery
  
- **Importing and Exporting Data**
  - Using the SQL Server Import and Export Wizard
  - Using the bcp Utility
  - Using the BULK INSERT Statement
  - Copy or Move a Database

- **Management Enhancements**
  - Startup Options
  - Enhancements in bcp.exe and sqlcmd.exe
  - Database Engine Tuning Advisor Enhancements
  - New and Modified Dynamic Management Views and Functions
  
- **Security Enhancements**
  - Introduction to SQL Server Security
  - Managing Server-Level Security
  - Managing Database-Level Principals
  - Managing Database Permissions
  - New Permissions
  - New Role Management
  - Default Schema for Groups
  - Audit Enhancements
  - Deprecation of RC4
  - Certificate Key Length
  - Encryption changes
  - Create Certificates from Binary

**Day 3**

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- **Auditing Data Access and Encrypting Data**
  - Auditing Data Access in SQL Server
  - Implementing SQL Server Audit
  - Encrypting Databases
  - Increased Partition support
  
- **Performing Ongoing Database Maintenance**
  - Managing Database Integrity
  - Managing Index Fragmentation
  - Implementing a Maintenance Plan
  - Ensure database integrity by using DBCC CHECKDB
  
- **Automating SQL Server 2014 Management**
  - Automating SQL Server Management
  - Implementing SQL Server Agent Jobs
  - Managing SQL Server Agent Jobs
  - Managing Job Security Contexts
  - Managing Jobs on Multiple Servers
  - Monitoring SQL Server Errors
  - Configuring Database Mail
  - Configuring Operators, Alerts, and Notifications

**Day 4**

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- **Scalability and Performance Enhancements**
  - Columnstore Indexes
  - Online Rebuild Indexes
  - Online Not Null Columns
  - Increased Partition support
  
- **Miscellaneous Enhancements(Demo and Concepts)**
  - Transaction Durability

- Full Durability
- Delayed Durability
- Cardinality Estimation
- In-Memory OLTP
- Indexes in In-Memory OLTP
  
- **Availability Enhancements(Only Concepts)**
  - AlwaysOn - Next Version to Mirroring
  - AlwaysOn - SQL Server Failover Cluster Instances
  - AlwaysOn - Availability Groups
  - Indirect CheckPoints