Microsoft Azure Data Explorer with Advanced KQL Training

Course Duration: 16 Hours **Course Code: ADX-KQL-ADV-01**

1. Course Overview

Microsoft Azure Data Explorer with Advanced KQL Training is designed to help professionals analyze large-scale data efficiently using Azure's powerful analytics service. This course focuses on mastering Kusto Query Language (KQL) for real-time data exploration, log analytics, and business intelligence. Participants will gain hands-on experience in handling big data, optimizing queries, and building scalable data solutions in Azure.

2. What You'll Learn

- Introduction to Azure Data Explorer (ADX) and its architecture
- Fundamentals to advanced concepts of Kusto Query Language (KQL)
- Writing efficient and optimized queries
- Data ingestion techniques and pipelines
- Real-time analytics and log monitoring
- Data visualization using dashboards
- Performance tuning and query optimization
- Integration with Azure services like Power BI and Azure Monitor
- Security, governance, and best practices

3. Target Audience

- Data Analysts and Business Intelligence professionals
- Data Engineers and Database Administrators
- Cloud Engineers and Azure Professionals

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- Developers working with large datasets
- IT professionals interested in real-time data analytics

4. Pre-Requisites

- Basic understanding of databases and SQL
- Familiarity with cloud computing concepts
- Basic knowledge of Microsoft Azure fundamentals
- Analytical thinking and problem-solving skills
- Prior exposure to data analytics tools (preferred but not mandatory)

5. Course Content

Module 1: Introduction to Azure Data Explorer

- Overview of ADX
- Use cases and architecture
- Setting up Azure Data Explorer cluster

Module 2: KQL Fundamentals

- Query structure and syntax
- Filtering and sorting data
- Working with operators and expressions

Module 3: Advanced KQL Techniques

- Joins and aggregations
- Time-series analysis
- Window functions and advanced operators

Module 4: Data Ingestion

- Batch and streaming ingestion

- Data connectors and pipelines
- Data transformation techniques

Module 5: Data Visualization & Dashboards

- Creating dashboards in ADX
- Integrating with Power BI
- Real-time reporting

Module 6: Performance Optimization

- Query performance tuning
- Indexing and caching
- Best practices for large datasets

Module 7: Security & Governance

- Role-based access control (RBAC)
- Data security and compliance
- Monitoring and auditing

Module 8: Real-World Use Cases & Projects

- Log analytics and monitoring
- IoT data analysis
- Business intelligence scenarios