



Microsoft Azure Data Factory

Course ID #: 7000-1172-ZZ-Z

Hours: 35 - 40

Delivery Method: Instructor-led Classroom/On-line

Course Content

Course Description:

Azure Data Factory is Microsoft's cloud-based data integration and orchestration service. This course teaches how to design, build, deploy, and manage data pipelines that ingest, transform, and move data across cloud and on-premises systems. Learners gain hands-on experience with pipelines, triggers, integration runtimes, mapping data flows, and real-world ETL/ELT patterns used in analytics and data warehousing.

Learning Objectives:

- Explain the architecture and core components of Azure Data Factory.
- Build and manage pipelines for batch and real-time data movement.
- Use linked services, datasets, and activities to orchestrate data workflows.
- Configure and optimize Integration Runtimes (IRs).
- Develop Mapping Data Flows for code-free transformations.
- Implement CI/CD for ADF using Git and Azure DevOps.
- Monitor, debug, and troubleshoot pipelines.
- Integrate ADF with Azure Synapse, Azure Databricks, Azure Storage, SQL Database, and other services.
- Apply best practices for security, governance, and cost optimization.

Prerequisites:

Learners benefit most from the course if they have:

- Basic understanding of cloud concepts (Azure fundamentals helpful but not required).
- Familiarity with SQL and relational databases.
- General knowledge of data warehousing or ETL concepts.
- Optional but helpful: experience with Azure Storage, Azure SQL, or other data services.

Target Audience

This course is designed for:

- Data Engineers and ETL Developers
- Cloud Engineers and Solution Architects
- BI Developers and Data Analysts transitioning to cloud data pipelines
- IT professionals responsible for data integration or migration
- Anyone preparing for the **DP-203: Data Engineering on Microsoft Azure** certification



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Topics:

Module 1: Introduction to Azure Data Factory (ADF)

- Overview of ADF
- Objectives and Scenarios for using ADF
- Authoring ADF Pipelines
- Introduction to Source Control in ADF

Module 2: Copy Activities and Connectors

- Copy Activity in ADF
- Copy Data Tool in ADF
- Connecting to Different Data Sources
- Creating Linked Services

Module 3: Transformation and Control Flow

- Identify and explain different transformation activities
- On-Demand vs BYO Compute environments
- Controlling flow of activities in the pipeline

Module 4: Azure Data Factory CI/CD

- Connecting ADF to DevOps Release pipelines

Module 5: Mapping Data Flow

- Introduction to Mapping Data Flow (MDF)
- Debugging in MDF
- Introduction to MDF Expression Builder
- Scenarios for using Mapping Data Flow

Module 6: Security and Monitoring

- Security in ADF and integration with Azure Security
- Securely storing credentials for ADF
- Using ADF Integration Runtimes
- Monitoring ADF within the ADF and Azure Portals

Module 7: Error Handling and Logging in ADF

- Best practices for error handling in ADF pipelines
- Configuring logging and monitoring for better troubleshooting

Module 8: Advanced Pipeline Orchestration

- Use of triggers for scheduling and automating pipelines
- Pipeline dependency management and execution order

Module 9: Performance Optimization

- Techniques for optimizing data movement and transformation performance
- Monitoring and optimizing data integration pipelines for efficiency

Module 10: Data Governance and Compliance

- Implementing data governance policies in ADF
- Ensuring compliance with data protection regulations

Module 11: Integration with Azure Services

- Integrating ADF with other Azure services
 - Azure Data Lake Storage
 - Azure SQL Database
 - Azure Synapse Analytics

Module 12: Advanced Mapping Data Flow Features

- Advanced usage of Mapping Data Flow transformations
- Handling complex data transformations and scenarios



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Module 13: Hybrid Cloud Scenarios

- Implementing ADF in hybrid cloud environments
- Connecting on-premises data sources with ADF pipelines

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www.tcworkshop.com or calling us at 800-639-3535