Implement Data Engineering Solutions Using Microsoft Fabric

Course DP-700 4 days Instructor-led

Introduction

This course covers methods and practices to implement data engineering solutions by using Microsoft Fabric. Students will learn how to design and develop effective data loading patterns, data architectures, and orchestration processes. Objectives for this course include ingesting and transforming data and securing, managing, and monitoring data engineering solutions. This course is designed for data professionals with some data integration and orchestration experience.

Who Should Attend?

This audience for this course is data professionals with experience in data extraction, transformation, and loading. DP-700 is designed for professionals who need to create and deploy data engineering solutions using Microsoft Fabric for enterprise-scale data analytics.

At Course Completion

After completing this course, students will be able to:

- Ingest Data with Dataflows Gen2 in Microsoft Fabric
- Orchestrate processes and data movement with Microsoft Fabric
- Use Apache Spark in Microsoft Fabric
- Work with real-time data in an Eventhouse in Microsoft Fabric
- Introduction to end-to-end analytics using Microsoft Fabric
- Get started with lakehouses in Microsoft Fabric
- Use Apache Spark in Microsoft Fabric
- Work with Delta Lake tables in Microsoft Fabric
- Ingest Data with Dataflows Gen2 in Microsoft Fabric
- Orchestrate processes and data movement with Microsoft Fabric
- Organize a Fabric lakehouse using medallion architecture design
- Get started with Real-Time Intelligence in Microsoft Fabric
- Use Eventstream in Microsoft Fabric
- Work with real-time data in an Eventhouse in Microsoft Fabric
- Create Real-Time Dashboards with Microsoft Fabric
- Use Activator in Microsoft Fabric
- Introduction to end-to-end analytics using Microsoft Fabric
- Get started with data warehouses in Microsoft Fabric

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- Load data into a Microsoft Fabric data warehouse
- Query a data warehouse in Microsoft Fabric
- Monitor a Microsoft Fabric data warehouse
- Secure a Microsoft Fabric data warehouse
- Implement continuous integration and continuous delivery (CI/CD) in Microsoft Fabric
- Monitor activities in Microsoft Fabric
- Secure data access in Microsoft Fabric
- Administer a Microsoft Fabric environment
- Use Activator in Microsoft Fabric

Prerequisites

Prior to attending this course, learners are expected to have a good understanding of Azure Databricks workspaces and Unity Catalog, along with familiarity with data access patterns and core data engineering and data warehouse concepts. In addition, they should have foundational knowledge of Azure security, including Microsoft Entra ID, and be familiar with Git version control fundamentals.

Course Outline

Module 1: Ingest Data with Dataflows Gen2 in Microsoft Fabric

- Understand Dataflows Gen2 in Microsoft Fabric
- Explore Dataflows Gen2 in Microsoft Fabric
- Integrate Dataflows Gen2 and Pipelines in Microsoft Fabric
- Module assessment

Module 2: Orchestrate processes and data movement with Microsoft Fabric

- Understand pipelines
- Use the Copy Data activity
- Use pipeline templates
- Run and monitor pipelines
- Module assessment

Module 3: Use Apache Spark in Microsoft Fabric

- Prepare to use Apache Spark
- Run Spark code
- Work with data in a Spark dataframe
- Work with data using Spark SQL
- Visualize data in a Spark notebook
- Module assessment

Module 4: Work with real-time data in an Eventhouse in Microsoft Fabric

- Get started with an Eventhouse
- Use KQL effectively
- Materialized views and stored functions
- Module assessment

Module 5: Introduction to end-to-end analytics using Microsoft Fabric

- Explore end-to-end analytics with Microsoft Fabric
- Explore data teams and Microsoft Fabric
- Enable and use Microsoft Fabric
- Module assessment

Module 6: Get started with lakehouses in Microsoft Fabric

- Explore the Microsoft Fabric lakehouse
- Work with Microsoft Fabric lakehouses
- Explore and transform data in a lakehouse
- Module assessment

Module 7: Use Apache Spark in Microsoft Fabric

- Prepare to use Apache Spark
- Run Spark code
- Work with data in a Spark dataframe
- Work with data using Spark SQL
- Visualize data in a Spark notebook
- Module assessment

Module 8: Work with Delta Lake tables in Microsoft Fabric

- Understand Delta Lake
- Create delta tables
- Optimize delta tables
- Work with delta tables in Spark
- Use delta tables with streaming data
- Module assessment

Module 9: Ingest Data with Dataflows Gen2 in Microsoft Fabric

- Understand Dataflows Gen2 in Microsoft Fabric
- Explore Dataflows Gen2 in Microsoft Fabric
- Integrate Dataflows Gen2 and Pipelines in Microsoft Fabric
- Module assessment

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Module 10: Orchestrate processes and data movement with Microsoft Fabric

- Understand pipelines
- Use the Copy Data activity
- Use pipeline templates
- Run and monitor pipelines
- Module assessment

Module 11: Organize a Fabric lakehouse using medallion architecture design

- Describe medallion architecture
- Implement a medallion architecture in Fabric
- Query and report on data in your Fabric lakehouse
- Considerations for managing your lakehouse
- Module assessment

Module 12: Get started with Real-Time Intelligence in Microsoft Fabric

- What is real-time data analytics?
- Real-Time Intelligence in Microsoft Fabric
- Ingest and transform real-time data
- Store and query real-time data
- Visualize real-time data
- Automate actions
- Module assessment

Module 13: Use Eventstream in Microsoft Fabric

- Components of Eventstream
- Eventstream sources and destinations
- Eventstream transformations
- Module assessment

Module 14: Work with real-time data in an Eventhouse in Microsoft Fabric

- Get started with an Eventhouse
- Use KQL effectively
- Materialized views and stored functions
- Module assessment

Module 15: Create Real-Time Dashboards with Microsoft Fabric

- Get started with real-time dashboards

- Organize and filter dashboard data
- Dashboard management and optimization
- Module assessment

Module 16: Use Activator in Microsoft Fabric

- Configure Activator for your data
- Create rules in Activator
- Configure actions in Activator
- Module assessment

Module 17: Introduction to end-to-end analytics using Microsoft Fabric

- Explore end-to-end analytics with Microsoft Fabric
- Explore data teams and Microsoft Fabric
- Enable and use Microsoft Fabric
- Module assessment

Module 18: Get started with data warehouses in Microsoft Fabric

- Understand data warehouse fundamentals
- Understand data warehouses in Fabric
- Query and transform data
- Prepare data for analysis and reporting
- Secure and monitor your data warehouse
- Module assessment

Module 19: Load data into a Microsoft Fabric data warehouse

- Explore data load strategies
- Use data pipelines to load a warehouse
- Load data using T-SQL
- Load and transform data with Dataflow Gen2
- Module assessment

Module 20: Query a data warehouse in Microsoft Fabric

- Query data
- Use the SQL query editor
- Explore the visual query editor
- Use client tools to query a warehouse
- Module assessment

Module 21: Monitor a Microsoft Fabric data warehouse

- Monitor capacity metrics
- Monitor current activity
- Monitor queries
- Module assessment

Module 22: Secure a Microsoft Fabric data warehouse

- Explore dynamic data masking
- Implement row-level security
- Implement column-level security
- Configure SQL granular permissions using T-SQL
- Module assessment

Module 23: Implement continuous integration and continuous delivery (CI/CD) in Microsoft Fabric

- Understand Continuous Integration and Continuous Delivery (CI/CD)
- Implement version control and Git integration
- Implement deployment pipelines
- Automate CI/CD using Fabric APIs
- Module assessment

Module 24: Monitor activities in Microsoft Fabric

- Understand monitoring
- Use Microsoft Fabric Monitor Hub
- Take action with Microsoft Fabric Activator
- Module assessment

Module 25: Secure data access in Microsoft Fabric

- Understand the Fabric security model
- Configure workspace and item permissions
- Apply granular permissions
- Module assessment

Module 26: Administer a Microsoft Fabric environment

- Understand the Fabric Architecture
- Understand the Fabric administrator role
- Manage Fabric security
- Govern data in Fabric
- Module assessment

Module 27: Use Activator in Microsoft Fabric

- Configure Activator for your data
- Create rules in Activator
- Configure actions in Activator
- Module assessment