DP-600T00: Microsoft Fabric Analytics Engineer

Course ID #: 7000-888-ZZ-Z
Hours: 28

Course Content

Course Description:

This course covers methods and practices for implementing and managing enterprise-scale data analytics solutions using Microsoft Fabric. Students will build on existing analytics experience and will learn how to use Microsoft Fabric components, including lakehouses, data warehouses, notebooks, dataflows, data pipelines, and semantic models, to create and deploy analytics assets.

This course is best suited for those who have the PL-300 certification or similar expertise in using Power BI for data transformation, modeling, visualization, and sharing. Also, learners should have prior experience in building and deploying data analytics solutions at the enterprise level.

Course Objectives:

Upon successful completion of this course, students will be able to:
Create Dataflow solutions to ingest and transform data
Configure external source authentication and optimization
Create pipelines based on predefined templates
Create a lakehouse
Apply the medallion architecture framework within the Microsoft Fabric environment
Configure Spark in a Microsoft Fabric workspace
Create and manage delta tables using Spark
Create and manage fact tables and dimensions within a data warehouse
Use SQL query editor to query a data warehouse
Implement Power BI data modeling best practices

Prerequisites:

The following is recommended:

- Familiarity with Microsoft Fabric lakehouses and core concepts
- Experience with Apache Spark and Python
- Basic understanding of extracting, transforming, and loading data
- Experience developing Power BI data models by using Power BI Desktop

Target Audience:

The primary audience for this course is data professionals with experience in data modeling, extraction, and analytics. DP-600 is designed for professionals who want to use Microsoft Fabric to create and deploy enterprise-scale data analytics solutions.

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Topics:

Lesson 1: Ingest Data with Dataflows Gen2 in Microsoft Fabric

- Introduction
- Create a managed virtual machine (VM) image
- Modify a session host image
- Plan for image update and management
- Create and use an Azure Compute Gallery using the portal
- Create an Azure Virtual Desktop image by using VM Image Builder
- Install Microsoft 365 Apps on a master Virtual Hard Disk image
- Install language packs in Azure Virtual Desktop
- Knowledge check
- Summary

Lesson 2: Ingest data with Spark and Microsoft Fabric notebooks

- Introduction
- Connect to data with Spark
- Write data into a lakehouse
- Consider uses for ingested data
- Exercise – Ingest data with Spark and Microsoft Fabric Notebooks
- Knowledge Check
- Summary

Lesson 3: Use Data Factory pipelines in Microsoft Fabric

- Introduction
- Create a managed virtual machine (VM) image
- Modify a session host image
- Plan for image update and management
- Create and use an Azure Compute Gallery using the portal
- Create an Azure Virtual Desktop image by using VM Image Builder
- Install Microsoft 365 Apps on a master Virtual Hard Disk image
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Lesson 4: Get started with lakehouses in Microsoft Fabric

- Introduction
- Create a managed virtual machine (VM) image
- Modify a session host image
- Plan for image update and management
- Create and use an Azure Compute Gallery using the portal
- Create an Azure Virtual Desktop image by using VM Image Builder
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Lesson 5: Organize a Fabric lakehouse using medallion architecture design

- Introduction
- Describe medallion architecture
- Implement a medallion architecture in Fabric
- Query and report on data in your Fabric lakehouse
- Considerations for managing your lakehouse
- Exercise – Organize your Fabric lakehouse using a medallion architecture
- Knowledge Check
- Summary

Lesson 6: Use Apache Spark in Microsoft Fabric

- Introduction
- Create a managed virtual machine (VM) image
- Modify a session host image
- Plan for image update and management
- Create and use an Azure Compute Gallery using the portal
- Create an Azure Virtual Desktop image by using VM Image Builder
- Install Microsoft 365 Apps on a master Virtual Hard Disk image
- Install language packs in Azure Virtual Desktop
- Knowledge check
- Summary

Lesson 7: Work with Delta Lake tables in Microsoft Fabric

- Introduction
- Understand Delta Lake
- Create delta tables
- Work with delta tables in Spark
- Use delta tables with streaming data
- Exercise – Use delta tables in Apache Spark
- Knowledge Check
- Summary

Lesson 8: Get started with data warehouses in Microsoft Fabric

- Introduction
- 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
- Exercise – Analyze data in a data warehouse
- Knowledge Check
- Summary

Lesson 9: Load data into a Microsoft Fabric data warehouse

- Introduction
- Explore data load strategies
- Use data pipelines to load a warehouse
- Load data using T-SQL
- Load and transform data with Dataflor Gen2
- Exercise – Load data into a warehouse in Microsoft Fabric
- Knowledge Check
- Summary

Lesson 10: Query a data warehouse in Microsoft Fabric

- Introduction
- Use the SQL query editor
- Explore the visual query editor
- Use client tools to query a warehouse
- Exercise – Query a warehouse in Microsoft Fabric
- Knowledge Check
- Summary

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Lesson 11: Monitor a Microsoft Fabric data warehouse
- Introduction
- Monitor capacity metrics
- Monitor current activity
- Monitor queries
- Exercise – Monitor a data warehouse in Microsoft Fabric
- Knowledge Check
- Summary

Lesson 12: Understand scalability in Power BI
- Introduction
- Describe the significance of scalable models
- Implement Power BI data modeling best practices
- Configure large datasets
- Exercise – Create a star schema model
- Knowledge Check
- Summary

Lesson 13: Create Power BI model relationships
- Introduction
- Understand model relationships
- Set up relationships
- Use DAX relationship functions
- Understand relationship evaluation
- Exercise – Work with model relationships
- Knowledge Check
- Summary

Lesson 14: Use tools to optimize Power BI performance
- Introduction
- Use Performance analyzer
- Troubleshoot DAX performance by using DAX Studio
- Optimize a data model by using Best Practice Analyzer
- Exercise – Use tools to optimize Power BI performance
- Knowledge Check
- Summary

Lesson 15: Enforce Power BI model security
- Introduction
- Restrict access to Power BI model data
- Restrict access to Power BI model objects
- Apply good modeling practices
- Exercise – Enforce model security
- Knowledge Check
- Summary

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