COURSE OUTLINE

Microsoft
Solutions Partner

Microsoft Cloud

Training Services

Course Name: Microsoft Fabric Analytics Engineer

Course Code: MS-DP600T00

DURATION	SKILL LEVEL	DELIVERY METHOD	TRAINING CREDITS	TECHNOLOGY
4 Day	Advanced	VIL/TILT	N/A	Analytics & Data Management

Course Overview

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.

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.

Course Content

Module 1: Introduction to end-to-end analytics using Microsoft Fabric

Discover how Microsoft Fabric can meet your enterprise's analytics needs in one platform. Learn about Microsoft Fabric, how it works, and identify how you can use it for your analytics needs.

Lesson

- Describe end-to-end analytics in Microsoft Fabric

Module 2: Administer Microsoft Fabric

Microsoft Fabric is a SaaS solution for end-to-end data analytics. As an administrator, you can configure features and manage access to suit your organization's needs.

Lesson

- Describe Fabric admin tasks
- Navigate the admin center
- Manage user access

Module 3: Ingest Data with Dataflows Gen2 in Microsoft Fabric

Data ingestion is crucial in analytics. Microsoft Fabric's Data Factory offers Dataflows for visually creating multi-step data ingestion and transformation using Power Query Online.

Lesson

- Describe Dataflow capabilities in Microsoft Fabric
- Create Dataflow solutions to ingest and transform data
- Include a Dataflow in a pipeline

Module 4: Ingest data with Spark and Microsoft Fabric notebooks

Discover how to use Apache Spark and Python for data ingestion into a Microsoft Fabric lakehouse. Fabric notebooks provide a scalable and systematic solution.

Lesson

- Ingest external data to Fabric lakehouses using Spark
- Configure external source authentication and optimization
- Load data into lakehouse as files or as Delta tables

Module 5: Use Data Factory pipelines in Microsoft Fabric

Microsoft Fabric includes Data Factory capabilities, including the ability to create pipelines that orchestrate data ingestion and transformation tasks.

Lesson

- Describe pipeline capabilities in Microsoft Fabric
- Use the Copy Data activity in a pipeline
- Create pipelines based on predefined templates
- Run and monitor pipelines

Module 6: Get started with lakehouses in Microsoft Fabric

Lakehouses merge data lake storage flexibility with data warehouse analytics. Microsoft Fabric offers a lakehouse solution for comprehensive analytics on a single SaaS platform.

Lesson

- Describe core features and capabilities of lakehouses in Microsoft Fabric
- Create a lakehouse
- Ingest data into files and tables in a lakehouse
- Query lakehouse tables with SQL

Module 7: Organize a Fabric lakehouse using medallion architecture design

Explore the potential of the medallion architecture design in Microsoft Fabric. Organize and transform your data across Bronze, Silver, and Gold layers of a lakehouse for optimized analytics.

Lesson

- Describe the principles of using the medallion architecture in data management.
- Apply the medallion architecture framework within the Microsoft Fabric environment.
- Analyze data stored in the lakehouse using DirectLake in Power BI.
- Describe best practices for ensuring the security and governance of data stored in the medallion architecture.

Module 8: Use Apache Spark in Microsoft Fabric

Apache Spark is a core technology for large-scale data analytics. Microsoft Fabric provides support for Spark clusters, enabling you to analyze and process data in a Lakehouse at scale.

Lesson

- Configure Spark in a Microsoft Fabric workspace
- Identify suitable scenarios for Spark notebooks and Spark jobs

- Use Spark dataframes to analyze and transform data
- Use Spark SQL to query data in tables and views
- Visualize data in a Spark notebook

Module 9: Work with Delta Lake tables in Microsoft Fabric

Tables in a Microsoft Fabric lakehouse are based on the Delta Lake storage format commonly used in Apache Spark. By using the enhanced capabilities of delta tables, you can create advanced analytics solutions.

Lesson

- Understand Delta Lake and delta tables in Microsoft Fabric
- Create and manage delta tables using Spark
- Use Spark to query and transform data in delta tables
- Use delta tables with Spark structured streaming

Module 10: Get started with data warehouses in Microsoft Fabric

Data warehouses are analytical stores built on a relational schema to support SQL queries. Microsoft Fabric enables you to create a relational data warehouse in your workspace and integrate it easily with other elements of your end-to-end analytics solution.

Lesson

- Describe data warehouses in Fabric
- Understand a data warehouse vs a data Lakehouse
- Work with data warehouses in Fabric
- Create and manage fact tables and dimensions within a data warehouse

Module 11: Load data into a Microsoft Fabric data warehouse

Data warehouse in Microsoft Fabric is a comprehensive platform for data and analytics, featuring advanced query processing and full transactional T-SQL capabilities for easy data management and analysis.

Lesson

- Learn different strategies to load data into a data warehouse in Microsoft Fabric.
- Learn how to build a data pipeline to load a warehouse in Microsoft Fabric.
- Learn how to load data in a warehouse using T-SQL.
- Learn how to load and transform data with dataflow (Gen 2).

Module 12: Query a data warehouse in Microsoft Fabric

Data warehouse in Microsoft Fabric is a comprehensive platform for data and analytics, featuring advanced query processing and full transactional T-SQL capabilities for easy data management and analysis.

Lesson

- Use SQL query editor to query a data warehouse.
- Explore how visual query editor works.
- Learn how to connect and query a data warehouse using SQL Server Management Studio.

Module 13: Monitor a Microsoft Fabric data warehouse

A data warehouse is a vital component of an enterprise analytics solution. It's important to learn how to monitor a data warehouse so you can better understand the activity that occurs in it.

Lesson

- Monitor capacity unit usage with the Microsoft Fabric Capacity Metrics app.
- Monitor current activity in the data warehouse with dynamic management views.
- Monitor querying trends with query insights views.

Module 14: Understand scalability in Power BI

Scalable data models enable enterprise-scale analytics in Power BI. Implement data modeling best practices, use large dataset storage format, and practice building a star schema to design analytics solutions that can scale.

Lesson

- Describe the importance of building scalable data models
- Implement Power BI data modeling best practices
- Use the Power BI large dataset storage format

Module 15: Create Power BI model relationships

Power BI model relationships form the basis of a tabular model. Define Power BI model relationships, set up relationships, recognize DAX relationship functions, and describe relationship evaluation.

Lesson

- Understand how model relationship work.
- Set up relationships.
- Use DAX relationship functions.
- Understand relationship evaluation.

Module 16: Use tools to optimize Power BI performance

Use tools to develop, manage, and optimize Power BI data model and DAX query performance.

Lesson

- Optimize queries using performance analyzer.
- Troubleshoot DAX performance using DAX Studio.
- Optimize a data model using Tabular Editor.

Module 17: Enforce Power BI model security

Enforce model security in Power BI using row-level security and object-level security.

Lesson

- Restrict access to Power BI model data with RLS.
- Restrict access to Power BI model objects with OLS.
- Apply good development practices to enforce Power BI model security.

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