

DP-600T00: Microsoft Fabric Analytics Engineer

Course Code: DP-600T00

Duration: 4 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

Microsoft Fabric Analytics Engineer

This [Microsoft 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.

SKILLS COVERED

In this course you will learn to:

- Ingest Data with Dataflows Gen2 in Microsoft Fabric
- Ingest data with Spark and Microsoft Fabric notebooks
- Use Data Factory pipelines in Microsoft Fabric
- Get started with lakehouses in Microsoft Fabric
- Organize a Fabric lakehouse using medallion architecture design
- Use Apache Spark in Microsoft Fabric
- Work with Delta Lake tables in Microsoft Fabric
- Get started with data warehouses in Microsoft Fabric
- Load data into a Microsoft Fabric data warehouse
- Query a data warehouse in Microsoft Fabric

- Monitor a Microsoft Fabric data warehouse
- Understand scalability in Power BI
- Create Power BI model relationships
- Use tools to optimize Power BI performance
- Enforce Power BI model security

WHO SHOULD ATTEND?

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.

PREREQUISITES

This course is best suited for those who have the [Microsoft Certified: Power BI Data Analyst Associate](#) 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 [enterprise data analytics solutions](#).

MODULES

Module 1: Ingest Data with Dataflows Gen2 in Microsoft Fabric

Data ingestion is crucial in analytics. Microsoft Fabric's Data Factory offers Dataflows (Gen2) for visually creating multi-step data ingestion and transformation using Power Query Online.

Learning objectives

In this module, you'll learn how to:

- Describe Dataflow (Gen2) capabilities in Microsoft Fabric
- Create Dataflow (Gen2) solutions to ingest and transform data
- Include a Dataflow (Gen2) in a pipeline

Prerequisites

Before you start this module, you should be familiar with Microsoft Fabric lakehouses and core concepts.

Module 2: 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.

Learning objectives

By the end of this module, you'll be able to:

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

Prerequisites

- Experience with Apache Spark and Python
- Basic understanding of extracting, transforming, and loading data

Module 3: 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.

Learning objectives

In this module, you'll learn how to:

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

Prerequisites

Before starting this module, you should be familiar with Microsoft Fabric and data orchestration.

Module 4: 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.

Learning objectives

In this module, you'll learn how to:

- 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

Prerequisites

Before starting this module, you should be familiar with fundamental data analytics concepts.

Module 5: 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.

Learning objectives

In this module, you'll learn how to:

- 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.

Prerequisites

Before starting this module, you should be familiar with Microsoft Fabric lakehouses, Apache Spark, and SparkSQL.

Module 6: 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.

Learning objectives

In this module, you'll learn how to:

- 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

Prerequisites

Before starting this module, you should be familiar with the Microsoft Fabric interface and core concepts.

Module 7: 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.

Learning objectives

In this module, you'll learn how to:

- 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

Prerequisites

Before starting this module, you should be familiar with Microsoft Fabric lakehouses and Apache Spark.

Module 8: 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.

Learning objectives

In this module, you'll learn how to:

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

Prerequisites

Before starting this module, you should be familiar with the Microsoft Fabric interface and core concepts.

Module 9: 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.

Learning objectives

In this module, you'll:

- 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).

Prerequisites

Before starting this module, you should be familiar with the basic principles of a data warehouse.

Module 10: 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.

Learning objectives

In this module, you'll:

- 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.

Prerequisites

Before starting this module, you should be familiar with the basic principles of data warehousing.

Module 11: 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.

Learning objectives

After completing this module, you'll be able to:

- 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.

Prerequisites

Before starting this module, you should be familiar with Microsoft Fabric and Transact-SQL.

Module 12: 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.

Learning objectives

By the end of this module, you'll be able to:

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

Prerequisites

Consider completing the [Model data in Power BI](#) learning path. You will need knowledge of:

- Power BI data model design including star schema design basics

Module 13: 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.

Learning objectives

By the end of this module, you'll be able to:

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

Prerequisites

- Experience developing Power BI data models by using Power BI Desktop.

Module 14: Use tools to optimize Power BI performance

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

Learning objectives

After completing this module, you'll be able to:

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

Prerequisites

- Experience designing and building Power BI data models.

Module 15: Enforce Power BI model security

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

Learning objectives

By the end of this module, you'll be able to:

- 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.

Prerequisites

- Experience developing Power BI data models by using Power BI Desktop.

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