

DATA ENGINEERING ON MICROSOFT AZURE (DP-203T00)

Course Code: 821362

In this course, the student will learn how to implement and manage data engineering workloads on Microsoft Azure, using Azure services such as Azure Synapse Analytics, Azure Data Lake Storage Gen2, Azure Stream Analytics, Azure Databricks, and others.

The course focuses on common data engineering tasks such as orchestrating data transfer and transformation pipelines, working with data files in a data lake, creating and loading relational data warehouses, capturing and aggregating streams of real-time data, and tracking data assets and lineage.

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Microsoft Azure Certification Video

What You'll Learn

Students will learn ,

- Get started with data engineering on Azure
- Build data analytics solutions using Azure Synapse serverless SQL pools
- Perform data engineering with Azure Synapse Apache Spark Pools
- Transfer and transform data with Azure Synapse Analytics pipelines
- Implement a Data Analytics Solution with Azure Synapse Analytics
- Work with Data Warehouses using Azure Synapse Analytics
- Work with Hybrid Transactional and Analytical Processing Solutions using Azure Synapse Analytics
- Implement a Data Streaming Solution with Azure Stream Analytics

- Implement a data lakehouse analytics solution with Azure Databricks

Who Needs to Attend

The primary audience for this course is data professionals, data architects, and business intelligence professionals who want to learn about data engineering and building analytical solutions using data platform technologies that exist on Microsoft Azure. The secondary audience for this course includes data analysts and data scientists who work with analytical solutions built on Microsoft Azure.

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CLASSROOM LIVE

\$2,595 CAD

4 Day

Classroom Live Outline

Module 1 : Get started with data engineering on Azure

- Introduction to data engineering on Azure
- Introduction to Azure Data Lake Storage Gen2
- Introduction to Azure Synapse Analytics

Module 2 : Build data analytics solutions using Azure Synapse serverless SQL pools

- Use Azure Synapse serverless SQL pool to query files in a data lake
- Use Azure Synapse serverless SQL pools to transform data in a data lake
- Create a lake database in Azure Synapse Analytics
- Secure data and manage users in Azure Synapse serverless SQL pools

Module 3 : Perform data engineering with Azure Synapse Apache Spark Pools Analyze data with Apache Spark in Azure Synapse Analytics

- Transform data with Spark in Azure Synapse Analytics
- Use Delta Lake in Azure Synapse Analytics

Module 4 : Transfer and transform data with Azure Synapse Analytics pipelines Build a data pipeline in Azure Synapse Analytics

- [Use Spark Notebooks in an Azure Synapse Pipeline](#)

Module 5 : Implement a Data Analytics Solution with Azure Synapse Analytics

- Introduction to Azure Synapse Analytics
- Use Azure Synapse serverless SQL pool to query files in a data lake
- Analyze data with Apache Spark in Azure Synapse Analytics
- Use Delta Lake in Azure Synapse Analytics
- Analyze data in a relational data warehouse
- Build a data pipeline in Azure Synapse Analytics

Module 6 : Work with Data Warehouses using Azure Synapse Analytics

- Analyze data in a relational data warehouse
- Load data into a relational data warehouse
- Manage and monitor data warehouse activities in Azure Synapse Analytics
- Secure a data warehouse in Azure Synapse Analytics

Module 7 : Work with Hybrid Transactional and Analytical Processing Solutions using Azure Synapse Analytics

- Plan hybrid transactional and analytical processing using Azure Synapse Analytics
- Implement Azure Synapse Link with Azure Cosmos DB
- Implement Azure Synapse Link for SQL

Module 8 : Implement a Data Streaming Solution with Azure Stream Analytics Get started with Azure Stream Analytics

- Ingest streaming data using Azure Stream Analytics and Azure Synapse Analytics
- Visualize real-time data with Azure Stream Analytics and Power BI

Module 9 : Implement a data lakehouse analytics solution with Azure Databricks

- Explore Azure Databricks
- Perform data analysis with Azure Databricks
- Use Apache Spark in Azure Databricks
- Manage data with Delta Lake
- Build data pipelines with Delta Live Tables
- Deploy workloads with Azure Databricks Workflows

Classroom Live Labs

Lab : Explore compute and storage options for data engineering workloads

- Combine streaming and batch processing with a single pipeline
- Organize the data lake into levels of file transformation
- Index data lake storage for query and workload acceleration

Lab : Designing and Implementing the Serving Layer

- Design a star schema for analytical workloads
- Populate slowly changing dimensions with Azure Data Factory and mapping data flows

Lab : Data engineering considerations

- Managing files in an Azure data lake
- Securing files stored in an Azure data lake

Lab : Run interactive queries using serverless SQL pools

- Query Parquet data with serverless SQL pools
- Create external tables for Parquet and CSV files
- Create views with serverless SQL pools
- Secure access to data in a data lake when using serverless SQL pools
- Configure data lake security using Role-Based Access Control (RBAC) and

Access Control List

Lab : Explore, transform, and load data into the Data Warehouse using Apache Spark

- Perform Data Exploration in Synapse Studio
- Ingest data with Spark notebooks in Azure Synapse Analytics
- Transform data with DataFrames in Spark pools in Azure Synapse Analytics
- Integrate SQL and Spark pools in Azure Synapse Analytics

Lab : Data Exploration and Transformation in Azure Databricks

- Use DataFrames in Azure Databricks to explore and filter data
- Cache a DataFrame for faster subsequent queries
- Remove duplicate data
- Manipulate date/time values
- Remove and rename DataFrame columns
- Aggregate data stored in a DataFrame

Lab : Ingest and load Data into the Data Warehouse

- Perform petabyte-scale ingestion with Azure Synapse Pipelines
- Import data with PolyBase and COPY using T-SQL
- Use data loading best practices in Azure Synapse Analytics

Lab : Transform Data with Azure Data Factory or Azure Synapse Pipelines

- Execute code-free transformations at scale with Azure Synapse Pipelines
- Create data pipeline to import poorly formatted CSV files
- Create Mapping Data Flows

Lab : Orchestrate data movement and transformation in Azure Synapse Pipelines

- Integrate Data from Notebooks with Azure Data Factory or Azure Synapse Pipelines

Lab : Optimize Query Performance with Dedicated SQL Pools in Azure Synapse

- Understand developer features of Azure Synapse Analytics
- Optimize data warehouse query performance in Azure Synapse Analytics
- Improve query performance

Lab : Analyze and Optimize Data Warehouse Storage

- Check for skewed data and space usage
- Understand column store storage details
- Study the impact of materialized views
- Explore rules for minimally logged operations

Lab : Support Hybrid Transactional Analytical Processing (HTAP) with Azure Synapse Link

- Configure Azure Synapse Link with Azure Cosmos DB
- Query Azure Cosmos DB with Apache Spark for Synapse Analytics
- Query Azure Cosmos DB with serverless SQL pool for Azure Synapse Analytics

Lab : End-to-end security with Azure Synapse Analytics

- Secure Azure Synapse Analytics supporting infrastructure
- Secure the Azure Synapse Analytics workspace and managed services

- Secure Azure Synapse Analytics workspace data

Lab : Real-time Stream Processing with Stream Analytics

- Use Stream Analytics to process real-time data from Event Hubs
- Use Stream Analytics windowing functions to build aggregates and output to Synapse Analytics
- Scale the Azure Stream Analytics job to increase throughput through partitioning
- Repartition the stream input to optimize parallelization

Lab : Create a Stream Processing Solution with Event Hubs and Azure Databricks

- Explore key features and uses of Structured Streaming
- Stream data from a file and write it out to a distributed file system
- Use sliding windows to aggregate over chunks of data rather than all data
- Apply watermarking to remove stale data
- Connect to Event Hubs read and write streams

Lab : Build reports using Power BI integration with Azure Synapse Analytics

- Integrate an Azure Synapse workspace and Power BI
- Optimize integration with Power BI
- Improve query performance with materialized views and result-set caching
- Visualize data with SQL serverless and create a Power BI report

Lab : Perform Integrated Machine Learning Processes in Azure Synapse Analytics

- Create an Azure Machine Learning linked service
- Trigger an Auto ML experiment using data from a Spark table
- Enrich data using trained models
- Serve prediction results using Power BI

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PRIVATE GROUP TRAINING

4 Day

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