

20776: Performing Big Data Engineering on Microsoft Cloud Services

Course Details

Course Outline

1. Architectures for Big Data Engineering with Azure

- Understanding Big Data
- Architectures for Processing Big Data
- Considerations for designing Big Data solutions
- Lab : Designing a Big Data Architecture
- Design a big data architecture

2. Processing Event Streams using Azure Stream Analytics

- Introduction to Azure Stream Analytics
- Configuring Azure Stream Analytics jobs
- Lab : Processing Event Streams with Azure Stream Analytics
- Create an Azure Stream Analytics job
- Create another Azure Stream job
- Add an Input
- Edit the ASA job
- Determine the nearest Patrol Car

3. Performing custom processing in Azure Stream Analytics

- Implementing Custom Functions
- Incorporating Machine Learning into an Azure Stream Analytics Job
- Lab : Performing Custom Processing with Azure Stream Analytics
- Add logic to the analytics
- Detect consistent anomalies
- Determine consistencies using machine learning and ASA

4. Managing Big Data in Azure Data Lake Store

- Using Azure Data Lake Store
- Monitoring and protecting data in Azure Data Lake Store
- Lab : Managing Big Data in Azure Data Lake Store
- Update the ASA Job
- Upload details to ADLS

5. Processing Big Data using Azure Data Lake Analytics

- Introduction to Azure Data Lake Analytics
- Analyzing Data with U-SQL

- Sorting, grouping, and joining data
- Lab : Processing Big Data using Azure Data Lake Analytics
- Add functionality
- Query against Database
- Calculate average speed

6. Implementing custom operations and monitoring performance in Azure Data Lake Analytics

- Incorporating custom functionality into Analytics jobs
- Managing and Optimizing jobs
- Lab : Implementing custom operations and monitoring performance in Azure Data Lake Analytics
- Custom extractor
- Custom processor
- Integration with R/Python
- Monitor and optimize a job

7. Implementing Azure SQL Data Warehouse

- Introduction to Azure SQL Data Warehouse
- Designing tables for efficient queries
- Importing Data into Azure SQL Data Warehouse
- Lab : Implementing Azure SQL Data Warehouse
- Create a new data warehouse
- Design and create tables and indexes
- Import data into the warehouse.

8. Performing Analytics with Azure SQL Data Warehouse

- Querying Data in Azure SQL Data Warehouse
- Maintaining Performance
- Protecting Data in Azure SQL Data Warehouse
- Lab : Performing Analytics with Azure SQL Data Warehouse
- Performing queries and tuning performance
- Integrating with Power BI and Azure Machine Learning
- Configuring security and analysing threats

9. Automating the Data Flow with Azure Data Factory

- Introduction to Azure Data Factory
- Transferring Data
- Transforming Data
- Monitoring Performance and Protecting Data
- Lab : Automating the Data Flow with Azure Data Factory
- Automate the Data Flow with Azure Data Factory