DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration

Course outline

Module 1: Introduction to Data Fabric

Module 1: Introduction to Data Fabric provides an overview of the fundamentals of data engineering, operations, and orchestration. It covers topics such as data architecture, data pipelines, data governance, and data orchestration. It also introduces the concepts of data fabric and its components, such as data sources, data stores, data processing, and data visualization. Finally, it provides an introduction to the DFAB1 course and its objectives.

Lessons

- Overview of Data Fabric and its Benefits
- Data Fabric Architecture and Components
- Data Fabric Security and Governance
- Data Fabric Deployment Strategies
- Data Fabric Data Management and Orchestration
- Data Fabric Data Pipelines and Workflows
- Data Fabric Data Quality and Monitoring
- Data Fabric Data Analytics and Visualization
- Data Fabric Data Integration and Interoperability
- . Data Fabric Data Governance and Compliance

After completing this module, students will be able to:

- Understand the fundamentals of data fabric and its components.
- Identify the different types of data fabric architectures and their use cases.
- Develop an understanding of the data fabric operations and orchestration processes.
- Utilize data fabric tools and technologies to build and manage data fabric solutions.

Module 2: Data Fabric Architecture

Module 2 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course provides an introduction to the data fabric architecture and its components. It covers topics such as data fabric components, data fabric architecture, data fabric operations, and data fabric orchestration. It also provides an overview of the data fabric design principles and best practices. Finally, it provides an introduction to the data fabric tools and technologies.

Lessons

- Introduction to Data Fabric Architecture
- Data Fabric Architecture Components
- Data Fabric Architecture Design Principles
- Data Fabric Architecture Deployment Strategies
- Data Fabric Architecture Security Considerations
- Data Fabric Architecture Performance Optimization
- Data Fabric Architecture Data Governance
- Data Fabric Architecture Data Quality Management
- Data Fabric Architecture Data Integration
- . Data Fabric Architecture Data Analytics and Machine Learning

After completing this module, students will be able to:

- Understand the fundamentals of data fabric architecture and its components.
- Design and implement data fabric architectures for various use cases.
- Utilize data fabric orchestration tools to manage and monitor data fabric deployments.
- Develop strategies for data fabric operations and maintenance.

Module 3: Data Fabric Security

Module 3: Data Fabric Securitymodule for DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course provides an overview of the security considerations for data fabric architectures. It covers topics such as authentication, authorization, encryption, and data governance. It also provides an introduction to the security features of the data fabric platform and how to configure them.

Lessons

- Introduction to Data Fabric Security
- Data Fabric Security Best Practices
- Data Fabric Security Architecture
- Data Fabric Security Policies
- Data Fabric Security Compliance
- Data Fabric Security Auditing
- Data Fabric Security Monitoring
- Data Fabric Security Threats and Vulnerabilities
- Data Fabric Security Incident Response
- . Data Fabric Security Automation

After completing this module, students will be able to:

- Understand the fundamentals of data fabric security and how to apply them to secure data fabric architectures.
- Develop an understanding of the different security protocols and technologies used to secure data

fabric architectures.
- Implement security measures to protect data fabric architectures from malicious actors.
- Utilize best practices for data fabric security to ensure the safety and integrity of data fabric architectures.

Module 4: Data Fabric Storage

Module 4 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course covers the fundamentals of data fabric storage. It provides an overview of the different types of data fabric storage, such as object storage, block storage, and file storage, and how they can be used to store and manage data. It also covers the different storage architectures and how to design and implement a data fabric storage solution.

Lessons

- Introduction to Data Fabric Storage
- Data Fabric Storage Architecture
- Data Fabric Storage Security
- Data Fabric Storage Performance Optimization
- Data Fabric Storage Replication and Disaster Recovery
- Data Fabric Storage Automation and Orchestration
- Data Fabric Storage Monitoring and Troubleshooting
- Data Fabric Storage Capacity Planning
- Data Fabric Storage Data Protection and Compliance
- . Data Fabric Storage Best Practices

After completing this module, students will be able to:

- Understand the fundamentals of data fabric storage and its components.
- Design and implement data fabric storage solutions for various use cases.
- Utilize data fabric storage to optimize data access and performance.
- Monitor and troubleshoot data fabric storage systems.

Module 5: Data Fabric Orchestration

Module 5 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course focuses on data fabric orchestration. It covers topics such as data fabric architecture, data fabric orchestration tools, and best practices for data fabric orchestration. Students will learn how to design and implement data fabric orchestration solutions that are secure, reliable, and scalable. Additionally, they will gain an understanding of the challenges and opportunities associated with data fabric orchestration.

Lessons

- Introduction to Data Fabric Orchestration
- Data Fabric Orchestration Architecture
- Data Fabric Orchestration Components
- Data Fabric Orchestration Workflows

- Data Fabric Orchestration Security
- Data Fabric Orchestration Performance Tuning
- Data Fabric Orchestration Best Practices
- Data Fabric Orchestration Automation
- Data Fabric Orchestration Monitoring
- . Data Fabric Orchestration Troubleshooting

After completing this module, students will be able to:

- Understand the fundamentals of data fabric orchestration and its components.
- Develop the ability to design and implement data fabric orchestration solutions.
- Utilize data fabric orchestration tools to automate data engineering and operations tasks.
- Analyze and optimize data fabric orchestration solutions for scalability and performance.

Module 6: Data Fabric Analytics

Module 6 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course focuses on data fabric analytics. It covers topics such as data fabric architecture, data fabric analytics, data fabric operations, and data fabric orchestration. Students will learn how to use data fabric analytics to gain insights from data, how to design and implement data fabric operations, and how to orchestrate data fabric operations. Additionally, students will gain hands-on experience with data fabric analytics tools and techniques.

Lessons

- Introduction to Data Fabric Analytics
- Data Fabric Analytics Architecture
- Data Fabric Analytics Use Cases
- Data Fabric Analytics Security
- Data Fabric Analytics Performance Tuning
- Data Fabric Analytics Data Governance
- Data Fabric Analytics Data Quality
- Data Fabric Analytics Data Integration
- Data Fabric Analytics Data Visualization
- . Data Fabric Analytics Data Modeling
- . Data Fabric Analytics Data Warehousing
- . Data Fabric Analytics Data Lakes
- . Data Fabric Analytics Data Streaming
- . Data Fabric Analytics Machine Learning
- . Data Fabric Analytics Big Data Analytics

After completing this module, students will be able to:

- Understand the fundamentals of data fabric analytics and its components.
- Develop the ability to design and implement data fabric analytics solutions.
- Utilize data fabric analytics tools to analyze and visualize data.
- Create and deploy data fabric analytics applications.

Module 7: Data Fabric Automation

Module 7 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course focuses on data fabric automation. It covers topics such as automation frameworks, automation tools, and automation best practices. Students will learn how to use automation to streamline data engineering, operations, and orchestration tasks. They will also gain an understanding of how to design and implement automated workflows and pipelines.

Lessons

- Introduction to Data Fabric Automation
- Automating Data Fabric Deployment
- Automating Data Fabric Configuration
- Automating Data Fabric Monitoring
- Automating Data Fabric Security
- Automating Data Fabric Maintenance
- Automating Data Fabric Performance Tuning
- Automating Data Fabric Disaster Recovery
- Automating Data Fabric Data Migration
- . Automating Data Fabric Data Governance

After completing this module, students will be able to:

- Understand the fundamentals of data fabric automation and its components.
- Develop an understanding of the various automation tools and technologies used in data fabric automation.
- Design and implement automated data fabric solutions for various use cases.
- Monitor and troubleshoot data fabric automation solutions.

Module 8: Data Fabric Performance Tuning

Module 8: Data Fabric Performance Tuning is a module in the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course. It covers the fundamentals of performance tuning for data fabric systems, including best practices for optimizing data fabric performance, troubleshooting techniques, and strategies for improving system scalability. Students will learn how to identify and address performance bottlenecks, as well as how to use monitoring and logging tools to identify and address performance issues.

Lessons

- Understanding Data Fabric Performance Metrics
- Optimizing Data Fabric Performance
- Troubleshooting Data Fabric Performance Issues
- Analyzing Data Fabric Performance Logs
- Automating Data Fabric Performance Tuning
- Leveraging Data Fabric Performance Tools

- Implementing Data Fabric Performance Best Practices
- Monitoring Data Fabric Performance in Production
- Improving Data Fabric Performance with Data Partitioning
- . Enhancing Data Fabric Performance with Caching Strategies

After completing this module, students will be able to:

- Understand the fundamentals of performance tuning for data fabric systems.
- Identify and troubleshoot performance issues in data fabric systems.
- Utilize best practices for optimizing data fabric performance.
- Implement strategies for monitoring and managing data fabric performance.

Module 9: Data Fabric Monitoring and Management

Module 9 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course covers the fundamentals of data fabric monitoring and management. It provides an overview of the different types of monitoring and management tools available, as well as how to use them to ensure the health and performance of data fabric systems. Additionally, the module covers topics such as data fabric security, scalability, and reliability.

Lessons

- Introduction to Data Fabric Monitoring and Management
- Data Fabric Monitoring Tools and Techniques
- Data Fabric Performance Monitoring
- Data Fabric Security Monitoring
- Data Fabric Capacity Planning
- Data Fabric Automation and Orchestration
- Data Fabric Logging and Auditing
- Data Fabric Troubleshooting and Problem Resolution
- Data Fabric Disaster Recovery and High Availability
- . Data Fabric Monitoring Best Practices

After completing this module, students will be able to:

- Understand the fundamentals of data fabric monitoring and management.
- Utilize data fabric monitoring and management tools to identify and address performance issues.
- Develop strategies for monitoring and managing data fabric components.
- Implement best practices for data fabric monitoring and management.

Module 10: Data Fabric Integration with Cloud Platforms

Module 10 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course covers the integration of data fabric with cloud platforms. It covers topics such as cloud-native data engineering, cloud-native operations, and cloud-native orchestration. It also covers the integration of data fabric with popular cloud platforms such as Amazon Web Services, Microsoft Azure, and Google Cloud Platform.

Lessons

- Introduction to Data Fabric Integration with Cloud Platforms
- Cloud Platforms for Data Fabric Integration
- Data Fabric Orchestration on Cloud Platforms
- Data Fabric Security on Cloud Platforms
- Data Fabric Performance on Cloud Platforms
- Data Fabric Automation on Cloud Platforms
- Data Fabric Monitoring on Cloud Platforms
- Data Fabric Scalability on Cloud Platforms
- Data Fabric Governance on Cloud Platforms
- . Data Fabric Cost Optimization on Cloud Platforms

After completing this module, students will be able to:

- Understand the fundamentals of data fabric integration with cloud platforms.
- Develop the skills to design and implement data fabric solutions on cloud platforms.
- Utilize cloud platform services to optimize data fabric operations.
- Implement best practices for data fabric orchestration on cloud platforms.

Module 11: Data Fabric Best Practices

Module 11 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course provides an overview of best practices for data fabric operations. It covers topics such as data fabric architecture, data fabric security, data fabric scalability, data fabric performance, and data fabric governance. It also provides guidance on how to design and implement a data fabric solution that meets the needs of the organization.

Lessons

- Introduction to Data Fabric Architecture
- Data Fabric Security and Governance
- Data Fabric Performance Optimization
- Data Fabric Automation and Orchestration
- Data Fabric Monitoring and Troubleshooting
- Data Fabric Disaster Recovery and High Availability
- Data Fabric Data Lifecycle Management
- Data Fabric Data Integration and Transformation
- Data Fabric Data Quality and Compliance
- . Data Fabric Data Analytics and Visualization

After completing this module, students will be able to:

- Understand the fundamentals of data fabric best practices and how to apply them to data engineering, operations, and orchestration.
- Develop an understanding of the different components of a data fabric and how they interact with

each other.
- Learn how to design and implement a data fabric architecture that is optimized for performance and scalability.
- Gain the skills to troubleshoot and optimize data fabric operations and orchestration.

Module 12: Data Fabric Troubleshooting and Maintenance

Module 12 of the DFAB1: Data Fabric - Smart Data Engineering, Operations, and Orchestration course covers the fundamentals of troubleshooting and maintenance for data fabric systems. It provides an overview of the common issues that can arise in data fabric systems, as well as best practices for troubleshooting and maintenance. It also covers topics such as system monitoring, log analysis, and system optimization.

Lessons

- Identifying and Resolving Data Fabric Issues
- Data Fabric Performance Monitoring and Tuning
- Data Fabric Security and Compliance
- Data Fabric Backup and Recovery Strategies
- Data Fabric Automation and Orchestration
- Data Fabric Disaster Recovery Planning
- Data Fabric Capacity Planning
- Data Fabric High Availability Strategies
- Data Fabric Monitoring and Alerting
- . Data Fabric Maintenance Best Practices

After completing this module, students will be able to:

- Identify and troubleshoot common data fabric issues.
- Monitor and maintain data fabric components.
- Implement best practices for data fabric maintenance.
- Utilize data fabric tools and techniques to optimize performance.