

Design and implement cloud-native applications with Microsoft Azure Cosmos DB (DP-420T00)

Duration: 4 days

Audience: Professionnel TI

Who is this training for?

Software engineers tasked with authoring cloud-native solutions that leverage Azure Cosmos DB for NoSQL and its various SDKs. They are familiar with C#, Python, Java, or JavaScript. They also have experience writing code that interacts with a SQL or NoSQL database platform.

Training objectives

By the end of this course, students will be able to:

- Design and implement data models.
- Design and implement data distribution.
- Integrate an Azure Cosmos DB solution.
- Optimize an Azure Cosmos DB solution.
- Maintain an Azure Cosmos DB solution.

Summary

This course teaches developers how to create application using the NoSQL API and SDK for Azure Cosmos DB. Students will learn how to write efficient queries, create indexing policies, manage and provisioned resources, and perform common operations with the SDK.

Course outline

Learning Path 1: Get started with Azure Cosmos DB for NoSQL

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Module 1: Introduction to Azure Cosmos DB for NoSQL

- Module 2: Try Azure Cosmos DB for NoSQL

Learning Path 2: Plan and implement Azure Cosmos DB for NoSQL

- Module 1: Plan Resource Requirements
- Module 2: Configure Azure Cosmos DB for NoSQL
- Module 3: Move data into and out of Azure Cosmos DB for NoSQL

Learning Path 3: Connect to Azure Cosmos DB for NoSQL with the SDK

- Module 1: Use the Azure Cosmos DB for NoSQL SDK
- Module 2: Configure the Azure Cosmos DB for NoSQL SDK

Learning Path 4: Access and manage data with the Azure Cosmos DB for NoSQL SDKs

- Module 1: Implement Azure Cosmos DB for NoSQL point operations
- Module 2: Perform cross-document transactional operations with the Azure Cosmos DB for NoSQL
- Module 3: Process bulk data in Azure Cosmos DB for NoSQL

Learning Path 5: Execute queries and build a Generative AI application with Azure Cosmos DB

- Module 1: Query the Azure Cosmos DB for NoSQL
- Module 2: Author complex queries with the Azure Cosmos DB for NoSQL
- Module 3: Build Generative AI applications with Azure Cosmos DB

Approach and methodology

Practical and structured approach combining focused theory and guided workshops. Participants gradually discover how to design and manage analytics solutions with Power BI through hands-on exercises inspired by real-world business scenarios, promoting immediate application of the learnings.

They learn how to prepare and model data, create impactful visualizations, develop interactive reports and dashboards, and apply analytical techniques to support data-driven decision-making.

Led by a Microsoft Certified Trainer (MCT), the training emphasizes interactivity and the development of practical, transferable skills for effectively using Power BI in a professional environment.

Prerequisites

Students should have the following knowledge and experience before attending this course:

- Familiarity with C#, Python, Java, or JavaScript.
- Experience writing code that interacts with a SQL or NoSQL database platform.

Recommendations

In order to maximize learning, it is recommended that participants:

- Have intermediate experience in software development in a supported language (Java, Python or JavaScript).
- Have functional knowledge of database, relational, and NoSQL concepts, as well as hands-on experience with CRUD operations and queries.
- Be comfortable with the fundamental concepts of Microsoft Azure, including portal navigation and resource management (level equivalent to AZ-900).
- Understand the principles of cloud-native applications (scalability, partitioning, performance) and be exposed to development or application architecture contexts.

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