



Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB (DP-420)

Description

This official 4-day Microsoft course: **Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB (DP-420)**, teaches developers how to build an application using the SQL API and SDK for Azure Cosmos DB. Participants learn to write efficient queries, create indexing strategies, manage and configure resources, and perform common operations with the Software Development Kit (SDK).

Course Content

Module 1: Get started with Azure Cosmos DB SQL API

- Introduction to Azure Cosmos DB SQL API
- Try Azure Cosmos DB SQL API

Module 2: Plan and implement Azure Cosmos DB SQL API

- Plan Resource Requirements
- Configure Azure Cosmos DB SQL API database and containers
- Moving data into and out of Azure Cosmos DB SQL API

Module 3: Connect to Azure Cosmos DB SQL API with the SDK

- Use the Azure Cosmos DB SQL API SDK
- Configure the Azure Cosmos DB SQL API SDK

Module 4: Access and manage data with the Azure Cosmos DB SQL API SDKs

- Implement Azure Cosmos DB SQL API point operations
- Perform cross-document transactional operations with the Azure Cosmos DB SQL API
- Process bulk data in Azure Cosmos DB SQL API

Module 5: Execute queries in Azure Cosmos DB SQL API

- Query the Azure Cosmos DB SQL API
- Author complex queries with the Azure Cosmos DB SQL API

Module 6: Define and implement an indexing strategy for Azure Cosmos DB SQL API

- Define indexes in Azure Cosmos DB SQL API
- Customize indexes in Azure Cosmos DB SQL API

Module 7: Integrate Azure Cosmos DB SQL API with Azure services

- Consume an Azure Cosmos DB SQL API change feed using the SDK
- Handle events with Azure Functions and Azure Cosmos DB SQL API change feed
- Search Azure Cosmos DB SQL API data with Azure Cognitive Search

Module 8: Implement a data modeling and partitioning strategy for Azure Cosmos DB SQL API

- Model and partition your data in Azure Cosmos DB
- Optimize databases by using advanced modeling patterns for Azure Cosmos DB

Module 9: Design and implement a replication strategy for Azure Cosmos DB SQL API

- Configure replication and manage failovers in Azure Cosmos DB
- Use consistency models in Azure Cosmos DB SQL API
- Configure multi-region write in Azure Cosmos DB SQL API

Module 10: Optimize query performance in Azure Cosmos DB SQL API

- Choosing indexes in Azure Cosmos DB SQL API
- Optimize queries in Azure Cosmos DB SQL API
- Implement integrated cache

Module 11: Administrating and Monitoring tasks for an Azure Cosmos DB SQL API solution

- Measure performance in Azure Cosmos DB SQL API
- Monitor responses and events in Azure Cosmos DB SQL API
- Implementing backup and restore for Azure Cosmos DB SQL API
- Implement security in Azure Cosmos DB SQL API

Module 12: Manage an Azure Cosmos DB SQL API solution using DevOps practices

- Write scripts for Azure Cosmos DB SQL API
- Create resource template for Azure Cosmos DB SQL API

Module 13: Create server-side programming constructs in Azure Cosmos DB SQL API

- Build multi-item transactions with the Azure Cosmos DB SQL API
- Expand query and transaction functionality in Azure Cosmos DB SQL API

Lab / Exercises

Official Microsoft Labs:

- Create an Azure Cosmos DB SQL API account
- Configure throughput for Azure Cosmos DB SQL API with the Azure portal
- Migrate existing data using Azure Data Factory

- Configure the Azure Cosmos DB SQL API SDK for offline development
- Connect to Azure Cosmos DB SQL API with the SDK
- Create and update documents with the Azure Cosmos DB SQL API SDK
- Batch multiple point operations together with the Azure Cosmos DB SQL API SDK
- Move multiple documents in bulk with the Azure Cosmos DB SQL API SDK
- Paginate cross-product query results with the Azure Cosmos DB SQL API SDK
- Execute a query with the Azure Cosmos DB SQL API SDK
- Review the default index policy for an Azure Cosmos DB SQL API container with the portal
- Configure an Azure Cosmos DB SQL API container's index policy with the portal
- Archive Azure Cosmos DB SQL API data using Azure Functions
- Process change feed events using the Azure Cosmos DB SQL API SDK
- Archive data using Azure Functions and Azure Cosmos DB SQL API
- Measure performance for customer entities
- Advanced modeling patterns
- Configure consistency models in the portal and the Azure Cosmos DB SQL API SDK
- Connect to different regions with the Azure Cosmos DB SQL API SDK
- Connect to a multi-region write account with the Azure Cosmos DB SQL API SDK
- Optimize an Azure Cosmos DB SQL API container's index policy for common operations
- Optimize an Azure Cosmos DB SQL API container's index policy for a specific query
- Troubleshoot an application using the Azure Cosmos DB SQL API SDK
- Use Azure Monitor to analyze an Azure Cosmos DB SQL API account
- Recover a database or container from a recovery point
- Store Azure Cosmos DB SQL API account keys in Azure Key Vault
- Adjust provisioned throughput using an Azure CLI script
- Create an Azure Cosmos DB SQL API container using Azure Resource Manager templates
- Implement and then use a UDF using the SDK
- Create a stored procedure with the Azure Portal

Documentation

- Digital courseware included

Exam

- This course prepares you to the DP-420: Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB exam. If you wish to take this exam, please contact our secretariat who will let you know the cost of the exam and will take care of all the necessary administrative procedures for you.

Participant profiles

- Software engineers

Prerequisites

- Knowledge of Microsoft Azure and ability to navigate the Azure portal (AZ-900 equivalent)
- Experience writing in an Azure-supported language at the intermediate level. (C#, JavaScript, Python, or Java)
- Ability to write code to connect and perform operations on a SQL or NoSQL database product. (SQL Server, Oracle, MongoDB, Cassandra or similar)

Objectives

- Create and configure Azure Cosmos DB SQL API account, database, and container

- Use the .NET SDK to manage resources and perform operations
- Perform queries of varying complexity
- Design a data modeling and partitioning strategy
- Optimize queries and indexes based on characteristics of an application
- Use the Azure Resource Manager to manage accounts and resources with CLI or JSON and Bicep templates

Description

Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB (DP-420)

Niveau

Intermédiaire

Classroom Registration Price (CHF)

3200

Virtual Classroom Registration Price (CHF)

3000

Duration (in Days)

4

Reference

DP-420T00