

DP-420T00: Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB

Course Code: DP-420T00

Duration: 4 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

Unlock opportunities with Azure Cosmos DB.

This **DP-420T00: Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB** course teaches developers how to create application using the SQL 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.

SKILLS COVERED

- 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

WHO SHOULD ATTEND?

Software engineers tasked with authoring cloud-native solutions that leverage Azure Cosmos DB

SQL API 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.

PREREQUISITES

Before attending this course, students must have:

- 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)

MODULES

Module 1: Get started with Azure Cosmos DB for NoSQL

Learn about the Azure Cosmos DB for NoSQL and how to get started with your first account, database, and container.

This learning path helps prepare you for [Exam DP-420: Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB](#).

Prerequisites

Before starting this learning path, you should already have:

- Familiarity with Azure and the Azure portal.
- Experience programming with C#. If you have no previous programming experience, we recommend you complete the [Take your first steps with](#)

C# learning path before starting this one.

Module 2: Plan and implement Azure Cosmos DB for NoSQL

Plan for configuration options and provisioning choices with a new Azure Cosmos DB for NoSQL account.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

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

Use the Microsoft.Azure.Cosmos library from NuGet to connect to an Azure Cosmos DB for NoSQL account from a .NET application.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

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

Use the .NET SDK for Azure Cosmos DB for NoSQL to perform common operations on databases, containers, and items.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

Module 5: Execute queries in Azure Cosmos DB for NoSQL

Create SQL queries for the Azure Cosmos DB for NoSQL using the Data Explorer and the .NET SDK

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

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

Create custom indexing policies for Azure Cosmos DB for NoSQL containers.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications

with Microsoft C# or a similar programming language.

Module 7: Integrate Azure Cosmos DB for NoSQL with Azure services

Integrate Azure Cosmos DB for NoSQL with Azure Cognitive Search, Azure Functions, and your own solutions.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

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

In this learning path, you'll learn how Azure Cosmos DB uses partitioning to scale containers and how spending some time thinking about your data model helps to meet the performance needs of your applications.

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Prerequisites

Before starting this learning path, you should already have:

- Familiarity with Azure and the Azure portal.
- Experience programming with C#. If you have no previous programming experience, we recommend you

complete the Take your first steps with C# learning path before starting this one.

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

Plan and implement techniques to replicate data across the globe in Azure Cosmos DB for NoSQL.

This learning path helps prepare you for [Exam DP-420: Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB.](#)

Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

Module 10: Optimize query and operation performance in Azure Cosmos DB for NoSQL

Optimize the performance of your queries and operations using Azure Cosmos DB for NoSQL.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

Module 11: Monitor and troubleshoot an Azure Cosmos DB for NoSQL solution

Review the common Cosmos DB administrative tasks of monitor, performance metrics, backup and security used in Azure.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

Module 12: Manage an Azure Cosmos DB for NoSQL solution using DevOps practices

Use the command line and Azure Resource Manager to automate common management tasks for Azure Cosmos DB for NoSQL.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications with Microsoft C# or a similar programming language.

Module 13: Create server-side programming constructs in Azure Cosmos DB for NoSQL

Use JavaScript to author server-side stored procedures, user-defined functions, and triggers.

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Prerequisites

Before starting this learning path, you should have experience of building cloud applications

with Microsoft C# or a similar programming language.

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