training code: DP-420 / ENG DL 4d / EN

Build AI applications with Azure Cosmos DB

Build AI applications with Azure Cosmos DB training prepares developers to build cloud-native applications using Azure Cosmos DB and the SQL API interface.
Participants learn how to create modern data-driven applications using SDKs (.NET, Python, Java, JavaScript), how to design data modeling and partitioning strategies, and how to optimize queries and indexes.
The course also covers resource management, security, monitoring, and the integration of Cosmos DB with other Azure services such as Azure Functions and Azure Cognitive Search.

Training recipients

The training is intended for developers and software engineers who build cloud-based, data-driven solutions and want to leverage the capabilities of the Azure Cosmos DB SQL API.
It is particularly dedicated to:

- C#, Python, Java, or JavaScript developers,
- software engineers building cloud-native applications,
- application developers working with SQL or NoSQL databases,
- DevOps specialists deploying solutions based on Azure Cosmos DB,
- system architects designing distributed, scalable database systems.

Benefits

- Creating and configuring the Azure Cosmos DB environment – you will learn how to create accounts, databases, and containers in Azure Cosmos DB using the SQL API.
- Resource and operations management – you will learn how to use SDKs (.NET, Python, Java, JavaScript) to manage data and execute queries.

- Designing data strategies – you will learn how to plan data models, partitioning, and replication in a distributed environment.
- Query and performance optimization – you will learn methods for selecting indexes, optimizing queries, and using the integrated cache.
- Integration with Azure and DevOps services – you will learn how to connect Cosmos DB with Azure Functions, Cognitive Search, and automate infrastructure management using ARM, CLI, and Bicep.

Training program

1: Start using API SQL Azure Cosmos DB interface
- Introduction to API SQL Azure Cosmos DB interface
- Test API SQL Azure Cosmos DB interface

2: Plan and implement API SQL Azure Cosmos DB interface
- Plan requirements related to resources
- Configure database and containers of API SQL Azure Cosmos DB database
- Transferring data to Azure Cosmos DB SQL API interface

3: Connect to API SQL Azure Cosmos DB interface using SDK bundle
- Use SDK bundle of API SQL Azure Cosmos DB interface
- Configure SDK bundle of API SQL Azure Cosmos DB interface

4: Gain access to data and manage them using SDK Azure Cosmos DB SQL API
- Implement operations of SQL API Azure Cosmos DB interface points
- Performing transaction operations on many documents using API SQL Azure Cosmos DB interface
- Process collective data in Azure Cosmos DB SQL API

5: Performing queries in Azure Cosmos DB SQL API
- Send query to API SQL Azure Cosmos DB interface
- Create complex złożone zapytania za pomocą interfejsu API SQL Azure Cosmos DB

6: Define and implement indexation strategy for Azure Cosmos DB SQL API
- Define indexes in Azure Cosmos DB SQL API
- Adjust indexes in Azure Cosmos DB SQL API

7: Integrating API SQL Azure Cosmos DB interface with Azure services
- Use the source of API SQL Azure Cosmos DB interface changes with SDK bundle
- Handle events with the use of Azure Functions service and data change stream of API SQL Azure Cosmos DB interface
- Search data of API SQL Azure Cosmos DB data with the ise of Azure Cognitive Search service

8: Implement strategy of modelling and data partition for API SQL Azure Cosmos DB interface
- Model and partition your data in Azure Cosmos DB
- Optimise database using advanced modelling templates for Azure Cosmos DB

9: Design and implement replication strategy for Azure Cosmos DB SQL API
- Configure replication and manage work in failover mode in Azure Cosmos DB

- Use cohesion models in Azure Cosmos DB SQL API
- Configure the record in several regions in API SQL Azure Cosmos DB interface

10: Optimising query performance in Azure Cosmos DB SQL API

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

11: Administering and monitoring tasks for Azure Cosmos DB SQL API solution

- Measure performance in Azure Cosmos DB SQL API
- Monitor answers and events in Azure Cosmos DB SQL API
- Back-up implementation and restoring for Azure Cosmos DB SQL API
- Implement securities in Azure Cosmos DB SQL API

12: Managing DB SQL API solution using DevOps practices

- Writing scripts for API SQL Azure Cosmos DB interface
- Create resource template for API SQL Azure Cosmos DB interface

13: Developing server software construction in Azure Cosmos DB SQL API

- Create multi-element transactions using API SQL Azure Cosmos DB interface
- Expand functionality of queries and transactions in Azure Cosmos DB SQL API



Expected preparation of the participant

- Knowledge of Microsoft Azure and an ability to navigate on Azure Portal (odpowiednik AZ-900)
- Experience writing in Azure platform language on intermediate level (C#, JavaScript, Python or Java)
- An ability to write the code to join and perform operations on SQL or NoSQL database product (SQL Server, Oracle, MongoDB, Cassandra or similar)

To make work more convenient and training more effective we suggest using additional screen. Lack of extra screen does not make it impossible to participate in the training, but significantly influences the convenience of work during classes

Information and requirements conerning participation in distance learning trainings is available at: https://www.altkomakademia.pl/en/how-it-works/about-courses/



Training Includes

* electronic handbook available at: https://learn.microsoft.com/pl-pl/training/
* access to Altkom Akademia student portal

Training method:

- theory

- demos
- individual laboratories
- 50% theory
- 50% practice

Language

- **Training**: English
- **Materials**: English

Examination method

The exam is on-line. You can enroll at: https://home.pearsonvue.com/Clients/Microsoft.aspx

Duration

4 days / 28 hours

Examination description

After the DP-420 course, you can take Microsoft certification exams:an Authorized Test Center,online being monitored by an offsite proctor. Details on the website:
https://docs.microsoft.com/pl-pl/learn/certifications/exams/dp-420