

INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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AZURE COSMOS DB

Introduction to Azure Cosmos DB

- Overview of Azure Cosmos DB
- Key features and benefits
- Use cases and scenarios

Getting Started

- Creating an Azure Cosmos DB account
- Exploring Azure Cosmos DB APIs (SQL, MongoDB, Cassandra, Gremlin, Table)
- Understanding consistency levels and their implications

Data Modeling and Partitioning

- Understanding partitioning concepts in Azure Cosmos DB
- Choosing partition keys
- Best practices for data modelling

Working with Data in Azure Cosmos DB

- CRUD operations (Create, Read, Update, Delete)
- Querying data using SQL API
- Indexing strategies and best practices

Developing Applications with Azure Cosmos DB

- Connecting applications to Azure Cosmos DB
- Implementing partitioning strategies in applications
- Handling retries and errors

Advanced Data Management

- Server-side programming with stored procedures, triggers, and user-defined functions
- Working with geospatial data and spatial indexing
- Transactions and consistency management in distributed environments

Monitoring and Optimization

- Monitoring Azure Cosmos DB performance
- Performance tuning and optimization techniques
- Cost management and scaling considerations

Security and Compliance

- Authentication and authorization in Azure Cosmos DB
- Data encryption at rest and in transit
- Compliance certifications and regulatory considerations

Integration with Other Azure Services

- Integrating Azure Cosmos DB with Azure Functions
- Serverless architectures and Azure Cosmos DB
- Data migration strategies to and from Azure Cosmos DB

Advanced Data Modeling

- Advanced partitioning strategies
- Composite partition keys
- Hierarchical partitioning

Advanced Querying and Indexing

- Advanced querying techniques using SQL API
- Range queries and composite indexes
- Performance tuning through indexing strategies

Server-side Programming

- Implementing complex business logic with stored procedures
- Trigger-based operations for reactive programming
- User-defined functions for custom data processing

Geospatial Data and Spatial Indexing

- Storing and querying geospatial data
- Spatial indexing for efficient spatial queries
- Integration with mapping and visualization tools

Transactions and Consistency Models

- Understanding multi-document transactions
- Optimistic concurrency control
- Consistency policies and trade-offs

Advanced Monitoring and Optimization

- Monitoring performance metrics at scale
- Diagnosing and troubleshooting performance issues
- Advanced performance optimization techniques