

Hello everyone!

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Let's START!



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Welcome to journey to Cosmos DB

- **Azure** – is a cloud computing service created by Microsoft for building, testing, deploying, and managing applications and services through a global network of Microsoft-managed data centers.
- **Cosmos DB** - fully managed database service with turnkey global distribution and transparent multi-master replication & guaranteed 99.999 SLA



What we will cover

What is Cosmos DB

Managed DB fundamentals

Consistency models

Setup & configurations

Development tools

Demos

Onboarding best practices

What is Cosmos DB

- Build planet-scale applications more easily than ever
- Turnkey global distribution
- Single-digit millisecond latency backed by SLA
- Elastic and unlimited scalability
- Multi-model with wire protocol compatible API endpoints



Turnkey global distribution with transparent multi-master replication and five well-defined consistency choices



Single-digit millisecond latency at the 99th percentile and 99.999-percent high availability, for any scale, backed by SLAs



Elastic and unlimited scalability to meet demand with capacity, and payment based on only the throughput and storage you need



Multi-model with wire protocol-compatible API endpoints for Cassandra, MongoDB, SQL, Gremlin, Etcd, and Table along with built-in support for Apache Spark and Jupyter notebooks

Managed DB fundamentals



Table

SQL

SQL



JavaScript

{LEAF}

API for MongoDB



Gremlin



Cassandra

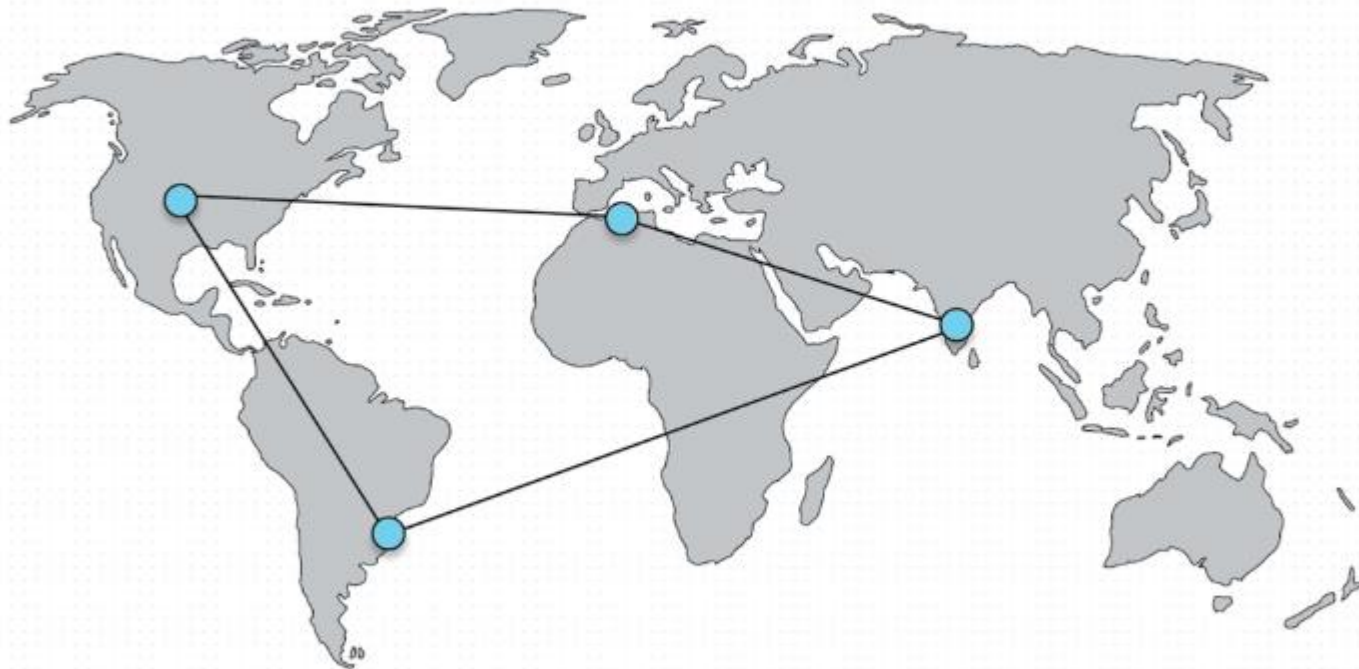


Spark



ETCD

...more APIs coming



Key-Value



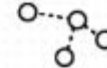
Column-Family



Documents



Graph



Global distribution

Elastic scale-out

Guaranteed low latency

Five consistency models

Comprehensive SLAs

Is cosmos DB in in the cloud



Consistency models

- Strong
- Bounded staleness
- Session
- Consistency prefix
- Eventual



Setup and configuration

- Azure account – provision from portal
- Reserved capacity
- Use budgets and cost alerts
- Create and manage Azure budgets

Create Azure Cosmos DB Account

Create a new Azure Cosmos DB account with multi-region writes in North Europe, West Europe, South Central US, or North Central US by November 30, 2019. Restrictions apply.*

*** Subscription** Primary MSDN

*** Resource Group** Select existing... [Create new](#)

Instance Details

*** Account Name** Enter account name

*** API** Core (SQL)

Jupyter Notebooks or Apache Spark

*** Location**

Geo-Redundancy

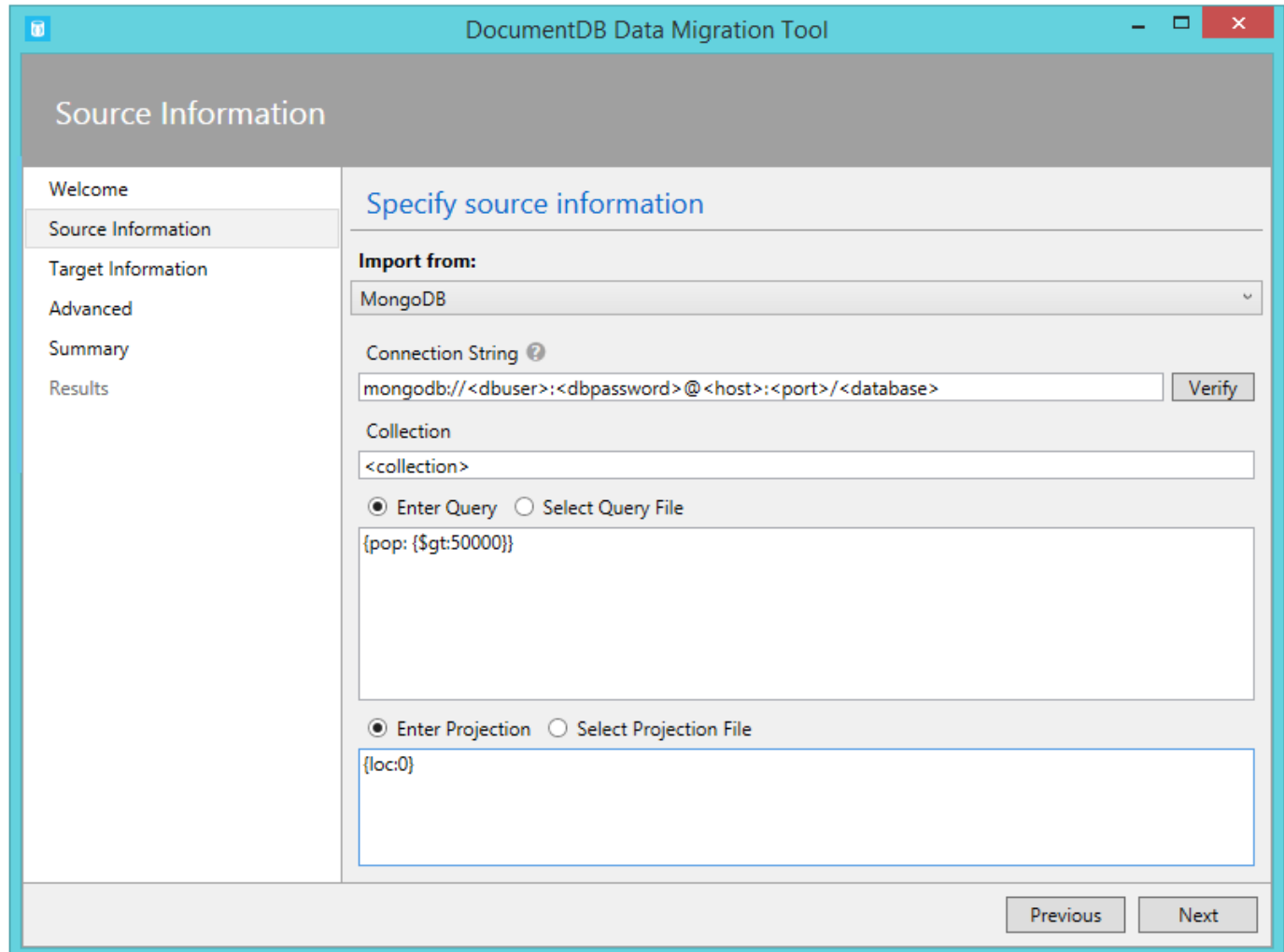
Multi-region Writes Enable Disable

*Up to 33% off multi-region writes is available to qualifying new accounts only. Accounts must be created between August 15, 2019 and November 30, 2019. Offer limited to accounts with both account locations and geo-redundancy only in North Europe, West Europe, South Central US, or North Central US regions, and applies only to multi-region writes in those same regions. Both Geo-Redundancy and Multi-region Writes must be enabled in account settings. Actual discount will vary based on number of qualifying regions selected.

[Review + create](#) [Previous](#) [Next: Network](#)

Data migration tool

- Install .NET Framework 4.5.2 or later
- Increase throughput
- Create Azure Cosmos DB Resources



The screenshot shows the 'DocumentDB Data Migration Tool' window. The title bar is teal with standard Windows window controls. The main area has a grey header 'Source Information'. On the left is a sidebar with a list of steps: 'Welcome', 'Source Information' (highlighted), 'Target Information', 'Advanced', 'Summary', and 'Results'. The main content area is titled 'Specify source information' and contains the following fields and controls:

- Import from:** A dropdown menu currently showing 'MongoDB'.
- Connection String** with a help icon (?): A text box containing the template `mongodb://<dbuser>:<dbpassword>@<host>:<port>/<database>` and a 'Verify' button.
- Collection:** A text box containing the placeholder `<collection>`.
- Query Selection:** Two radio buttons: 'Enter Query' (selected) and 'Select Query File'.
- Query Text:** A text box containing the query `{pop: {$gt:50000}}`.
- Projection Selection:** Two radio buttons: 'Enter Projection' (selected) and 'Select Projection File'.
- Projection Text:** A text box containing the projection `{loc:0}`.

At the bottom right of the window are two buttons: 'Previous' and 'Next'.

Development tools

- VS Code (or IDE of your choice)
- Emulator for Azure Cosmos DB
- Emulator for Azure Storage

Cosmos DB SQL API on Azure

- Explore a NodeJS app and its connection
- Query Cosmos DB SQL API on Azure
 - Explore query of collections
- Cosmos DB Mongo API on Azure
 - Use mean stack app
 - Explore query of collections
- How backups setup
 - Online & on-demand data restore

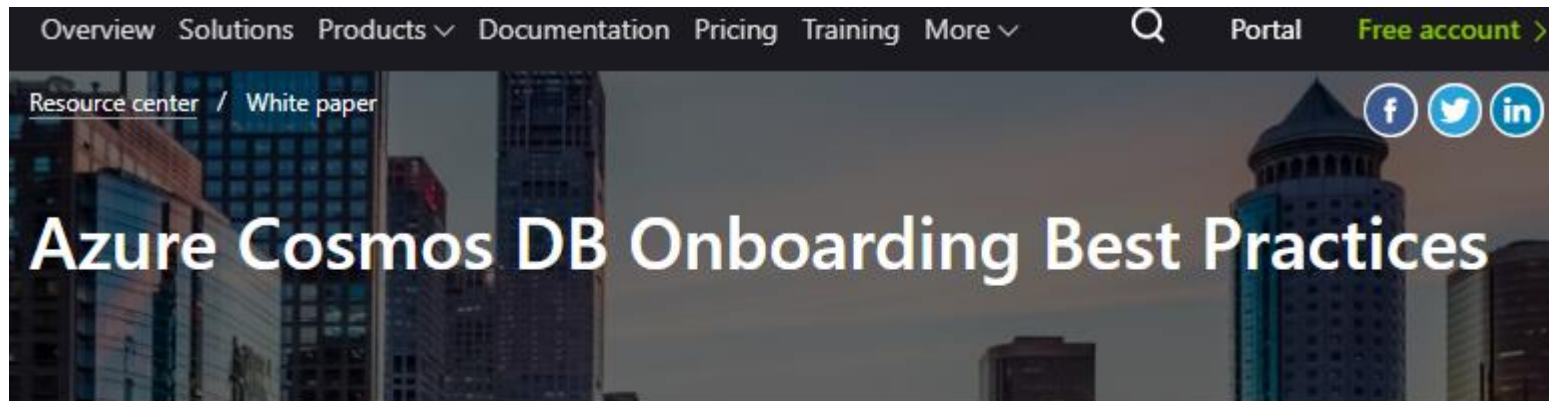
Onboarding best practices

Azure Cosmos DB Onboarding Best Practices

- Data Modeling
- Partitioning
- Global distribution
- Performance
- Cost Optimization

Reference:

<https://azure.microsoft.com/en-us/resources/azure-cosmos-db-onboarding-best-practices/>



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Optimizing performance and ROI with Azure Cosmos DB

Demo – apps on production?

- Cosmos DB SQL API on Emulator
 - Explore a NodeJS app and its connection
 - Show quickstart-nodejs Todo list sample
- Cosmos DB Emulator details
 - Explore query of collections

Summary

What is Cosmos DB

Managed DB fundamentals

Consistency models

Setup & configurations

Development tools

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Onboarding best practices

Continues updates on Cosmos DB

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Azure Cosmos DB updates, blogs, and announcements

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UPDATE

Azure Cosmos DB Python SDK
Version 4 is now in preview

UPDATE

Azure Cosmos DB Java V3 SDK now
available

UPDATE

Azure Cosmos DB ExpressRoute BGP
Community now available

UPDATE

A new set of Azure SDKs is now
available in preview

UPDATE

Azure Cosmos DB JavaScript V3 SDK
is now available

UPDATE

Azure Cosmos DB—Direct
connectivity support for Java Async
SDK is now in preview

UPDATE

Azure Cosmos DB .NET V3 SDK now
generally available

UPDATE

Driver extension for Cassandra in
Azure Cosmos DB is now in preview

UPDATE

Upgraded Gremlin API functionality

What is Cosmos have to do with DB anyway?



Thank you for coming!

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Thank you!



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