

Learning Azure Cosmos DB

INTRODUCTION AND OVERVIEW



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What Is NoSQL?



3Vs



Every 60 seconds

- 98,000+ tweets
- 695,000 status updates
- 11million instant messages
- 698,445 Google searches
- 168 million+ emails sent
- 1,820TB of data created
- 217 new mobile web users

Volume
Variety
Velocity

What Is a NoSQL Database?

Distributed

Replicas ensure high throughput/availability, and low latency

Scale-out

Horizontal partitioning enables virtually limitless storage and throughput

Schema-free

Document, table, graph, and columnar data models



What Is Cosmos DB?

Evolution of DocumentDB

Scalable NoSQL document database
Low latency (single-digit millisecond)

Virtually unlimited scale

Scale storage with server-side partitioning
Scale throughput with variable request units

Turnkey global distribution

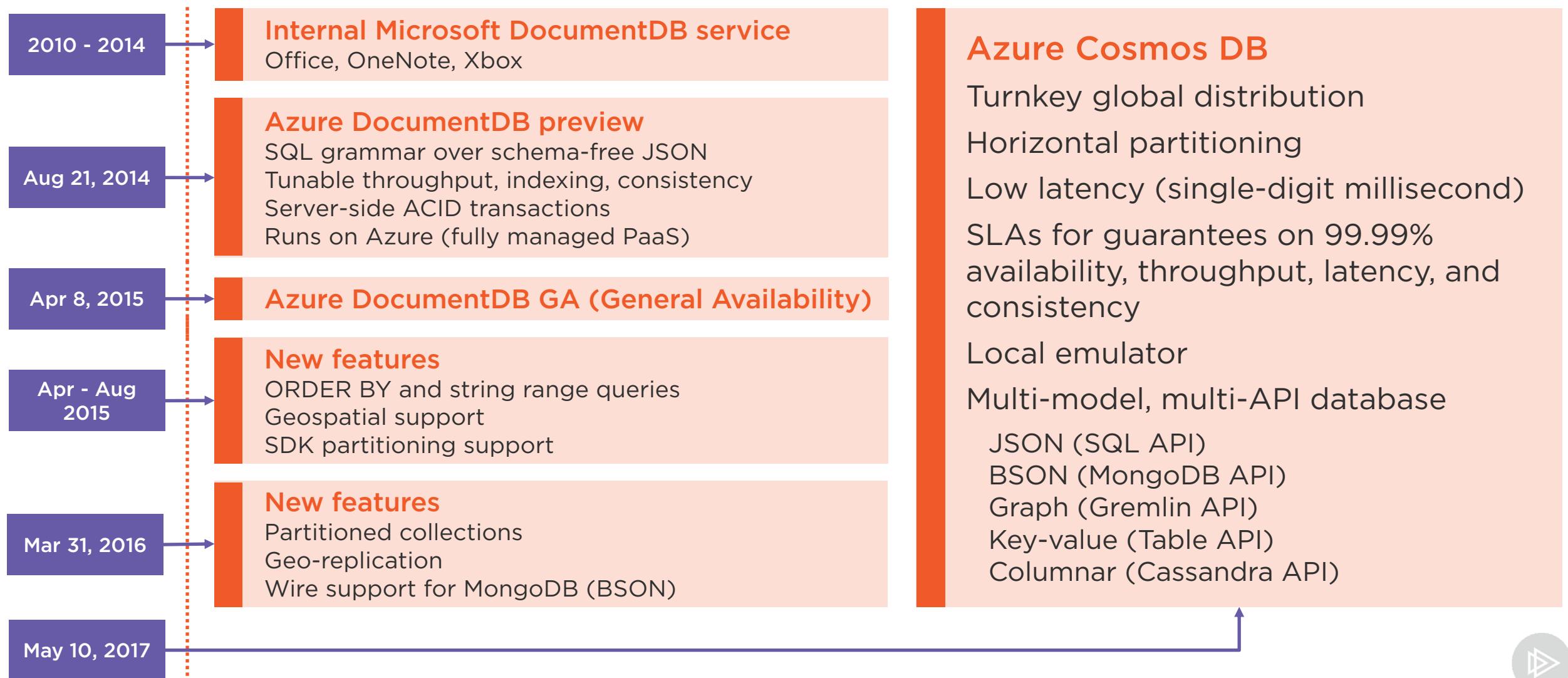
Point-and-click control over where
your data gets geo-replicated

Multi-model / Multi-API

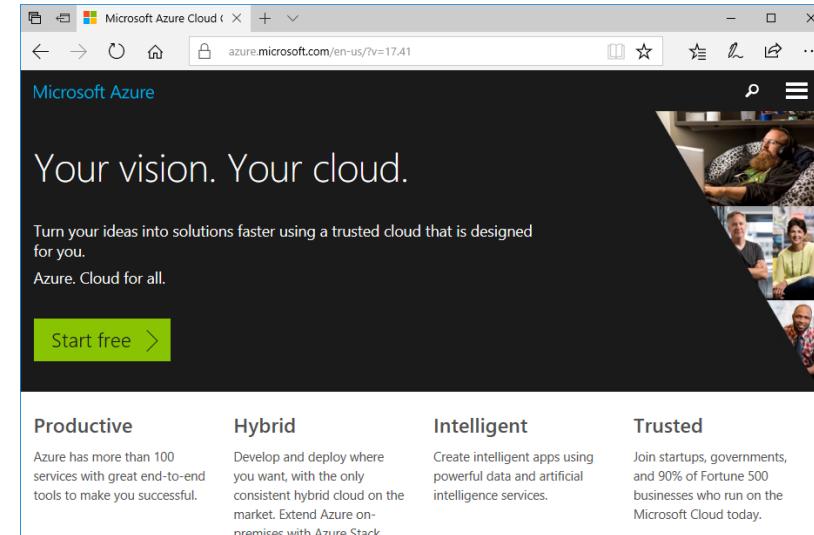
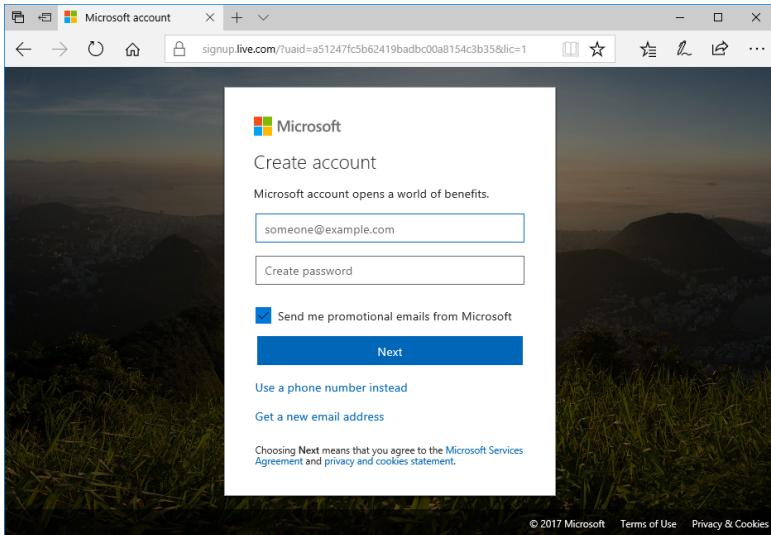
No longer exclusively a document database
Also supports tables, graph, and columnar



Cosmos DB Evolution



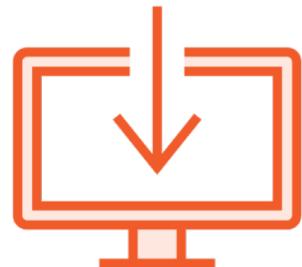
Getting Started



Get a Microsoft account
<http://signup.live.com>

Get a Microsoft Azure subscription
<http://azure.microsoft.com>

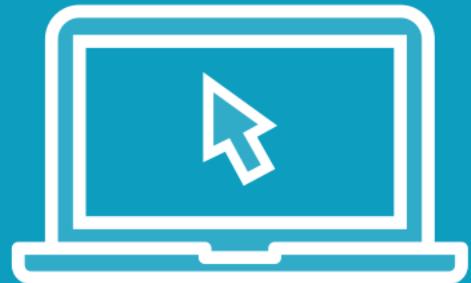
Or,



Download the local emulator
<https://aka.ms/cosmosdb-emulator>



Demo



Creating a Cosmos DB account



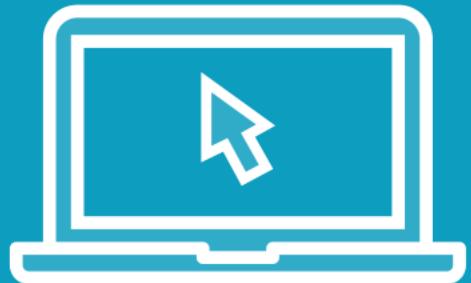
Introducing the Local Emulator



- Emulate Cosmos DB in a local development environment
 - Supports identical functionality as Azure Cosmos DB in the cloud
- No need for:
 - Azure subscription
 - Cosmos DB account
 - Internet connection
- Develop and test locally
 - Incur no costs
 - Deploy to the cloud when ready



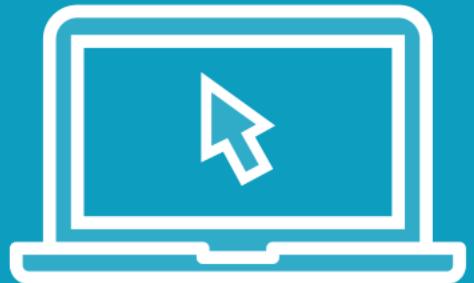
Demo



Installing the Cosmos DB local emulator



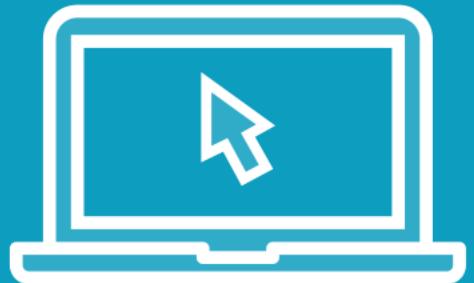
Demo



Creating a collection



Demo

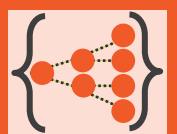


Creating documents



Multiple APIs and Data Models

Document



SQL API (JSON)
MongoDB API (BSON)

Key-Value

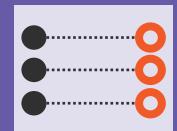
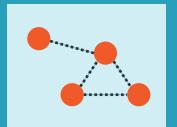


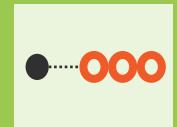
Table API
(replaces Azure Table Storage)

Graph



Gremlin API
(graph traversal language)

Columnar



Cassandra API

Atom Record Sequence

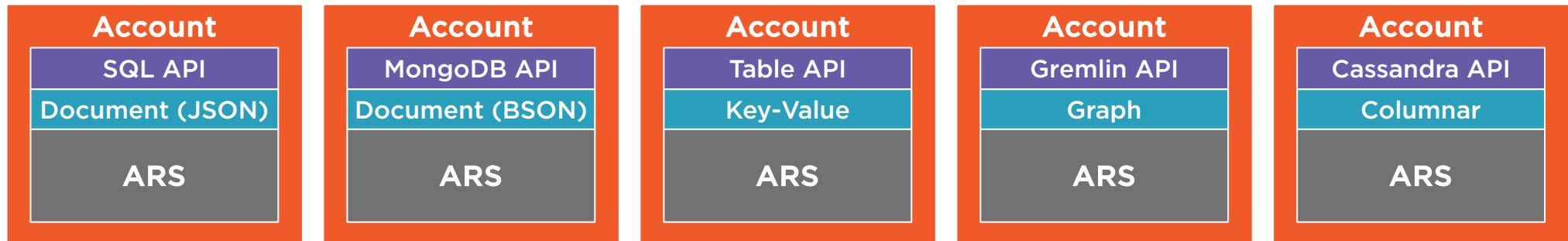
ARS

It's all ARS under the covers,
projected as any desired data model

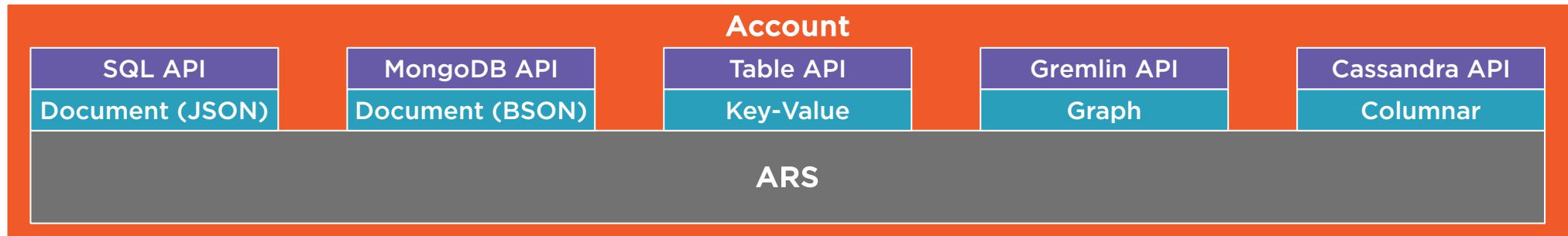


Multiple APIs and Data Models

- Today



- In the future



Course Structure

Concepts

- Throughput
- Partitioning
- Global distribution

How-to

- SQL API
- Table API
- Gremlin API



Summary



Introduction to NoSQL

Introduction to Cosmos DB

Getting started

Local emulator

Multi-model APIs

Course structure

