Cosmos DB

Developing Solutions for Microsoft Azure

What Is NoSQL?

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3Vs

Volume
Variety
Velocity

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

What is a no SQL Database
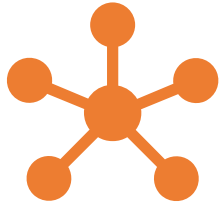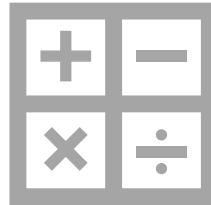
Distributed   **Scale Out**   **Schema Free**

What Is Cosmos DB?

Virtually Unlimited Scale

Turnkey Global Distribution

Multiple API Support

Demo

Create a Cosmos DB in portal

Introduce local emulator

Cosmos DB Resource Model

Azure Cosmos DB account

Database

Collections

Documents

Attachments

Users

Permissions

Stored Procedures

Triggers

User Defined Functions
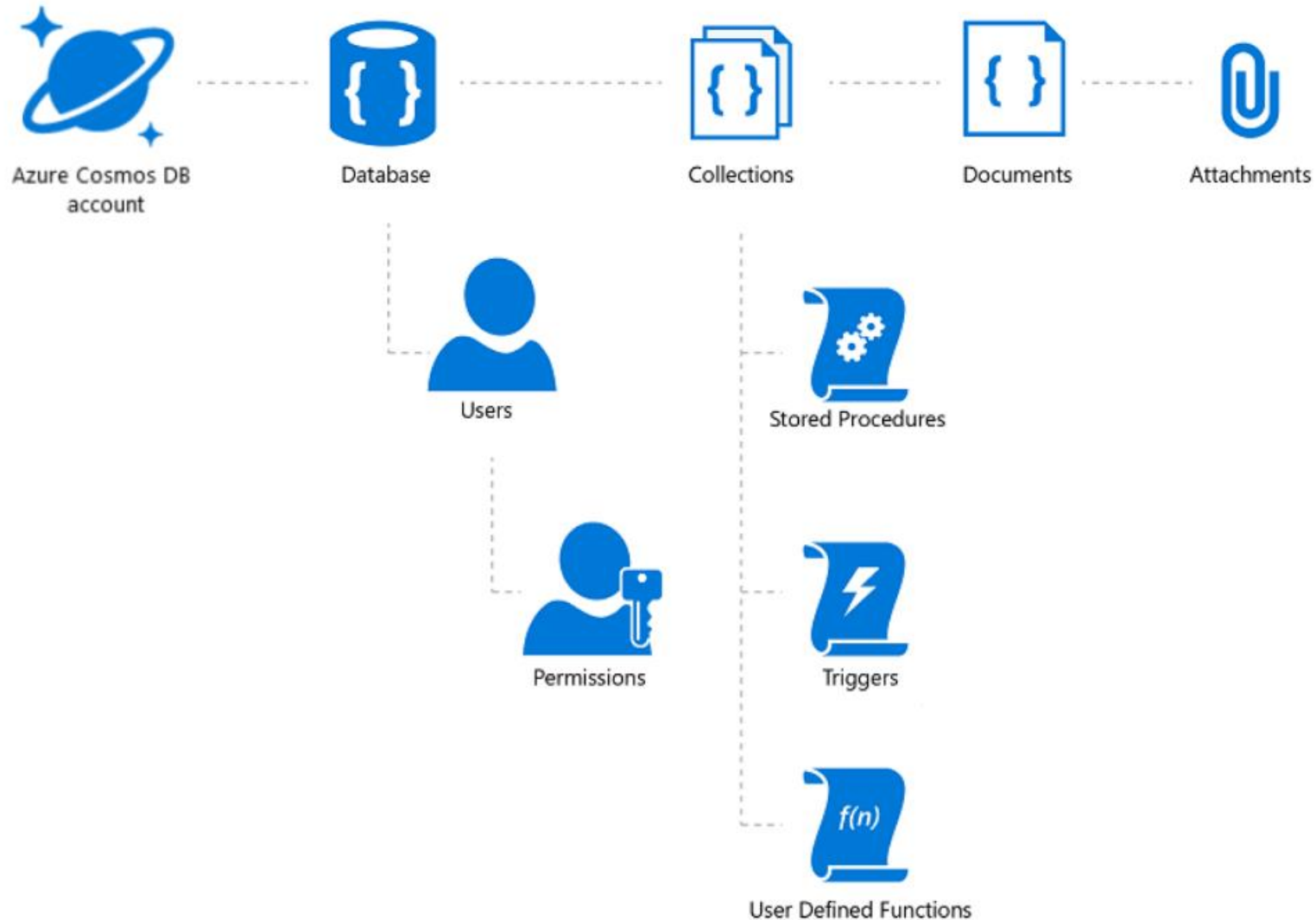
Resource Properties

👤	id	User-defined unique ID (string)
🪪	_rid	Resource ID
⏱	_ts	Timestamp (last updated) epoch value
🧍	_etag	GUID used for optimistic concurrency
👤	_self	URI path to the resource
📎	_attachments	URI path suffix to the resource attachments

Demo

- Create a Resource in Local Emulator and analyze the autogenerated properties

Ways to identify the resource in Cosmos DB

```
// Identify document by...

// ...self link
string id1 = "dbs/v84pAA==/colls/v84pAO7nPQA=/docs/v84pAO7nPQABAAAAAAAABg==/";

// ...ID-based routing
string id2 = "dbs/Families/colls/Families/docs/ab7aafc4-6a6e-f19e-bf5f-f7985b2f156d";

// ...URI
Uri id3 = UriFactory.CreateDocumentUri("Families", "Families", "ab7aafc4-6a6e-f19e-bf5f-f7985b2f156d");
```

Demo

- Data migration Tool
- SQL API Queries
- .Net SDK

Indexing Policies

Spatial index

Distance and intersection

Points, polygons,

Range index

Equality, range, ORDER BY

Strings and numbers

Hash index

Equality queries

Strings and numbers

Indexing Policies

Collection-wide policy

Established when creating a collection

Can be changed after collection is created

Automatic indexing

Can switch to manual

Can override on a per-document basis

Selective indexing

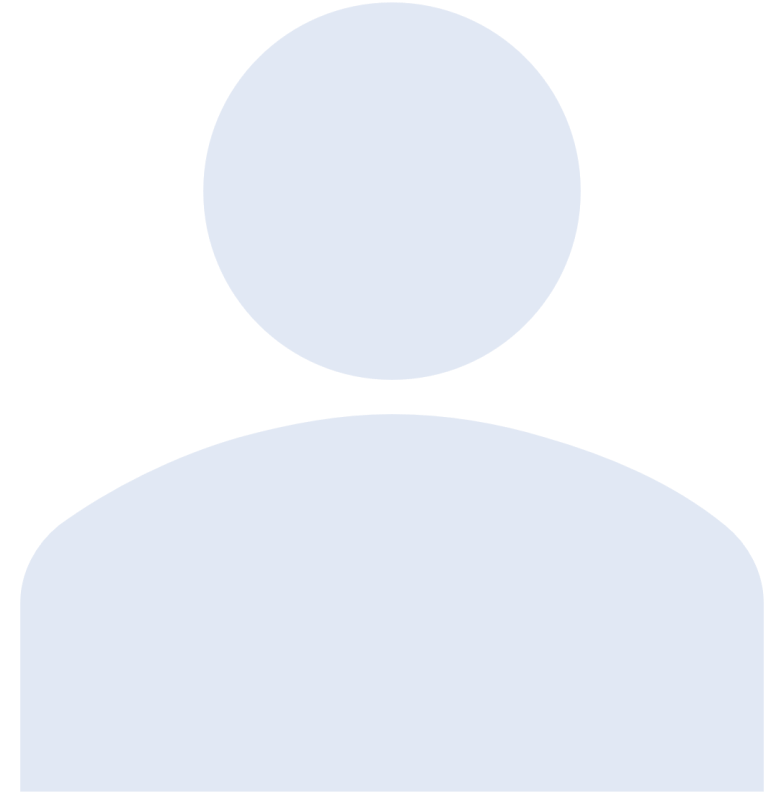Include/exclude selected property paths

Individual properties (?)	Recursive properties (*)
/name/?	/address/*
/address/state/?	/item/colors[]/*

Users And Permissions

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STORED PROCEDURES

TRIGGERS

UDFS