Microsoft Azure Fundamentals Training Bootcamp

Azure Cosmos Database Fundamentals 101

Azure Cosmos Database Introduction

- Azure Cosmos DB is Microsoft's globally distributed, multi-model database service
- It is designed for high scale, global replication, low latency databases
- How does Azure Cosmos DB store data ?
- It's just a document DB
  - Document format JSON (JavaScript Object Notation)

Azure Cosmos DB

JSON Document Example

- JSON (JavaScript Object Notation) is an open-standard file format that uses human-readable syntax, consisting of attribute-value pairs

- Key-value pair
  - Key=id, value=1
  - Key=category, value=CAR

```
{
   "id": "1",
   "category": ”CAR",
   "name": ”BMW",
   "description": ”7 series",
   "isComplete": false
}
```

Azure Cosmos Database - Key Features

- Global distribution
  - Transparent multi-region distribution
- Regional presence
  - 56+ regions
- High availability (Always on) – 99,999%

Azure Cosmos DB

Azure Cosmos Database - Key Features

- Elastic scale
  - From thousands to hundreds of millions of requests/sec around the globe
- Low latency guarantee
  - Less than 10-ms – 99% of requests
- No schema or index management
  - Just operate on the documents, which can have different properties/formats

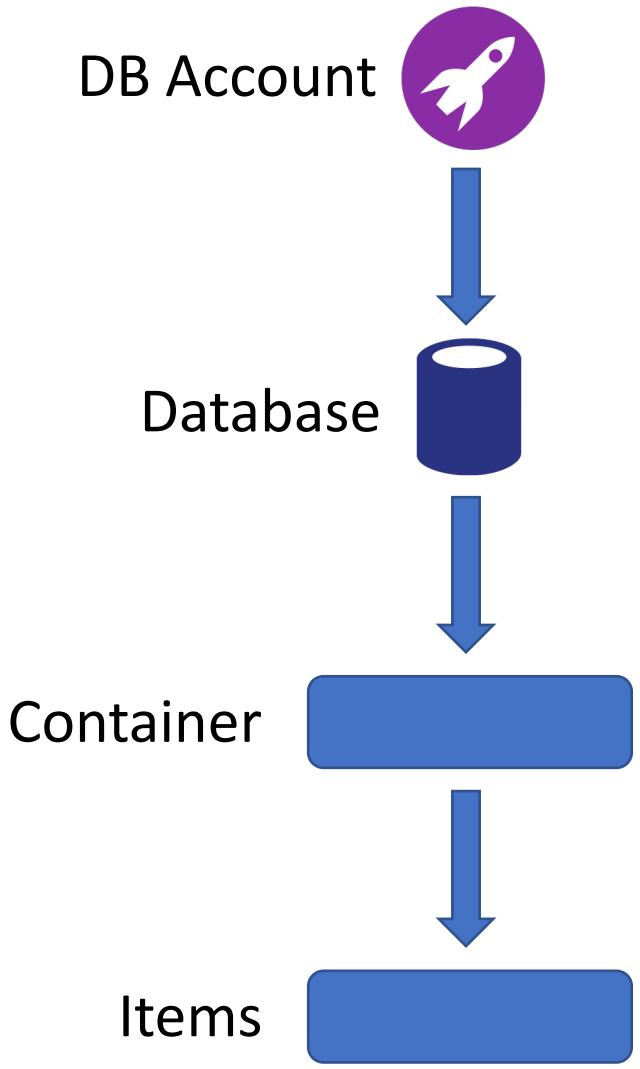
Azure Cosmos DB

Azure Cosmos Database - Key Features

- Multiple APIs available
  - SQL (core API) – query your data just like you would do with any "normal" DB
  - Cassandra
  - MongoDB
  - Gremlin
  - Azure Table Storage

Azure Cosmos DB

Azure Cosmos Database – The Structure



- Start with Database Account
- Container – e.g. table
- Items – e.g. rows of data
- Cosmos API chosen reflects what container (table) and item (row) are realized of
- E.g. -SQL API – collection & docs

Azure Cosmos Database – Request Units

- The cost of all database operations is expressed by Azure Cosmos DB in Request Units (RUs) - e.g. operations: read, insert, delete, query

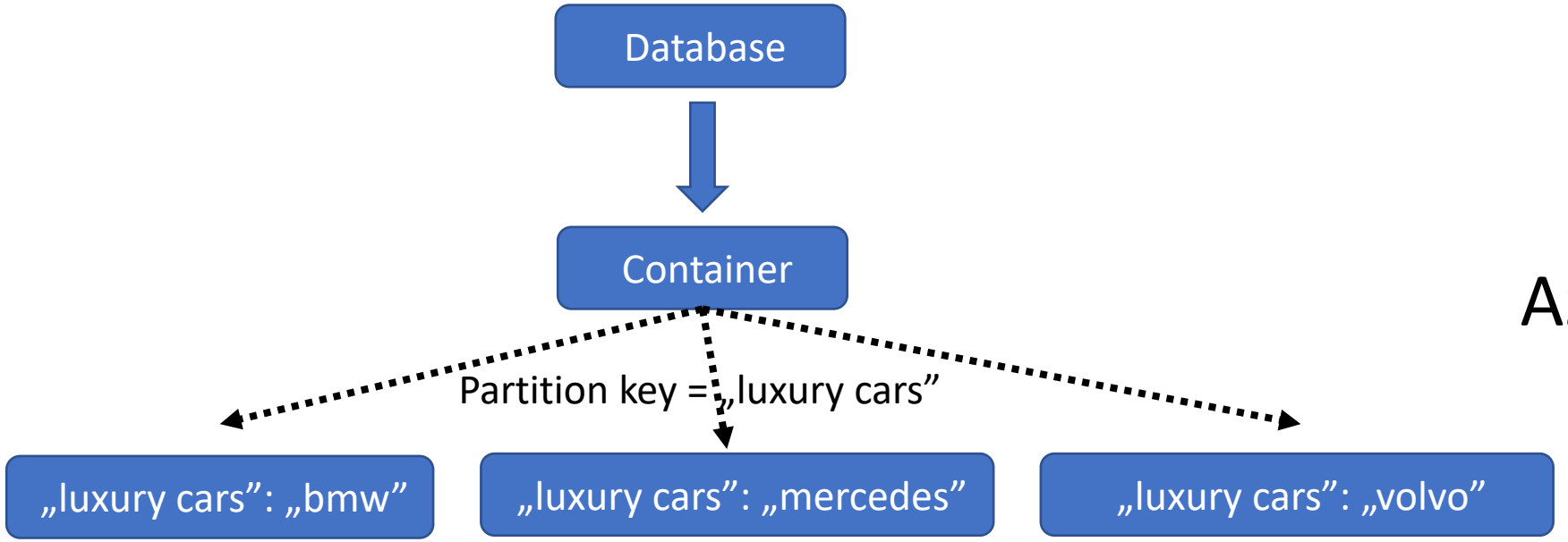
- Simply put, just think of RUs per second as the currency for throughput

- You don't pick how much CPU, RAM, etc you only pick one aggregate measure, the throughput measure, which is the RUs

Azure Cosmos DB

Azure Cosmos Database – Partitions

- Items in a container are divided into distinct subsets called logical partitions



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Thank you