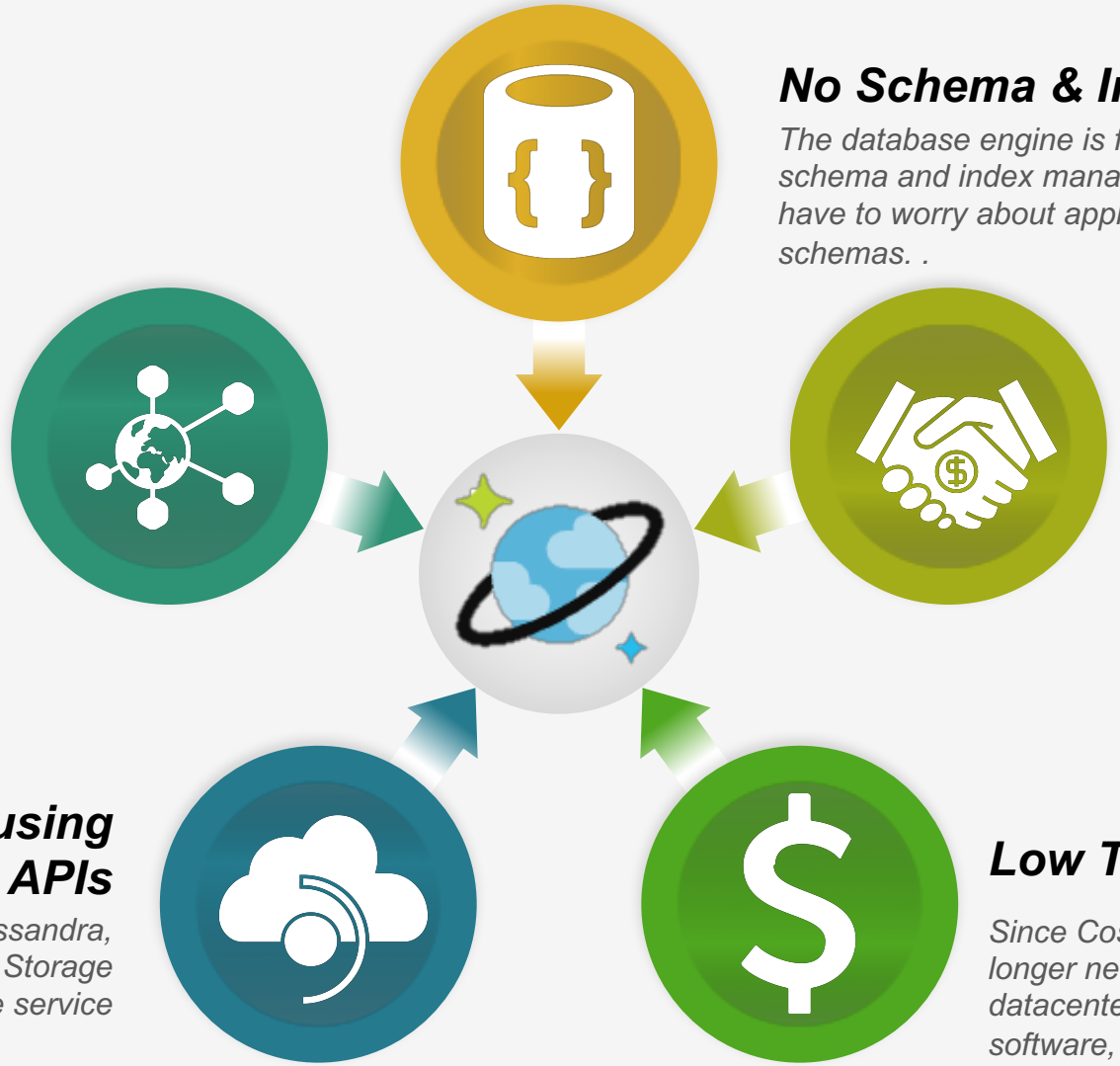
Azure database services – Azure Cosmos database

COSMOS database overview



No Schema & Index management

The database engine is fully schema-agnostic. Since no schema and index management is required, you also don't have to worry about application downtime while migrating schemas. .

Global distribution

Cosmos DB allows you to add or remove any of the Azure regions to your Cosmos account at any time, with a click of a button.

Industry leading comprehensive SLAs

Cosmos DB is the first and only service to offer industry-leading comprehensive SLAs encompassing 99.999% high availability, read and write latency at the 99th percentile, guaranteed throughput, and consistency.

Developing application using NoSQL APIs

Cosmos DB implements Cassandra, MongoDB, Gremlin and Azure Table Storage wire protocols directly on the service

Low Total Cost of Ownership

Since Cosmos DB is a fully managed service, you no longer need to manage and operate complex multi datacenter deployments and upgrades of your database software, pay for the support, licensing, or operations.

COSMOS database structure

Cosmos Account

The Azure Cosmos account is the fundamental unit of global distribution and high availability. For globally distributing your data and throughput across multiple Azure regions, you can add and remove Azure regions to your Azure Cosmos account at any time.

Database

You can create one or more Azure Cosmos databases under your account. A database is analogous to a namespace, it is the unit of management for a set of Azure Cosmos containers.

Container (collection / table / graph / …)

An Azure Cosmos container is the unit of scalability for both provisioned throughput and storage of items. A container is horizontally partitioned and then replicated across multiple regions

Items

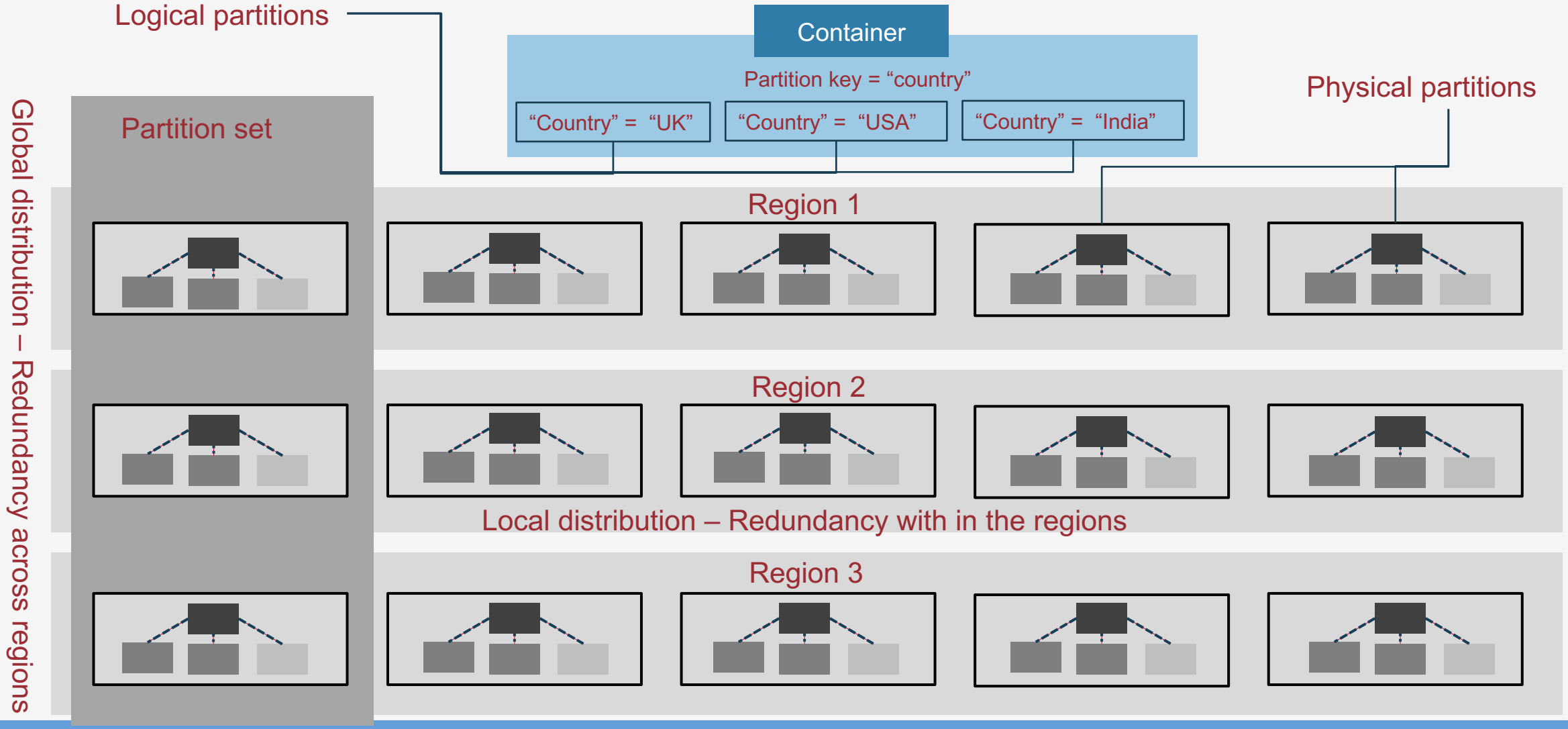
Stored procedures

User defined functions

Triggers

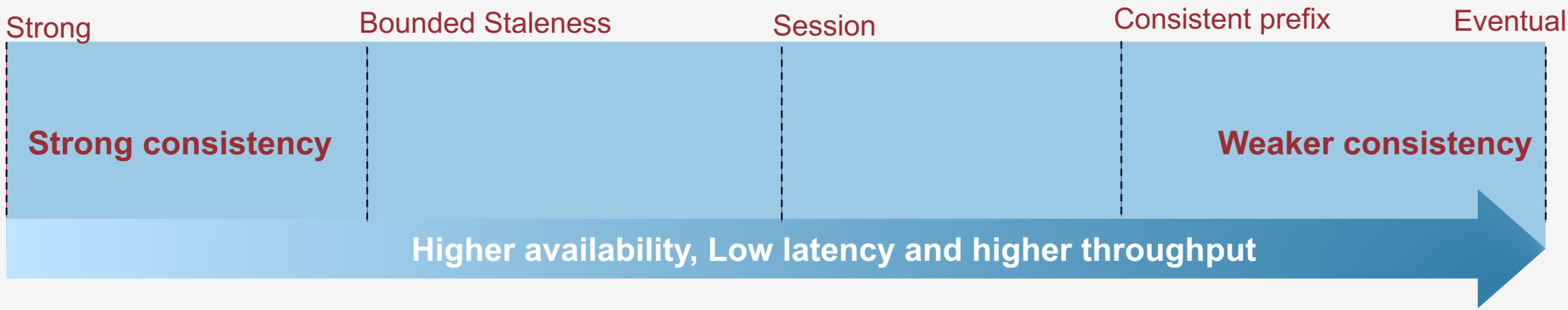
(document / row / node / edge / …)

Global distribution and Partitioning



Types of Consistency

- Azure Cosmos DB approaches data consistency as a spectrum of choices instead of two extremes. Strong consistency and eventual consistency are at the ends, but there are many consistency choices along the spectrum.

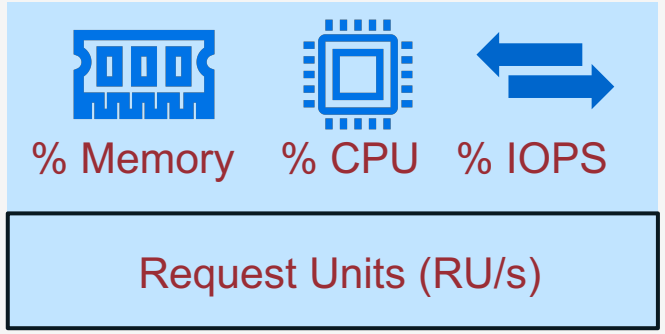


- The consistency levels are region-agnostic. The consistency level of your Azure Cosmos account is guaranteed for all read operations regardless of the region from which the reads and writes are served, the number of regions associated with your Azure Cosmos account, or whether your account is configured with a single or multiple write regions.

Request Units

- With Azure Cosmos DB, you pay for the throughput you provision and the storage you consume on an hourly basis

- The cost of all database operations is normalized by Azure Cosmos DB and is expressed in terms of Request Units (RUs). The cost to read a 1-KB item is 1 Request Unit (1 RU). All other database operations are similarly assigned a cost in terms of RUs.



- Number of RU's consumed will depend on type of operation, item size, data consistency, query patterns etc.