**Amazon DynamoDB**

# Amazon DynamoDB

**DynamoDB is a managed NoSQL database service.**

- Easy to set up, operate, and scale

- Data model : tables, items and attributes

- Store and retrieve any amount of data

- Serve any level of request traffic.

- Without any operational burden.

# More about DynamoDB

- No fixed schema (number of columns, column names, their data types, column order, and column size).

- Just a fixed primary key, its data type, and a secondary index if needed, and the remaining attributes can be decided at runtime.

- Items in DynamoDB are individual records of the table. We can have any number of attributes in an item. but item size limit is up to 400KB.

- All data items are stored on Solid State Drives (SSDs), and are replicated across 3 Availability Zones for high availability and durability.

# More about DynamoDB

**Primary Key**

- Simple primary key or Hash Key or Partition Key

- Composite Primary key or Hash or Partition Key and Range or Sort Key

# More about DynamoDB

**Secondary indexes:** Secondary indexes on a table will help optimize querying on non-key attributes. DynamoDB supports two kinds of secondary indexes.

- Local secondary index: an index that has the same hash key as the table, but a different range key.

- Global secondary index: an index with a hash and range key that can be different from those on the table.

# Amazon DynamoDB

## Consistent, predictable performance.

- Single digit millisecond latencies.

- Backed on solid-state drives.

# Amazon DynamoDB

## Flexible data

- Key/attribute pairs.

- No schema required.

- Easy to create. Easy to adjust.

# Amazon DynamoDB

## Seamless scalability

- No table size limits. Unlimited storage.

- No downtime.

# Amazon DynamoDB

## Durable

- Consistent, disk-only writes (not memory)

- Replication across data centers and
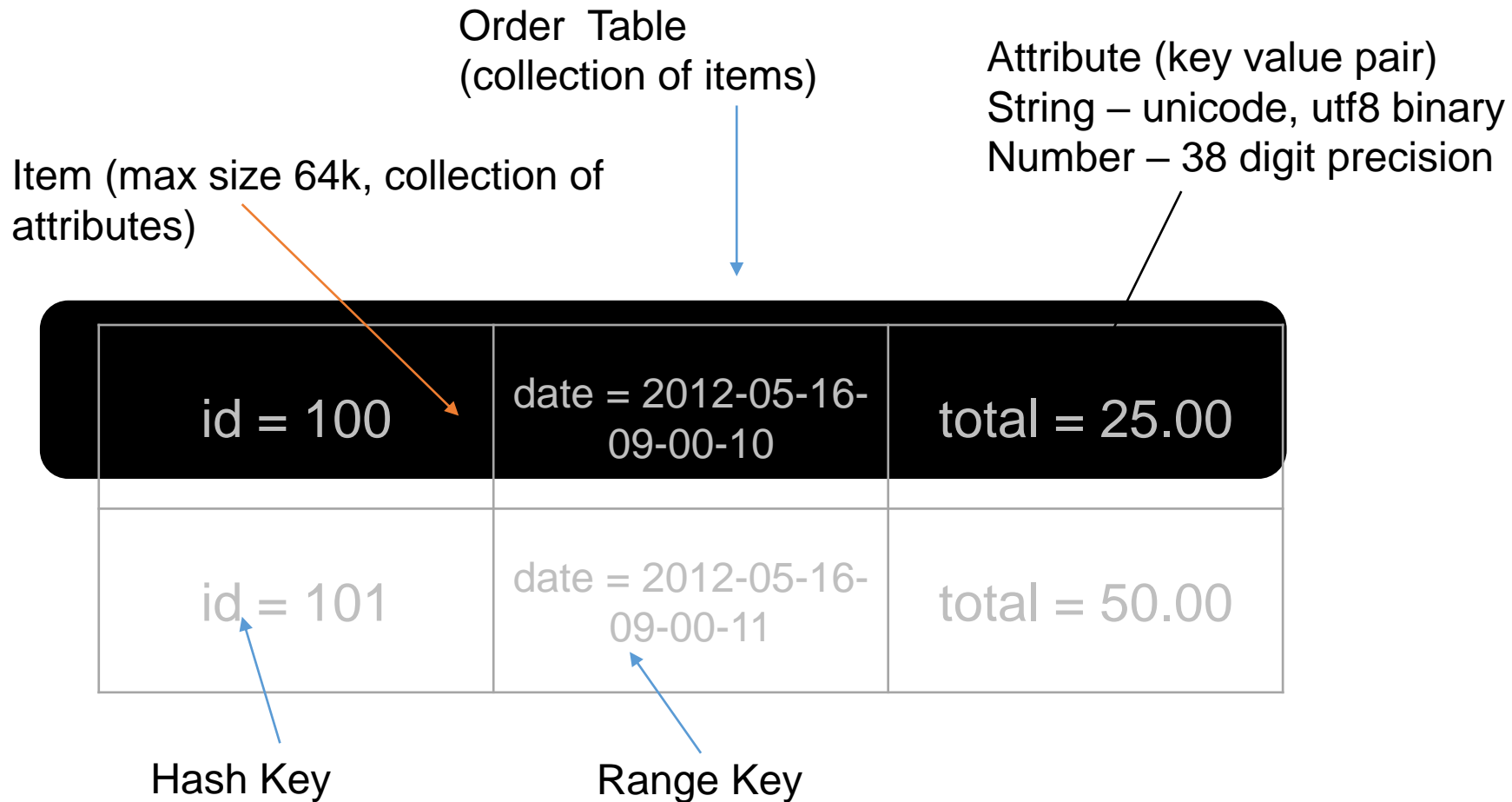
- Availability zones.

# Amazon DynamoDB

**Primary keys +**
**Provisioned level of throughput** (easy to change)

Two decisions + three clicks = ready for use

# Amazon DynamoDB

Order Table
(collection of items)

Attribute (key value pair)
String – unicode, utf8 binary
Number – 38 digit precision

Item (max size 64k, collection of attributes)

| id = 100 | date = 2012-05-16-09-00-10 | total = 25.00 |
| id = 101 | date = 2012-05-16-09-00-11 | total = 50.00 |

Hash Key

Range Key

# Amazon DynamoDB

## Mapping relationships with range keys.

- No cross-table joins in DynamoDB.

- Use composite keys to model relationships.

# Amazon DynamoDB

## Handling large

- Unlimited attributes per item.

- Unlimited items per table.

- Max 64k per item.

# Amazon DynamoDB

## Store a pointer to objects in Amazon S3

- Large data stored in S3.
- Location stored in DynamoDB.
- 99.999999999% data durability in S3.

# Amazon DynamoDB

## Managing secondary indices.

- Not currently supported by DynamoDB.

- You can create on your own.

# **Amazon DynamoDB**

## Amazon CloudDrive

- Stores user objects in Cloud
  - Metadata in DynamoDB
  - Objects in S3

- Queries and object searches are served
  - What are all the objects in my drive?
  - Find me all the music albums stored on my drive

# Amazon DynamoDB

## DynamoDB Customer Highlights

# AWS DynamoDB – Limits

## Amazon DynamoDB Limits

| Resource | Default Limit |
|---|---|
| Read capacity units (individual table) | 10,000 |
| Write capacity units (individual table) | 10,000 |
| Read capacity units (account) | 20,000 |
| Write capacity units (account) | 20,000 |
| Maximum number of tables | 256 |

# AWS DynamoDB – Pricing

- Pay only for what you use.
- There is no minimum fee.

Free Tier*

- As part of AWS's Free Tier, AWS customers can get started with Amazon DynamoDB for free.
- DynamoDB customers get 25 GB of free storage, as well as up to 25 write capacity units and 25 read capacity units of ongoing throughput capacity (enough throughput to handle up to 200 million requests per month) and 2.5 million read requests from DynamoDB Streams for free.

- For more pricing detail visit

# Thank You