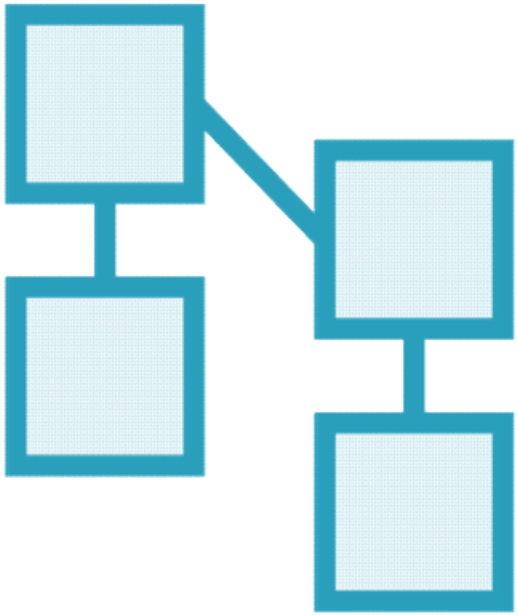
Avoiding Common Pitfalls

Abhaya Chauhan

@AbhayaChauhan www.abhayachauhan.com

Data Modeling



Very important activity to undertake

DynamoDB is a Key-Value store

- Some Document Database capabilities
- Predictable access patterns
- Single digit millisecond latency
- Scales with your needs

Data

Access Patterns	Size
Is it Predictable Load?	How are the bounds of the data?
If yes, scale at fixed schedules	Total data
If no, how will you handle throttling?	Table size
Can you isolate unpredictable loads?	Item size (400KB item size limit)

Data

Query

What are your most run queries?

Can you execute them without Scan operations?

Can the application handle eventually consistent?

Expect adhoc queries?

Write

WCUs more expensive than RCUs

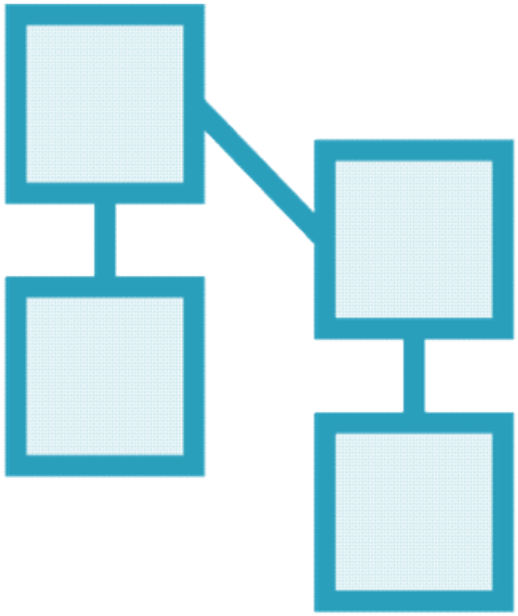
- 1 RCU gives you 4KB per second
- 1 WCU gives you 1KB per second
- 1 WCU cost > 1 RCU cost

How much of the data is static vs volatile?

Isolate volatile data to separate tables or use UpdateItem API

Each operation is atomic

Data Modeling



Monitor real usage

- CloudWatch with metrics and alarms
- Avoid changing RCU/WCUs regularly
- Accept you will be wrong on the first attempt

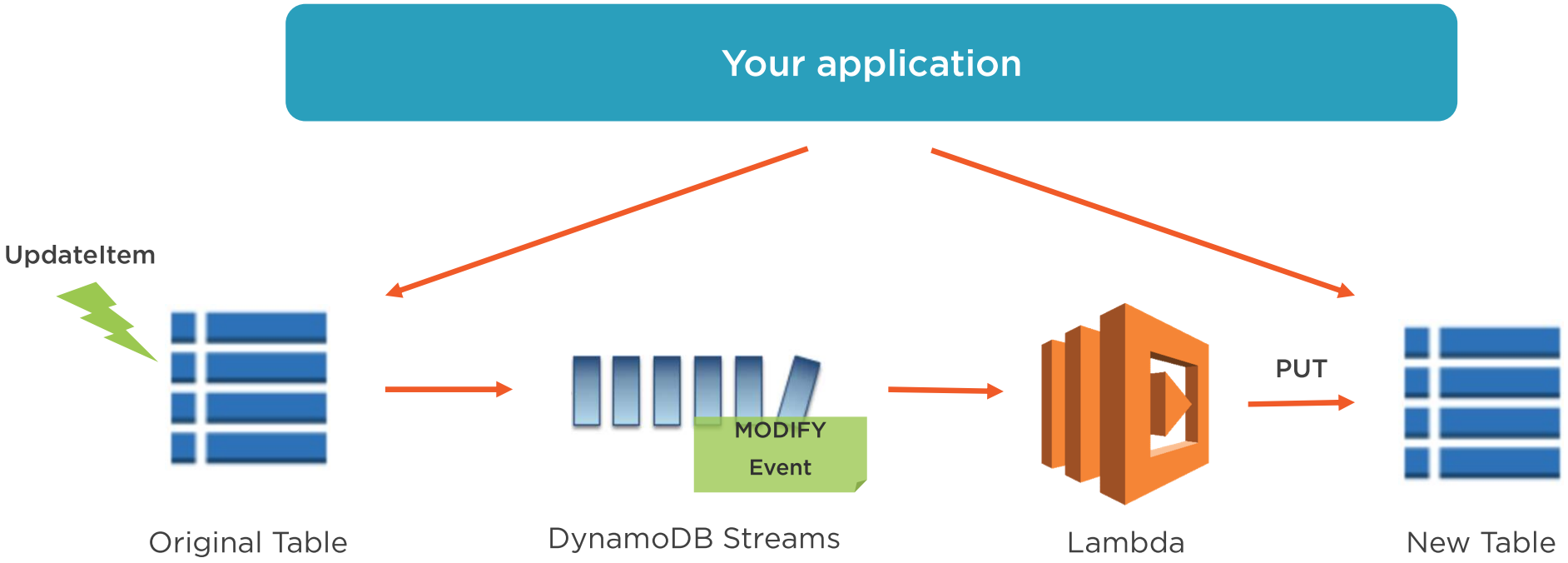
Remodeling Your Data

Do not be afraid to remodel your data

- Adding LSIs
- Changing Key Schemas

Leverage DynamoDB Streams and Lambda to remodel data as needed

Migrate Data Using Triggers



Pricing

DynamoDB charges in a few dimensions:

- Provision Capacity
- Indexed Data Storage
- Data Transfer
- DynamoDB Streams
- DynamoDB Triggers

Latest pricing details found at:

- https://goo.gl/iDMNcf

Unique Identifiers

Using counters as identities have problems

- Inefficient from a WCU perspective
- Makes every write a multi operation
- Adds latency
- Partition performance can limit counters
- Can become a bottleneck

Consider using UUIDs

- Well supported cross platform / languages

DynamoDB Hard Limits

Partition Key capacity limits:

- Max WCU = 1,000
- Max RCU = 3,000

Table / Account capacity limits exist:

- Varies across regions

Decrease RCUs / WCUs 4 times a day

DynamoDB Limitations

Partition Key data limit:

- 10GB

Table Index limits:

- Maximum of 5 LSIs
- Maximum of 5 GSIs

Item size (including indexes + projections)

- 400KB