Dynamo DB Cheat Sheet

Partitions - 10% Rule

Never have a partition that contains more than 10% of the table data.

When Dynamo is storing your data it groups it all by the partition key. Multiple partitions can be stored on a single SSD, but one partition can never be split across multiple SSDs. This means that you want to make sure that you always create small partition keys. You don't want to have one partition, and therefore one SSD, getting hit with most of the requests and becoming throttled.

Use Range Keys to make querying data easier

As well as a Partition Key you can have a Range Key. This key is different from a partition key in that you can query on more than an exact match.

Condition	Example
=	rangeKey = 1598942275
<	rangeKey < 1598942275
<=	rangeKey <= 1598942275
>	rangeKey > 1598942275
>=	rangeKey >= 1598942275
BETWEEN	rangeKey BETWEEN 1598242275 AND 1598942275
begins_with()	begins_with(rangeKey, '15983')
contains()	contains(rangeKey, '82422')

Using Compound Sort Keys for grouping data

Sort keys can be used for more than querying on a date. It can be used for hierarchical grouping. This is where you chain increasingly small categories into the sort key. This is easier explained with examples.

If you have a table containing store information for stores that you sell your products to.

Partition Key	Store Brand
Sort Key	{country}#{state}#{city}#{town/area}#{ID}

This way you can query make these queries:

Request	**Query**
All Target in New York	PartitionKey = Target AND begins_with(SortKey, USA#NY)
All Wallmart in Seattle	PartitionKey = Wallmart AND begins_with(SortKey, USA#WA#seattle)
All Wallmart in Beacon Hill, Seattle	PartitionKey = Wallmart AND begins_with(SortKey, USA#WA#seattle#beacon_hill)
A specific Target that is in Roxhil, Seattle	PartitionKey = Wallmart AND SortKey = USA#WA#seattle#roxhill#02349283

Using this you are able to get groups of data but still get a specific item of information.

One Table - Multiple stored datatypes

In another way to use compound keys are to use them to store multiple types of data in a single table.
An example would be if you are storing data about a customer, traditionally you would have a table for each type of data you are storing. A table for addresses, a table for orders, etc. With Dynamo, you can have this all in one table if you create your Sort key correctly.

Partition Key	Customer ID
Sort Key	{DataType}#{date}#{ID}

This would end up with a table like this:

Partition Key	**Sort Key**	**Data… (more fields)**
12345	address#0321	....
12345	order#1593115224#10352	....
12345	order#1597115224#10367	...
12345	order#1599115224#10394	...
12345	complaint#1597815224#0031	...
12345	complaint#1599995224#0031	...
....	...	...

You could then do queries like this:

Request	**Query**	**Result**
Get all orders for user 12345	PartitionKey = 12345 AND begins_with(SortKey, order)	3 orders
Get all orders for 12345 in August	PartitionKey = 12345 AND SortKey BETWEEN 1596236400 AND 1598914800	1 order
Get order 10367	PartitionKey = 12345 AND SortKey = 10367	1 order
Get all details for user 12345	PartitionKey = 12345	1 address, 3 orders, 2 complaints