

Amazon Web Services - Beyond EC2 and S3

DynamoDB, Redshift, Kinesis and Lambda

Markus Dale, November 2015

Managed Services With Rich Environment

- ▶ EC2 - Elastic Load Balancer service, Auto-Scaling, Security groups...
- ▶ S3 - Server-Side Encryption, Versioning, Notification...
- ▶ RDS - Relational Database Service...

Developer Productivity

Right Tool for the Right Job



AWS DynamoDB

- ▶ Managed NoSQL database since 2012
 - ▶ Dynamo key-value paper 2007
- ▶ Cost: Provisioned read/write throughput and actual storage
- ▶ Scalable (up and down)
- ▶ Fault-tolerant
- ▶ SSD storage

DynamoDB Tables

	Name ^	Status v	Partition key v	Sort key v	Indexes v	Total read capacity units
<input type="radio"/>	Forum	Active	Name (String)	-	0	1
<input type="radio"/>	ProductCatalog	Active	Id (Number)	-	0	1
<input type="radio"/>	Reply	Active	Id (String)	ReplyDateTime (String)	0	1
<input type="radio"/>	Thread	Active	ForumName (String)	Subject (String)	0	1

DynamoDB Provisioned Capacity

Overview

Items

Metrics

Alarms

Capacity

Indexes

Triggers

Access control

Provisioned capacity

Read capacity units Table

Write capacity units Table

Estimated cost \$0.59 / month ([Capacity calculator](#))

Cancel

Save

DynamoDB Sample Table - Reply

Reply

Overview

Items

Metrics

Alarms

Capacity

Indexes

Triggers

Access control

Create item

Actions ▼

Scan: [Table] Reply: Id, ReplyDateTime ▼

<input type="checkbox"/>	Id	ReplyDateTime	Message	PostedBy
<input type="checkbox"/>	Amazon DynamoDB#DynamoDB Thread 1	2015-11-10 05:02:08	DynamoDB Thread 1 Reply 2 text	User B
<input type="checkbox"/>	Amazon DynamoDB#DynamoDB Thread 2	2015-11-03 05:02:08	DynamoDB Thread 2 Reply 3 text	User B
<input type="checkbox"/>	Amazon DynamoDB#DynamoDB Thread 2	2015-11-17 05:02:08	DynamoDB Thread 2 Reply 2 text	User A
<input type="checkbox"/>	Amazon DynamoDB#DynamoDB Thread 2	2015-11-23 05:02:08	DynamoDB Thread 2 Reply 1 text	User A

DynamoDB Query

Query ▾

[Table] Reply: Id, ReplyDateTime ▾

⬆

Partition key

Id

String

=

Amazon DynamoDB#DynamoDB

Sort key

ReplyDateTime

String

Between ▾

2015-11-01

And

2015-11-20

Filter

PostedBy

String ▾

= ▾

User A

✕

➕ Add filter

Sort

☐ Ascending

☒ Descending

Attributes

☐ All

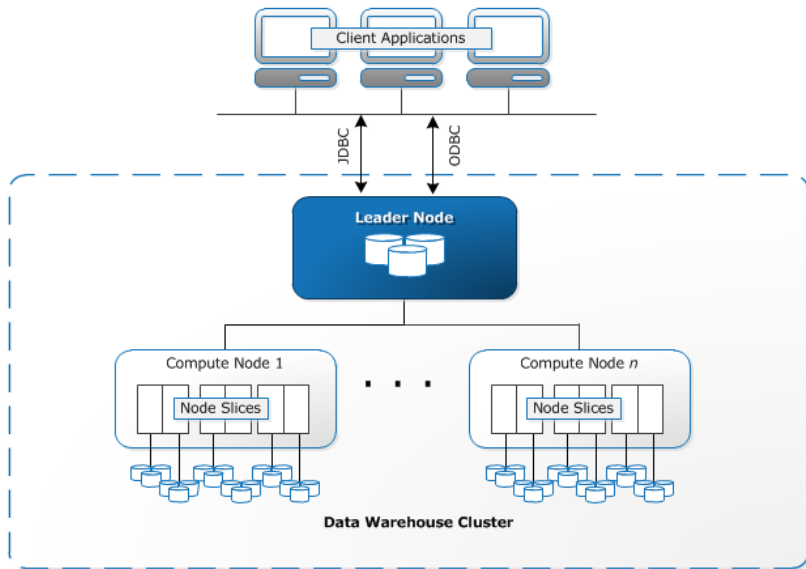
☐ Projected

Start search

Amazon Redshift

- ▶ Fully managed, petabyte-scale data warehouse
- ▶ Online Analytic Processing (OLAP) and Business Intelligence at scale
- ▶ Single or multi-node cluster in a single AZ

Redshift Architecture



Redshift Integration

- ▶ Load/store in S3
- ▶ DynamoDB
- ▶ Elastic MapReduce
- ▶ Kinesis