

Amazon DynamoDB

A fast and flexible NoSQL
database service for any
scale

DynamoDB is a fully managed, key-value, and document database that delivers single-digit-millisecond performance at any scale.

What is NoSQL?



NoSQL is a type of database designed to store and manage data in flexible, **non-tabular formats**, making it ideal for handling large volumes of unstructured data.

```
{  
  "_id": 1,  
  "name": "Raju",  
  "email": "raju@example.com",  
  "age": 35,  
  "address": {  
    "street": "123 Bollywood Blvd",  
    "city": "Mumbai",  
    "zip": "400001"  
  },  
  "hobbies": ["acting", "reading"]  
}
```

DynamoDB stores data as items in **tables**, with each **item** represented as a JSON-like **document** consisting of **key-value** pairs.



table: users



name: Raju
age: 25



name: Sham
age: 28



name: Baburao
age: 45

arguments

documents



Snap Inc.

zoom

DynamoDB also offers a free tier that provides 25 GB of storage.

The free tier also includes 25 provisioned Write /Read Capacity Units (WCU, RCU) which is enough to handle 200 M requests per month.

FREE TIER OFFER DETAILS

ALWAYS FREE

25 GB of Storage per month

25 provisioned write capacity units per month

25 provisioned read capacity units per month

Practical Time

Docker based Node App with Dynamodb



EC2



DynamoDB

Docker
Node-App

DynamoDB

- Create a table 'Contacts' with primary key as 'id' (Type String)

EC2 Instance

- `sudo yum install -y docker`
- `sudo service docker start`
- `sudo usermod -aG docker ec2-user`
- `sudo docker pull philippaul/node-dynamodb-demo`

IAM Access Keys

- Create Access and Security Keys for your app to connect with Dynamodb

- `docker run --rm -d -p 80:3000 --name node-dynamo-app -e AWS_REGION=your-region -e AWS_ACCESS_KEY_ID=your-access-key -e AWS_SECRET_ACCESS_KEY=your-secret-key philippaul/node-dynamodb-demo`

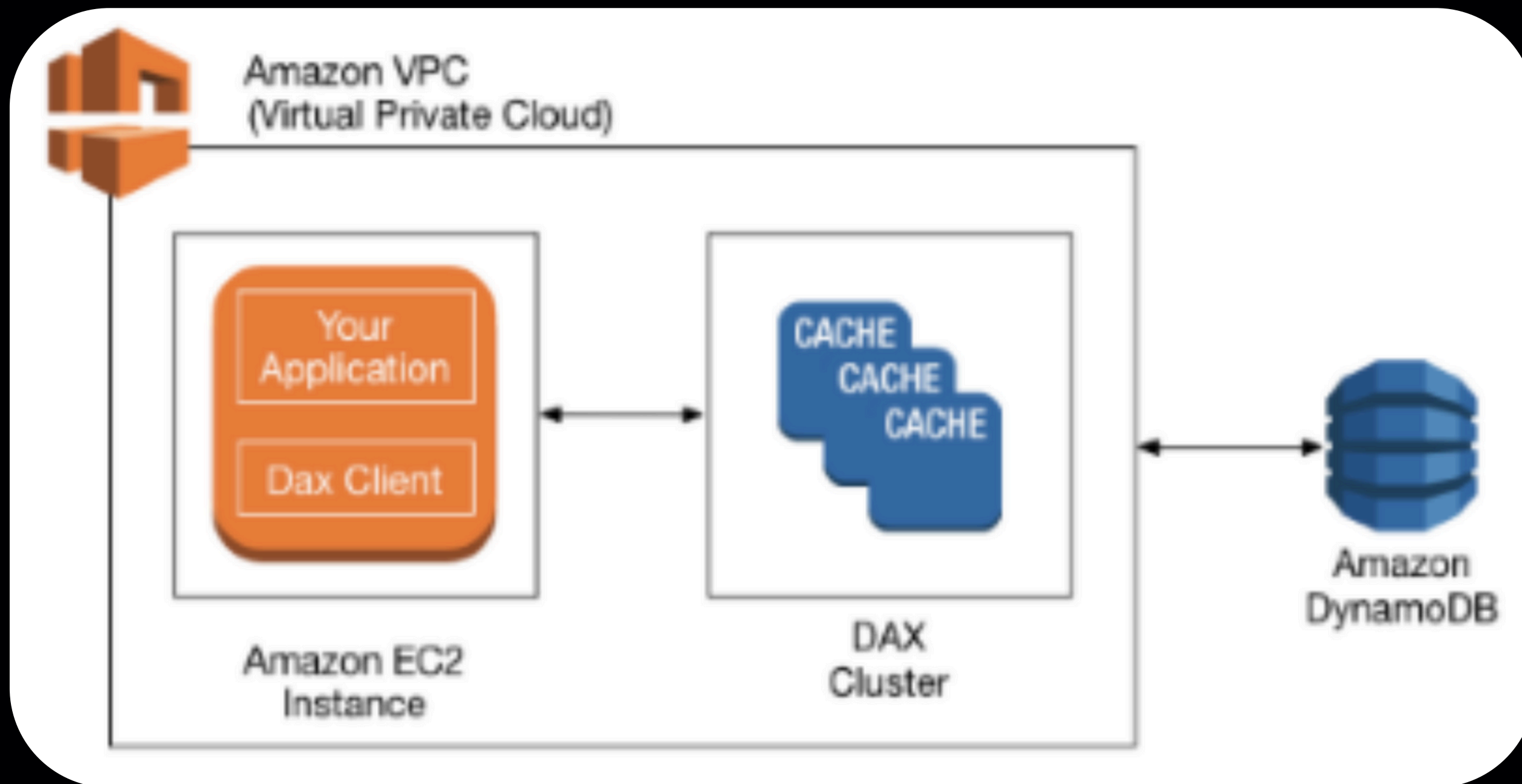
- **Serverless:** No need for server provisioning, software installation, maintenance, or patching.
- **Automatic Scaling:** Instantly scales up or down based on demand, with no manual adjustments needed.
- **Zero Downtime:** Provides continuous availability without maintenance windows.
- **On-Demand Pricing:** Pay only for the read/write requests used, ideal for fluctuating workloads.
- **Idle Cost Savings:** Scales down to zero during inactivity, so there's no cost when tables have no traffic.

Its flexible data model and reliable performance make DynamoDB a great fit for **mobile, web, gaming, advertising technology, Internet of Things**, and other applications.



DynamoDB Accelerator - DAX

- Fully Managed in-memory cache for DynamoDB
- DAX offers microsecond latency achieving up to a 10x performance over standard DynamoDB queries.
- High Availability and Scalability: can be deployed in multiple AZs
- DAX is only used for and is integrated with DynamoDB, while ElastiCache can be used for other databases



DynamoDB Global Table

