

# 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`

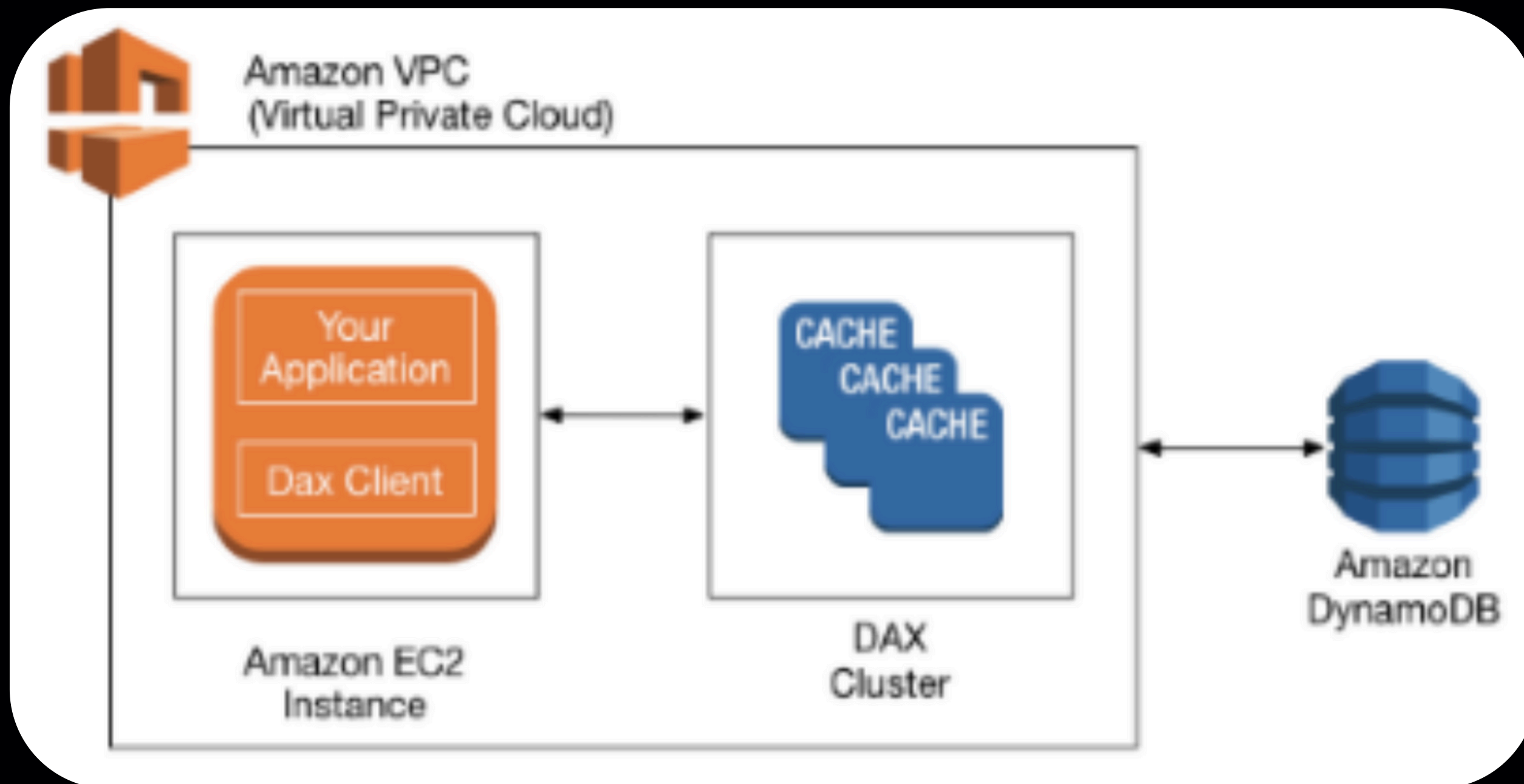
- **Serverless:** No need for server provisioning, software installation, maintenance, or patching.
- **Automatic Scaling:** Instantly scales up or down based on demand, with no manual adjustments needed.
- **Zero Downtime:** Provides continuous availability without maintenance windows.
- **On-Demand 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

