DynamoDB Storage Architecture
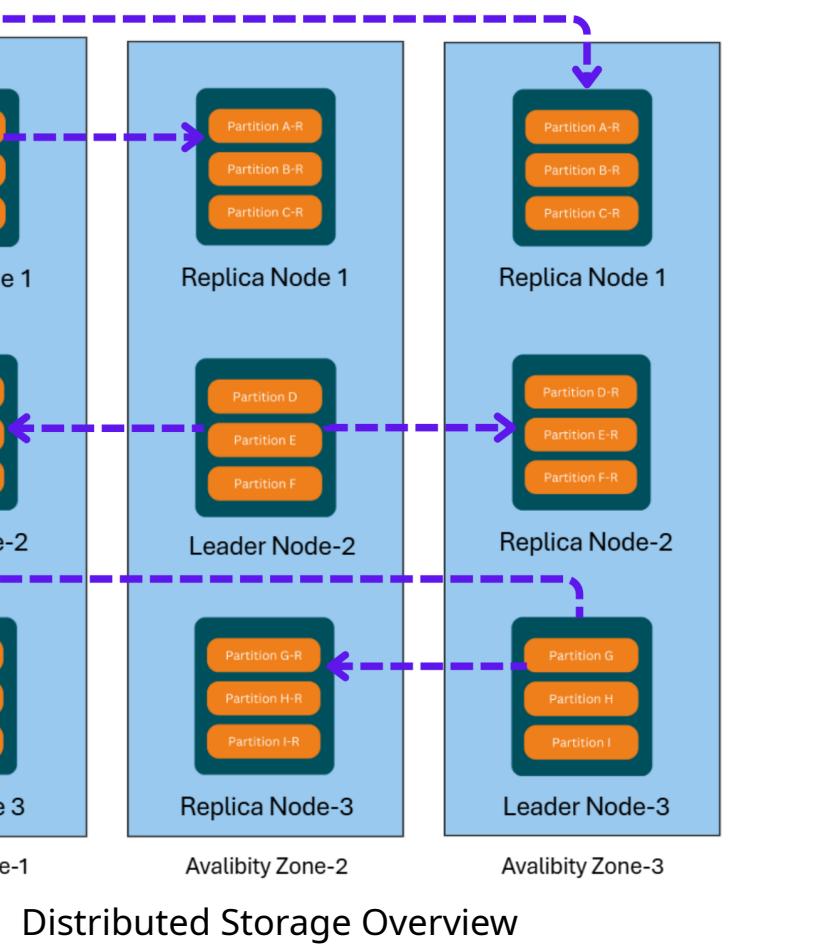
CloudFolks HUB

1 Introduction

1. DynamoDB is a fully managed NoSQL database designed for scalability, high availability, and performance
2. To achieve this, it uses a distributed storage architecture
3. Unlike traditional databases that store data on a single server, DynamoDB splits and distributes data across multiple servers, called partitions
4. This architecture allows DynamoDB to scale dynamically while ensuring data durability and fault tolerance

2 Distributed Storage Overview

Distributed Storage Overview

1 Introduction

1. DynamoDB organizes data into partitions based on the Partition Key
2. These partitions are distributed across multiple servers (nodes) for scalability and performance
3. Each partition resides on a Leader Node and is replicated to Replica Nodes in other Availability Zones to ensure high availability and fault tolerance

2 Partitions

1. DynamoDB splits data into logical units called partitions based on the Partition Key
2. Each partition is a small, manageable piece of your table's data, distributed across multiple nodes for scalability

3 Leader Node

1. Each partition resides on a Leader Node, which Handles all write requests
2. Manages Strongly Consistent Reads to provide the latest data
3. Ensures durability by replicating data to other nodes

4 Replica Nodes

1. Each partition is replicated to Replica Nodes in other Availability Zones
2. Replica Nodes handle Eventually Consistent Reads, which are faster and more cost-efficient but may not always reflect the latest data

3 What is next ?

1. Now you have a strong understanding of DynamoDB's storage architecture
2. This will help a lot when you learn about Read Consistency and Write Consistency in the next video