Using Oracle NoSQL Database

Duración

Días: 4 Días
Horas: 24 horas

Descripción.

In this course, you'll learn what an Oracle NoSQL Database is, what the features and benefits are and how to use it to store Big Data. Explore key concepts of the NoSQL Database technology, while learning when to use the Oracle NoSQL Database versus an RDBMS.

Requisitos

Required prerequisites

- Java programming
- Understanding of Big Data
- Introduction to Big Data

Suggested prerequisites

- Conceptos fundamentales de Java SE 7
- Introduction to Oracle NoSQL Database
- Java SE7 Fundamentals

Objetivos

1. Define and design major and minor keys
2. Identify the schema structure for Oracle NoSQL Database
3. Use KVLite
4. Identify the components of Oracle NoSQL Database
5. Explain the Oracle NoSQL Database architecture
6. Identify the key features of the Oracle NoSQL Database
7. Identify when to use a NoSQL Database
8. Differentiate a NoSQL Database from the Relational Database Management System
9. Define Big Data
10. Define consistency and durability
11. Identify the Java API's to access the KVStore
12. Install Oracle NoSQL Database
13. Configure a KVStore using command line interface and admin console
14. Explain how to update an existing deployment
15. Identify how to override a default consistency and durability policy
16. Create and execute a transactional operation

A quién se dirige

- Application Developers
- Database Administrators
- Java Developer

Qué aprenderá

- Monitor and optimize Oracle NoSQL Database performance.
- Perform backup, recovery and troubleshooting tasks.
- Create an application using Oracle NoSQL Database APIs.
- Define Big Data and identify when to use the Oracle NoSQL Database.
- Explain the key features, benefits and components of Oracle NoSQL Database.
- Install and configure Oracle NoSQL Database.

Beneficios

Installing & Configuring a KVStore

This course will also teach you how to install and configure a KVStore. You'll learn to optimize the KVStore's performance, troubleshoot errors, create and store records, manipulate data, handle exceptions and implement consistency and durability policies.

Contenido

1. Big Data and NoSQL Database Overview
    - Defining Big Data
    - Big Data Evolution
    - Introducing NoSQL Database
    - NoSQL Database versus RDBMS
    - Consideration Points Before Opting for NoSQL Database
    - Oracle Big Data Solution HDFS

2. Oracle NoSQL Database
    - Defining the Oracle NoSQL Database
    - Key Features and Benefits
    - Supported Data Types
    - How Does the Oracle NoSQL Database Work?
    - Components of the Oracle NoSQL Database
    - Partitions and Key Value Pairs
    - Accessing KVStore
    - Introducing KVLite

3. Designing a Schema
    - Schema Structure
    - What is a Key Component?
    - Identifying the Major Key
    - Identifying the Minor Key
    - How is a Key Stored in the Oracle NoSQL Database?

- Design Considerations for Key Components
- What is a Value Component?
- Types of Value Component

4. Consistency
    - Understanding the Write and Read Process
    - Understanding Consistency
    - Default Consistency
    - Applying Consistency
    - Predefined Consistency
    - Time Based Consistency
    - Version Based Consistency

5. Durability
    - Understanding the Write Process
    - Understanding Durability
    - Default Durability
    - Applying Durability
    - Synchronization Based Durability
    - Acknowledgement Based Durability

6. Credit Card Application and APIs: Overview
    - Credit card approval application
    - Analyzing the Data
    - Designing the Schema
    - Identifying the Key Structure
    - APIs: Overview

7. Administration: Overview
    - Tasks of the Administrator
    - KVStore Components: Review
    - Replication Nodes, Shards, and Partitions
    - Balancing a KVStore
    - Security
    - Defining Key Terms (Latency, Throughput, Cache)
    - Steps to Deploy a KVStore (Plan, Install, Configure Installation, Configure KVStore)

8. Planning the Installation
    - Analyze Workload and Identify Hardware Resources, Install storage nodes, Configure Installation
    - Analysis: Tasks
    - Estimating Record Size
    - Estimating Workload
    - Determining Throughput Requirements
    - Determining Store Configuration
    - Determining Cache Size

9. Setting-up the Oracle NoSQL Database Nodes
    - Prerequisites Checklist
    - KVHOME and KVROOT
    - Installation Steps
    - Creating Directories
    - Extracting Software
    - Verifying the Installation
    - Steps for Configuring the Installation
    - Using the makebootconfig Utility

10. Configuring and Deploying the KVStore
    - Configuration Tools
    - Introducing Plans
    - States/Life cycle of a Plan
    - Reviewing and Tracking Plans
    - Introducing the Admin Console
    - Configuring KVStore
    - Creating a Data Center
    - Creating a Storage Pool

11. Store Parameters
    - Introducing KVStore Parameters
    - Parameters List
    - Viewing Parameters
    - Changing Parameters Using CLI
    - Changing Parameters Using Admin Console

- Setting Admin Parameters
- Setting Storage Node Parameters
- Setting Replication Node Parameters

12. Optimizing KVStore Performance
    - Factors Affecting KVStore Performance
    - Introducing and Estimating JE Cache Size
    - Setting JE Cache Size
    - Introducing Java Heap Size
    - Optimizing Key Size
    - Logging Garbage Collection Activity

13. Backup and Recovery
    - Backup Process
    - Introducing Snapshots
    - Using Snapshots (commands to create, remove, list, and remove all)
    - Managing Snapshots
    - Methods to Recover KVStore
    - Recovering KVStore: Using a Load Program and Snapshot
    - Updating an Existing Deployment

14. Troubleshooting
    - Verifying a KVStore
    - Monitoring a KVStore
    - Replacing a Failed Storage Node
    - Fixing Incorrect HA Port Ranges

15. Accessing the KVStore
    - KVStore Handle
    - Creating a KVStore Handle
    - Using KVStoreFactory Class
    - KVStoreFactory Class Definition
    - Using KVStoreConfig Class
    - KVStoreConfig Class Definition
    - Creating a KVStore Handle: Example
    - View KVStore Parameters' Default Values

16. Creating Key and Value Components
    - Structure of a Record: Review
    - Creating a Key Component: Overview
    - Creating a Major Key Component
    - Creating a Minor Key Component
    - Creating a Key: Examples
    - Creating Value Components: Overview
    - Creating a Value Component
    - Creating Value Components: Examples

17. Loading Data into a KVStore
    - The Load Process
    - Creating a Load Program
    - Methods Available to Write Records to KVStore
    - Using the put() Method
    - Reviewing a Sample Load Program
    - Identify the Record Structure of the Sample Data
    - Running the Sample Load Program

18. Retrieving Data from a KVStore
    - Retrieving Records Methods: Overview
    - Using get()
    - get(): Example
    - Using multiGet()
    - mutiGet(): Example
    - Key Range
    - Creating a Key Range
    - Key Depth

19. Manipulating Data in a KVStore
    - Methods: Overview
    - putIfAbsent(): Use Case
    - Performing a Create Operation
    - putIfPresent(): Use Case
    - Performing an Update Operation

- Deleting a Single Record
- Deleting a Single Record: Example
- Deleting Multiple Records

20. Handling Exceptions
    - Understanding Exceptions
    - Oracle NoSQL Database Exceptions
    - RequestTimeout Exception
    - Methods that Throw RequestTimeout Exception
    - Handling RequestTimeout Exception
    - RequestLimit Exception
    - Methods that Throw RequestLimit Exception
    - Handling RequestLimit Exception

21. Configuring Consistency
    - Consistency: Review
    - Viewing the Default Consistency
    - Using Pre-defined Consistencies
    - Over-riding the Default Consistency
    - Changing the Default Consistency
    - Creating Time Based Consistency
    - Creating Version Based Consistency

22. Configuring Consistency and Durability
    - Durability: Review
    - Viewing the Default Durability
    - Setting Synchronization-based Durability
    - Creating a New Durability Policy
    - Transactional Operation
    - Executing a Transactional
    - Operation OperationFactory: Methods
    - Handling Exceptions