

CS300 Couchbase NoSQL Server Administration

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Learn hands-on mission-critical Couchbase Server skills

CS300 Couchbase NoSQL Server Administration - This 4-day course provides participants a fast-paced technical practicum on Couchbase Server 3.0 from an Administration and Operations perspective. The class covers all of the common architectural concepts and procedures an administrator needs to know to operate Couchbase Server for real-time OLTP enterprise workloads, leveraging Couchbase's scalability and performance.

The course takes a use-case driven approach to learning NoSQL database server cluster deployment and operations. Through instructor-led discussion, demonstrations and intensive realistic hands-on labs, participants will develop an actual Couchbase server cluster and Proof of Concept (POC) modeled on typical use-cases for high performance mission-critical NoSQL databases.

Hands-on labs: The goal of the class is to get students immediately productive with Couchbase and develop working prototype cluster environments. Lab time will be from 40% to 60% or more, each day.

Each student will be provided multiple VMs running in the cloud for hands-on practice setting up a live Couchbase cluster and learning how to configure, monitor and troubleshoot the cluster in realistic scenarios.

Each lab exercise builds progressive skills and "flight-time" in design and deployment of a Couchbase NoSQL Server cluster designed for handling core use-cases, and subjected to realistic workloads that take advantage of its powerful capabilities and benefits.

The course incorporates best practices with insider tips and tricks drawn from hundreds of real customer uses-cases for how to deploy and manage production Couchbase clusters. Students will be shown how to recreate and practice on their functioning prototype Couchbase cluster in the Amazon Cloud after class.

Objectives: By the end of this course the student will be able to perform the most critical administrative tasks such as how to install and configure Couchbase, run benchmark testing against a real cluster while monitoring its health, cause auto-sharding of clusters, backup and restore a cluster, add and remove nodes, and troubleshoot a live cluster. Each student will create their own fully functional 3-node Couchbase cluster in one data center and replicate the data via XDCR to a single node in another data center. The student will be able to demonstrate best practices and diagnose and resolve the top ten current operations issues.

Audience: The course is intended for future Couchbase Administrators, DevOps engineers and Systems engineers. The class will be focused on technical concepts and hands-on labs. However, developers, managers and network administrators with an interest in Couchbase are also welcome to attend.

Pre-requisites: experience in one of the following job roles: system administrator (Win32, UNIX, Linux); or DBA; or administration of other networking/systems/cloud technology. No prior database experience is required; however, knowledge of relational database technology is helpful. No prior knowledge of Couchbase is required or assumed.

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Hardware and Systems: classroom will usually be equipped with PC type workstations (which may be laptops) with minimum of 4GB RAM, or Apple Mac computers, with minimum of 4GB RAM. Labs will be run on virtual machine instances, provided. The current version of Couchbase Server 3.0 Enterprise Edition will be available for use by participants during class. Couchbase Server 3.0 Enterprise Edition currently supports the following OS's: Ubuntu Linux, Red Hat Linux, Windows, Mac OS X.

Participation: since the class covers concepts at a rapid pace and because lab assignments are additive and progressive, it is important for students to devote their full attention to the training. If students miss one of the earlier labs or fail to complete it this may prevent or reduce ability to complete subsequent labs.

Outline: a *partial list* of concepts, topics and labs, subject to changes and updates, may include:

1. Overview of Couchbase Server 3.0 Architecture
2. Ideal use cases for Couchbase
3. Hardware sizing guidelines for different workloads
4. Installation and best practices guidelines for configuring Couchbase
5. How to perform a upgrade of Couchbase in a production environment
6. vBuckets
7. Storage Engine: Caching layer, Disk persistence and Network replication
8. Server warmup
9. Replicas and intra-cluster Replication: How Couchbase deals with consistency resolution
10. Configuring a client application to use a Couchbase cluster
11. How a client determines which Couchbase node to contact for I/O
12. Creating a new Bucket and adding data to it
13. How deletes are handled asynchronously: Tombstones and Compaction
14. Ejection, Eviction and Working Set Management
15. Rebalancing a cluster after adding or removing nodes
16. Views and Indexing
17. Managing Rack Awareness
18. Common Admin tasks: increasing or reducing a cluster size, handling a failover situation, etc
19. Benchmarking and monitoring a live cluster
20. Cross Datacenter Replication and conflict resolution strategies
21. Backing up and Restoring a cluster
22. Tips and tricks for troubleshooting a Couchbase cluster
23. Using the Web Console to administer and monitor Couchbase
24. Using the Command-line toolkit to administer Couchbase

Partial List of Labs:

1. Lab1
2. Lab2
3. Lab3
4. Lab4
5. Lab5
6. Lab6
7. Lab7
8. Lab 8
9. Lab9
10. Lab10
11. Lab 11
12. Lab 12
13. Lab 13
14. Lab14
15. Lab15
16. Lab 16

Please Note: Course content, topics, labs, software versions, pre-requisites, duration, start and/or end times, etc., are subject to change without prior notice, at sole discretion of Couchbase, from time to time as we continuously update and iteratively enhance our hands-on enterprise training offerings. Check online course description at training.couchbase.com for further information, and to find schedule of upcoming classes in a city nearest to you. Additional offerings, terms and conditions at training.couchbase.com