This 4-day Advanced Couchbase Operations Course dives into depth on key concepts for sizing, deploying, managing, monitoring, and troubleshooting Couchbase clusters. The course consists of modular content that is not available in any other course, numerous self-guided labs, hands-on exercises with each lesson, and a fully provisioned EKS environment for the duration of the class.

**NOTE:** This is an advanced course. Please pay careful attention to the prerequisites.

**Objectives**
Upon completing this course, students will be able to perform the following:

- Learn how to properly size a Couchbase cluster for your applications' needs
- Detailed discussion of how to manage all major Couchbase server features, e.g., Key Value, Global Secondary Indexes, Query (N1QL), Eventing/Functions, Analytics, and Full Text Search
- Gain detailed understanding of Couchbase tooling and usage
- Understand key metrics and stats and how to monitor the health of your Couchbase clusters
- Learn how to analyze logs and troubleshoot issues within your Couchbase clusters

**Course Number**
CS400

**Delivery Methods**
Public remote
Private onsite

**Duration**
Four days, instructor-led training

**Prerequisites**
Successful completion of CS300 and intermediate knowledge of Couchbase.
High-level understanding of Couchbase SDK and operations.
Basic knowledge of Couchbase's N1QL query language.
Laptop with necessary software for course lab work installed.

**Target Audience**
System Administrators

**More Information**
On-site training is also available for customers who prefer to bring a Couchbase Instructor to their own facilities.
For more information about on-site classes, contact us at training@couchbase.com.
Overview and Baseline Audience
- Interactions vs Transactions
- From RDBMS to NoSQL
- Use Cases

Couchbase Architecture Overview
- SDK Operations
- Cluster Operations
- Multidimensional Scaling

Couchbase Data Platform Deployment
- General Deployment Guidelines
- Deployment Guidelines - Cloud, VMs and Containers

Couchbase Autonomous Operator for Kubernetes
- Kubernetes Architecture
- Couchbase Operator Architecture
- Stateful Sets vs Operator
- Couchbase Operator Capabilities

Data Service Overview
- Data Service Architecture
- Service components
- Compression

SDK Overview
- Application to Database Interaction
- Using the right tool for the Job
- Language and Interfaces for Couchbase
- Connectors/Integration

N1QL Services Overview
- Key features of N1QL
- Query with N1QL
- Indexing

Full Text Service Overview
- Concepts & Configuration
- Full Text Search Architecture
- Capabilities

Eventing Service Overview
- Eventing Architecture
- Sharing vBuckets
- Enterprise Architecture Simplified

Analytics Service Overview
- Core Principle and Architecture
- Ingestion & Storage
- Parallel Processing, Memory Management and Troubleshooting

High Availability
- Couchbase Architectural High Availability
- Handling Failovers
- Rack/Zone Awareness
- XDCR

Security
- Role-Based Access Control (RBAC)
- Encryption
- Auditing

Sizing
- General Sizing Considerations
- Service-level Sizing
- Best Practices - Getting Started

REST APIs and CLI Tools
- Basic Principles
- API Overview
- Couchbase – CLI Tools Overview
- Tool Usage

Advance Tuning
- Network & Memory Tuning
- Filesystem Tuning
- CPU Tuning

Performance Load Testing
- cbc-pillowfight
- N1QLback

Additional Advanced Topics
- Handling Failures with Higher Availability
- Upgrade and Maintenance
- Index Management
- Troubleshooting

About Couchbase
Unlike other NoSQL databases, Couchbase provides an enterprise-class, multicloud to edge database that offers the robust capabilities required for business-critical applications on a highly scalable and available platform. As a distributed cloud-native database, Couchbase runs in modern dynamic environments and on any cloud, either customer-managed or fully managed as-a-service. Couchbase is built on open standards, combining the best of NoSQL with the power and familiarity of SQL, to simplify the transition from mainframe and relational databases.

Couchbase has become pervasive in our everyday lives; our customers include industry leaders Amadeus, American Express, Carrefour, Cisco, Comcast/Sky, Disney, eBay, LinkedIn, Marriott, Tesco, Tommy Hilfiger, United, Verizon, as well as hundreds of other household names. For more information, visit www.couchbase.com.