This 4-day Advanced N1QL Course goes into detail on key concepts for building, managing, and deploying N1QL queries and Global Secondary Indexes (GSI) as part of your Couchbase applications. The course includes 16 modules of N1QL 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 listed below.

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

- Data modeling for N1QL
- Query and index optimization best practices
- Using N1QL in the Couchbase SDK
- Monitoring and troubleshooting best practices

Prerequisites
Successful completion of CD210 and Intermediate knowledge/experience with Couchbase concepts.
High-level understanding of Couchbase SDK and operations.
Working knowledge of Couchbase’s N1QL query language.
Laptop with necessary software necessary for course lab work installed.

Target Audience
Architects
DevOps
Developers

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

N1QL Language Review
- Querying (SELECT)
- Operators
- Expressions
- Modifying (INSERT, UPSERT, UPDATE, DELETE, MERGE)
- EXPLAIN
- Reserved Words
- Conventions

Indexing Basics
- Types of Indexes
- Index Scans
- Index DDL
- Cardinality & Selectivity
- Array Indexes
- Index Hints

Data Modeling
- Key Design
- Arrays
- Objects
- INFER

Working Complex Data
- Objects
- Arrays
- NEST
- UNNEST

Understanding EXPLAIN
- Index Scan Types
- Operators
- Kernel vs. Service vs. Execution Time

Advanced Indexing Strategies
- OR Alternatives
- Lookup / Reference Pattern
- LIKE Alternatives
- KeySet Pagination
- Index Partitioning
- Equality vs. Range Strategies
- Multiple CASE Expressions
- Size Reduction

SDK
- Scan Consistency
- Settings
- Debugging
- Prepareds
- Bindings
- Failure Scenarios

Identifying Slow Queries
- System Catalogs
- Monitoring
- Completed Requests
- Cancelling Requests

Query Optimization and Tuning
- Projection
- Predicates
- Selectivity
- Phases
- Items In vs. Items Out
- Index Key Order

Pushdown Optimizations
- Predicate Pushdowns
- Pagination Pushdowns
- Index Collation
- Aggregate Pushdowns

Advanced Indexing Strategies
- OR Alternatives
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Index Management
- Partitioning
- Replication
- Deployment
- Backfills
- ALTER INDEX

REST APIs
- Query Service
- Index Service

Administration, Sizing and Scripting
- Query Service Settings
- Index Service Settings
- RBAC Auditing

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.

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