

# Introduction to Redis

**This 2-day class cover the essentials of Redis for Administrators Architects and Java Developers**

By the end of this course you will master Redis installation administration and development using the Java Redis drivers.

Redis is an open source (BSD licensed), in-memory data structure store, used as a database, cache and message broker. It supports data structures such as strings, hashes, lists, sets, sorted sets with range queries, bitmaps, hyperloglogs, geospatial indexes with radius queries and streams. Redis has built-in replication, Lua scripting, LRU eviction, transactions and different levels of on-disk persistence, and provides high availability via Redis Sentinel and automatic partitioning with Redis Cluster.

**123Completed Experts assisted numerous customers in Architecting a Redis based solution and is a formal partner of Redis Labs**

## AUDIENCE

Architects  
DBAs  
Developers

## KNOWLEDGE REQUIREMENTS

SQL  
RDBMS  
Java

## LENGTH

2 Days

## BONUS

Hands-on lab sessions

## SYLLABUS

### Day 1

Course Introduction  
Redis Introduction  
Strings  
Lists  
Hashes  
Sets  
Sorted Sets  
Advanced API Topics  
Transactions  
Querying Multiple Keys

### Day 2

Redis "Relational" Data Modeling  
Pub Sub  
Additional API  
Redis in-memory and Persistence  
Backup and Recovery  
Redis Sentinel for High Availability  
Redis Cluster  
Java and Redis  
Summary

## HARDWARE AND SOFTWARE REQUIREMENTS

### Computer Requirements

- RAM: minimum 8 GB of RAM required for exercises and platform to operate, 16 GB and up recommended.
- Disk Space: At least 40 GB of free disk space
- Internet connection
- All machines connected to same Network

### Supported Operating Systems

- Linux Ubuntu VM is provided.
- Machine should be able to run VMware Player and host the Ubuntu VM

### Additional Software Requirements

- PDF Reader
- Zip software

### Class HW required (If delivered on customer site)

- Projector 1024\*768 minimum resolution (HD preferred)
- White Board
- Erasable Markers
- Desktops or Laptops (see HW Requirements)
- 12-24 ports Switch
- Internet connectivity
- Electricity outlets for all computers/monitors and other equipment.
- At least 3 electricity outlets next to instructor location.

**DAY 1 - AGENDA****Lesson 1: Course Introduction**

Duration: 0.5 hour Including Lab

- Course Introduction
- Courseware walkthrough
- Course environment
- Documentation
- Lab

**Lesson 2: Redis Introduction**

Duration: 1 hour Including Lab

- What is Redis?
- Why Redis?
- Redis Data model and API introduction
- Redis CLI

**Lesson 3: Redis API - Strings**

Duration: 0.5 hours Including Lab

- Redis Data Store
- Strings

**Lesson 4: Redis API - Lists**

Duration: 1 hour Including Lab

- Lists
- When to use Lists
- Lists commands
- Implementing Queues with Lists

**Lesson 5: Redis API - Hashes**

Duration: 0.75 hour Including Lab

- Hash
- When to use Hash
- Hash command
- Implementing table rows with Hash

**Lesson 6: Redis API - Sets**

Duration: 0.5 hour

- Set
- When to use Set
- Set Commands
- Implementing Contact List with Set

**Lesson 7: Redis API - Sorted Set**

Duration: 0.75 hour Including Lab

- Sorted Set
- When to use Sorted Set
- Sorted Set Commands
- Implementing Leader Board with Sorted Set

**Lesson 8: Advanced API Topics**

Duration: 1 hour Including Lab

- Advanced API introduction
- Info
- Client List
- monitor
- Bitmaps
- Bit Fields

- HyperLogLogs
- Geospatial Indexes

**Lesson 9: Transactions****Duration: 0.5 hours  
Including Lab**

- ACID Transaction
- Transaction considerations
- Multi/Exec
- Wait command

**Lesson 10: Querying Multiple Keys****Duration: 1 hour Including  
Lab**

- Scan
  - SScan, ZScan, HScan
  - Querying using values (Where clause like)
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## DAY 2 - AGENDA

## Lesson 11: Redis "Relational" Data Modeling

Duration: 1 hour Including Lab

- Key Value to Relational?
- Redis Customer to Orders with order lines example

## Lesson 12: Pub Sub

Duration: 1 hour Including Lab

- What is Publish Subscribe?
- Redis PubSub configuration

## Lesson 13: Additional API

Duration: 1 hour Including Lab

- Lua Scripts
- Redis Modules

## Lesson 14: Redis in Memory and Persistence

Duration: 1 hour

- Redis Persistence
- Redis In Memory Store
- Configuration

## Lesson 15: Backup and Recovery

Duration: 1 hours Including Lab

- Redis snapshots
- Incremental snapshot
- Full snapshot
- Recover from a snapshot

## Lesson 16: Redis Sentinel for High Availability

Duration: 1.5 hour

- Redis Sentinel Architecture
- Redis Sentinel configuration
- Master
- Slave
- consistency

## Lesson 17: Redis Cluster

Duration: 1 hour Including Lab

- What is Redis Cluster
- Redis Cluster configuration
- Sharding

## Lesson 18: Java and Redis

Duration: 1 hours Including Lab

- Jedis Java Client for Redis
- jedis Connection Pool
- Recover from a Snapshot
- jedis Redis API
- Luttuce Java Client for Redis
- Lettuce vs jedis

## Lesson 19: Summary

Duration: 0.5 hour Including Lab

- Summary