

Redis

Find the detailed version of this roadmap and other similar roadmaps
[roadmap.sh](#)

Overview of Redis / What is it?

- In-memory Data Structure Store
- Key-value Database
- Cache
- Message Broker

Core Use Cases

- Caching
- Real-time Analytics
- Session Management
- Pub/Sub Messaging
- Leaderboards and Counters

Key Features

- Data Persistence Options
- Rich Data Structures
- High Performance and Scalability

What is Redis?

Redis vs Other Databases

- Redis vs SQL/NoSQL DBs
- When to choose Redis?

Getting Started with Redis

Installing Redis Locally

- Using Package Managers
- Pre-compiled Binaries
- Using Docker

Running Redis

- Starting the Server
- Connecting using Redis CLI
- Basic Commands / SET, GET

Core Data Structures

Basic Data Operations

- Settings and Getting Keys
- DEL, EXPR, TTL
- Overview of Data Types

Strings, Lists, Sets, Hashes, Sorted Sets

First Steps

- HSET, HGET
- HGETALL, HDEL
- HEXISTS
- More Commands
- Common Commands
- Usecases

Strings

- SET, GET
- INCR, DECR
- APPEND, STRLEN
- More Commands
- Common Commands
- Usecases

Hashes

Sorted Sets

- ZADD, ZRANGE
- ZRANK, ZREM
- ZRANGEBYSCORE
- ZINCRBY, ZCOUNT
- More Commands
- Common Commands
- Usecases

Lists

Sets

- LPUSH, RPUSH
- LPOP, RPOP
- LRANGE, LINDEX
- LLEN, LMOVE
- More Commands
- Common Commands
- Usecases

- SADD, SREM
- SMEMBERS
- SISMEMBER
- SINTER, SCARD
- SUNION, SDIFF
- More Commands
- Common Commands
- Usecases

Working with Redis

- Naming Conventions
- Retrieval by Pattern
- Expiration
- Key Management

Atomicity in Redis

Pipelining

Batch Operations

- SETBIT, GETBIT
- BITOP, BITPOS
- BITCOUNT
- Common Commands
- Usecases

Bitmaps

Advanced Data Structures

- XADD, XREAD
- XRANGE, XLEN
- More Commands
- Common Commands
- Usecases

MSET / MGET

- GEOADD
- GEOSEARCH
- More Commands
- Common Commands
- Usecases

- PFMERGE
- PFADD
- PFCOUNT
- Common Commands
- Usecases

HyperLogLog

Streams

Geospatial Indexes

Lua Scripting

Transactions

Pub/Sub

- EVAL
- EVALSHA
- Common Commands
- Usecases

- WATCH
- EXEC
- MULTI
- Common Commands
- Optimistic Locking

- SUBSCRIBE
- UNSUBSCRIBE
- PUBLISH
- More Commands
- Common Commands
- Usecases

Persistence Options

- No Persistence Option
- How RDB Works?
- Configuring Save Interval
- Usecases / Best Practices
- Snapshotting (RDB)
- How AOF Works?
- AOF rewrite & compaction
- Truncation / Corruption
- Usecases
- Append-Only File (AOF)
- RDB vs AOF Tradeoffs
- Hybrid Persistence
- Choosing Right Strategy

Replication / HA

- Replication Basics
- Redis Sentinel
- Clustering

Authentication

Network Security

SSL/TLS Encryption

Security

- Search
- RedisTimeSeries
- RedisBloom
- RedisJSON
- Redis Modules

- Max Memory Policy
- Memory Management
- Slow Log Analysis
- redis-benchmark
- Monitoring
- Performance Optimization

Monitoring / Optimization

- INFO, MONITOR
- Built-in Tools
- RedisInsight
- RedisCommander
- 3rd Party Tools

Managing Redis in Production

redis.conf

Important Configurations

Disaster Recovery

Upgrading Redis

Backup and Recovery

Minimizing Downtimes

RDB and AOF Files

Redis Enterprise

- Active-Active geo Distribution
- Redis on Flash
- Security and Compliance
- Enterprise Features
- When to consider enterprise?

Continue Learning with following relevant tracks

- MongoDB
- PostgreSQL
- SQL