Redis (5 days)

By Dr. Vishwanath Rao

Introduction to Redis

- Redis Compared to Other Databases and Software
- Features
- Why Redis?

What Redis Data Structures Look Like

- Strings in Redis
- Lists in Redis
- Sets in Redis
- Hashes in Redis
- Sorted sets in Redis

Redis Web Applications

- Login and Cookie Caching
- Shopping Carts in Redis
- Web Page Caching
- Database Row Caching
- Web Page Analytics

Commands in Redis

- Strings
- Lists Sets
- Hashes
- Sorted Sets
- Publish/Subscribe
- Sorting
- Transactions
- Expiring Keys

Data Management

- Persistence Options
- Snapshots

- Append-only File Persistence
- Rewriting/Compacting Append-only Files
- Replication
- Configuring for Replication
- Master/Slave Chains
- Verifying Disk Writes
- System Failures

Application Support

- Logging to Redis
- Counters and Statistics
- Service Discovery and Configuration
- Using Redis to Store Configuration Information

Application Components

- Distributed Locking
- Fine-grained Locking
- Locks with Timeouts
- Counting Semaphores
- Fair Semaphores
- Refreshing Semaphores
- Preventing Race Conditions
- Task Queues
- Distributing Files with Redis

Search-based Applications

- Searching in Redis
- Basic Search Theory
- Sorting Search Results
- Sorted Indexes
- Sorting Search Results with ZSETs

Reducing Memory Use

- Short Structures
- The ziplist Representation
- The intset Encoding for SETs
- Performance Issues for Long ziplists and intsets
- Sharded Structures
- HASHes

- SETs

Scaling Redis

- Scaling Reads
- Scaling Writes and Memory Capacity
- Handling Shard Configuration
- Creating a Server-sharded Connection Decorator
- Scaling Complex Queries
- Scaling Search Query Volume
- Scaling Search Index Size
- Scaling a Social Network