

Redis Administration Training – 5 Days Schedule (40 Hours)

Duration: 5 Days (8 Hours/Day)

Target Audience

- **Database Administrators (DBAs)**
- **DevOps Engineers**
- **Linux/System Administrators**
- **Cloud Engineers**
- **Backend Developers**
- **Application Support Engineers**

Prerequisites

- **Basic Linux commands and administration**
 - **Basic database concepts (SQL/NoSQL)**
 - **Basic networking concepts (IP, ports, client-server)**
 - **Basic understanding of command line tools**
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Day 1: Redis Fundamentals & Installation

Topics

- **Introduction to Redis**
- **Redis Architecture Overview**
- **Redis Features and Use Cases**
- **Redis vs Traditional Databases**
- **Redis Data Types**
 - **Strings**
 - **Hashes**
 - **Lists**
 - **Sets**
 - **Sorted Sets**
 - **Streams**

- **Installing Redis on Linux**
- **Redis CLI Basics**
- **Redis Configuration File (redis.conf)**

Hands-on

- **Install Redis Server**
 - **Execute Redis Commands**
 - **Create and Manage Keys**
 - **Configure Redis Instance**
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Day 2: Redis Administration & Data Management

Topics

- **Redis CLI Administration**
- **Key Management**
- **Expiration and TTL**
- **Redis Transactions**
- **Pipelines**
- **Memory Management**
- **Memory Optimization**
- **Eviction Policies**
- **Redis Persistence**
 - **RDB**
 - **AOF**
- **Backup and Restore**

Hands-on

- **Configure Persistence**
- **Perform Backup and Restore**
- **Monitor Memory Usage**
- **Apply Eviction Policies**

Day 3: Redis Security & High Availability

Topics

- **Redis Security Concepts**
- **Authentication**
- **ACL Users and Permissions**
- **TLS Security**
- **Redis Replication**
- **Master-Replica Architecture**
- **Redis Sentinel**
- **Automatic Failover**

Hands-on

- **Configure Redis Authentication**
- **Create ACL Users**
- **Setup Master-Replica**
- **Configure Sentinel Failover**

Day 4: Redis Cluster & Performance Tuning

Topics

- **Redis Cluster Architecture**
- **Hash Slots**
- **Cluster Nodes**
- **Data Distribution**
- **Cluster Scaling**
- **Adding and Removing Nodes**
- **Performance Tuning**
- **Latency Optimization**
- **Slow Queries Analysis**

Hands-on

- **Create Redis Cluster**
 - **Add Cluster Nodes**
 - **Perform Resharding**
 - **Analyze Slow Logs**
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Day 5: Monitoring, Troubleshooting & Production Administration

Topics

- **Redis Monitoring**
- **Redis INFO Commands**
- **Client Monitoring**
- **Memory Monitoring**
- **Performance Metrics**
- **Troubleshooting Redis Issues**
- **Backup Strategies**
- **Disaster Recovery**
- **Production Best Practices**
- **Redis Deployment Architecture**

Hands-on

- **Monitor Redis Health**
- **Troubleshoot Common Issues**
- **Backup and Recovery Exercise**
- **End-to-End Redis Administration Lab**