# Redis部署方案

## Redis架构



图表 1 Redis架构

如上图，每组Redis实例采用1主2从实现高可用，通过3组集群做分片实现负载均衡，部署3个Sentinel实例对每个Redis节点做监控。

## Redis部署方案

使用三台服务器（开发环境为192.168.192.116, 192.168.192.117, 192.168.192.118），每台服务器部署3个Redis实例（端口为6380,6381,6382），同时每台机器部署一个Sentinel监控（端口为26380）。应用程序通过Jedis在客户端做hash实现分片。如下图：

图表 2部署方案

## Redis安装

1. 安装redis需安装GCC编译器，若系统已安装则跳过此步骤

|  |
| --- |
| yum install -y gcc g++ gcc-c++ make |

1. 安装redis，在3台机器上分别安装

|  |
| --- |
| wget http://download.redis.io/releases/redis-3.0.7.tar.gz  tar -xzvf redis-3.0.7.tar.gz  cd redis-3.0.7  make MALLOC=libc #3.0.5版本不需要增加MALLOC=libc参数  make install #此命令可以不执行，执行此命令将Redis命令安装到/usr/local/bin/目录 |

1. 在192.168.192.116服务器上配置redis实例

|  |
| --- |
| cd /usr/local/  mkdir redis  cd redis  mkdir redis-6380  mkdir redis-6381  mkdir redis-6382  mkdir sentinel-26380 |

创建并编辑redis-6380/redis.conf文件

|  |
| --- |
| vi redis-6380/redis.conf  daemonize yes  appendonly yes  port 6380  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6380/redis.pid  logfile /usr/local/redis/redis-6380/redis-6380.log  dir /usr/local/redis/redis-6380  dbfilename dump-6380.rdb  appendfilename appendonly-6380.aof |

创建并编辑redis-6381/redis.conf文件

|  |
| --- |
| vi redis-6381/redis.conf  daemonize yes  appendonly yes  port 6381  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6381/redis.pid  logfile /usr/local/redis/redis-6381/redis-6381.log  dir /usr/local/redis/redis-6381  dbfilename dump-6381.rdb  appendfilename appendonly-6381.aof  slaveof 192.168.192.117 6381 |

创建并编辑redis-6382/redis.conf文件

|  |
| --- |
| vi redis-6382/redis.conf  daemonize yes  appendonly yes  port 6382  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6382/redis.pid  logfile /usr/local/redis/redis-6382/redis-6382.log  dir /usr/local/redis/redis-6382  dbfilename dump-6382.rdb  appendfilename appendonly-6382.aof  slaveof 192.168.192.118 6382 |

创建并编辑sentinel-26380/sentinel.conf文件

|  |
| --- |
| vi sentinel-26380/sentinel.conf  port 26380  dir /usr/local/redis/sentinel-26380  sentinel monitor master-6380 192.168.192.116 6380 2  sentinel monitor master-6381 192.168.192.117 6381 2  sentinel monitor master-6382 192.168.192.118 6382 2  sentinel down-after-milliseconds master-6380 30000  sentinel down-after-milliseconds master-6381 30000  sentinel down-after-milliseconds master-6382 30000  sentinel parallel-syncs master-6380 1  sentinel parallel-syncs master-6381 1  sentinel parallel-syncs master-6382 1  sentinel failover-timeout master-6380 180000  sentinel failover-timeout master-6381 180000  sentinel failover-timeout master-6382 180000 |

Redis目录结构

|  |
| --- |
| redis  redis-6380  redis.conf  redis-6381  redis.conf  redis-6382  redis.conf  sentinel-26380  sentinel.conf |

1. 将redis目录复制到192.168.192.117及192.168.192.118上

|  |
| --- |
| scp -r /usr/local/redis root@192.168.192.117:/usr/local/  scp -r /usr/local/redis root@192.168.192.117:/usr/local/ |

1. 修改192.168.192.117配置文件

|  |
| --- |
| vi redis-6380/redis.conf  daemonize yes  appendonly yes  port 6380  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6380/redis.pid  logfile /usr/local/redis/redis-6380/redis-6380.log  dir /usr/local/redis/redis-6380  dbfilename dump-6380.rdb  appendfilename appendonly-6380.aof  slaveof 192.168.192.116 6380  vi redis-6381/redis.conf  daemonize yes  appendonly yes  port 6381  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6381/redis.pid  logfile /usr/local/redis/redis-6381/redis-6381.log  dir /usr/local/redis/redis-6381  dbfilename dump-6381.rdb  appendfilename appendonly-6381.aof  vi redis-6382/redis.conf  daemonize yes  appendonly yes  port 6382  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6382/redis.pid  logfile /usr/local/redis/redis-6382/redis-6382.log  dir /usr/local/redis/redis-6382  dbfilename dump-6382.rdb  appendfilename appendonly-6382.aof  slaveof 192.168.192.118 6382 |

1. 修改192.168.192.118配置文件

|  |
| --- |
| vi redis-6380/redis.conf  daemonize yes  appendonly yes  port 6380  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6380/redis.pid  logfile /usr/local/redis/redis-6380/redis-6380.log  dir /usr/local/redis/redis-6380  dbfilename dump-6380.rdb  appendfilename appendonly-6380.aof  slaveof 192.168.192.116 6380  vi redis-6381/redis.conf  daemonize yes  appendonly yes  port 6381  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6381/redis.pid  logfile /usr/local/redis/redis-6381/redis-6381.log  dir /usr/local/redis/redis-6381  dbfilename dump-6381.rdb  appendfilename appendonly-6381.aof  slaveof 192.168.192.117 6381  vi redis-6382/redis.conf  daemonize yes  appendonly yes  port 6382  requirepass cdeledu  masterauth cdeledu  pidfile /usr/local/redis/redis-6382/redis.pid  logfile /usr/local/redis/redis-6382/redis-6382.log  dir /usr/local/redis/redis-6382  dbfilename dump-6382.rdb  appendfilename appendonly-6382.aof |

1. 在3台服务器上逐个启动redis实例

|  |
| --- |
| redis-server ./redis-6380/redis.conf  redis-server ./redis-6381/redis.conf  redis-server ./redis-6382/redis.conf |

1. 在3台服务器上启动sentinel实例

|  |
| --- |
| nohup redis-sentinel ./sentinel-26380/sentinel.conf > ./sentinel-26380/sentinel.log 2>&1 & |

## 客户端调用

1. 在应用项目中增加jar包依赖

<dependency>

<groupId>com.cdel.commons</groupId>

<artifactId>cdel-redis</artifactId>

<version>1.0-SNAPSHOT</version>

</dependency>

1. 在src/main/resources目录下增加redis配置文件redis.properties

|  |
| --- |
| #Redis服务器集群，以空格分开  redis.servers=192.168.192.116:26380 192.168.192.117:26380 192.168.192.118:26380  #Redis master集群，与sentinel中配置的名称相同，以空格分开  redis.masters=master-6380 master-6381 master-6382  #Redis访问密码  redis.password=cdeledu  #数据库  redis.database=0  #最大连接数  redis.maxTotal=512  #最大空闲连接数  redis.maxIdle=512  #最小空闲连接  redis.minIdle=8  #访问超时  redis.timeout=2000 |

1. 访问Redis

com.cdel.commons.redis.store.RedisUtil类提供了大量操作Redis的静态方法，通过直接调用这些静态方法操作Redis数据库。