Clickhouse集群安装手册

# 安装环境准备

## 准备3台虚拟机

192.168.1.240 clickhouse01  
192.168.1.241 clickhouse02  
192.168.1.243 clickhouse03

## 安装环境

CentOs、JDK1.8

# 安装zookeeper

## 下载

<https://zookeeper.apache.org/releases.html>

## 解压

tar -zxvf zookeeper-3.6.0.tar.gz

#重命名

mv zookeeper-3.6.0 zookeeper

## 拷贝

将zookeeper拷贝至/usr/local下

## 修改配置

cd /usr/local/zookeeper/conf

#拷贝zoo\_sample.cfg为zoo.cfg，

cp zoo\_sample.cfg zoo.cfg

#修改zoo.cfg文件

tickTime=2000

initLimit=10

syncLimit=5

dataDir=/home/data/zookeeper

dataLogDir=/home/data/zookeeper

clientPort=2181

autopurge.purgeInterval=0

globalOutstandingLimit=200

server.1= clickhouse01:2888:3888

server.2= clickhouse02:2888:3888

server.3=clickhouse03:2888:3888

## 设置环境变量

export ZOOKEEPER\_HOME=/usr/local/zookeeper

export PATH=$PATH:$ZOOKEEPER\_HOME/bin

## 创建目录

mkdir -p /home/data/zookeeper

## 设置myid

vim /home/data/zookeeper/myid

#240为1，241为2，243为3

## 启动zookeeper

/usr/local/zookeeper/bin/zkServer.sh start

测试zookeeper

./zkCli.sh -server 192.168.1.241:2181

如果出现拒绝连接，查看防火墙是否关闭，关闭防火墙 systemctl stop firewalld 重启zookeeper

# Clickhouse单机安装

## 下载

<https://repo.yandex.ru/clickhouse/rpm/stable/x86>\_64

## **添加clickhouse用户**

useradd clickhouse

## 安装

rpm -ivh clickhouse-server-common-19.1.8-1.el7.x86\_64.rpm

rpm -ivh clickhouse-common-static-19.1.8-1.el7.x86\_64.rpm

rpm -ivh clickhouse-server-19.1.8-1.el7.x86\_64.rpm

rpm -ivh clickhouse-client-19.1.8-1.el7.x86\_64.rpm

rpm -ivh unixODBC-2.3.1-11.el7.x86\_64.rpm

## 配置

vim /etc/clickhouse-server/config.xml修改内容如下：

<log>/var/log/clickhouse-server/clickhouse-server.log</log>

<path>/data/clickhouse/</path>

<tmp\_path>/data/clickhouse/tmp/</tmp\_path>

<user\_files\_path>/data/clickhouse/user\_files/</user\_files\_path>

<errorlog>/var/log/clickhouse-server/clickhouse-server.err.log</errorlog>

## 授权

将配置的目录都授予clickhouse权限

chown -R clickhouse:clickhouse 目录

## 启动clickhouse

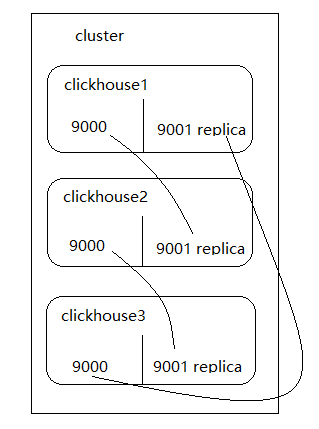
/etc/init.d/clickhouse-server start

## 验证单节点的clickhouse

输入clickhouse-client进入clickhouse客户端，查询system数据库中的表名

# 集群安装

## 集群部署结构图



## 拷贝配置

cp /etc/clickhouse-server/config.xml /etc/clickhouse-server/config1.xml

cp /etc/clickhouse-server/config.xml /etc/clickhouse-server/config2.xml

## 修改配置

vim /etc/clickhouse-server/config1.xml

vim /etc/clickhouse-server/config2.xml

1. 打开 <listen\_host>::</listen\_host> 的注释
2. 修改

<http\_port>8123</http\_port>#第二个实例为8124

<tcp\_port>9000</tcp\_port>#第二个实例为9001

<mysql\_port>9004</mysql\_port>#第二个实例为9005

<interserver\_http\_port>9009</interserver\_http\_port> #第二个实例为9010

<interserver\_http\_host>192.168.1.240</interserver\_http\_host>#每个实例为自己IP

<log>/var/log/clickhouse-server/clickhouse-server-1.log</log>

<path>/data/clickhouse-1/</path>

<tmp\_path>/data/clickhouse-1/tmp/</tmp\_path>

<user\_files\_path>/data/clickhouse-1/user\_files/</user\_files\_path>

<errorlog>/var/log/clickhouse-server-1/clickhouse-server.err.log</errorlog>

（3）增加<include\_from>/etc/clickhouse-server/metrika.xml</include\_from>

（4）users.xml可共用

## 创建配置文件

vim /etc/clickhouse-server/metrika.xml内容如下：

*<yandex>*

*<clickhouse\_remote\_servers>*

*<perftest\_3shards\_2replicas>*

*<shard>*

*<internal\_replication>true</internal\_replication>*

*<replica>*

*<host>192.168.1.240</host>*

*<port>9000</port>*

*</replica>*

*<replica>*

*<host>192.168.1.241</host>*

*<port>9001</port>*

*</replica>*

*</shard>*

*<shard>*

*<replica>*

*<internal\_replication>true</internal\_replication>*

*<host>192.168.1.241</host>*

*<port>9000</port>*

*</replica>*

*<replica>*

*<host>192.168.1.242</host>*

*<port>9001</port>*

*</replica>*

*</shard>*

*<shard>*

*<internal\_replication>true</internal\_replication>*

*<replica>*

*<host>192.168.1.243</host>*

*<port>9000</port>*

*</replica>*

*<replica>*

*<host>192.168.1.240</host>*

*<port>9001</port>*

*</replica>*

*</shard>*

*</perftest\_3shards\_2replicas>*

*</clickhouse\_remote\_servers>*

*<!--zookeeper相关配置-->*

*<zookeeper-servers>*

*<node index="1">*

*<host>192.168.1.240</host>*

*<port>2181</port>*

*</node>*

*<node index="2">*

*<host>192.168.1.241</host>*

*<port>2181</port>*

*</node>*

*<node index="3">*

*<host>192.168.1.243</host>*

*<port>2181</port>*

*</node>*

*</zookeeper-servers>*

*<macros>*

*<replica>192.168.1.240</replica>*

*</macros>*

*<networks>*

*<ip>::/0</ip>*

*</networks>*

*<clickhouse\_compression>*

*<case>*

*<min\_part\_size>10000000000</min\_part\_size>*

*<min\_part\_size\_ratio>0.01</min\_part\_size\_ratio>*

*<method>lz4</method>*

*</case>*

*</clickhouse\_compression>*

*</yandex>*

上述配置中三个节点中不同的地方在于

<macros>

<replica>192.168.1.240</replica>

</macros>

改为当前节点的IP即可

## **复制并修改clickhouse server文件**

cp /etc/rc.d/init.d/clickhouse-server /etc/rc.d/init.d/clickhouse-server-1

#第二个实例为clickhouse-server-1

修改：

CLICKHOUSE\_USER=clickhouse

CLICKHOUSE\_GROUP=${CLICKHOUSE\_USER}

SHELL=/bin/bash

PROGRAM=clickhouse-server

CLICKHOUSE\_GENERIC\_PROGRAM=clickhouse

CLICKHOUSE\_PROGRAM\_ENV=""

EXTRACT\_FROM\_CONFIG=${CLICKHOUSE\_GENERIC\_PROGRAM}-extract-from-config

CLICKHOUSE\_CONFDIR=/etc/$PROGRAM

CLICKHOUSE\_LOGDIR=/var/log/clickhouse-server-1#第二个实例为9010 clickhouse-server-2

CLICKHOUSE\_LOGDIR\_USER=root

CLICKHOUSE\_DATADIR\_OLD=/opt/clickhouse

CLICKHOUSE\_DATADIR=/var/lib/clickhouse

if [ -d "/var/lock" ]; then

LOCALSTATEDIR=/var/lock

else

LOCALSTATEDIR=/run/lock

fi

if [ ! -d "$LOCALSTATEDIR" ]; then

mkdir -p "$LOCALSTATEDIR"

fi

CLICKHOUSE\_BINDIR=/usr/bin

CLICKHOUSE\_CRONFILE=/etc/cron.d/clickhouse-server-1#第二个实例为9010 clickhouse-server-2

CLICKHOUSE\_CONFIG=$CLICKHOUSE\_CONFDIR/config1.xml #第二个实例为config1.xml

LOCKFILE=$LOCALSTATEDIR/$PROGRAM

RETVAL=0

CLICKHOUSE\_PIDDIR=/var/run/$PROGRAM

CLICKHOUSE\_PIDFILE="$CLICKHOUSE\_PIDDIR/$PROGRAM-1.pid"#增加PID

# CLICKHOUSE\_STOP\_TIMEOUT=

## **复制并修改**/etc/cron.d/clickhouse-server**文件**

cp /etc/cron.d/clickhouse-server /etc/cron.d/clickhouse-server clickhouse-server-1

修改

#\*/10 \* \* \* \* root (which service > /dev/null 2>&1 && (service clickhouse-server-1 condstart ||:)) || /etc/init.d/clickhouse-server-1 condstart > /dev/null 2>&1

## 开放端口

firewall-cmd --zone=public --add-port=9021/tcp --permanent

## 重启clickhouse服务

/etc/init.d/clickhouse-server-1 restart

/etc/init.d/clickhouse-server-2 restart

## 增加开机启动项

chmod 755 clickhouse-server-1

chkconfig clickhouse-server-1 on

service clickhouse-server-1 restart