

SolrCloud 环境搭建

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在ubuntu16.04系统下 采用zookeeper+tomcat+solr搭建

创建三个zookeeper节点 3个tomcat

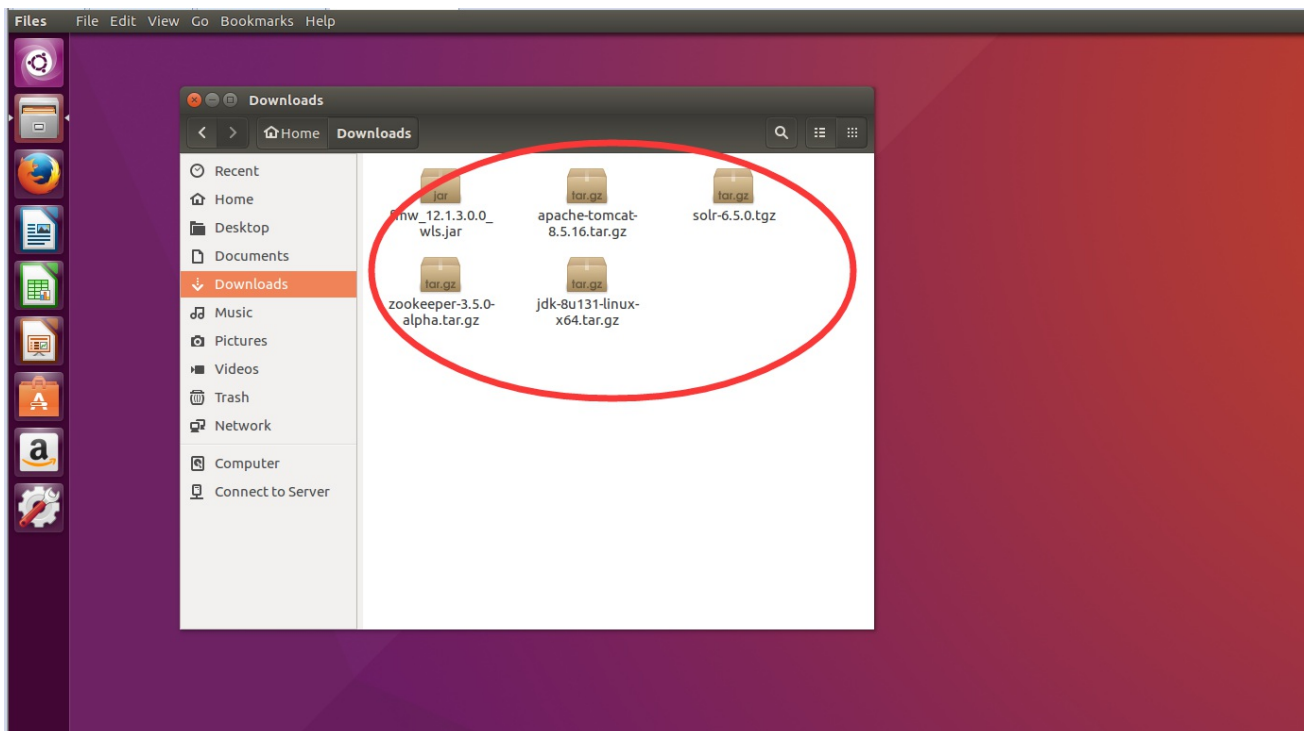
1.下载JDK压缩包（1.8版本）

下载zookeeper tar.gz压缩包

apache-tomcat压缩包

solr压缩包，这里下载的是接近最新的稳定版本6.5（官方最新版本6.6.0）

如图所示，安装桌面版本的可以在桌面操作，没有安装的用命令操作，云服务器大多都不会安装桌面，下面采用命令行方式,先配置一台机器,其余机器需要不一样配置的会具体说明，未说明则均配置一样



1.搭建zookeeper环境

在/usr目录下创建 jdk目录， solrCloud目录

```
$> cd /usr
```

```
$>sudo mkdir java-jdk solrCloud 创建两个目录
```

```
$>sudo chmod -R a+w /usr/solrCloud/ /usr/java-jdk/ 改变两个目录权限为普通用户组也可读可写
```

```
$>cp ~/Downloads/jdk-8u131-linux-x64.tar.gz java-jdk/ 复制压缩包到相应目录下
```

```
$>cp ~/Downloads/zookeeper-3.5.0-alpha.tar.gz solrCloud/
```

```
$>cp ~/Downloads/apache-tomcat-8.5.16.tar.gz solrCloud/
```

```
$>cp ~/Downloads/solr-6.5.0.tgz solrCloud/
```

```
$>tar -zxvf jdk-8u131-linux-x64.tar.gz 解压jdk
```

```
free@localhost: /usr/java-jdk
free@localhost:/usr$ cd /usr
free@localhost:/usr$ sudo mkdir java-jdk solrCloud
free@localhost:/usr$ ls
bin games include java-jdk lib local locale sbin share solrCloud src
free@localhost:/usr$ sudo chmod -R a+w /usr/solrCloud/ /usr/java-jdk/
free@localhost:/usr$ ls
bin games include java-jdk lib local locale sbin share solrCloud src
free@localhost:/usr$ cp ~/Downloads/jdk-8u131-linux-x64.tar.gz java-jdk/
free@localhost:/usr$ cp ~/Downloads/zookeeper-3.5.0-alpha.tar.gz solrCloud/
free@localhost:/usr$ cp ~/Downloads/apache-tomcat-8.5.16.tar.gz solrCloud/
free@localhost:/usr$ cp ~/Downloads/solr-6.5.0.tgz solrCloud/
free@localhost:/usr$ cd java-jdk/
free@localhost:/usr/java-jdk$ ls
jdk-8u131-linux-x64.tar.gz
free@localhost:/usr/java-jdk$ tar -zxvf jdk-8u131-linux-x64.tar.gz
```

\$>sudo gedit /etc/profile 配置全局环境变量（如果没有gedit是用vi编辑器）

在profile配置文件中加入JAVA_HOME环境变量

export JAVA_HOME=/usr/java-jdk/jdk1.8.0_131

export PATH=/usr/java-jdk/jdk1.8.0_131/bin:\$PATH

然后保存，并输入

\$>source /etc/profile 命令使配置文件立即生效

```
# /etc/profile: system-wide .profile file for the Bourne shell (sh(1))
# and Bourne compatible shells (bash(1), ksh(1), ash(1), ...).

if [ "$PS1" ]; then
  if [ "$BASH" ] && [ "$BASH" != "/bin/sh" ]; then
    # The file bash.bashrc already sets the default PS1.
    # PS1='h:w$ '
    if [ -f /etc/bash.bashrc ]; then
      . /etc/bash.bashrc
    fi
  else
    if [ "`id -u`" -eq 0 ]; then
      PS1='# '
    else
      PS1='$ '
    fi
  fi
fi

if [ -d /etc/profile.d ]; then
  for i in /etc/profile.d/*.sh; do
    if [ -r $i ]; then
      . $i
    fi
  done
unset i
fi

export JAVA_HOME=/usr/java-jdk/jdk1.8.0_131
export PATH=/usr/java-jdk/jdk1.8.0_131/bin:$PATH
```

```
free@localhost: /usr/java-jdk/jdk1.8.0_131
jdk1.8.0_131/jre/lib/amd64/libgstreamer-lite.so
jdk1.8.0_131/jre/lib/amd64/libawt_headless.so
jdk1.8.0_131/jre/lib/amd64/libsplashscreen.so
jdk1.8.0_131/jre/lib/fontconfig.properties.src
jdk1.8.0_131/jre/lib/psfont.properties.ja
jdk1.8.0_131/jre/lib/fontconfig.Turbo.properties.src
jdk1.8.0_131/jre/lib/jce.jar
jdk1.8.0_131/jre/lib/flavormap.properties
jdk1.8.0_131/jre/lib/jfxswt.jar
jdk1.8.0_131/jre/lib/fontconfig.SuSE.10.properties.src
jdk1.8.0_131/jre/lib/fontconfig.SuSE.11.bfc
jdk1.8.0_131/jre/COPYRIGHT
jdk1.8.0_131/jre/THIRDPARTYLICENSEREADME-JAVAFX.txt
jdk1.8.0_131/jre/Welcome.html
jdk1.8.0_131/jre/README
jdk1.8.0_131/README.html
free@localhost:/usr/java-jdk$ cd jdk1.8.0_131/
free@localhost:/usr/java-jdk/jdk1.8.0_131$ pwd
/usr/java-jdk/jdk1.8.0_131
free@localhost:/usr/java-jdk/jdk1.8.0_131$ sudo gedit /etc/profile
(gedit:17276): IBUS-WARNING **: The owner of /home/free/.config/ibus/bus is not root!
```

是用命令 \$>java -version测试是否配置成功

```

free@localhost:/usr/java-jdk/jdk1.8.0_131
jdk1.8.0_131/jre/lib/jfxswt.jar
jdk1.8.0_131/jre/lib/fontconfig.SuSE.10.properties.src
jdk1.8.0_131/jre/lib/fontconfig.SuSE.11.bfc
jdk1.8.0_131/jre/COPYRIGHT
jdk1.8.0_131/jre/THIRDPARTYLICENSEREADME-JAVAFX.txt
jdk1.8.0_131/jre/Welcome.html
jdk1.8.0_131/jre/README
jdk1.8.0_131/README.html
free@localhost:/usr/java-jdk$ cd jdk1.8.0_131/
free@localhost:/usr/java-jdk/jdk1.8.0_131$ pwd
/usr/java-jdk/jdk1.8.0_131
free@localhost:/usr/java-jdk/jdk1.8.0_131$ sudo gedit /etc/profile

(gedit:17276): IBUS-WARNING **: The owner of /home/free/.config/ibus/bus is not
root!

** (gedit:17276): WARNING **: Set document metadata failed: Setting attribute me
ta-data::gedit-position not supported
free@localhost:/usr/java-jdk/jdk1.8.0_131$ source /etc/profile
free@localhost:/usr/java-jdk/jdk1.8.0_131$ java -version
java version "1.8.0_131"
Java(TM) SE Runtime Environment (build 1.8.0_131-b11)
Java HotSpot(TM) 64-Bit Server VM (build 25.131-b11, mixed mode)
free@localhost:/usr/java-jdk/jdk1.8.0_131$

```

进到solrCloud目录下 解压tomcat zookeeper 和 solr压缩文件

```
$> cd /usr/solrCloud/
```

```
$> tar -zxf zookeeper-3.5.0-alpha.tar.gz
```

```
$>tar -zxf apache-tomcat-8.5.16.tar.gz
```

```
$>tar -zxf solr-6.5.0.tgz
```

```
$>sudo chmod -R a+w /usr/java-jdk/ /usr/solrCloud/ 解压完成再改变一次权限
```

否则后面会出现**Permission denied**权限不足

```

free@localhost:/usr/solrCloud
free@localhost:/usr/solrCloud$ cd /usr/solrCloud/
free@localhost:/usr/solrCloud$ tar -zxf zookeeper-3.5.0-alpha.tar.gz
free@localhost:/usr/solrCloud$ tar -zxf apache-tomcat-8.5.16.tar.gz
free@localhost:/usr/solrCloud$ tar -zxf solr-6.5.0.tgz
free@localhost:/usr/solrCloud$ ls
apache-tomcat-8.5.16      solr-6.5.0      zookeeper-3.5.0-alpha
apache-tomcat-8.5.16.tar.gz  solr-6.5.0.tgz  zookeeper-3.5.0-alpha.tar.gz
free@localhost:/usr/solrCloud$ sudo chmod -R a+w /usr/java-jdk/ /usr/solrCloud/
[sudo] password for free:
free@localhost:/usr/solrCloud$ ls
apache-tomcat-8.5.16      solr-6.5.0      zookeeper-3.5.0-alpha
apache-tomcat-8.5.16.tar.gz  solr-6.5.0.tgz  zookeeper-3.5.0-alpha.tar.gz
free@localhost:/usr/solrCloud$

```

解压完zookeeper压缩包

在zookeeper的根目录下创建data和logs文件夹，并在data文件夹下创建myid文件填入内容1（这个数字1为zookeeper节点的编号，其余两台服务器需要配置不同的数字，2和3），在conf目录下，复制一份zoo_sample.cfg重命名为zoo.cfg查看本机ip地址

```
$>ifconfig
```

```
$>mkdir data logs
```

```
$>cd data
```

```
$>echo 1 >> myid
```

```
$>cd ../conf/
```

```
$>cat zoo_sample.cfg>> zoo.cfg
```

```
$>gedit zoo.cfg
```

```
free@localhost: /usr
free@localhost:/usr$ ifconfig
ens33      Link encap:Ethernet  HWaddr 00:0c:29:22:ec:5b
            inet addr:192.168.106.132  Bcast:192.168.106.255  Mask:255.255.255.0
            inet6 addr: fe80::29a6:4502:a228:8c02/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:50908 errors:0 dropped:0 overruns:0 frame:0
            TX packets:10520 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:64519237 (64.5 MB)  TX bytes:643963 (643.9 KB)

lo         Link encap:Local Loopback
            inet addr:127.0.0.1  Mask:255.0.0.0
            inet6 addr: ::1/128 Scope:Host
            UP LOOPBACK RUNNING  MTU:65536  Metric:1
            RX packets:419 errors:0 dropped:0 overruns:0 frame:0
            TX packets:419 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:35768 (35.7 KB)  TX bytes:35768 (35.7 KB)

free@localhost:/usr$
```

```
free@localhost: /usr/solrCloud/zookeeper-3.5.0-alpha/conf
free@localhost:/usr/solrCloud$ cd zookeeper-3.5.0-alpha/
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha$ mkdir data logs
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha$ ls
bin          ivysettings.xml  recipes
build.xml    ivy.xml          src
CHANGES.txt lib              zookeeper-3.5.0-alpha.jar
conf         LICENSE.txt      zookeeper-3.5.0-alpha.jar.asc
contrib      logs            zookeeper-3.5.0-alpha.jar.md5
data         NOTICE.txt     zookeeper-3.5.0-alpha.jar.sha1
dist-maven  README_packaging.txt
docs        README.txt
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha$ cd data
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha/data$ echo 1 >> myid
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha/data$ cd ../conf/
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha/conf$ cat zoo_sample.cfg >>
zoo.cfg
free@localhost:/usr/solrCloud/zookeeper-3.5.0-alpha/conf$ gedit zoo.cfg
```



```
zoo.cfg (/usr/solrCloud/zookeeper-3.5.0-alpha/conf) - gedit
Open Save

# The number of milliseconds of each tick
tickTime=2000
# The number of ticks that the initial
# synchronization phase can take
initLimit=10
# The number of ticks that can pass between
# sending a request and getting an acknowledgement
syncLimit=5
# the directory where the snapshot is stored.
# do not use /tmp for storage, /tmp here is just
# example sake
dataDir=/usr/solrCloud/zookeeper-3.5.0-alpha/data
dataLogDir=/usr/solrCloud/zookeeper-3.5.0-alpha/logs
# the port at which the clients will connect
clientPort=2181
admin.serverPort=2180
server.1=192.168.106.132:2888:3888
server.2=192.168.106.128:2888:3888
server.3=192.168.106.130:2888:3888
# the maximum number of client connections.
# increase this if you need to handle more clients
#maxClientCnxns=60
#
# Be sure to read the maintenance section of the
# administrator guide before turning on autopurge.
#
# http://zookeeper.apache.org/doc/current/zookeeperAdmin.html#sc_maintenance
#
# The number of snapshots to retain in dataDir
#autopurge.snapRetainCount=3
# Purge task interval in hours
# Set to "0" to disable auto purge feature
#autopurge.purgeInterval=1

Plain Text Tab Width: 8 Ln 19, Col 25 INS
```

配置为刚才创建的目录

zookeeper管理地址，配置成未被占用的端口，否则将默认使用8080端口，导致需要修改tomcat端口号

server.1这个1就是myid中的数字，由于本机是192.168.106.132，所以等于本机ip，其余两个服务器的ip自己确定以后配置在这里，本例子中其余两台分别为128和130。后面的2888,3888为通信选举leader的端口根据自己的服务器情况来配置，这个配置项在三台服务器中必须一致

然后保存其余两台服务器一样配置

配置完成后到zookeeper根目录下的bin目录启动zookeeper

`$. /zkServer.sh start-foreground` 启动zookeeper命令

由于三台服务器进行通信，未找到绑定的端口 所以报错，等三台服务器zookeeper都启动了，就好了。

```
free@localhost: /usr/solrCloud/zookeeper-3.5.0-alpha/bin$ ./zkServer.sh start-foreground
JMX enabled by default
Using config: /usr/solrCloud/zookeeper-3.5.0-alpha/bin/../conf/zoo.cfg
2017-07-29 03:47:54,939 [myid:] - INFO [main:QuorumPeerConfig@109] - Reading configuration from: /usr/solrCloud/zookeeper-3.5.0-alpha/bin/../conf/zoo.cfg
2017-07-29 03:47:54,945 [myid:2] - INFO [main:DataDirCleanupManager@78] - autopurge.snapRetainCount set to 3
2017-07-29 03:47:54,945 [myid:2] - INFO [main:DataDirCleanupManager@79] - autopurge.purgeInterval set to 0
2017-07-29 03:47:54,945 [myid:2] - INFO [main:DataDirCleanupManager@101] - Purge task is not scheduled.
2017-07-29 03:47:54,953 [myid:2] - INFO [main:QuorumPeerMain@136] - Starting quorum peer
2017-07-29 03:47:54,958 [myid:2] - INFO [main:NIOServerCnxnFactory@670] - Configuring NIO connection handler with 10s sessionless connection timeout, 1 sel
threads, and 64 kB direct buffers.
2017-07-29 03:47:54,961 [myid:2] - INFO [main:NIOServerCnxnFactory@683] - binding to port 0.0.0.0/0.0.0.0:2181
2017-07-29 03:47:54,989 [myid:2] - INFO [main:Slf4jLog@67] - Logging to org.slf4j.impl.Log4jLoggerAdapter(org.mortbay.log) via org.mortbay.log.Slf4jLog
2017-07-29 03:47:55,023 [myid:2] - INFO [main:QuorumPeer@1205] - Local sessions disabled
2017-07-29 03:47:55,023 [myid:2] - INFO [main:QuorumPeer@1216] - Local session upgrading disabled
2017-07-29 03:47:55,023 [myid:2] - INFO [main:QuorumPeer@1185] - tickTime set to 2000
2017-07-29 03:47:55,023 [myid:2] - INFO [main:QuorumPeer@1227] - minSessionTimeout set to 4000
2017-07-29 03:47:55,023 [myid:2] - INFO [main:QuorumPeer@1238] - maxSessionTimeout set to 40000
2017-07-29 03:47:55,024 [myid:2] - INFO [main:QuorumPeer@1253] - initLimit set to 10
2017-07-29 03:47:55,038 [myid:2] - INFO [main:Slf4jLog@67] - Jetty-6.1.26
2017-07-29 03:47:55,059 [myid:2] - INFO [main:Slf4jLog@67] - Started SocketConnector@0.0.0.0:2180
2017-07-29 03:47:55,060 [myid:2] - INFO [main:JettyAdminServer@93] - Started AdminServer on port 2180, command URL /commands
2017-07-29 03:47:55,065 [myid:2] - INFO [QuorumPeerListener:QuorumCnxManager$Listener@550] - My election bind port: /192.168.106.132:3888
2017-07-29 03:47:55,074 [myid:2] - INFO [QuorumPeer[myid=2]/0:0:0:0:0:0:0:0:2181:QuorumPeer@913] - LOOKING
2017-07-29 03:47:55,074 [myid:2] - INFO [QuorumPeer[myid=2]/0:0:0:0:0:0:0:0:2181:FastLeaderElection@688] - new election, my id = 2, proposed zxid=0x0
2017-07-29 03:47:55,095 [myid:2] - INFO [WorkerReceiver[myid=2]:FastLeaderElection$WorkerReceiver@293] - 2 Received version: 200000000 my version
2017-07-29 03:47:55,111 [myid:2] - WARN [WorkerSender[myid=2]:QuorumCnxManager@384] - Cannot open channel to 3 at election address /192.168.106.133:3888
java.net.ConnectException: Connection refused (Connection refused)
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
at java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:206)
at java.net.AbstractPlainSocketImpl.connect(AbstractPlainSocketImpl.java:188)
at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:392)
at java.net.Socket.connect(Socket.java:589)
at org.apache.zookeeper.server.quorum.QuorumCnxManager.connectOne(QuorumCnxManager.java:369)
at org.apache.zookeeper.server.quorum.QuorumCnxManager.connectOne(QuorumCnxManager.java:407)
at org.apache.zookeeper.server.quorum.QuorumCnxManagerToSend(QuorumCnxManager.java:346)
at org.apache.zookeeper.server.quorum.FastLeaderElection$Messenger$WorkerSender.process(FastLeaderElection.java:480)
at org.apache.zookeeper.server.quorum.FastLeaderElection$Messenger$WorkerSender.run(FastLeaderElection.java:459)
at java.lang.Thread.run(Thread.java:748)
2017-07-29 03:47:55,112 [myid:2] - INFO [WorkerReceiver[myid=2]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x30000000
, LOOKING (n.state), 1 (n.sid), 0x3 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:55,112 [myid:2] - INFO [WorkerReceiver[myid=2]:FastLeaderElection@682] - Notification: 2 (message format version), 2 (n.leader), 0x0 (n.z
G (n.state), 2 (n.sid), 0x0 (n.peerEpoch), LOOKING (my state)0 (n.config version)
2017-07-29 03:47:55,113 [myid:2] - WARN [WorkerSender[myid=2]:QuorumCnxManager@384] - Cannot open channel to 3 at election address /192.168.106.133:3888
java.net.ConnectException: Connection refused (Connection refused)
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
at java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:206)
at java.net.AbstractPlainSocketImpl.connect(AbstractPlainSocketImpl.java:188)
at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:392)
at java.net.Socket.connect(Socket.java:589)
```

这里连接错误属于正常，等全部启动就会好

```

2017-07-29 03:47:55,127 [myid:1] INFO [WorkerReceiver[myid=1]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x300000003 (n.zxid), 0x1 (n.round), LOOKING (n.state), 2 (n.sid), 0x3 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:55,328 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:MBeanRegistry@119] - Unregister MBean [org.apache.ZooKeeperService:name0=ReplicatedServer_id1,name1=replica.1,name2=LeaderElection]
2017-07-29 03:47:55,328 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:QuorumPeer@1061] - LEADING
2017-07-29 03:47:55,331 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Leader@62] - TCP NoDelay set to: true
2017-07-29 03:47:55,331 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Leader@82] - zookeeper.leader.maxConcurrentSnapshots = 10
2017-07-29 03:47:55,331 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Leader@84] - zookeeper.leader.maxConcurrentSnapshotTimeout = 5
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:zookeeper.version=3.5.0-alpha-1615249, built on 08/01/2014 22:13 GMT
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:host.name=localhost
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.version=1.8.0_131
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.vendor=Oracle Corporation
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.home=/usr/java/jdk1.8.0_131/jre
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.class.path=/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./build/classes:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./build/lib/*:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/slf4j-log4j12-1.7.5.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/slf4j-api-1.7.5.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/servlet-api-2.5-20081211.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/netty-3.7.0.Final.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/log4j-1.2.16.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jline-2.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jetty-util-6.1.26.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jetty-6.1.26.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/javacc.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jackson-mapper-asl-1.9.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jackson-core-asl-1.9.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/commons-cli-1.2.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./zookeeper-3.5.0-alpha.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./src/java/lib/*:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./conf:
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.library.path=/usr/java/packages/lib/amd64:/usr/lib64:/lib64:/lib:/usr/lib
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.io.tmpdir=/tmp
2017-07-29 03:47:55,335 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.compiler=NA
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.name=Linux
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.arch=amd64
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.version=4.10.0-27-generic
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:user.name=free
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:user.home=/home/free
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:user.dir=/usr/solrCloud/zookeeper-3.5.0-alpha/bin
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.memory.free=23MB
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.memory.max=889MB
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:os.memory.total=31MB
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:ZooKeeperServer@781] - minSessionTimeout set to 4000
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:ZooKeeperServer@790] - maxSessionTimeout set to 40000
2017-07-29 03:47:55,336 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:ZooKeeperServer@152] - Created server with tickTime 2000 minSessionTimeout 4000 maxSessionTimeout 40000
2017-07-29 03:47:55,337 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Leader@409] - LEADING LEADER ELECTION TOOK = 9
2017-07-29 03:47:55,338 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:FileTxnSnapLog@298] - Snapshotting: 0x300000003 to /usr/solrCloud/zookeeper-3.5.0-alpha/datas/data/version-2/snapshot.300000003
2017-07-29 03:47:55,365 [myid:1] INFO [LearnerHandler/-/192.168.106.132:35526:LearnerHandler@361] - Follower sid: 2 : Info : 192.168.106.132:2888:3888:participant
2017-07-29 03:47:55,373 [myid:1] INFO [LearnerHandler/-/192.168.106.132:35526:LearnerHandler@659] - Synchronizing with Follower sid: 2 maxCommittedLog=0x300000003 minCommittedLog=0x300000001 lastProcessedZxid=0x0
2017-07-29 03:47:55,374 [myid:1] WARN [LearnerHandler/-/192.168.106.132:35526:ZKDatabase@309] - Unable to find proposals from txnlog for zxid: 0
2017-07-29 03:47:55,387 [myid:1] INFO [LearnerHandler/-/192.168.106.132:35526:LearnerHandler@434] - Sending snapshot last zxid of peer is 0x0, zxid of leader is 0x400000000, send zxid of db as 0x300000003, 1 concurrent snapshots, snapshot was exempt from throttle
2017-07-29 03:47:55,411 [myid:1] INFO [QuorumPeer[myid=1]/0:0:0:0:0:0:0:2181:Leader@1243] - Have quorum of supporters, sids: [ [1, 2] ]; starting up and setting last processed z

```

```

free@localhost: /usr/solrCloud/zookeeper-3.5.0-alpha/bin$ ./zkServer.sh start-foreground
JMX enabled by default
Using config: /usr/solrCloud/zookeeper-3.5.0-alpha/bin/./conf/zoo.cfg
2017-07-29 03:47:56,021 [myid:1] INFO [main:QuorumPeerConfig@109] - Reading configuration from: /usr/solrCloud/zookeeper-3.5.0-alpha/bin/./conf/zoo.cfg
2017-07-29 03:47:56,021 [myid:1] INFO [main:DataDirCleanManager@78] - autopurge.snapshotCount set to 3
2017-07-29 03:47:56,021 [myid:1] INFO [main:DataDirCleanManager@79] - autopurge.purgeInterval set to 0
2017-07-29 03:47:56,021 [myid:1] INFO [main:DataDirCleanManager@101] - Purge task is not scheduled.
2017-07-29 03:47:56,033 [myid:1] INFO [main:QuorumPeerMain@136] - Starting quorum peer
2017-07-29 03:47:56,033 [myid:1] INFO [main:NIOServerCnxnFactory@970] - Configuring NIO connection handler with 10s sessionless connection timeout, 1 selector thread(s), 8 worker threads, and 64 kb socket buffers.
2017-07-29 03:47:56,041 [myid:1] INFO [main:NIOServerCnxnFactory@683] - binding to port 0.0.0.0/0.0.0.0:2181
2017-07-29 03:47:56,041 [myid:1] INFO [main:Slf4jLog@67] - Logging to org.slf4j.impl.Log4jLoggerAdapter(org.mortbay.log) via org.mortbay.log.Slf4jLog
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1205] - Local sessions disabled
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1216] - Local session upgrading disabled
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1185] - tickTime set to 2000
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1227] - minSessionTimeout set to 4000
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1238] - maxSessionTimeout set to 40000
2017-07-29 03:47:56,082 [myid:1] INFO [main:QuorumPeer@1253] - initLimit set to 10
2017-07-29 03:47:56,093 [myid:1] INFO [main:FileSnap@83] - Reading snapshot /usr/solrCloud/zookeeper-3.5.0-alpha/datas/data/version-2/snapshot.2000000017
2017-07-29 03:47:56,126 [myid:1] INFO [main:Slf4jLog@67] - jetty-6.1.26
2017-07-29 03:47:56,134 [myid:1] INFO [main:Slf4jLog@67] - Started SocketConnector@0.0.0.0:2180
2017-07-29 03:47:56,134 [myid:1] INFO [main:JettyAdminServer@93] - Started AdminServer on port 2180, command URL /commands
2017-07-29 03:47:56,134 [myid:1] INFO [QuorumPeerListener:QuorumCnxManager$Listener@530] - My election bind port: /192.168.106.133:3888
2017-07-29 03:47:56,144 [myid:1] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:QuorumPeer@913] - LOOKING
2017-07-29 03:47:56,155 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:FastLeaderElection@888] - New election. My id = 3, proposed zxid=0x300000003
2017-07-29 03:47:56,168 [myid:3] INFO [WorkerReceiver[myid=3]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x300000003 (n.zxid), 0x1 (n.round), LOOKING (n.state), 1 (n.sid), 0x3 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:56,168 [myid:3] INFO [WorkerReceiver[myid=3]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x300000003 (n.zxid), 0xffff (n.round), LEADING (n.state), 1 (n.sid), 0x4 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:56,168 [myid:3] INFO [WorkerReceiver[myid=3]:FastLeaderElection@682] - Notification: 2 (message format version), 3 (n.leader), 0x300000003 (n.zxid), 0x1 (n.round), LOOKING (n.state), 3 (n.sid), 0x3 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:56,170 [myid:3] INFO [WorkerReceiver[myid=3]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x300000003 (n.zxid), 0x1 (n.round), LOOKING (n.state), 2 (n.sid), 0x3 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:56,170 [myid:3] INFO [WorkerReceiver[myid=3]:FastLeaderElection@682] - Notification: 2 (message format version), 1 (n.leader), 0x300000003 (n.zxid), 0xffff (n.round), LEADING (n.state), 2 (n.sid), 0x4 (n.peerEpoch), LOOKING (my state)200000000 (n.config version)
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:MBeanRegistry@119] - Unregister MBean [org.apache.ZooKeeperService:name0=ReplicatedServer_id3,name1=replica.3,name2=LeaderElection]
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:QuorumPeer@989] - FOLLOWING
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Leader@93] - TCP NoDelay set to: true
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:zookeeper.version=3.5.0-alpha-1615249, built on 08/01/2014 22:13 GMT
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:host.name=localhost
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.version=1.8.0_131
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.vendor=Oracle Corporation
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.home=/usr/java/jdk1.8.0_131/jre
2017-07-29 03:47:56,171 [myid:3] INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Environment@109] - Server environment:java.class.path=/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./build/classes:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./build/lib/*:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/slf4j-log4j12-1.7.5.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/slf4j-api-1.7.5.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/servlet-api-2.5-20081211.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/netty-3.7.0.Final.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/log4j-1.2.16.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jline-2.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jetty-util-6.1.26.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jetty-6.1.26.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/javacc.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jackson-mapper-asl-1.9.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/jackson-core-asl-1.9.11.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./lib/commons-cli-1.2.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./zookeeper-3.5.0-alpha.jar:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./src/java/lib/*:/usr/solrCloud/zookeeper-3.5.0-alpha/bin/./conf:

```

zookeeper已经配置完毕，并且启动完毕

2. 配置tomcat

进入tomcat主目录 创建solrhome文件夹 复制solr下的contrib和dist两个文件夹到solrhome下，在solrhome下新建文件夹solr_collections(名字可以随意起)，然后复制solr文件夹下的server下的solr文件夹到solr_collections下，在solr_collections下新建solr_core文件夹(名字可以随便起)，复制solr主目录下的example下的example-DIH下的solr下的solr下的文件到solr_core下，

```
$>cd /usr/solrCloud/apache-tomcat-8.5.16/
```

```
$>mkdir solrhome
```

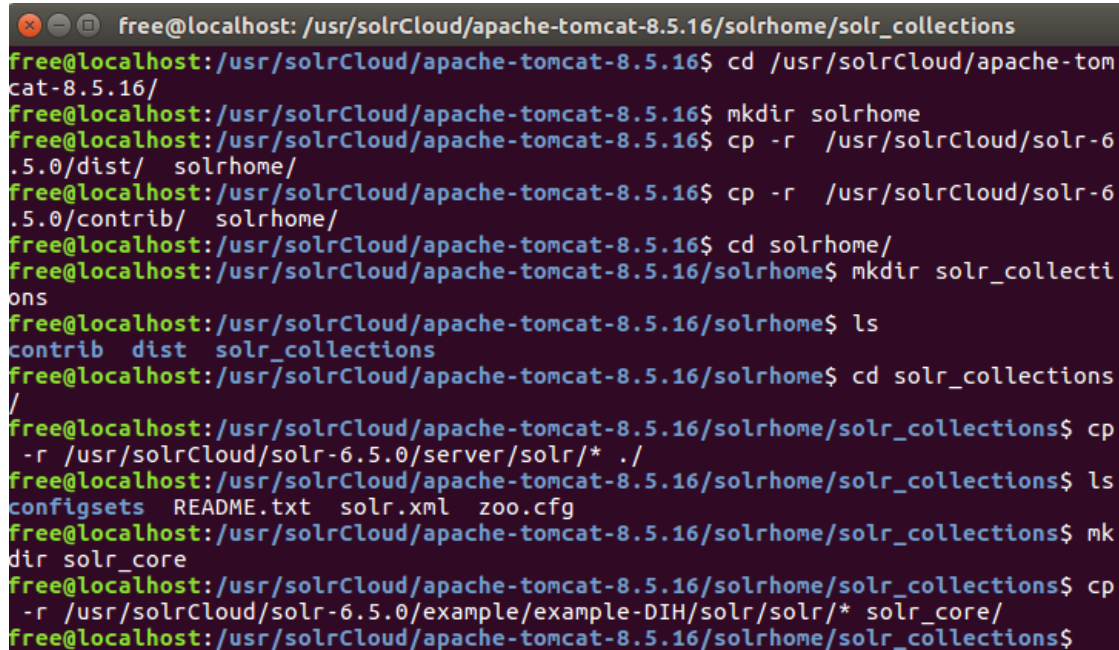
```
$>cp -r /usr/solrCloud/solr-6.5.0/dist/ solrhome/
```

```
$>cp -r /usr/solrCloud/solr-6.5.0/contrib/ solrhome/
```

```
$>cd solrhome/
```

```
$>mkdir solr_collections
```

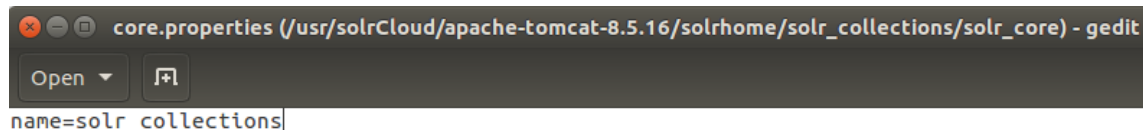
```
$>cd solr_collections
$>cp -r /usr/solrCloud/solr-6.5.0/server/solr/* ./
$>mkdir solr_core
$>cp -r /usr/solrCloud/solr-6.5.0/example/example-DIH/solr/solr/* solr_core/
```



```
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16$ cd /usr/solrCloud/apache-tomcat-8.5.16/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16$ mkdir solrhome
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16$ cp -r /usr/solrCloud/solr-6.5.0/dist/ solrhome/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16$ cp -r /usr/solrCloud/solr-6.5.0/contrib/ solrhome/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16$ cd solrhome/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome$ mkdir solr_collections
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome$ ls
contrib  dist  solr_collections
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome$ cd solr_collections
/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$ cp -r /usr/solrCloud/solr-6.5.0/server/solr/* ./
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$ ls
configsets  README.txt  solr.xml  zoo.cfg
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$ mkdir solr_core
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$ cp -r /usr/solrCloud/solr-6.5.0/example/example-DIH/solr/solr/* solr_core/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$
```

进到solr_core文件夹，修改core.properties，

写上要创建的collection名称，示例name=solr_collections，



```
core.properties (/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/solr_core) - gedit
name=solr_collections|
```

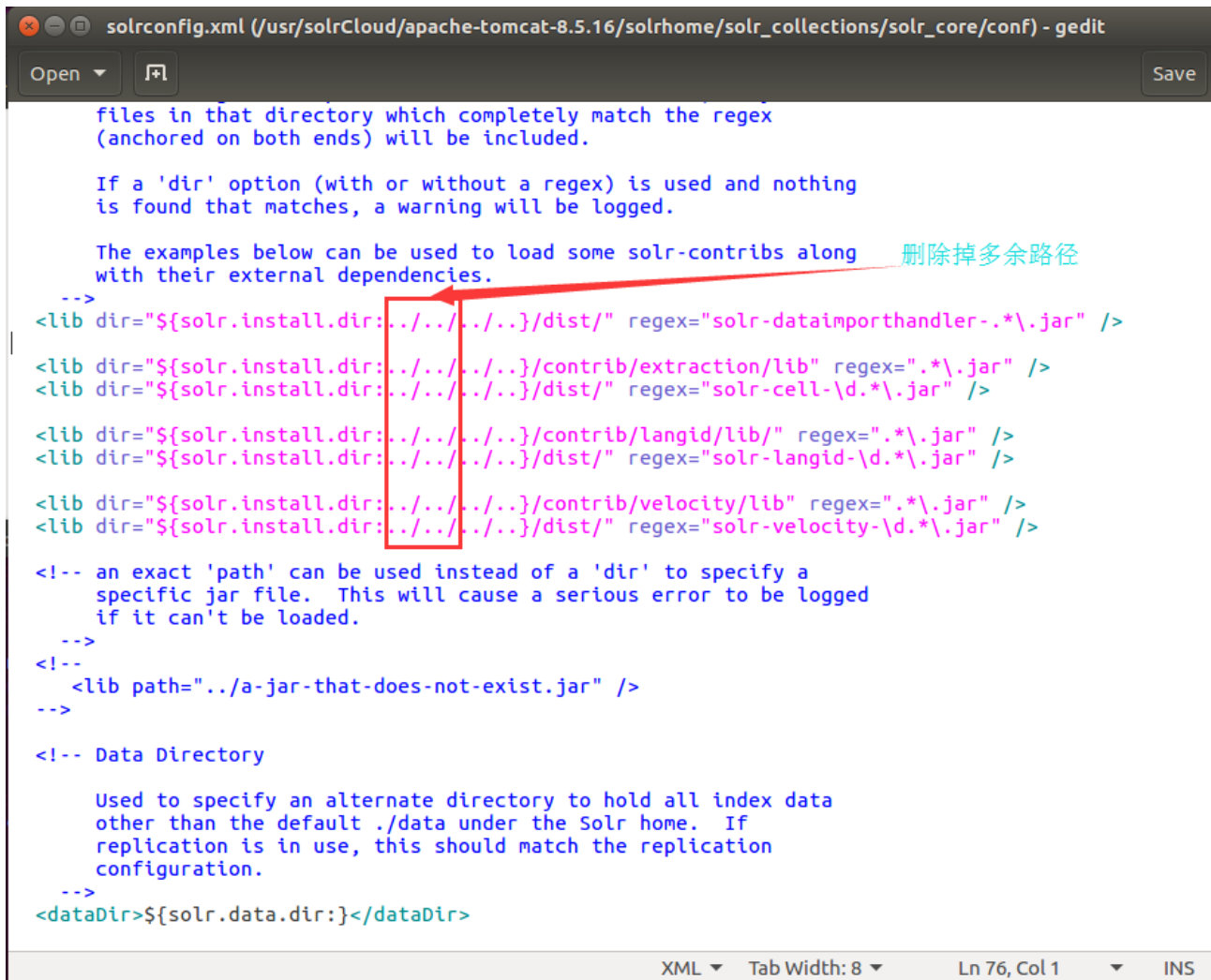
进入conf目录修改solr_config.xml,退出到solr_collections下修改solr.xml文件，（仔细看命令行，注意目录变化）


```

free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/sol
r_core$ cd conf/
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/sol
r_core/conf$ ls
admin-extra.html          lang                      solr-data-config.xml
admin-extra.menu-bottom.html  managed-schema          spellings.txt
admin-extra.menu-top.html    mapping-FoldToASCII.txt stopwords.txt
clustering                 mapping-ISOLatin1Accent.txt synonyms.txt
currency.xml               protwords.txt           update-script.js
elevate.xml                solrconfig.xml          xslt
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/sol
r_core/conf$ gedit solrconfig.xml
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/sol
r_core/conf$ cd ..
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/sol
r_core$ cd ..
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$ ge
dit solr.xml
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections$

```

修改前:



```

solrconfig.xml (/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/solr_core/conf) - gedit
Open [icon] Save

files in that directory which completely match the regex
(anchored on both ends) will be included.

If a 'dir' option (with or without a regex) is used and nothing
is found that matches, a warning will be logged.

The examples below can be used to load some solr-contribs along
with their external dependencies. 删除掉多余路径

-->
<lib dir="${solr.install.dir:../../../../}/dist/" regex="solr-dataimporthandler-.*\.jar" />
<lib dir="${solr.install.dir:../../../../}/contrib/extraction/lib" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../../../}/dist/" regex="solr-cell-.*\.jar" />

<lib dir="${solr.install.dir:../../../../}/contrib/langid/lib/" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../../../}/dist/" regex="solr-langid-.*\.jar" />

<lib dir="${solr.install.dir:../../../../}/contrib/velocity/lib" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../../../}/dist/" regex="solr-velocity-.*\.jar" />

<!-- an exact 'path' can be used instead of a 'dir' to specify a
specific jar file. This will cause a serious error to be logged
if it can't be loaded.
-->
<!--
<lib path="../../a-jar-that-does-not-exist.jar" />
-->

<!-- Data Directory

Used to specify an alternate directory to hold all index data
other than the default ./data under the Solr home. If
replication is in use, this should match the replication
configuration.
-->
<dataDir>${solr.data.dir:}</dataDir>

XML Tab Width: 8 Ln 76, Col 1 INS

```

修改后:

solrconfig.xml (/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/solr_core/conf) - gedit

Open Save

```
files in that directory which completely match the regex
(anchored on both ends) will be included.

If a 'dir' option (with or without a regex) is used and nothing
is found that matches, a warning will be logged.

The examples below can be used to load some solr-contribs along
with their external dependencies.
-->
<lib dir="${solr.install.dir:../../..}/dist/" regex="solr-dataimporthandler-.*\.jar" />
<lib dir="${solr.install.dir:../../..}/contrib/extraction/lib" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../..}/dist/" regex="solr-cell-\d.*\.jar" />
<lib dir="${solr.install.dir:../../..}/contrib/langid/lib/" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../..}/dist/" regex="solr-langid-\d.*\.jar" />
<lib dir="${solr.install.dir:../../..}/contrib/velocity/lib" regex=".*\.jar" />
<lib dir="${solr.install.dir:../../..}/dist/" regex="solr-velocity-\d.*\.jar" />
<!-- an exact 'path' can be used instead of a 'dir' to specify a
specific jar file. This will cause a serious error to be logged
if it can't be loaded.
-->
<!--
<lib path="../../a-jar-that-does-not-exist.jar" />
-->

<!-- Data Directory

Used to specify an alternate directory to hold all index data
other than the default ./data under the Solr home. If
replication is in use, this should match the replication
configuration.
-->
<dataDir>${solr.data.dir:}</dataDir>
```

XML Tab Width: 8 Ln 84, Col 32 INS

修改solr_collections下的solr.xml 的启动端口号

```
solr.xml (/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections) - gedit
Open Save
<?xml version="1.0" encoding="UTF-8" ?>
<!--
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
-->
<!--
This is an example of a simple "solr.xml" file for configuring one or
more Solr Cores, as well as allowing Cores to be added, removed, and
reloaded via HTTP requests.

More information about options available in this configuration file,
and Solr Core administration can be found online:
http://wiki.apache.org/solr/CoreAdmin
-->
<solr>
  <solrcloud>
    <str name="host">${host:}</str>
    <int name="hostPort">${jetty.port:8080}</int>
    <str name="hostContext">${hostContext:solr}</str>
    <bool name="genericCoreNodeNames">${genericCoreNodeNames:true}</bool>
  </solrcloud>
</solr>
```

tomcat启动端口

配置完solrhome进入到apache tomcat的webapps目录下，创建项目名称为solr的文件夹

并复制solr压缩文件根目录下的server下的solr-webapp下的webapp下的所有文件到tomcat下的webapps下的solr项目文件夹下，修改solr工程下的WEB-INF下的web.xml文件，找到env-entry标签解开注释，并配置env-entry-value的值为solrhome的路径，拖到最下面注释掉安全访问标签，

```
$>cd /usr/solrCloud/apache-tomcat-8.5.16/webapps/
```

```
$>mkdir solr
```

```
$>cp -r /usr/solrCloud/solr-6.5.0/server/solr-webapp/webapp/* /usr/solrCloud/apache-tomcat-8.5.16/webapps/solr
```

```
$>cd solr/WEB-INF/
```

```
$> gedit web.xml
```

```
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF
free@localhost:/$ cd /usr/solrCloud/apache-tomcat-8.5.16/webapps/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ mkdir solr
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ cp -r /usr/solrCloud
/solr-6.5.0/server/solr-webapp/webapp/* /usr/solrCloud/apache-tomcat-8.5.16/webapps/solr
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ cd solr/WEB-INF/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$ gedit web.xml
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$
```

配置env-entry-value节点为solrhome的路径

```
web.xml (/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF) - gedit
Open Save
<web-app xmlns="http://java.sun.com/xml/ns/javaee"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/
web-app_2_5.xsd"
  version="2.5"
  metadata-complete="true"
>

<!-- Uncomment if you are trying to use a Resin version before 3.0.19.
Their XML implementation isn't entirely compatible with Xerces.
Below are the implementations to use with Sun's JVM.
<system-property javax.xml.xpath.XPathFactory=
  "com.sun.org.apache.xpath.internal.jaxp.XPathFactoryImpl"/>
<system-property javax.xml.parsers.DocumentBuilderFactory=
  "com.sun.org.apache.xerces.internal.jaxp.DocumentBuilderFactoryImpl"/>
<system-property javax.xml.parsers.SAXParserFactory=
  "com.sun.org.apache.xerces.internal.jaxp.SAXParserFactoryImpl"/>
-->

<!-- People who want to hardcode their "Solr Home" directly into the
WAR File can set the JNDI property here...
-->
<!-- -->
  <env-entry>
    <env-entry-name>solr/home</env-entry-name>
    <env-entry-value>/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections</env-entry-
value>
    <env-entry-type>java.lang.String</env-entry-type>
  </env-entry>

  <!-- Any path (name) registered in solrconfig.xml will be sent to that filter -->
  <filter>
    <filter-name>SolrRequestFilter</filter-name>
    <filter-class>org.apache.solr.servlet.SolrDispatchFilter</filter-class>
  </filter>
  <!-- Exclude-patterns is a list of disjunctive patterns that would be short-circuited by the
```

拖动到web.xml最下方注释掉安全访问权限代码标签

```
*web.xml (/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF) - gedit
Open Save

<servlet-name>LoadAdminUI</servlet-name>
<url-pattern>/index.html</url-pattern>
</servlet-mapping>

<servlet-mapping>
<servlet-name>SolrRestApi</servlet-name>
<url-pattern>/schema/*</url-pattern>
</servlet-mapping>

<mime-mapping>
<extension>.xsl</extension>
<!-- per http://www.w3.org/TR/2006/PR-xslt20-20061121/ -->
<mime-type>application/xslt+xml</mime-type>
</mime-mapping>

<welcome-file-list>
<welcome-file>index.html</welcome-file>
</welcome-file-list>

<!-- Get rid of error message
<security-constraint>
  <web-resource-collection>
    <web-resource-name>Disable TRACE</web-resource-name>
    <url-pattern>/</url-pattern>
    <http-method>TRACE</http-method>
  </web-resource-collection>
  <auth-constraint/>
</security-constraint>
<security-constraint>
  <web-resource-collection>
    <web-resource-name>Enable everything but TRACE</web-resource-name>
    <url-pattern>/</url-pattern>
    <http-method-omission>TRACE</http-method-omission>
  </web-resource-collection>
</security-constraint>
-->
</web-app>
```

注释掉安全配置

XML Tab Width: 8 Ln 183, Col 4 INS

复制solr解压缩文件 根目录下的server下的lib下的ext文件夹下的所有jar和 lib下的metrics-*.jar，到solr工程的lib中

```
free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF
free@localhost:/$ cd /usr/solrCloud/apache-tomcat-8.5.16/webapps/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ mkdir solr
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ cp -r /usr/solrCloud
/solr-6.5.0/server/solr-webapp/webapp/* /usr/solrCloud/apache-tomcat-8.5.16/web
apps/solr
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps$ cd solr/WEB-INF/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$ gedit w
eb.xml
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$ cp -r /
usr/solrCloud/solr-6.5.0/server/lib/ext/* lib/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$ cp -r /
usr/solrCloud/solr-6.5.0/server/lib/metrics-* lib/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/webapps/solr/WEB-INF$
```

退出到apache tomcat根目录下的bin文件夹下，在catalina.sh第一行添加zookeeper地址，solrhome地址，配置文件名称等参数


```

free@localhost: /usr/solrCloud/apache-tomcat-8.5.16/bin
free@localhost:/$ cd /usr/solrCloud/apache-tomcat-8.5.16/bin/
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/bin$ gedit catalina.sh
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/bin$ ./startup.sh
Using CATALINA_BASE:   /usr/solrCloud/apache-tomcat-8.5.16
Using CATALINA_HOME:   /usr/solrCloud/apache-tomcat-8.5.16
Using CATALINA_TMPDIR: /usr/solrCloud/apache-tomcat-8.5.16/temp
Using JRE_HOME:        /usr/java-jdk/jdk1.8.0_131
Using CLASSPATH:        /usr/solrCloud/apache-tomcat-8.5.16/bin/bootstrap.jar:/usr/solrCloud/apache-tomcat-8.5.16/bin/tomcat-juli.jar
Tomcat started.
free@localhost:/usr/solrCloud/apache-tomcat-8.5.16/bin$

```

参数JAVA_OPTS="-DzkHost=192.168.106.128:2181,192.168.106.132:2181,192.168.106.133:2181 -Dbootstrap=/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/solr_core/conf -Dcollection.configName=myconf"

```

catalina.sh (/usr/solrCloud/apache-tomcat-8.5.16/bin) - gedit
Open Save
JAVA_OPTS="-DzkHost=192.168.106.128:2181,192.168.106.132:2181,192.168.106.133:2181 -Dbootstrap=/usr/solrCloud/apache-tomcat-8.5.16/solrhome/solr_collections/solr_core/conf -Dcollection.configName=myconf"
#!/bin/sh

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# this work for additional information regarding copyright ownership.
# The ASF licenses this file to You under the Apache License, Version 2.0
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#
#     http://www.apache.org/licenses/LICENSE-2.0
#
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# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.

# -----
# Control Script for the CATALINA Server
#
# Environment Variable Prerequisites
#
#   Do not set the variables in this script.  Instead put them into a script
#   setenv.sh in CATALINA_BASE/bin to keep your customizations separate.
#
#   CATALINA_HOME   May point at your Catalina "build" directory.
#
#   CATALINA_BASE   (Optional) Base directory for resolving dynamic portions
#                   of a Catalina installation.  If not present, resolves to
#                   the same directory that CATALINA_HOME points to.
#
#   CATALINA_OUT    (Optional) Full path to a file where stdout and stderr
#                   will be redirected.
#                   Default is $CATALINA_BASE/logs/catalina.out
#
sh Tab Width: 8 Ln 1, Col 204 INS

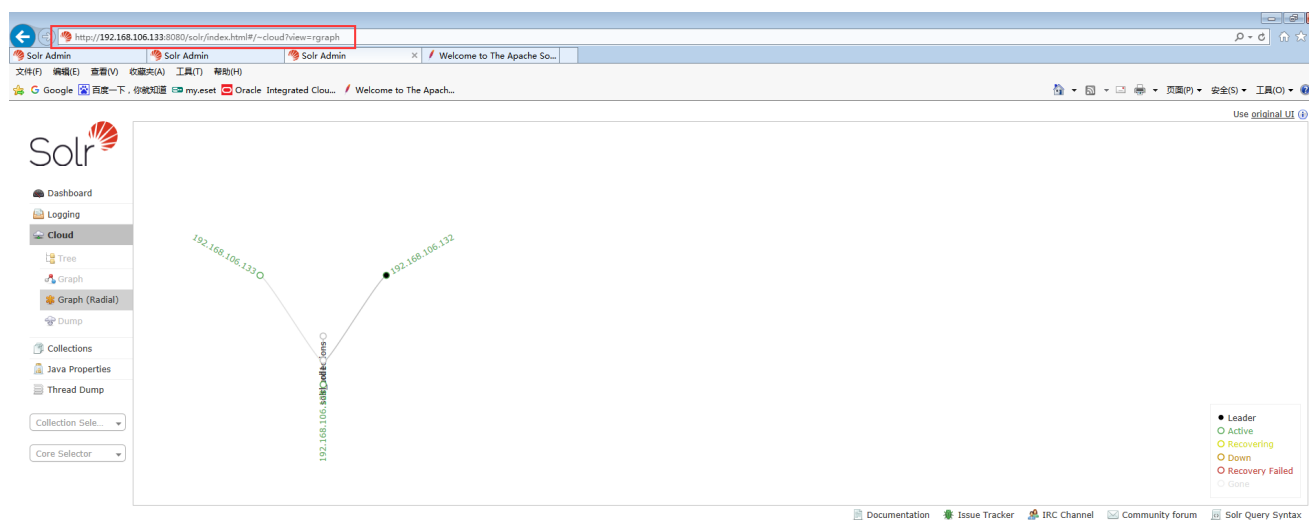
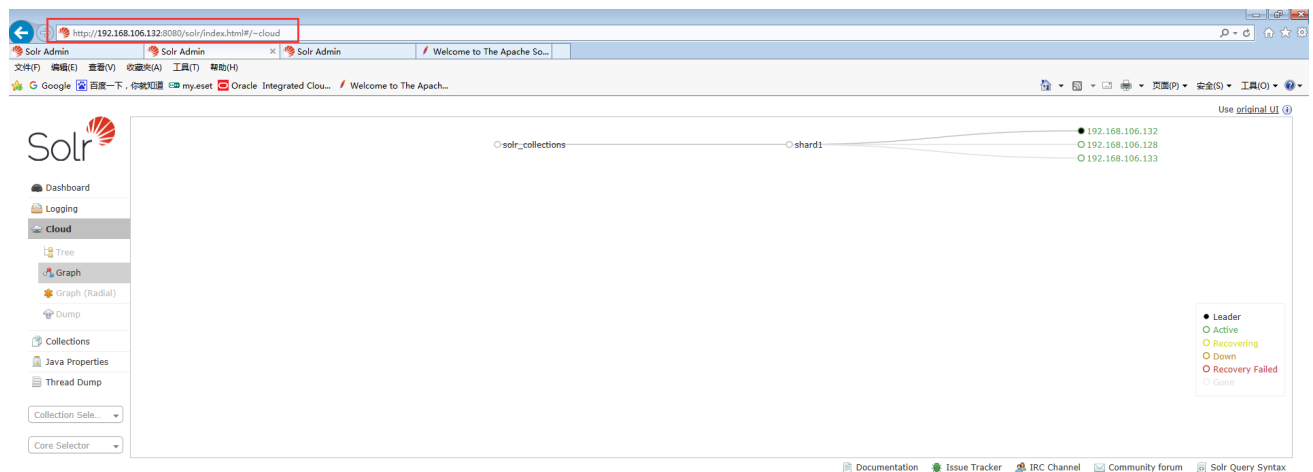
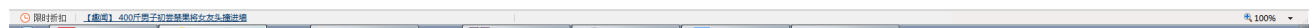
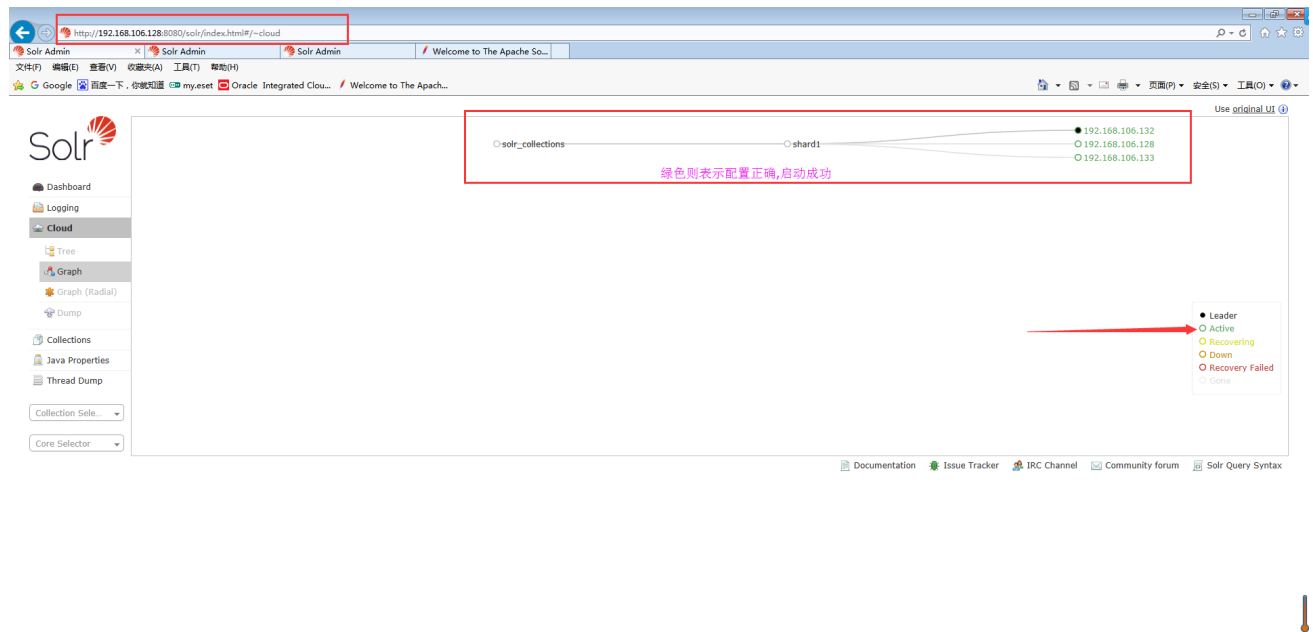
```

编辑完成保存 并运行tomcat启动的shell脚本，至此云环境已经基本搭建完毕，剩下的shard分片，副本，solrcore等 配置参考官网参数即可。

打开浏览器192.168.106.128:8080/solr/index.html即可访问

打开浏览器192.168.106.130:8080/solr/index.html即可访问

打开浏览器192.168.106.132:8080/solr/index.html即可访问



如果没有启动成功,多看下文档,哪个步骤配置错误,仔细检查一下

(配置结束)

下面是官方网站 给出相关参数配置，和url操作参数等方式 还未仔细研究过
通过url删除collection

<http://192.168.135.135:8080/solr/admin/collections?action=DELETE&name=collectionName>

重新加载collection

<http://192.168.135.135:8080/solr/admin/collections?action=RELOAD&name=collectionName>

创建：创建集合

/admin/collections?

action=CREATE&name=*name*&numShards=*number*&replicationFactor=*number*&maxShardsPerNode=*number*&createNodeSet=*node*
list&collection.configName=*configname*

输入

查询参数

键	类型	需要	默认	描述
名称	串	是		要创建的集合的名称。
router.name	串	没有	composited	将使用的路由器名称。路由器定义如何在分片之间分发文档。可能的值为implicit或composited。“隐式”路由器不会自动将文档路由到不同的分片。无论您在索引请求（或每个文档内）中指示的分片将被用作这些文档的目的地。'composited'路由器在uniqueKey字段中分配值，并在集合的集群状态中查找该散列，以确定哪个分片将接收文档，并具有手动引导路由的附加功能。当使用'implicit'路由器时，shards需要参数。当使用'composited'路由器时，numShards需要参数。了解更多信息，
numShards	整数	没有	空	要作为集合的一部分创建的碎片数。当使用'composited'路由器时，这是必需的参数。
碎片shards	串	没有	空	以逗号分隔的碎片名称列表，例如shard-x, shard-y, shard-z。当使用“隐式”路由器时，这是必需的参数。
replicationFactor	整数	没有	1	要为每个分片创建的副本数。
maxShardsPerNode	整数	没有	1	在创建集合时，分片和/或副本将分布在所有可用（即活动）节点上，同一分片的两个副本将永远不在同一个节点上。如果在调用CREATE操作时节点不活动，则不会获取新集合的任何部分，这可能导致在单个活动节点上创建的副本太多。定义maxShardsPerNode设置对CREATE将传播到每个节点的副本数量的限制。如果整个集合不能适合活动节点，则完全不会创建集合。
createNodeSet	串	没有		允许定义节点来扩展新的集合。如果没有提供，则CREATE操作将在所有实时Solr节点上创建分片副本。格式是以逗号分隔的node_names列表，例如localhost:8983 solr,localhost:8984 solr,localhost:8985 solr。或者，使用特殊值EMPTY最初在新集合中创建无碎片副本，然后使用 ADDREPLICA操作在需要时添加碎片副本。
createNodeSet.shuffle	布尔	没有	真正	为此集合创建的碎片副本的控制将以顺序方式分配给由createNodeSet指定的节点，或者在创建单个副本之前应该将节点列表进行混洗。“假”值使得集合创建的结果是可预测的，并且对每个分片副本的位置进行更精确的控制，但是“真实”可以是确保副本在节点之间均匀分布的更好选择。如果没有指定createNodeSet，则忽略它。
collection.configName	串	没有	空	定义要用于此集合的配置的名称（必须已存储在ZooKeeper中）。如果没有提供，Solr将默认为集合名称作为配置名称。
router.field	串	没有	空	如果指定了该字段，则路由器将在输入文档中查看字段的值，以计算哈希值，并识别分片而不是查看该uniqueKey字段。如果文档中指定的字段为空，则该文档将被拒绝。请注意，RealTime Get或通过id检索还需要参数_route_（或shard.keys）来避免分布式搜索。
属性.name = value	串	没有		将核心属性名称设置为值。有关支持的属性和值的详细信息，请参阅定义core.properties部分。
autoAddReplicas	布尔	没有	假	当设置为true时，启用在共享文件系统上自动添加副本。有关设置和覆盖的更多详细信息，请参阅“ autoAddReplicas设置 ”部分。
异步	串	没有		请求ID跟踪此操作将被异步处理。
规则	串	没有		副本放置规则。有关详细信息，请参阅“ 基于规则的副本安置 ”部分。
告密者	串	没有		snitch提供者的详细信息。有关详细信息，请参阅“ 基于规则的副本安置 ”部分。

产量

响应将包括请求的状态和新的核心名称。如果状态是“成功”以外的其他状态，则错误消息将解释为什么请求失败。

例子

输入

```
http://localhost:8983/solr/admin/collections?action=CREATE&name=newCollection&numShards=2&replicationFac
```



产量


```
<response>
<lst name="responseHeader">
<int name="status">0</int>
<int name="QTime">3764</int>
</lst>
<lst name="success">
<lst>
<lst name="responseHeader">
<int name="status">0</int>
<int name="QTime">3450</int>
</lst>
<str name="core">newCollection_shard1_replica1</str>
</lst>
<lst>
<lst name="responseHeader">
<int name="status">0</int>
<int name="QTime">3597</int>
</lst>
<str name="core">newCollection_shard2_replica1</str>
</lst>
</lst>
</response>
```

分裂：分裂碎片

`/admin/collections?action=SPLITSHARD&collection=name&shard=shardID`

分割分片将使用现有的分片，将其分成两部分，作为两个（新）分片写入磁盘。原始分片将继续包含相同的数据，但它将开始重新路由请求到新的分片。新的碎片将具有与原始碎片一样多的副本。分割碎片后会自动发出软提交，以便在子碎片上显示文档。拆分操作后，显式提交（硬或软）不需要，因为在拆分操作期间索引会自动保留到磁盘。此命令允许无缝拆分，无需停机。分割的分片将继续接受查询和索引请求，并且一旦完成操作，它将自动开始将它们路由到新的分片。此命令只能用于使用“numShards”参数创建的SolrCloud集合，这意味着依赖于Solr基于散列的路由机制的集合。

通过将原始分片的哈希范围划分为两个相等的分区并根据新的子范围分割原始分片中的文档来执行分割。还可以指定一个可选的“范围”参数，以将原始分片的散列范围划分为以十六进制指定的任意哈希范围间隔。例如，如果原始散列范围为0-1500，则添加参数：`ranges=0-1f4,1f5-3e8,3e9-5dc`将原始分片划分为三个碎片，散列范围为0-500,501-1000和1001-1500。

另一个可选参数“split.key”可用于使用路由密钥拆分分片，以使指定路由密钥的所有文档都在单个专用子分片中。在这种情况下，不需要提供'shard'参数，因为路由密钥足够找出正确的分片。不支持跨越多个分片的路由密钥。例如，假设split.key=A！散列到范围12-15，属于范围0-20的碎片'shard1'，然后通过此路由密钥分割将产生三个子范围为0-11,12-15和16-20的子分片。注意，具有路由密钥的散列范围的子分片还可以包含其散列范围重叠的其他路由密钥的文档。

碎片分裂可以是一个漫长的过程。为了避免超时，您应该将其作为异步调用运行。

输入

查询参数

键	类型	需要	描述
采集	串	是	包含要分割的分片的集合的名称。
碎片	串	是	要拆分的碎片的名称。
范围	串	没有	>以十六进制表示的逗号分隔的哈希范围列表，例如ranges=0-1f4,1f5-3e8,3e9-5dc。
> split.key	串	没有	用于拆分索引的关键。
属性。name = value	串	没有	将核心属性名称设置为值。有关支持的属性和值的详细信息，请参阅定义core.properties部分。
异步	串	没有	请求ID跟踪此操作将被异步处理

产量

输出将包括请求的状态和新的分片名称，将使用原始分片作为基础，添加下划线和数字。例如，“shard1”将成为“shard1_0”和“shard1_1”。如果状态是“成功”以外的其他状态，则错误消息将解释为什么请求失败。

例子

输入

拆分“anotherCollection”集合的shard1。

```
http://localhost:8983/solr/admin/collections?action=SPLITSHARD&collection=anotherCollection&shard=shard1
```

CREATESHARD: 创建碎片

碎片只能使用此API为使用“隐式”路由器的集合创建。使用“compositeId”路由器对集合使用SPLITSHARD。可以为现有的“隐式”集合创建一个名称为新的分片。

/admin/collections?action=CREATESHARD&shard=shardName&collection=name

输入

查询参数

键	类型	需要	描述
collection	串	是	包含将被拆分的分片的集合的名称。
碎片shard	串	是	要创建的分片的名称。
createNodeSet	串	没有	允许定义节点来扩展新的集合。如果没有提供，则CREATE操作将在所有实时Solr节点上创建分片副本。格式是以逗号分隔的node_names列表，例如localhost:8983_solr, localhost:8984_solr,localhost:8985_solr。
property.name=value	串	没有	将核心属性名称设置为值。有关支持的属性和值的详细信息，请参阅定义core.properties部分。
异步	串	没有	请求ID跟踪此操作将被异步处理。

产量

输出将包括请求的状态。如果状态是“成功”以外的其他状态，则错误消息将解释为什么请求失败。

例子

输入

为“anImplicitCollection”集合创建“shard-z”。

```
http://localhost:8983/solr/admin/collections?action=CREATESHARD&collection=anImplicitCollection&shard=shard-z
```