

一.开始集群环境搭建前的配置:

ZooKeeper是实际的运行环境之中,一定要以集群环境为主

主机名称	ip
zk-server-a	192.168.159.10
zk-server-b	192.168.159.30
zk-server-c	192.168.159.50

本次三台主机,三台主机如上所示

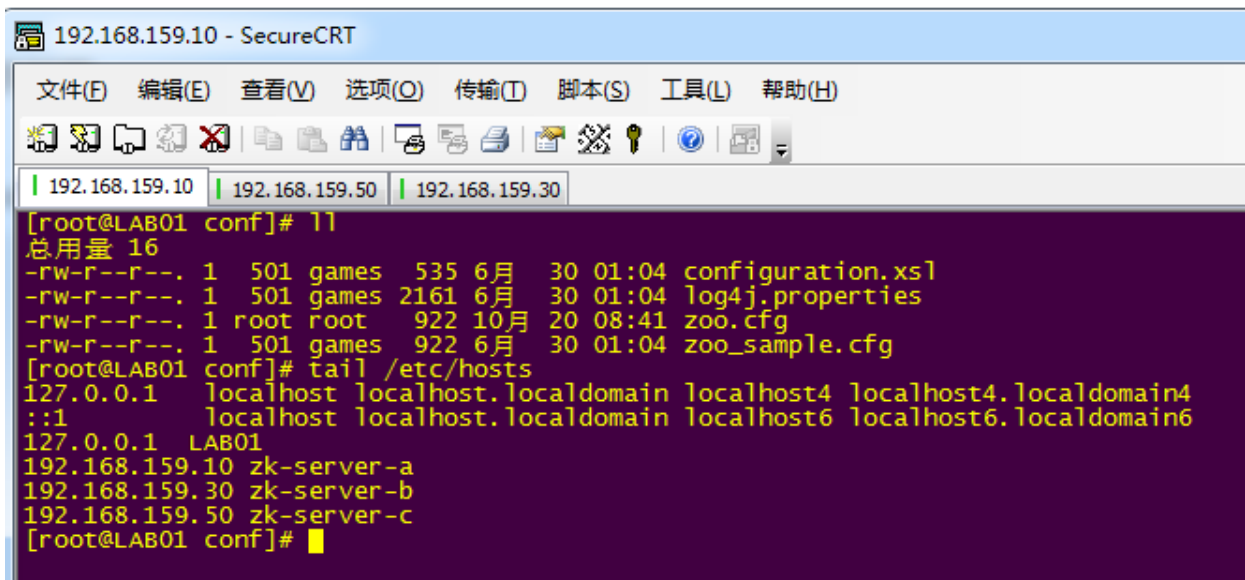
1.zk-server-a主机,在实际的项目运行中,建议都以主机名称为主(IP也一样),所以为了保证三台主机的访问的主机名称没有任何问题,要首先统一hosts文件

```
192.168.159.10 | 192.168.159.50 | 192.168.159.30
[root@LAB03 conf]# ll
总用量 16
-rw-r--r--. 1 501 games 535 6月 30 01:04 configuration.xml
-rw-r--r--. 1 501 games 2161 6月 30 01:04 log4j.properties
-rw-r--r--. 1 root root 922 10月 20 09:57 zoo.cfg
-rw-r--r--. 1 501 games 922 6月 30 01:04 zoo_sample.cfg
[root@LAB03 conf]# tail /etc/hosts
127.0.0.1 localhost LAB03 localhost4 localhost4.localdomain4
::1 localhost LAB03 localhost6 localhost6.localdomain6

192.168.159.10 zk-server-a
192.168.159.30 zk-server-b
192.168.159.50 zk-server-c
[root@LAB03 conf]# tail /etc/hosts
```

```
192.168.159.10 | 192.168.159.50 | 192.168.159.30
[root@LAB05 conf]# ll
总用量 16
-rw-r--r--. 1 501 games 535 6月 30 01:04 configuration.xml
-rw-r--r--. 1 501 games 2161 6月 30 01:04 log4j.properties
-rw-r--r--. 1 root root 922 10月 20 09:56 zoo.cfg
-rw-r--r--. 1 501 games 922 6月 30 01:04 zoo_sample.cfg
[root@LAB05 conf]# tail /etc/hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6

192.168.159.10 zk-server-a
192.168.159.30 zk-server-b
192.168.159.50 zk-server-c
[root@LAB05 conf]#
```



192.168.159.10 - SecureCRT

文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)

192.168.159.10 | 192.168.159.50 | 192.168.159.30

```
[root@LAB01 conf]# ll
总用量 16
-rw-r--r--. 1 501 games 535 6月 30 01:04 configuration.xml
-rw-r--r--. 1 501 games 2161 6月 30 01:04 log4j.properties
-rw-r--r--. 1 root root 922 10月 20 08:41 zoo.cfg
-rw-r--r--. 1 501 games 922 6月 30 01:04 zoo_sample.cfg
[root@LAB01 conf]# tail /etc/hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
127.0.0.1 LAB01
192.168.159.10 zk-server-a
192.168.159.30 zk-server-b
192.168.159.50 zk-server-c
[root@LAB01 conf]#
```

2.所有zk-server-\*都可以设置成免登陆处理,非必须,练习玩

a.如果本机已经有了ssh免登陆配置,先删除处理

rm -r ~/.ssh/

b.生成新的ssh授权文件:

ssh-keygen -t rsa

```

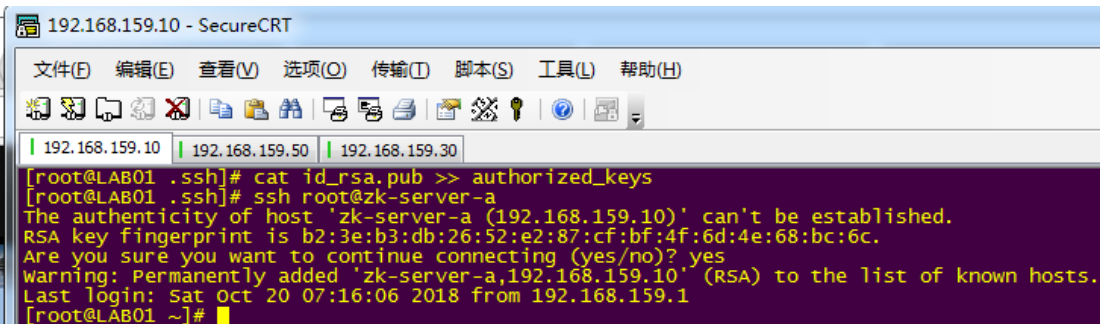
[root@LAB05 ~]# ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Created directory '/root/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa.
Your public key has been saved in /root/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:+ye9lRuqLe14vCFz6xvxDJFydBL3Uwnrog7AvBEQin0 root@LAB05
The key's randomart image is:
+---[RSA 2048]-----+
|  o.      +.o.. o |
| ... .    . = ..o |
| ... E.   . +  .o |
|   .o .   o ..   . |
|   = S o.   .    |
|   +  ..=.   .    |
|   . .+o+oo +   . |
|   o**=oo o     |
|   .=OB+..     |
+---[SHA256]-----+
[root@LAB05 ~]# ll
总用量 12
-rw-r-----. 1 root root 1817 9月 16 14:11 anaconda-ks.cfg
-rw-r--r--. 1 root root 1865 9月 16 14:13 initial-setup-ks.cfg
-rw-r-----. 1 root root 414 9月 16 10:09 nohup.out
[root@LAB05 ~]# ll -a
总用量 48
dr-xr-x---. 6 root root 275 10月 20 10:25 .
dr-xr-xr-x. 17 root root 224 9月 16 14:10 ..
-rw-r-----. 1 root root 1817 9月 16 14:11 anaconda-ks.cfg
-rw-r-----. 1 root root 5414 10月 14 14:15 .bash_history
-rw-r--r--. 1 root root 18 12月 29 2013 .bash_logout
-rw-r--r--. 1 root root 176 12月 29 2013 .bash_profile
-rw-r--r--. 1 root root 176 12月 29 2013 .bashrc
drwx-----. 4 root root 31 9月 16 14:17 .cache
drwxr-xr-x. 3 root root 18 9月 16 14:17 .config
-rw-r--r--. 1 root root 100 12月 29 2013 .cshrc
drwx-----. 3 root root 25 9月 16 14:12 .dbus
-rw-r--r--. 1 root root 1865 9月 16 14:13 initial-setup-ks.cfg
-rw-r-----. 1 root root 414 9月 16 10:09 nohup.out
-rw-r-----. 1 root root 31 10月 14 14:54 .rediscli_history
drwx-----. 2 root root 38 10月 20 10:25 .ssh
-rw-r--r--. 1 root root 129 12月 29 2013 .tcshrc
-rw-r-----. 1 root root 2283 10月 20 09:37 .viminfo
[root@LAB05 ~]# cd .ssh/
[root@LAB05 .ssh]# ll
总用量 8
-rw-r-----. 1 root root 1679 10月 20 10:25 id_rsa
-rw-r--r--. 1 root root 392 10月 20 10:25 id_rsa.pub
[root@LAB05 .ssh]#

```

c.各自都生成ssh后,互相授权配置

.进行本机授权控制

cat id\_rsa.pub >> authorized\_keys



```

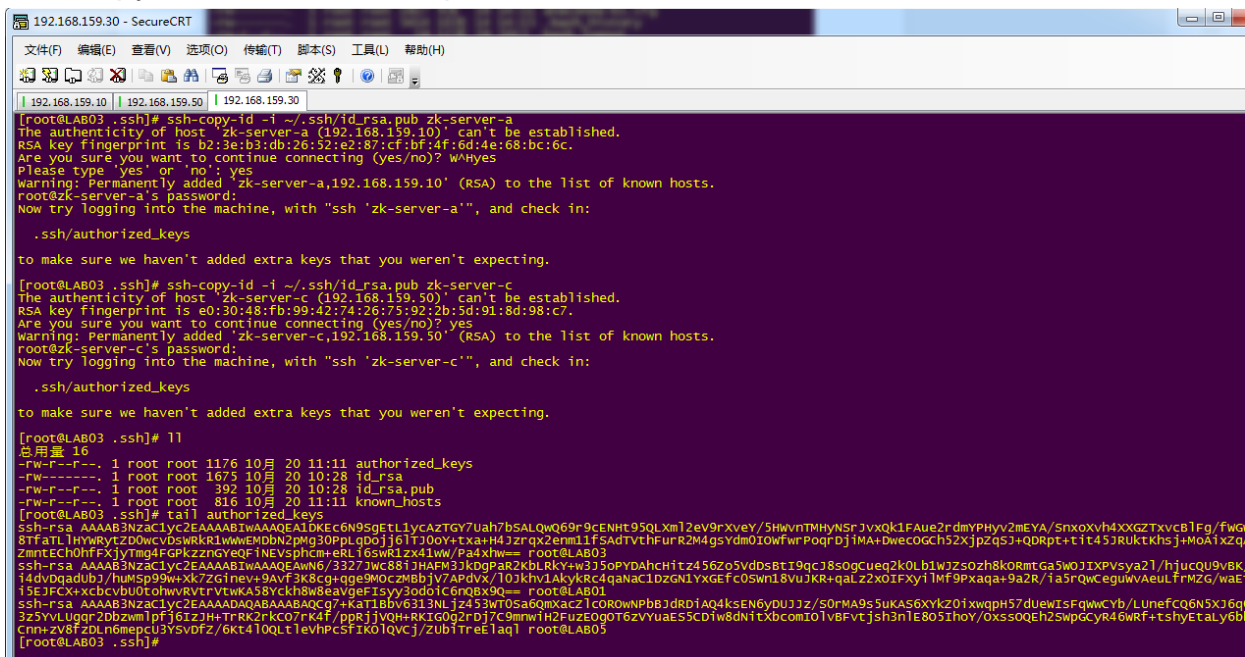
192.168.159.10 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)
192.168.159.10 192.168.159.50 192.168.159.30
[root@LAB01 .ssh]# cat id_rsa.pub >> authorized_keys
[root@LAB01 .ssh]# ssh root@zk-server-a
The authenticity of host 'zk-server-a (192.168.159.10)' can't be established.
RSA key fingerprint is b2:3e:b3:db:26:52:e2:87:cf:bf:4f:6d:4e:68:bc:6c.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'zk-server-a,192.168.159.10' (RSA) to the list of known hosts.
Last login: Sat Oct 20 07:16:06 2018 from 192.168.159.1
[root@LAB01 ~]#

```

.进行其它主机的授权连接处理(互相配置)

将本机的公钥拷贝到其它主机

ssh-copy-id -i ~/.ssh/id\_rsa.pub zk-server-a  
ssh-copy-id -i ~/.ssh/id\_rsa.pub zk-server-b



```
[root@LAB03 .ssh]# ssh-copy-id -i ~/.ssh/id_rsa.pub zk-server-a
The authenticity of host 'zk-server-a (192.168.159.10)' can't be established.
RSA key fingerprint is b2:3e:b3:db:26:52:e2:87:cf:bf:4f:6d:4e:68:bc:6c.
Are you sure you want to continue connecting (yes/no)? y
Warning: Permanently added 'zk-server-a,192.168.159.10' (RSA) to the list of known hosts.
root@zk-server-a's password:
Now try logging into the machine, with "ssh 'zk-server-a'", and check in:

    .ssh/authorized_keys

to make sure we haven't added extra keys that you weren't expecting.

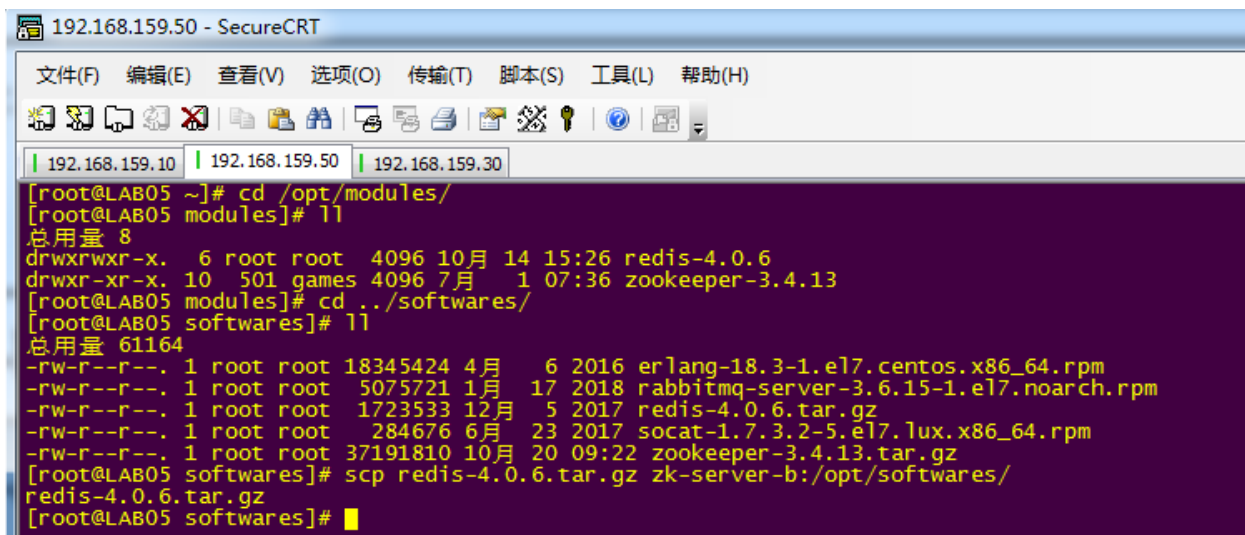
[root@LAB03 .ssh]# ssh-copy-id -i ~/.ssh/id_rsa.pub zk-server-b
The authenticity of host 'zk-server-b (192.168.159.50)' can't be established.
RSA key fingerprint is e0:30:48:fb:99:42:74:26:75:92:2b:5d:91:8d:98:c7.
Are you sure you want to continue connecting (yes/no)? y
Warning: Permanently added 'zk-server-b,192.168.159.50' (RSA) to the list of known hosts.
root@zk-server-b's password:
Now try logging into the machine, with "ssh 'zk-server-b'", and check in:

    .ssh/authorized_keys

to make sure we haven't added extra keys that you weren't expecting.

[root@LAB03 .ssh]# ll
总用量 16
-rw-r--r-- 1 root root 1176 10月 20 11:11 authorized_keys
-rw-r--r-- 1 root root 1675 10月 20 10:28 id_rsa
-rw-r--r-- 1 root root 392 10月 20 10:28 id_rsa.pub
-rw-r--r-- 1 root root 816 10月 20 11:11 known_hosts
[root@LAB03 .ssh]# tail authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQEAIDKEc6N9SgEtL1yCAzTGY7Uah7b5ALQw69r9cENHt95QLXm12eV9rXveY/5HwvntTMHyNSrJvXqk1FAue2rDMYPHYv2mEYA/SnxoXvh4XXGZTxvCB1Fg/FwGw
8TfATL1HYWrytZD0wcvD5wRkr1WmEMDBN2pMg30PpLqDj61Tj0oY+txa+H4JzrQx2nm11fSAdTvtHfUrR2M4gsYdm01owfwrPoqrDjiMA+DwecOGCh5XJpZqSj+QDRpt+tIt45J3RuktKhsj+MoA1x2q
zmntECh0nfFXjYtmG4fGPKzznGyeQF1NEVspHcm+eRL165wR1zx41wW/Pa4xIw== root@LAB03
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQEAwN6/3327Jw8B31H4F33kDpPa2KbLRKY+u3j5oPYDAhchit2456Z05Vd0Sbt19qCj8SogCueq2k0Lb1WJZ50zh8kOrmtGa5W0JIXPvya21/hjucQU9vBK
14dvDgaUubj/huM5p99w+Xk72Ginev+9AVf3K8cg+ggeMOCzMBjv7APdVX/10Jkhy1AkyRc4qaNaClD2Gn1YxGEfC0Swn18VUjKR+qaLz2x0IFxyi1Mf9Pxaqa+9a2R/ia5rQwCeguWvAeuLFrMZG/waE
15EJFCx+xcBcvbU0tdhwRVtVtWkAS8Yckh8W8eAvgeFISy30do1C6nQ8x9Q== root@LAB01
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQEAQc7+KaT1BbV6313Nljz453Wt05a6qmXacZ1c0rowNPBj3dRd1Aq4kSeN6yDUJjZ/S0rMA9s5UKAS6XYkz0iXwqPH57duEWisFqwmCYb/LUNefCQ6N5XJ6q
325YVLUgqr2DbzwmIpfj61zJH+TRKZrKCO7rK4F/ppRjJyQH+RKtG0gZrDj7C9mwmH2FuZE0GT6ZVUae5CD1w8dN1tXbcomT01vBfvtjsh3n1E80SihoY/OxssQEH2SwpgCYR46WRF+tshyEtALy6b
CmWkZv8fZdLrNmGp3YsVdfZ/6Kt410QLt1evHPC5fIK0IQCj/Zub1TrEeTaqI root@LAB05
[root@LAB03 .ssh]#
```

将本机的ssh与其它的主机的ssh进行互相的授权配置  
配置后可以相互传文件,免登陆了



```
[root@LAB05 ~]# cd /opt/modules/
[root@LAB05 modules]# ll
总用量 8
drwxrwxr-x. 6 root root 4096 10月 14 15:26 redis-4.0.6
drwxr-xr-x. 10 501 games 4096 7月 1 07:36 zookeeper-3.4.13
[root@LAB05 modules]# cd ../softwares/
[root@LAB05 softwares]# ll
总用量 61164
-rw-r--r-- 1 root root 18345424 4月 6 2016 erlang-18.3-1.el7.centos.x86_64.rpm
-rw-r--r-- 1 root root 5075721 1月 17 2018 rabbitmq-server-3.6.15-1.el7.noarch.rpm
-rw-r--r-- 1 root root 1723533 12月 5 2017 redis-4.0.6.tar.gz
-rw-r--r-- 1 root root 284676 6月 23 2017 socat-1.7.3.2-5.el7.linux.x86_64.rpm
-rw-r--r-- 1 root root 37191810 10月 20 09:22 zookeeper-3.4.13.tar.gz
[root@LAB05 softwares]# scp redis-4.0.6.tar.gz zk-server-b:/opt/softwares/
redis-4.0.6.tar.gz
[root@LAB05 softwares]#
```

## 二.正式搭建

- 1.上传zookeeper-3.4.13.tar.gz到指定目录
- 2.全部机器配置zk的环境变量并生效
- 3.都生成zoo.cfg文件
- 4.建立rookeeper的数据保存目录  
mkdir -p /usr/data/zookeeper
- 5.修改a主机的配置文件zoo.cfg

修改前:

```
192.168.159.10 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)
192.168.159.10 | 192.168.159.50 | 192.168.159.30
[root@LAB01 bin]# cd ../
[root@LAB01 zookeeper-3.4.13]# cd conf/
[root@LAB01 conf]# cat zoo.cfg
# 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 sakes.
dataDir=/tmp/zookeeper
# the port at which the clients will connect
clientPort=2181
# 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
[root@LAB01 conf]#
```

修改部分:

数据文件的存储目录

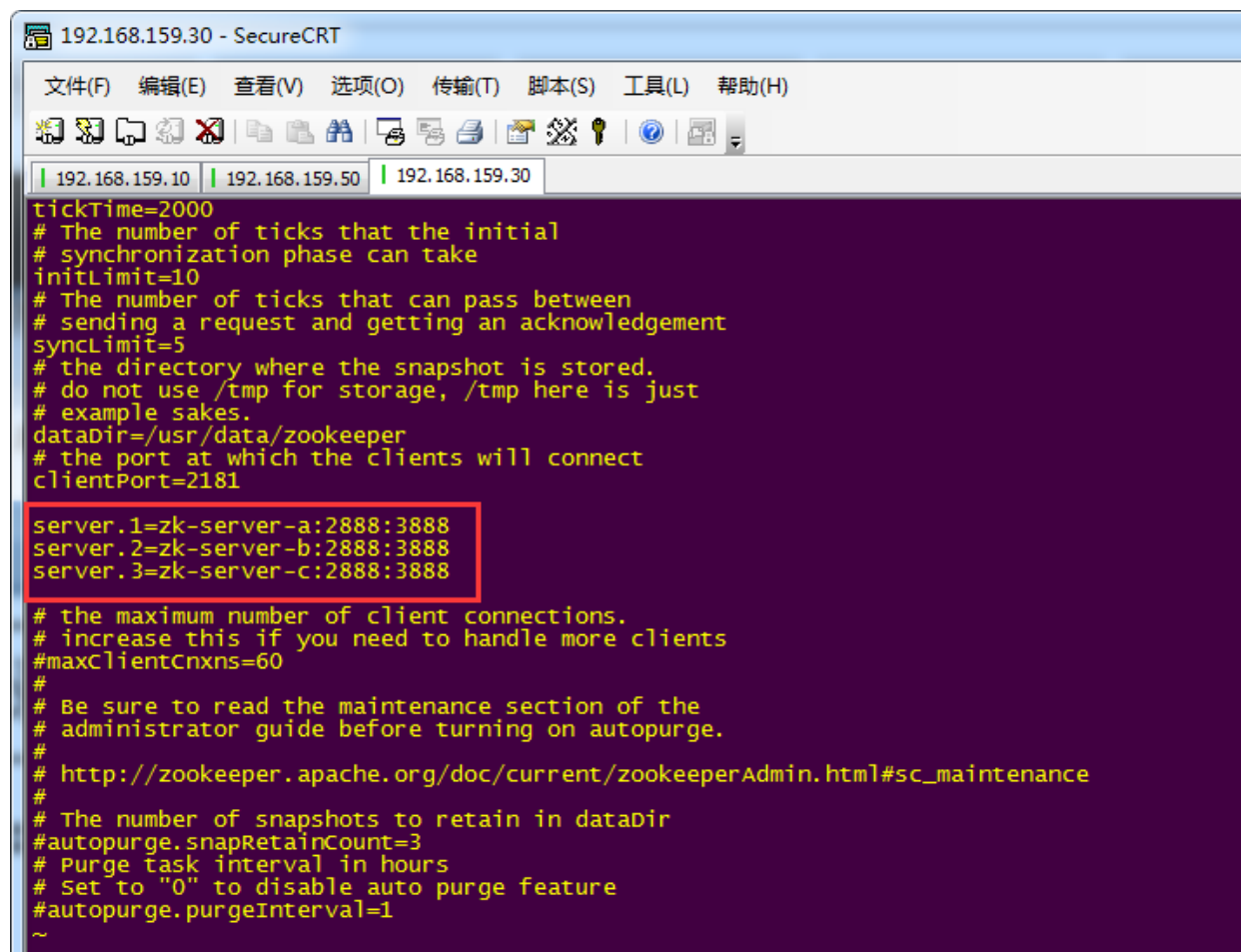
```
192.168.159.30 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)
192.168.159.10 | 192.168.159.50 | 192.168.159.30
tickTime=2000
# The number of ticks that the initial
# synchronization phase can take
initLimit=10
# The number of ticks that can pass between
# sending a request and getting an acknowledgement
syncLimit=5
# the directory where the snapshot is stored.
# do not use /tmp for storage, /tmp here is just
# example sakes.
dataDir=/usr/data/zookeeper
# the port at which the clients will connect
clientPort=2181
# 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
~
```



新增部分:

增加主机信息列表

server.主机编号=主机名:程序监听端口:程序选举端口



```
192.168.159.30 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)
192.168.159.10 | 192.168.159.50 | 192.168.159.30
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/data/zookeeper
# the port at which the clients will connect
clientPort=2181

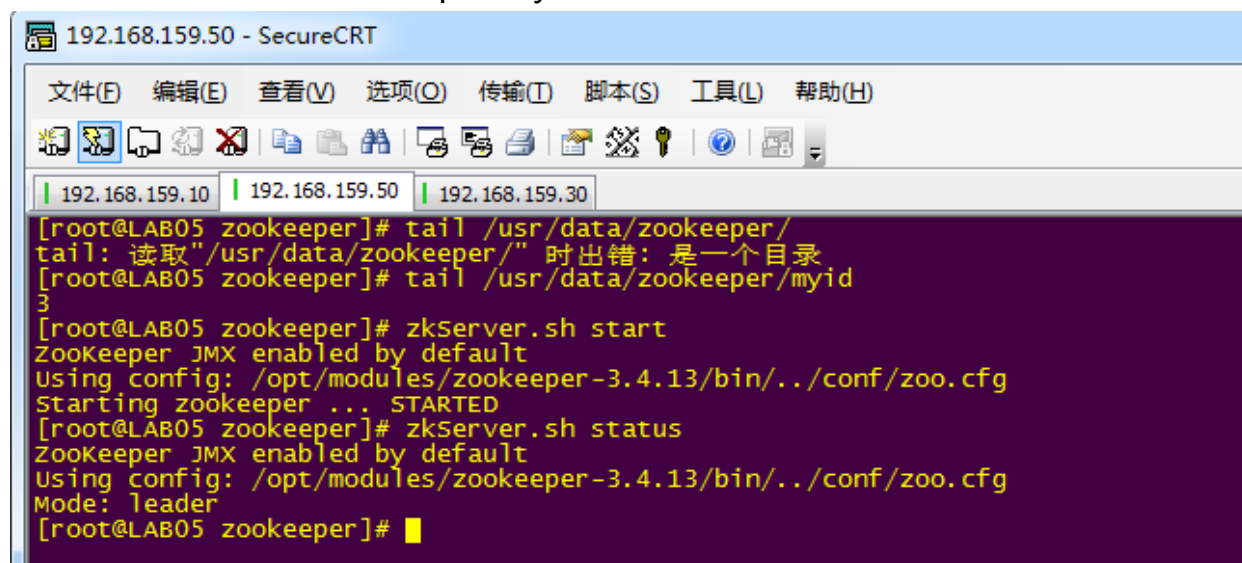
server.1=zk-server-a:2888:3888
server.2=zk-server-b:2888:3888
server.3=zk-server-c:2888:3888

# 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
~
```

在ZooKeeper之中所有主机都在工作目录中以myid的形式出现

echo 1 >>/usr/data/zookeeper/myid

echo 2 >>/usr/data/zookeeper/myid



```
192.168.159.50 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)
192.168.159.10 | 192.168.159.50 | 192.168.159.30
[root@LAB05 zookeeper]# tail /usr/data/zookeeper/
tail: 读取"/usr/data/zookeeper/" 时出错: 是一个目录
[root@LAB05 zookeeper]# tail /usr/data/zookeeper/myid
3
[root@LAB05 zookeeper]# zkServer.sh start
ZooKeeper JMX enabled by default
Using config: /opt/modules/zookeeper-3.4.13/bin/../conf/zoo.cfg
starting zookeeper ... STARTED
[root@LAB05 zookeeper]# zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /opt/modules/zookeeper-3.4.13/bin/../conf/zoo.cfg
Mode: leader
[root@LAB05 zookeeper]#
```