大数据集群环境准备

1.各台虚拟机关闭防火墙

各台机器执行以下命令（root 用户来执行）

```
service iptables stop
chkconfig iptables off
```

```
[root@node01 /]# service iptables stop
iptables: Setting chains to policy ACCEPT: filter [  OK  ]
iptables: Flushing firewall rules: [  OK  ]
iptables: Unloading modules: [  OK  ]
[root@node01 /]#
```

```
[root@node01 /]# chkconfig iptables off
[root@node01 /]#
```

//关闭防火墙自启动

2.各台机器关闭 selinux（linux 里面的安全策略，类似防火墙）

```
vim /etc/selinux/config
```

```
[root@node01 /]# vim /etc/selinux/config
```

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
#SELINUX=enforcing 这一行注释掉
SELINUX=disabled 添加这一行
# SELINUXTYPE= can take one of these two values:
#     targeted - Targeted processes are protected,
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

3.各台机器更改主机名

```
vim /etc/sysconfig/network
```

```
[root@node01 /]# vim /etc/sysconfig/network
```

192.168.52.100

```
NETWORKING=yes
HOSTNAME=node01.hadoop.com
```

4.各台机器做主机名与 IP 地址的映射

```
vim /etc/hosts
192.168.52.100 node01.hadoop.com    node01
192.168.52.110 node02.hadoop.com    node02
192.168.52.120 node03.hadoop.com    node03
```

192.168.52.100

```
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6

192.168.52.100 node01.hadoop.com  node01
192.168.52.110 node02.hadoop.com  node02
192.168.52.120 node03.hadoop.com  node03
```

5、各台机器重启

```
reboot    -h    now
```

6、各台机器机器免密码登录

第一步：各台机器生成公钥与私钥

在各台机器执行以下命令，生成公钥与私钥

```
ssh-keygen -t rsa
```

执行该命令之后，按下 3 个回车即可

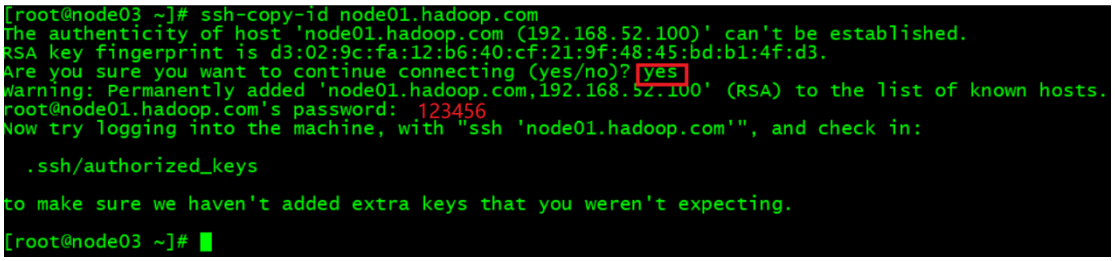
ssh-keygen -t rsa

第二步：拷贝公钥到同一台机器

各台机器将拷贝公钥到第一台机器

各台机器执行命令：

```
ssh-copy-id node01.hadoop.com
```



第三步：复制第一台机器的认证到其他机器

将第一台机器的公钥拷贝到其他机器上

在第一台机器上面指向以下命令

```
scp /root/.ssh/authorized_keys node02.hadoop.com:/root/.ssh
scp /root/.ssh/authorized_keys node03.hadoop.com:/root/.ssh
```

```
[root@node01 ~]# scp /root/.ssh/authorized_keys node02.hadoop.com:/root/.ssh
The authenticity of host 'node02.hadoop.com (192.168.52.110)' can't be established.
RSA key fingerprint is d3:02:9c:fa:12:b6:40:cf:21:9f:48:45:bd:b1:4f:d3.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'node02.hadoop.com,192.168.52.110' (RSA) to the list of known hosts.
root@node02.hadoop.com's password:
authorized_keys                                           100%  808     0.8KB/s   00:00
[root@node01 ~]# scp /root/.ssh/authorized_keys node03.hadoop.com:/root/.ssh
The authenticity of host 'node03.hadoop.com (192.168.52.120)' can't be established.
RSA key fingerprint is d3:02:9c:fa:12:b6:40:cf:21:9f:48:45:bd:b1:4f:d3.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'node03.hadoop.com,192.168.52.120' (RSA) to the list of known hosts.
root@node03.hadoop.com's password:
authorized_keys                                           100%  808     0.8KB/s   00:00
[root@node01 ~]#
```

7、各台机器时钟同步

通过网络进行时钟同步

通过网络连接外网进行时钟同步,必须保证虚拟机连上外网

```
ntpdate us.pool.ntp.org;
```

阿里云时钟同步服务器

```
ntpdate ntp4.aliyun.com
```

各台机器定时任务

```
crontab    -e
```

```
*/1 * * * * /usr/sbin/ntpdate us.pool.ntp.org;
```

或者直接与阿里云服务器进行时钟同步

```
crontab -e
```

```
*/1 * * * * /usr/sbin/ntpdate ntp4.aliyun.com;
```

```
*/1 * * * * /usr/sbin/ntpdate ntp4.aliyun.com;
```

8、各台机器安装 jdk

查看自带的 openjdk

```
rpm -qa | grep java
```

```
[root@node05 /]# rpm -qa | grep java
java-1.6.0-openjdk-1.6.0.41-1.13.13.1.el6_8.x86_64
tzdata-java-2016j-1.el6.noarch
java-1.7.0-openjdk-1.7.0.131-2.6.9.0.el6_8.x86_64
```

卸载系统自带的 openjdk

```
rpm -e java-1.6.0-openjdk-1.6.0.41-1.13.13.1.el6_8.x86_64 tzdata-java-2016j-1.el6.noarch java-1.7.0-openjdk-1.7.0.131-2.6.9.0.el6_8.x86_64 --nodeps
```

上传 jdk 并解压然后配置环境变量

说明：为了保持我们的安装环境统一和一致，我们这里创建两个约定俗称的文件夹，来进行我们的软件包的存放和软件的安装

所有软件的安装路径

```
mkdir -p /export/servers
```

所有软件压缩包的存放路径

```
mkdir -p /export/softwares
```

yum install lrzsz

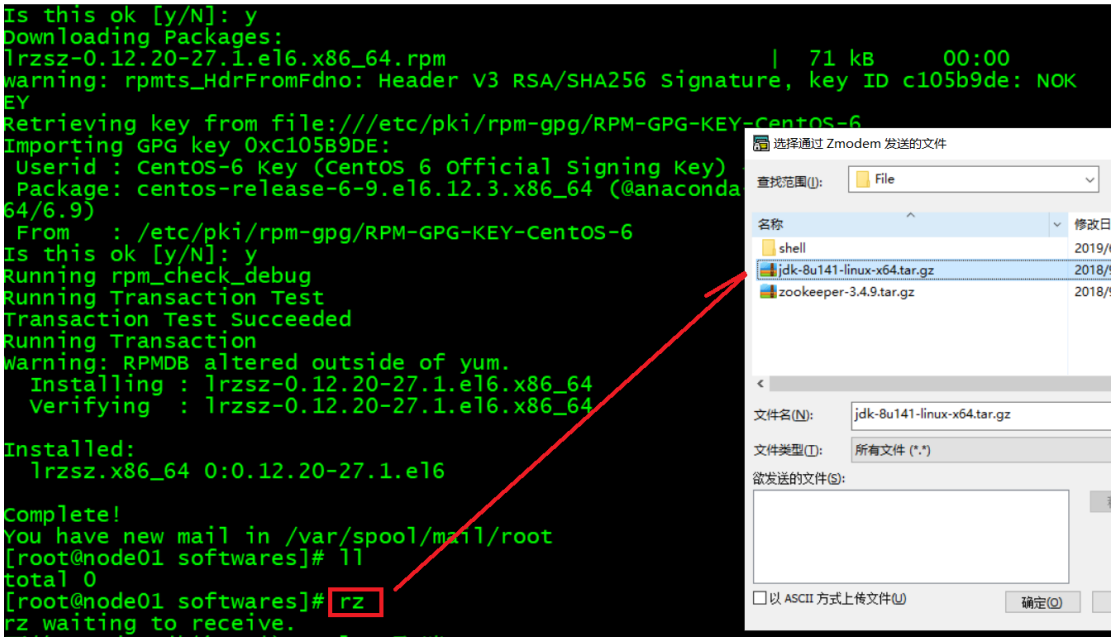
```
[root@node01 softwares]# yum install lrzsz
Loaded plugins: fastestmirror, security
Setting up Install Process
base                                                    | 3.7 kB     00:00
base/primary_db                                         | 4.7 MB     00:00
extras                                                  | 3.4 kB     00:00
extras/primary_db                                       |  29 kB     00:00
updates                                                 | 3.4 kB     00:00
updates/primary_db                                      | 5.1 MB     00:00
```

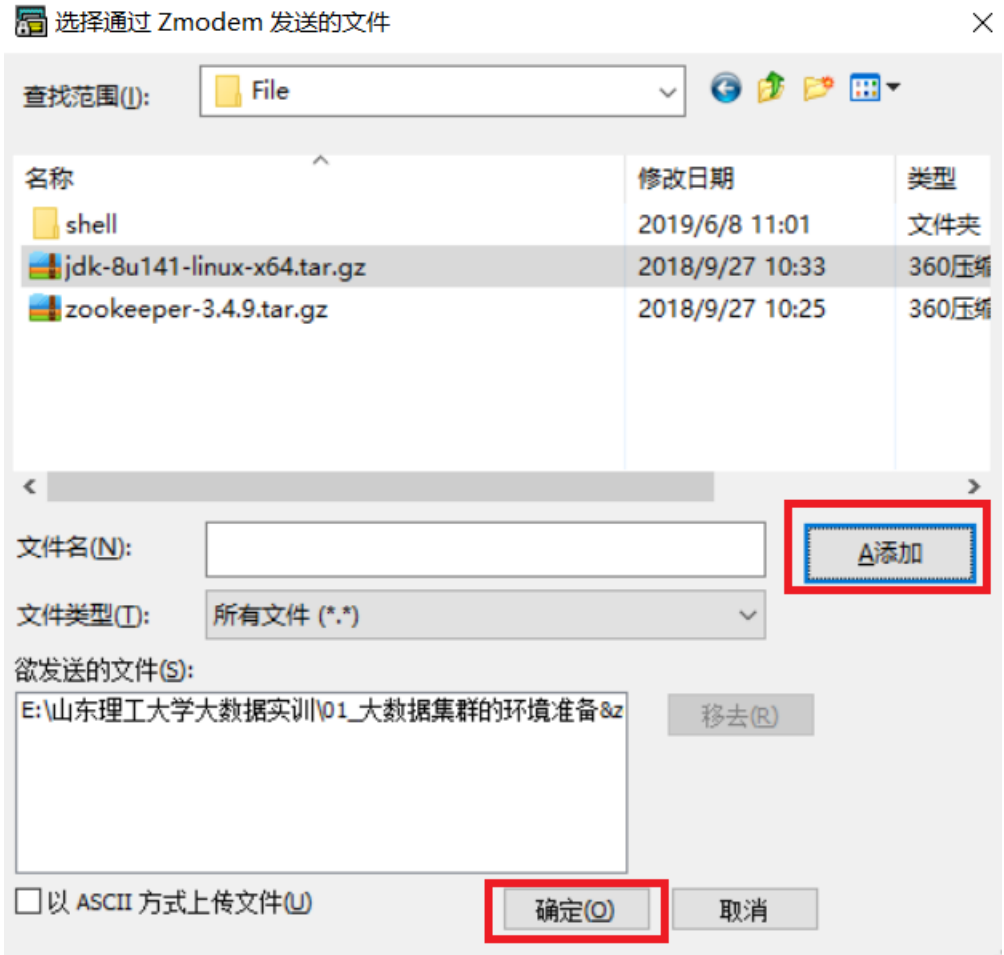
```
Transaction Summary
================================================================================
Install       1 Package(s)

Total download size: 71 k
Installed size: 159 k
Is this ok [y/N]: y
Downloading Packages:
lrzsz-0.12.20-27.1.el6.x86_64.rpm                       |  71 kB
warning: rpmts_HdrFromFdno: Header V3 RSA/SHA256 Signature, key ID c105b9de: NOKEY
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6
Importing GPG key 0xC105B9DE:
 Userid : CentOS-6 Key (CentOS 6 Official Signing Key) <centos-6-key@centos.org>
 Package: centos-release-6-9.el6.12.3.x86_64 (@anaconda-CentOS-201703281317.x86_64/6.9)
 From   : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6
Is this ok [y/N]: y
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
Warning: RPMDB altered outside of yum.
y
  Installing : lrzsz-0.12.20-27.1.el6.x86_64
  Verifying  : lrzsz-0.12.20-27.1.el6.x86_64

Installed:
  lrzsz.x86_64 0:0.12.20-27.1.el6
```

上传 jdk 到/export/softwares 路径下去，并解压


Is this ok [y/N]: y
Downloading Packages:
lrzsz-0.12.20-27.1.el6.x86_64.rpm | 71 kB 00:00
warning: rpmts_HdrFromFdno: Header V3 RSA/SHA256 Signature, key ID c105b9de: NOK
EY
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6
Importing GPG key 0xC105B9DE:
Userid : CentOS-6 Key (CentOS 6 Official Signing Key)
Package: centos-release-6-9.el6.12.3.x86_64 (@anaconda
64/6.9)
From : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6
Is this ok [y/N]: y
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
Warning: RPMDB altered outside of yum.
Installing : lrzsz-0.12.20-27.1.el6.x86_64
Verifying : lrzsz-0.12.20-27.1.el6.x86_64
Installed:
lrzsz.x86_64 0:0.12.20-27.1.el6
Complete!
You have new mail in /var/spool/mail/root
[root@node01 softwares]# ll
total 0
[root@node01 softwares]# rz
rz waiting to receive.
选择通过 Zmodem 发送的文件
查找范围(I):
File
名称
修改日
shell
2019/
jdk-8u141-linux-x64.tar.gz
2018/
zookeeper-3.4.9.tar.gz
2018/
文件名(N):
jdk-8u141-linux-x64.tar.gz
文件类型(T):
所有文件 (*.*)
欲发送的文件(S):
以 ASCII 方式上传文件(U)
确定(O)


选择通过 Zmodem 发送的文件
查找范围(I):
File
名称
修改日期
类型
shell
2019/6/8 11:01
文件夹
jdk-8u141-linux-x64.tar.gz
2018/9/27 10:33
360压缩
zookeeper-3.4.9.tar.gz
2018/9/27 10:25
360压缩
文件名(N):
A添加
文件类型(T):
所有文件 (*.*)
欲发送的文件(S):
E:\山东理工大学大数据实训\01_大数据集群的环境准备&z
移去(R)
以 ASCII 方式上传文件(U)
确定(O)
取消

```
[root@node01 softwares]# ll
total 0
[root@node01 softwares]# rz
rz waiting to receive.
开始 zmodem 传输.  按 Ctrl+C 取消.
Transferring jdk-8u141-linux-x64.tar.gz...
  100%  181168 KB 25881 KB/s 00:00:07       0 错误

SYou have new mail in /var/spool/mail/root
[root@node01 softwares]# ll
total 181172
-rw-r--r-- 1 root root 185516505 Sep 27  2018 jdk-8u141-linux-x64.tar.gz
[root@node01 softwares]#
```

```
tar -zxvf jdk-8u141-linux-x64.tar.gz -C ../servers/
```

```
[root@node01 servers]# ll
total 4
drwxr-xr-x 8 uucp 143 4096 Jul 12  2017 jdk1.8.0_141
```

配置环境变量

```
vim /etc/profile
export JAVA_HOME=/export/servers/jdk1.8.0_141
export PATH=:$JAVA_HOME/bin:$PATH
```

修改完成之后记得　reboot -h now 或 source /etc/profile 生效

```
[root@node01 servers]# jps
2057 Jps
You have new mail in /var/spool/mail/root
[root@node01 servers]#
```

安装包的分发

第一台机器执行以下命令

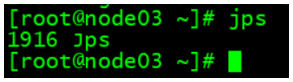
```
cd    /export/servers/
scp -r jdk1.8.0_141/ node02:$PWD
scp -r jdk1.8.0_141/ node03:$PWD
```

```
[root@node01 servers]# scp -r jdk1.8.0_141/ node02:$PWD
```

```
cd    /etc
scp    profile node02:$PWD
scp    profile node03:$PWD
```

jps

```
[root@node02 ~]# jps
1915 Jps
[root@node02 ~]#
```


[root@node03 ~]# jps
1916 Jps
[root@node03 ~]#