Centos7 安装 CDH6 文档

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https://blog.csdn.net/jato333

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1 软件需求

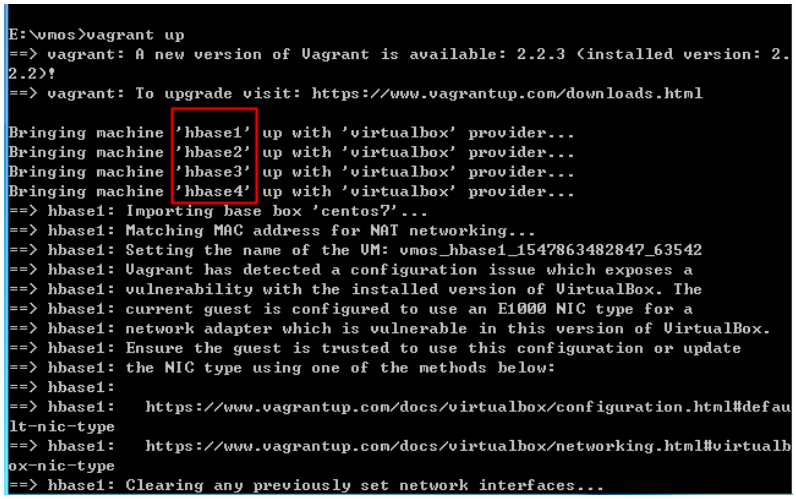
1) vagrant_1.9.6_x86_64.msi
2) VirtualBox-5.1.24-117012-Win.exe
3) vagrant-centos-7.2.box
4) mysql-connector-java-5.1.47.tar.gz
5) CDH6 相关软件包(cm6.0 和 cdh6.0)，如下

2 集群规划

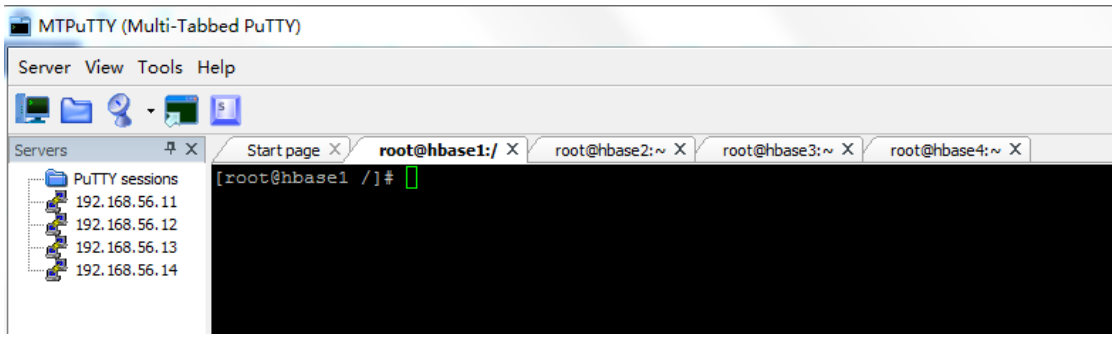
Ip	Hostname	Software
192.168.56.11	hbase1	Mysql、httpd、cm server
192.168.56.12	Hbase2	Cm Agent、hdfs、hbase
192.168.56.13	Hbase3	Cm Agent、hdfs、hbase
192.168.56.14	Hbase4	Cm Agent、hdfs、hbase

3 创建虚拟机

通过 vagrant+visual box 创建上述 4 个虚拟机

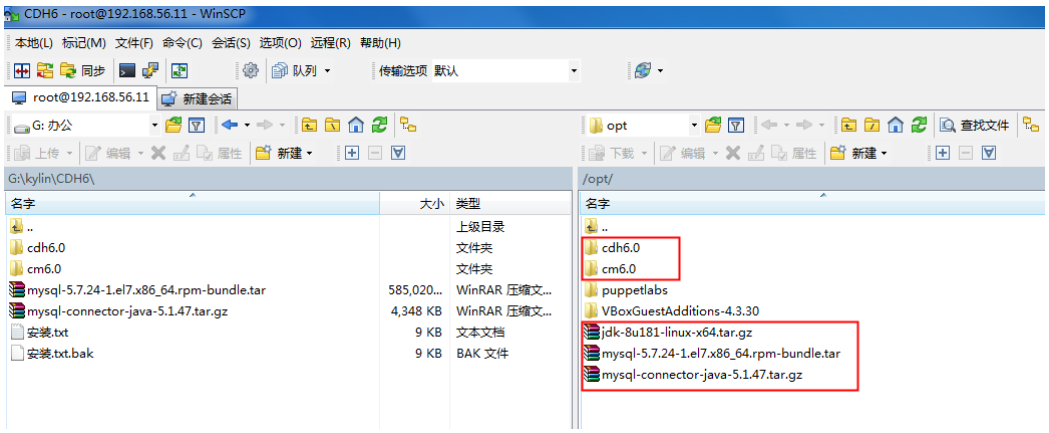


连接到 4 个终端



4 上传软件

将软件需求的软件全部上传至 hbase1 中



5 安装 CDH6

5.1 修改 hosts 文件

范围：hbase1/hbase2/hbase3/hbase4

命令：vi /etc/hosts

```
127.0.0.1    localhost
192.168.56.11 hbase1
192.168.56.12 hbase2
192.168.56.13 hbase3
192.168.56.14 hbase4
```

5.2 修改 hostname

范围：hbase1/hbase2/hbase3/hbase4

命令：vi /etc/hostname

hbase1

5.3 SSH 免密登录

5.3.1 创建私钥文件

范围：hbase1/hbase2/hbase3/hbase4

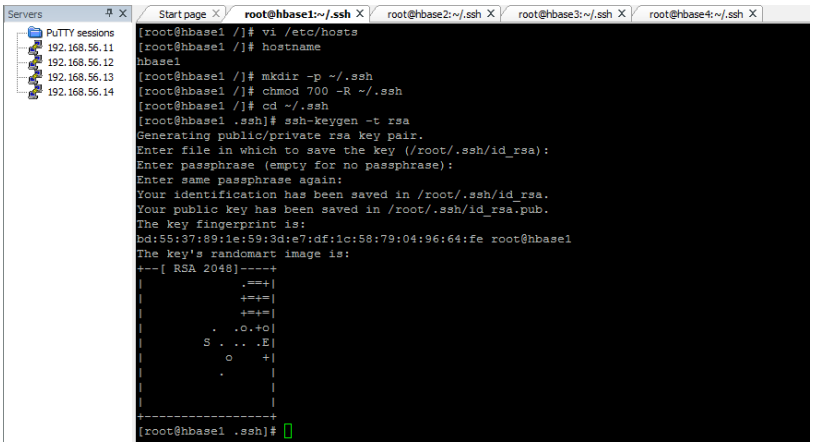
命令如下：

mkdir -p ~/.ssh

chmod 700 -R ~/.ssh

cd ~/.ssh

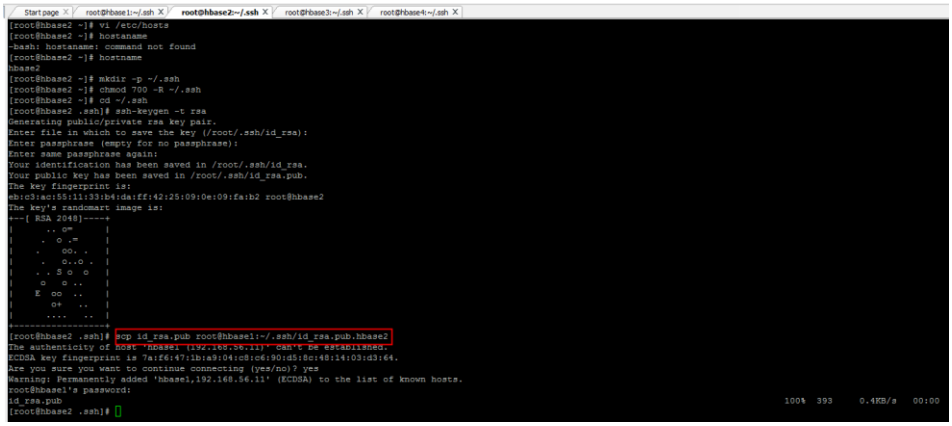
ssh-keygen -t rsa



5.3.2 将私钥文件拷贝至 hbase1

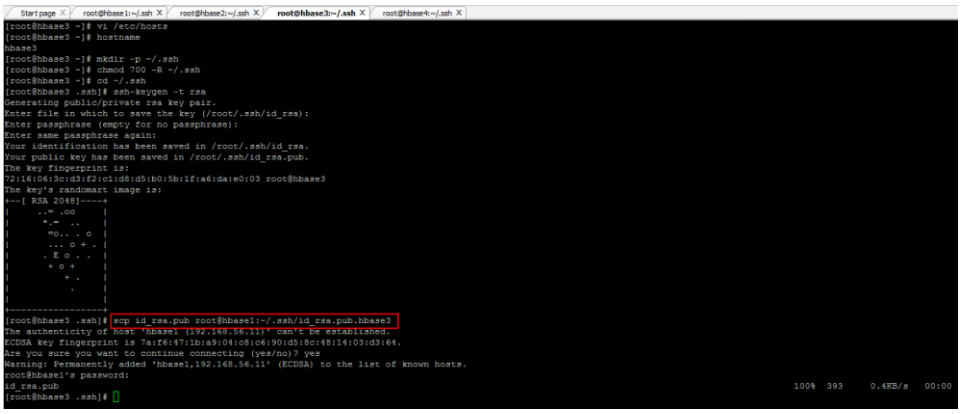
范围：hbase2

命令：scp id_rsa.pub root@hbase1:~/.ssh/id_rsa.pub.hbase2



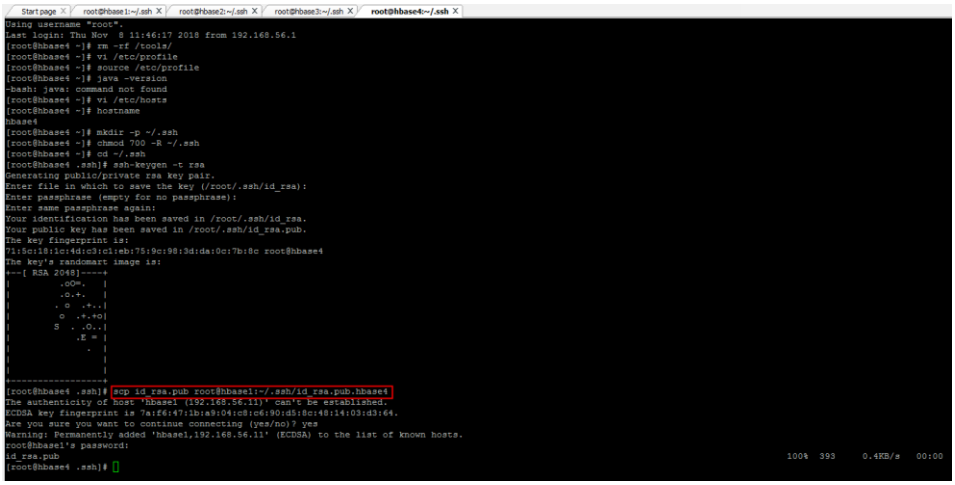
范围： hbase3

命令：scp id_rsa.pub root@hbase1:~/.ssh/id_rsa.pub.hbase3



范围： hbase4

命令：scp id_rsa.pub root@hbase1:~/.ssh/id_rsa.pub.hbase4



5.3.3 合并秘钥文件

范围： hbase1

命令：

cat id_rsa.pub >> authorized_keys

cat id_rsa.pub.hbase2 >> authorized_keys

cat id_rsa.pub.hbase3 >> authorized_keys

cat id_rsa.pub.hbase4 >> authorized_keys

chmod 600 ~/.ssh/authorized_keys

```
[root@hbase1 .ssh]# cat id_rsa.pub >> authorized_keys
[root@hbase1 .ssh]# cat id_rsa.pub.hbase2 >> authorized_keys
[root@hbase1 .ssh]# cat id_rsa.pub.hbase3 >> authorized_keys
[root@hbase1 .ssh]# cat id_rsa.pub.hbase4 >> authorized_keys
[root@hbase1 .ssh]# chmod 600 ~/.ssh/authorized_keys
[root@hbase1 .ssh]# ll
total 24
-rw------- 1 root root 1572 Jan 19 03:08 authorized_keys
-rw------- 1 root root 1679 Jan 19 02:59 id_rsa
-rw-r--r-- 1 root root  393 Jan 19 02:59 id_rsa.pub
-rw-r--r-- 1 root root  393 Jan 19 03:02 id_rsa.pub.hbase2
-rw-r--r-- 1 root root  393 Jan 19 03:03 id_rsa.pub.hbase3
-rw-r--r-- 1 root root  393 Jan 19 03:03 id_rsa.pub.hbase4
[root@hbase1 .ssh]#
```

5.3.4 分发公钥文件

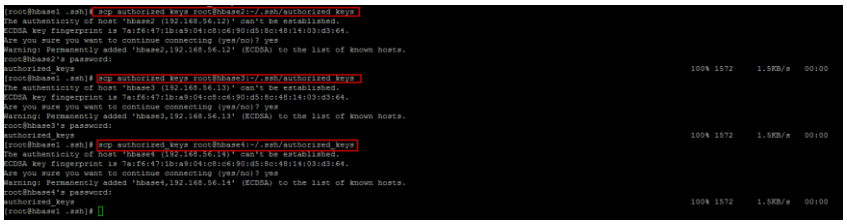
范围： hbase1

命令：

scp authorized_keys root@hbase2:~/.ssh/authorized_keys

scp authorized_keys root@hbase3:~/.ssh/authorized_keys

scp authorized_keys root@hbase4:~/.ssh/authorized_keys



5.3.5 验证 ssh 免密登录

范围： hbase1/hbase2/hbase3/hbase4

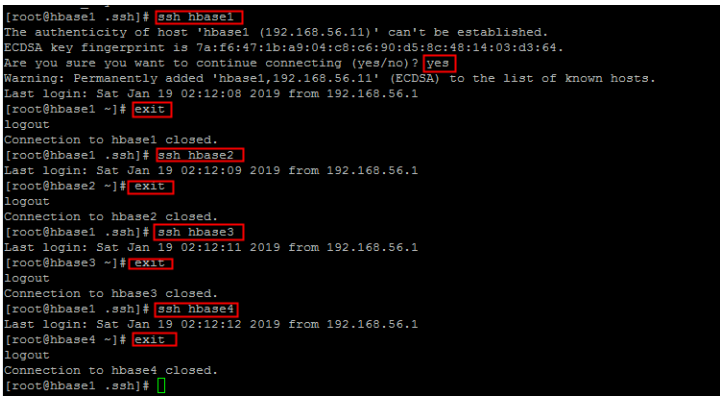
命令：

ssh hbase1

ssh hbase2

ssh hbase3

ssh hbase4



5.4 集群时钟同步

5.4.1 安装 ntp 包

范围： hbase1/hbase2/hbase3/hbase4

命令：yum install -y ntp

5.4.2 主节点配置

5.4..1 修改配置文件

范围： hbase1

命令：vi /etc/ntp.conf

修改以下内容：

#server 0.rhel.pool.ntp.org iburst

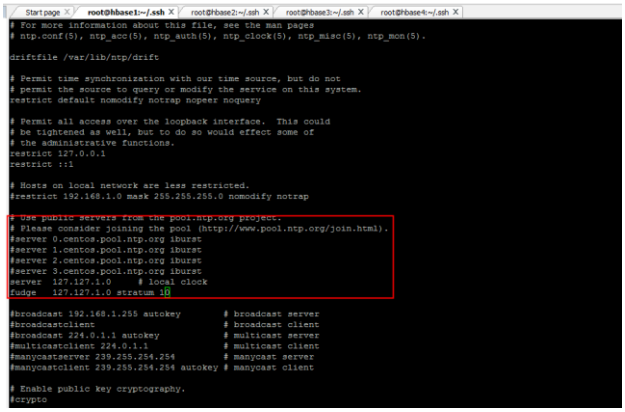
#server 1.rhel.pool.ntp.org iburst

#server 2.rhel.pool.ntp.org iburst

#server 3.rhel.pool.ntp.org iburst

server 127.127.1.0 # local clock

fudge 127.127.1.0 stratum 10



5.4.2.2 启动 ntp 服务

范围： hbase1

命令：

systemctl start ntpd

systemctl enable ntpd

systemctl status ntpd

```
[root@hbase1 .ssh]# vi /etc/ntp.conf
[root@hbase1 .ssh]# systemctl start ntpd
[root@hbase1 .ssh]# systemctl enable ntpd
Created symlink from /etc/systemd/system/multi-user.target.wants/ntpd.service to /usr/lib/systemd/system/ntpd.service.
[root@hbase1 .ssh]# systemctl status ntpd
● ntpd.service - Network Time Service
   Loaded: loaded (/usr/lib/systemd/system/ntpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Sat 2019-01-19 03:24:42 GMT; 18s ago
 Main PID: 13355 (ntpd)
   CGroup: /system.slice/ntpd.service
           └─13355 /usr/sbin/ntpd -u ntp:ntp -g

Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 3 enp0s3 10.0.2.15 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 4 enp0s8 192.168.56.11 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 5 lo ::1 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 6 enp0s3 fe80::a00:27ff:fe6c:3e95 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 7 enp0s8 fe80::a00:27ff:feb5:cbdd UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listening on routing socket on fd #24 for interface updates
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c016 06 restart
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c012 02 freq_set kernel 0.000 PPM
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c011 01 freq_not_set
Jan 19 03:24:43 hbase1 ntpd[13355]: 0.0.0.0 c514 04 freq_mode
```

5.4.2.3 查看当前 ntp 状态

范围： hbase1

命令：ntpq –p

```
[root@hbase1 .ssh]# ntpq -p
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
*LOCAL(0)        .LOCL.          10 l   40   64    1    0.000    0.000   0.000
[root@hbase1 .ssh]#
```

出现*，说明已经开始同步了。

5.4.3 从节点配置

5.4.3.1 修改配置文件

范围： hbase2/hbase3/hbase4

命令：vi /etc/ntp.conf

修改以下内容：

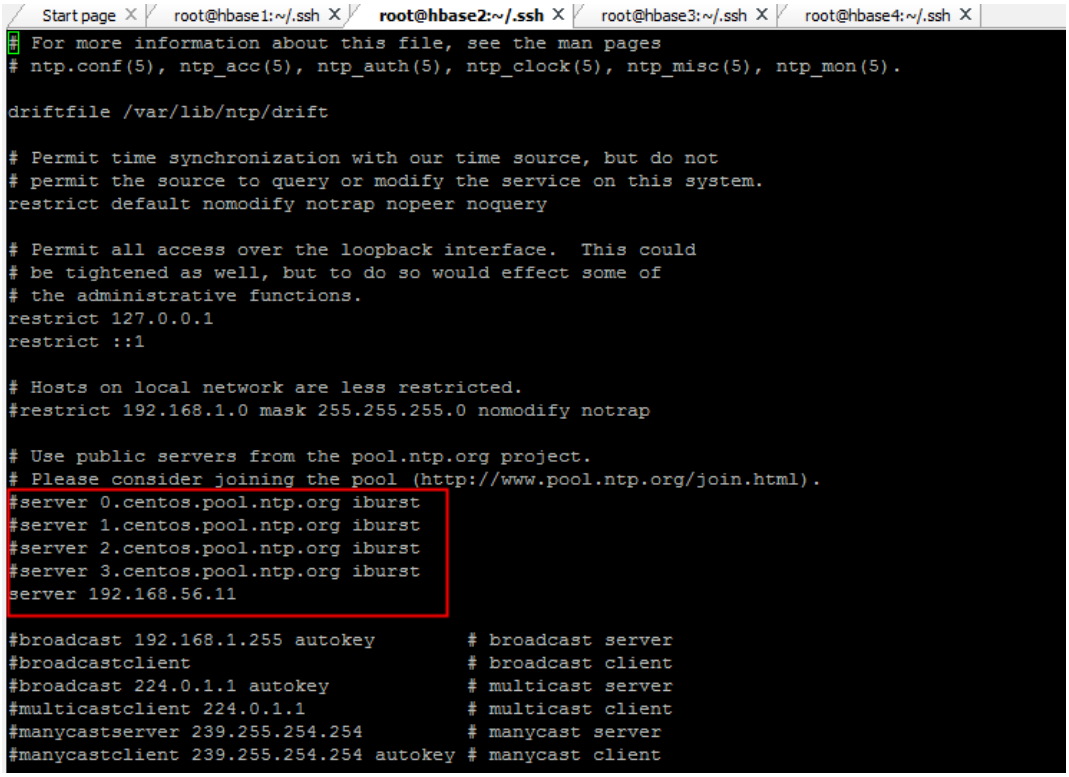
#server 0.rhel.pool.ntp.org iburst

#server 1.rhel.pool.ntp.org iburst

#server 2.rhel.pool.ntp.org iburst

#server 3.rhel.pool.ntp.org iburst

server 192.168.56.11



5.4.3.2 启动 ntp 服务

范围： hbase2/hbase3/hbase4

命令：

systemctl start ntpd

systemctl enable ntpd

systemctl status ntpd

```
[root@hbase1 .ssh]# vi /etc/ntp.conf
[root@hbase1 .ssh]# systemctl start ntpd
[root@hbase1 .ssh]# systemctl enable ntpd
Created symlink from /etc/systemd/system/multi-user.target.wants/ntpd.service to /usr/lib/systemd/system/ntpd.service.
[root@hbase1 .ssh]# systemctl status ntpd
● ntpd.service - Network Time Service
   Loaded: loaded (/usr/lib/systemd/system/ntpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Sat 2019-01-19 03:24:42 GMT; 18s ago
 Main PID: 13355 (ntpd)
   CGroup: /system.slice/ntpd.service
           └─13355 /usr/sbin/ntpd -u ntp:ntp -g

Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 3 enp0s3 10.0.2.15 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 4 enp0s8 192.168.56.11 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 5 lo ::1 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 6 enp0s3 fe80::a00:27ff:fe6c:3e95 UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listen normally on 7 enp0s8 fe80::a00:27ff:feb5:cbdd UDP 123
Jan 19 03:24:42 hbase1 ntpd[13355]: Listening on routing socket on fd #24 for interface updates
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c016 06 restart
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c012 02 freq_set kernel 0.000 PPM
Jan 19 03:24:42 hbase1 ntpd[13355]: 0.0.0.0 c011 01 freq_not_set
Jan 19 03:24:43 hbase1 ntpd[13355]: 0.0.0.0 c514 04 freq_mode
```

5.4.3.3 查看当前 ntp 状态

范围： hbase2/hbase3/hbase4

命令：ntpq –p

```
[root@hbase2 .ssh]# ntpq -p
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 hbase1          LOCAL(0)        11 u    9   64    1    0.548  -141.48   0.031
[root@hbase3 .ssh]# ntpq -p
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 hbase1          LOCAL(0)        11 u    1   64    1    0.499  -170.95   0.000
[root@hbase4 .ssh]# ntpq -p
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 hbase1          .INIT.          16 u    -   64    0    0.000    0.000   0.000
```

出现*，说明已经开始同步了，此时还未出现，请耐心等待几分钟即可，一般 5 分钟左右。

5.5 安装 JDK

5.5.1 解压文件

范围： hbase1/hbase2/hbase3/hbase4

命令：tar -xvf jdk-8u181-linux-x64.tar.gz

5.5.2 修改配置文件

范围： hbase1/hbase2/hbase3/hbase4

命令：vi /etc/profile

增加以下内容：

export JAVA_HOME=/opt/jdk1.8.0_181

export PATH=$PATH:$JAVA_HOME/bin:$HADOOP_HOME/bin

export CLASSPATH=.:$JAVA_HOME/lib/dt.jar:$JAVA_HOME/lib/tools.jar

5.5.3 生效配置

范围： hbase1/hbase2/hbase3/hbase4

命令：source /etc/profile

5.5.4 验证 jdk

范围： hbase1/hbase2/hbase3/hbase4

命令：java –version

```
[root@hbase1 opt]# java -version
java version "1.8.0_181"
Java(TM) SE Runtime Environment (build 1.8.0_181-b13)
Java HotSpot(TM) 64-Bit Server VM (build 25.181-b13, mixed mode)
```

5.6 配置 jdbc 驱动

范围： hbase1/hbase2/hbase3/hbase4

命令：

tar -xvf mysql-connector-java-5.1.47.tar.gz

mkdir -p /usr/share/java/

mv /opt/mysql-connector-java-5.1.47/mysql-connector-java-5.1.47.jar /usr/share/java/

cd /usr/share/java

chmod 777 mysql-connector-java-5.1.47.jar

ln -s mysql-connector-java-5.1.47.jar mysql-connector-java.jar

```
[root@hbase1 opt]# mkdir -p /usr/share/java/
[root@hbase1 opt]# mv /opt/mysql-connector-java-5.1.47/mysql-connector-java-5.1.47.jar /usr/share/java/
[root@hbase1 opt]# cd /usr/share/java
[root@hbase1 java]# chmod 777 mysql-connector-java-5.1.47.jar
[root@hbase1 java]# ln -s mysql-connector-java-5.1.47.jar mysql-connector-java.jar
[root@hbase1 java]# ll
total 984
-rwxrwxrwx 1 root root 1007502 Aug  7 07:59 mysql-connector-java-5.1.47.jar
lrwxrwxrwx 1 root root      31 Jan 19 03:54 mysql-connector-java.jar -> mysql-connector-java-5.1.47.jar
```

5.7 安装 httpd 服务

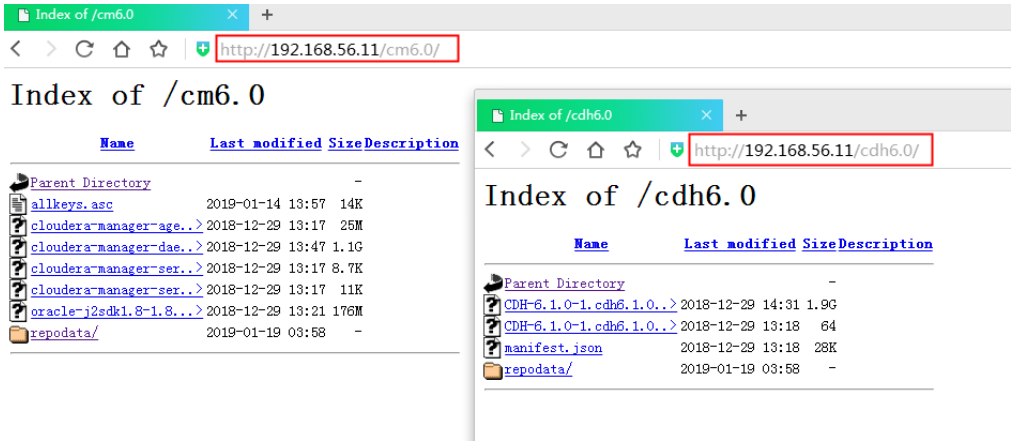
5.7.1 安装 httpd 包

范围： hbase1

命令：

yum -y install httpd createrepo
mv cm6.0/ cdh6.0/ /var/www/html/
cd /var/www/html/cm6.0/
createrepo ./
cd /var/www/html/cdh6.0/
createrepo ./

5.7.2 测试 httpd 服务



5.7.3 配置 repo

范围： hbase1/hbase2/hbase3/hbase4

命令：vi /etc/yum.repos.d/cm.repo

增加以下内容：

```
[cmrepo]
name = cm_repo
baseurl = http://192.168.56.11/cm6.0
enable = true
gpgcheck = false
```

5.7.4 查看仓库

范围： hbase1/hbase2/hbase3/hbase4

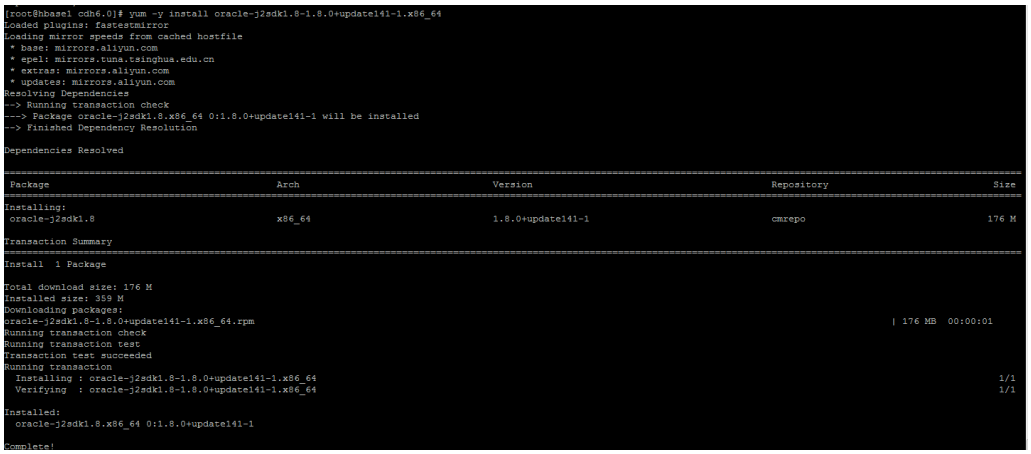
命令： yum repolist

```
[root@hbase1 cdh6.0]# vi /etc/yum.repos.d/cm.repo
[root@hbase1 cdh6.0]# yum repolist
Loaded plugins: fastestmirror
cmrepo
cmrepo/primary_db
Loading mirror speeds from cached hostfile
 * base: mirrors.aliyun.com
 * epel: mirrors.tuna.tsinghua.edu.cn
 * extras: mirrors.aliyun.com
 * updates: mirrors.aliyun.com
repo id                                                repo name
base/7/x86_64                                          CentOS-7 - Base - mirrors.aliyun.com
cmrepo                                                 cm_repo
*epel/x86_64                                           Extra Packages for Enterprise Linux 7 - x86_64
extras/7/x86_64                                        CentOS-7 - Extras - mirrors.aliyun.com
puppetlabs-pc1/x86_64                                  Puppet Labs PC1 Repository el 7 - x86_64
updates/7/x86_64                                       CentOS-7 - Updates - mirrors.aliyun.com
repolist: 24,037
[root@hbase1 cdh6.0]#
```

5.8 安装 oracle-JDK

范围： hbase1/hbase2/hbase3/hbase4

命令：yum -y install oracle-j2sdk1.8-1.8.0+update141-1.x86_64



5.9 设置 swap

范围： hbase1/hbase2/hbase3/hbase4

命令： echo "vm.swappiness=10" >> /etc/sysctl.conf

5.10 设置透明大页面

范围： hbase1/hbase2/hbase3/hbase4

命令：

echo never > /sys/kernel/mm/transparent_hugepage/defrag

echo never > /sys/kernel/mm/transparent_hugepage/enabled

5.11 安装 mysql

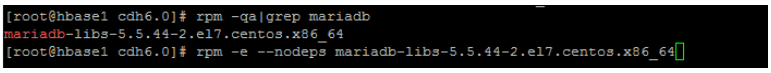
5.11.1 卸载 mariadb

范围： hbase1

命令：

rpm -qa|grep mariadb

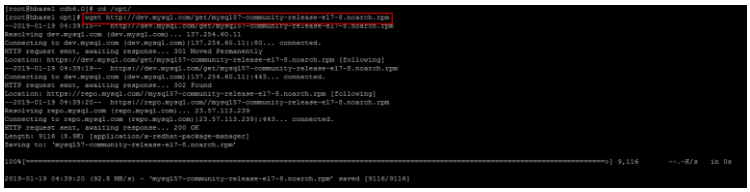
rpm -e --nodeps mariadb-libs-5.5.44-2.el7.centos.x86_64



5.11.2 下载 mysql 源安装包

范围： hbase1

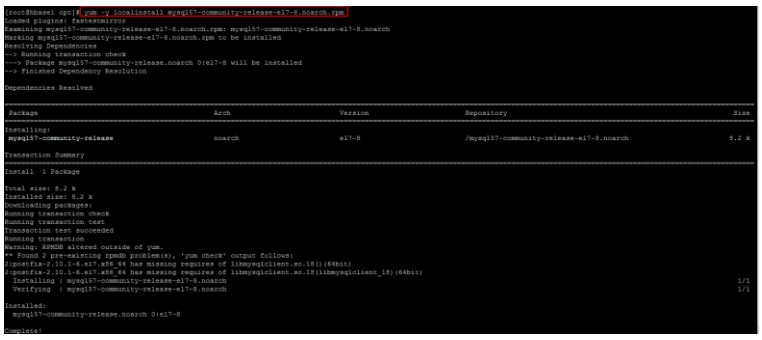
命令：wget http://dev.mysql.com/get/mysql57-community-release-el7-8.noarch.rpm



5.11.3 安装 mysql 源

范围： hbase1

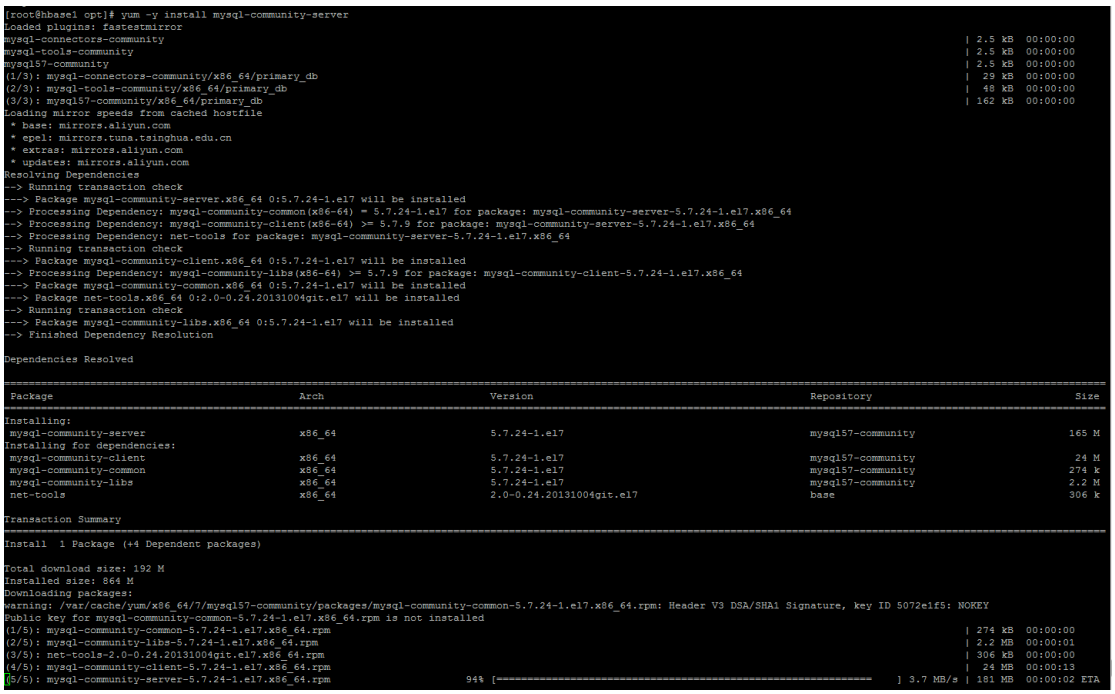
命令：yum -y localinstall mysql57-community-release-el7-8.noarch.rpm



5.11.4 安装 MySQL

范围： hbase1

命令：yum -y install mysql-community-server



5.11.5 启动 MySQL 服务

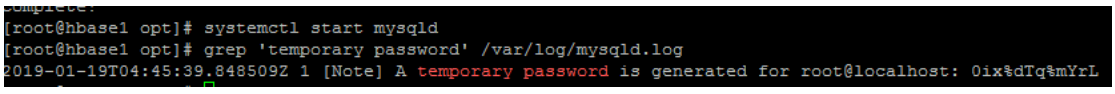
范围： hbase1

命令：systemctl start mysqld

5.11.6 查看初始化密码

范围： hbase1

命令：grep 'temporary password' /var/log/mysqld.log

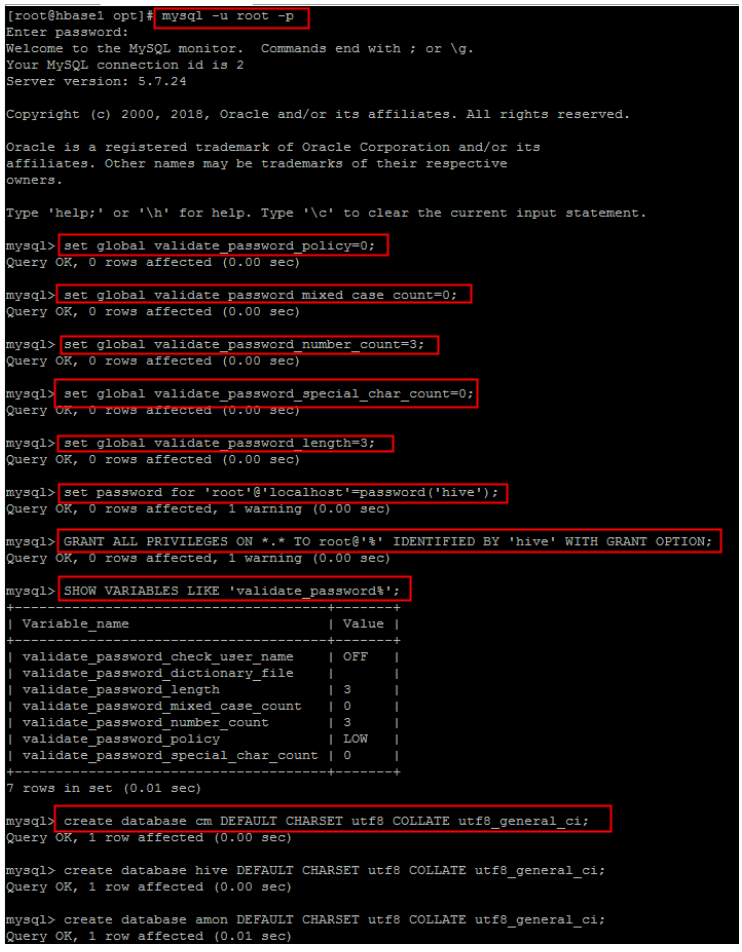


5.11.7 设置 mysql 数据库

范围： hbase1

命令：

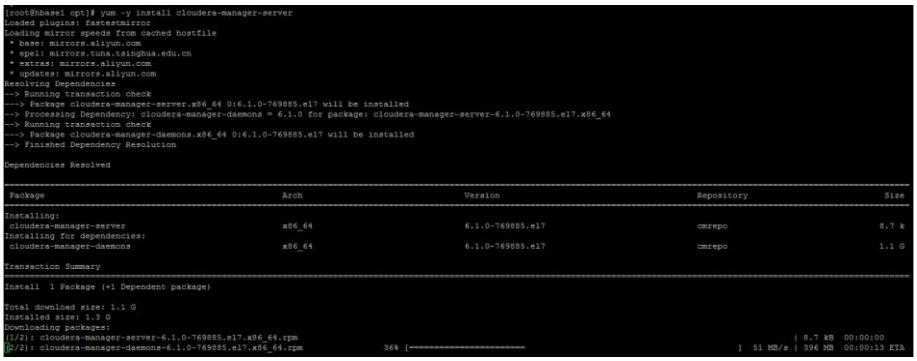
mysql -u root -p
set global validate_password_policy=0;
set global validate_password_mixed_case_count=0;
set global validate_password_number_count=3;
set global validate_password_special_char_count=0;
set global validate_password_length=3;
set password for 'root'@'localhost'=password('hive');
GRANT ALL PRIVILEGES ON *.* TO root@'%' IDENTIFIED BY 'hive' WITH GRANT OPTION;
SHOW VARIABLES LIKE 'validate_password%';
create database cm DEFAULT CHARSET utf8 COLLATE utf8_general_ci;
create database hive DEFAULT CHARSET utf8 COLLATE utf8_general_ci;
create database amon DEFAULT CHARSET utf8 COLLATE utf8_general_ci;
create database rman DEFAULT CHARSET utf8 COLLATE utf8_general_ci;
FLUSH PRIVILEGES;
exit;



5.12 安装 Cloudera Manager

范围： hbase1

命令：yum -y install cloudera-manager-server



5.13 初始化数据库

范围： hbase1

命令：

/opt/cloudera/cm/schema/scm_prepare_database.sh mysql cm root hive

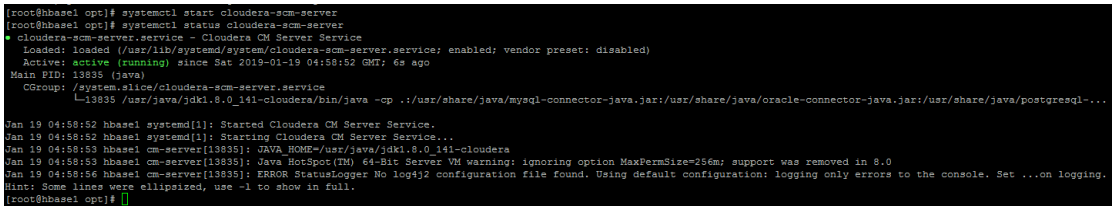
5.14 启动 Cloudera Manager Server

范围： hbase1

命令：

systemctl start cloudera-scm-server

systemctl status cloudera-scm-server



5.15 检查端口是否监听

范围： hbase1

命令：netstat -lnpt | grep 7180

启动的过程需要一段时间，大约 2 分钟左右，请耐心等待。。。

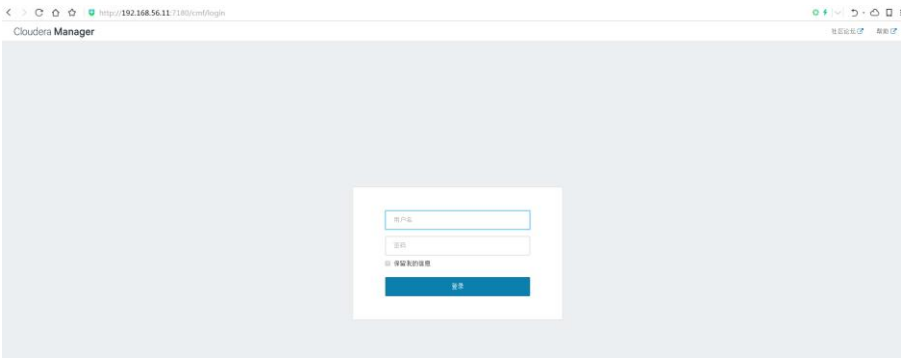
```
[root@hbase1 opt]# netstat -lnpt | grep 7180
tcp        0      0 0.0.0.0:7180            0.0.0.0:*               LISTEN      13835/java
```

5.16 访问 Cloudera Manager Server

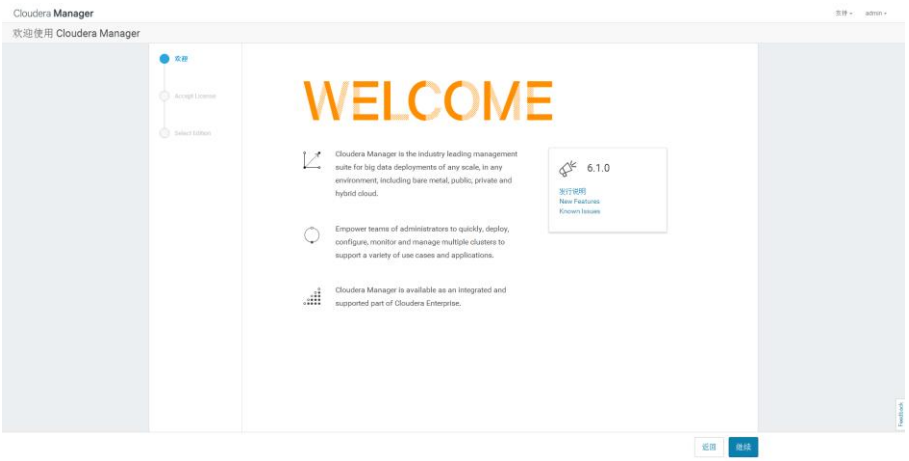
5.16.1 登录到 CM

访问 http://192.168.56.11:7180/cmf/login ，

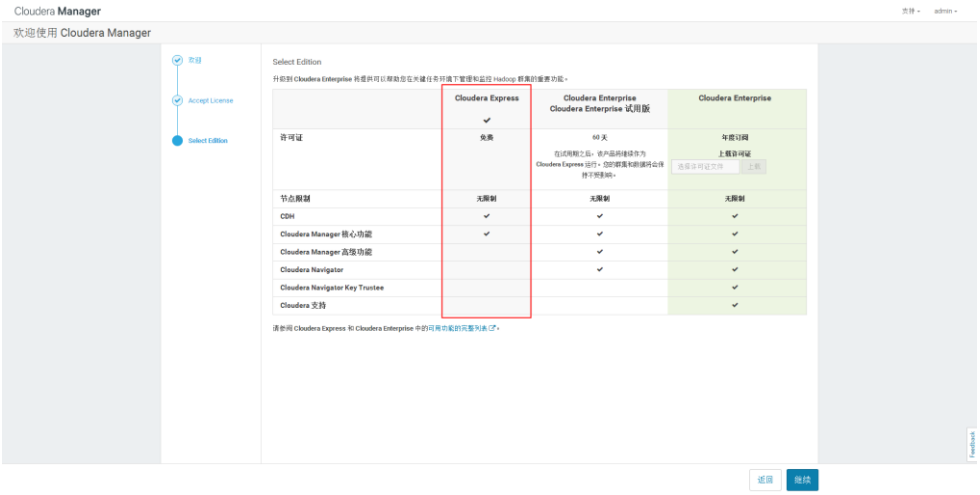
默认用户名/密码为：admin/admin



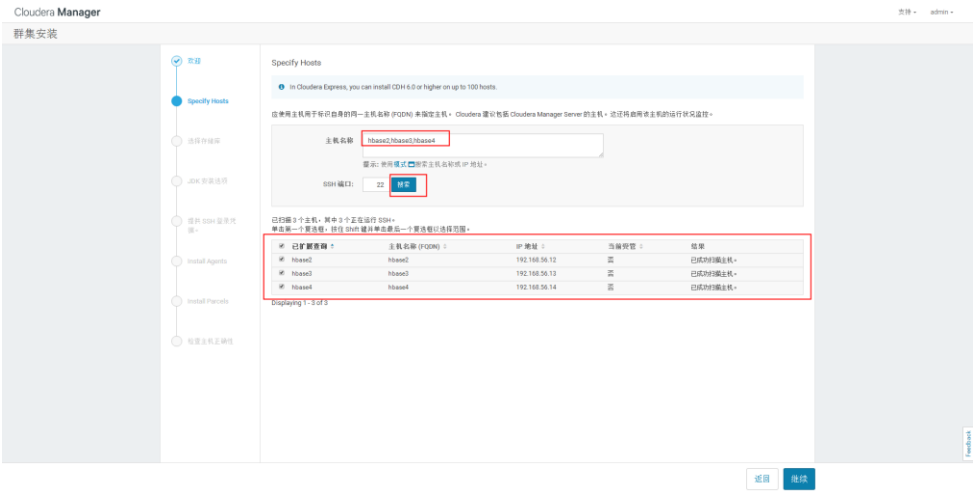
接下来，一路 next



这里我们选择“Cloudera Express”

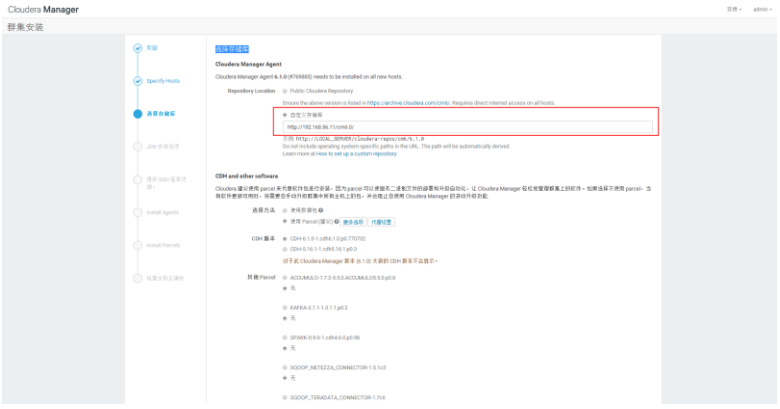


5.16.2 添加主机

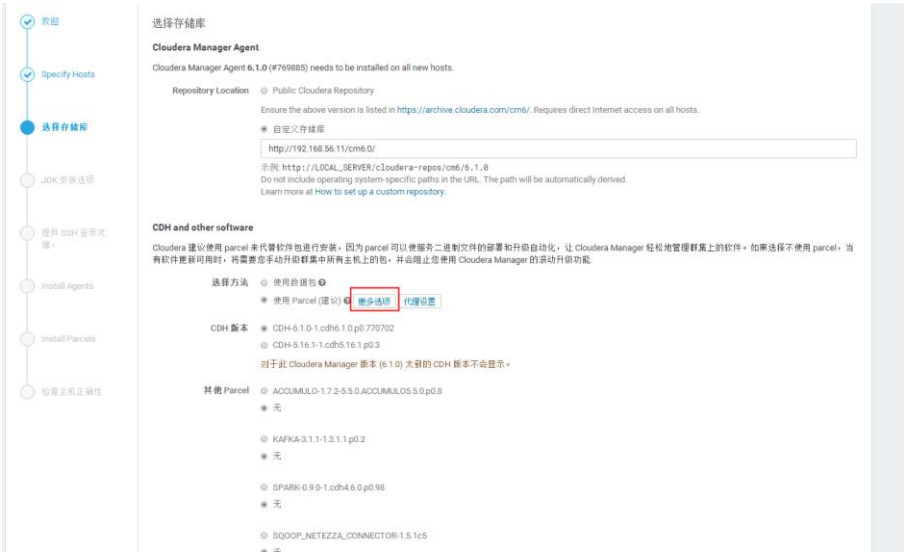


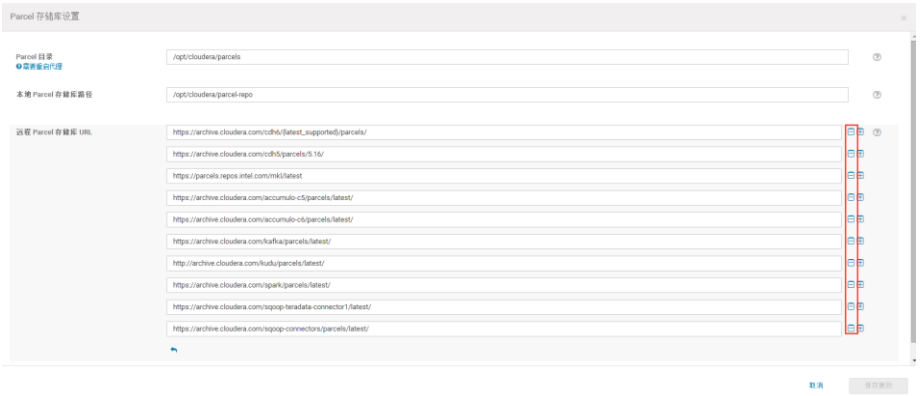
5.16.3 设置存储库

选择“自定义存储库”，输入：http://192.168.56.11/cm6.0/



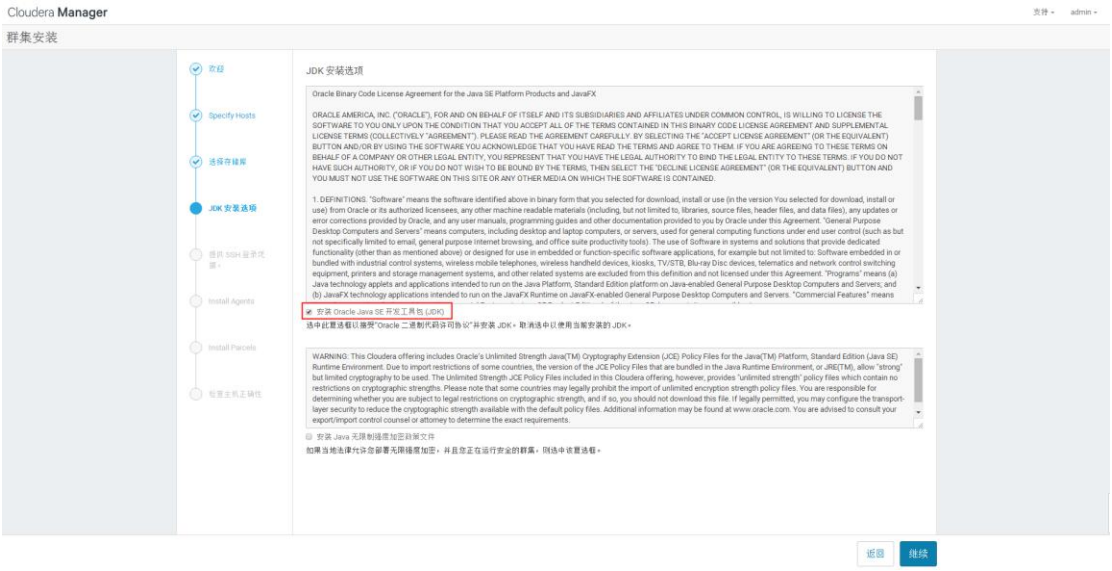
使用 parcel 选择，点击“更多选项”,点击“-”删除其它所有地址，



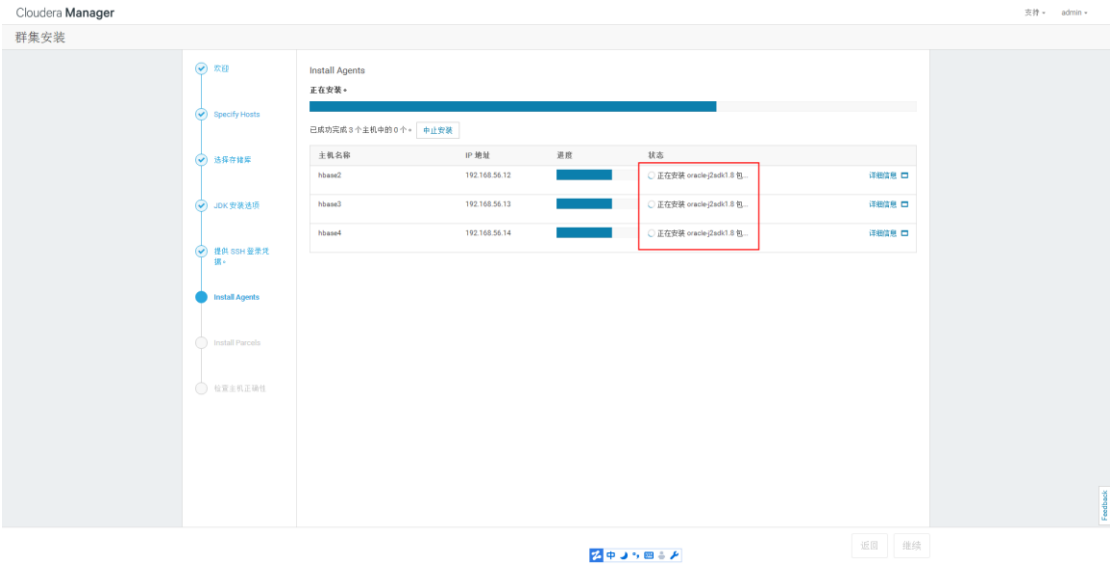


输入 http://192.168.56.11/cdh6.0/，点击“保存更改”

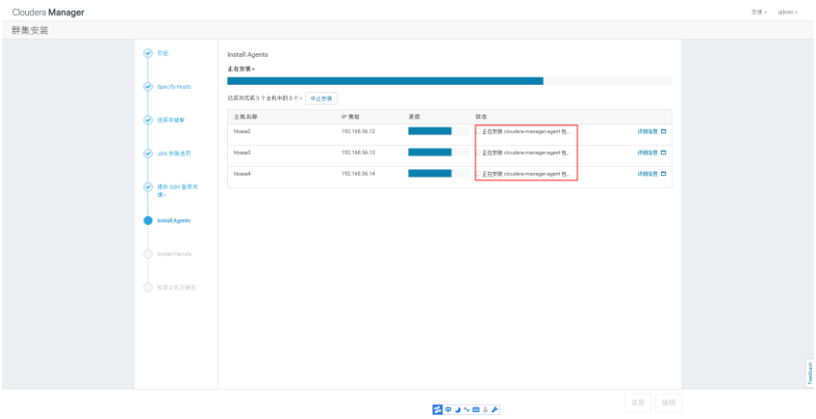
5.16.4 安装 jdk


Cloudera Manager
群集安装
JDK 安装选项
Oracle Binary Code License Agreement for the Java SE Platform Products and JavaFX
安装 Oracle Java SE 开发工具包 (JDK)
返回
继续

Cloudera Manager
群集安装
提供 SSH 登录凭据。
输入root账号的密码
返回
继续

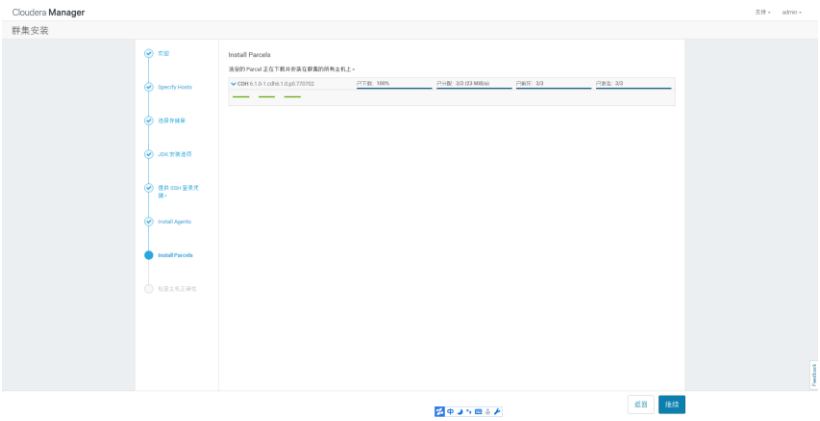

Cloudera Manager
群集安装
Install Agents
正在安装。
已成功完成 3 个主机中的 0 个。
中止安装
主机名称
IP 地址
进度
状态
hbase2
192.168.56.12
hbase3
192.168.56.13
hbase4
192.168.56.14
返回
继续

5.16.5 安装 Install Agents



此步的时间会长一些

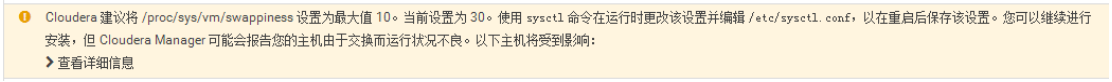
5.16.6 分配\解压\激活



5.16.7 检查主机正确性

这里报了两个警告，需要处理一下。

1）处理 **swappiness**

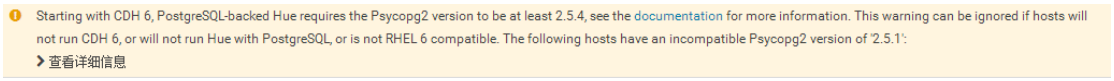


范围： hbase2/hbase3/hbase4

命令：echo 0 > /proc/sys/vm/swappiness

运行上述命令后，点击：“重新运行” ，已解决。

2）升级 **Psycopg2**



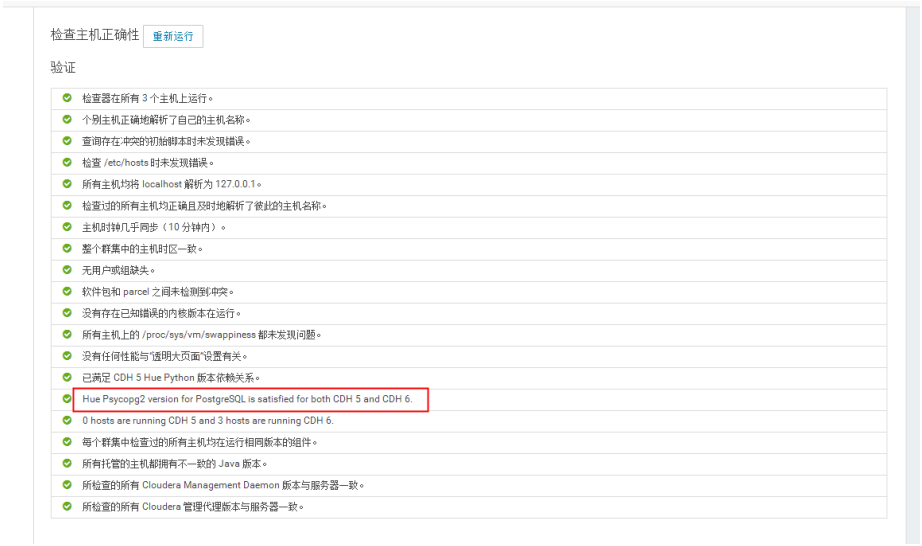
范围： hbase2/hbase3/hbase4

命令：

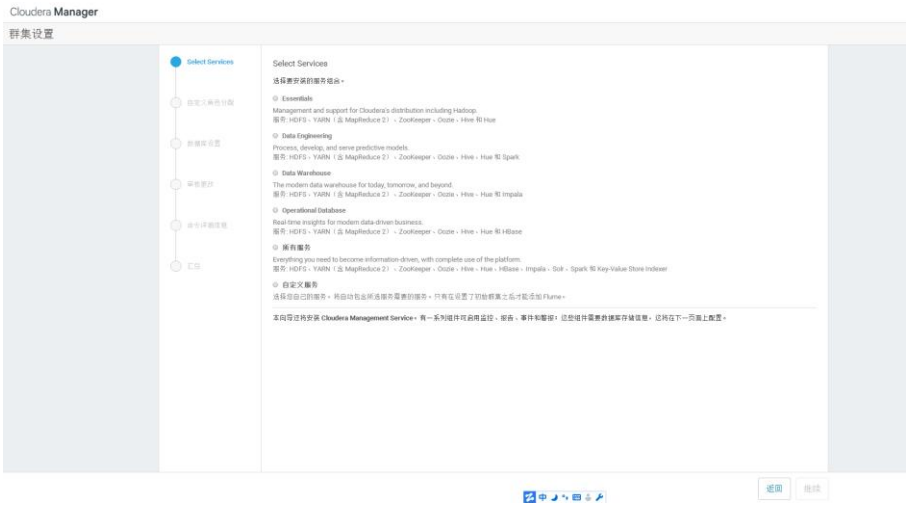
yum -y install python-devel mysql-devel zlib-devel openssl-devel gcc-c++ postgresql-devel*
cd /opt
wget https://pypi.python.org/packages/source/p/psycopg2/psycopg2-2.5.4.tar.gz
tar zxvf psycopg2-2.5.4.tar.gz
cd psycopg2-2.5.4
python setup.py build
python setup.py install

```
byte-compiling /usr/lib64/python2.7/site-packages/psycopg2/tests/test_cursor.py to test_cursor.pyc
byte-compiling /usr/lib64/python2.7/site-packages/psycopg2/tests/test_connection.py to test_connection
byte-compiling /usr/lib64/python2.7/site-packages/psycopg2/tests/test_notify.py to test_notify.pyc
byte-compiling /usr/lib64/python2.7/site-packages/psycopg2/tests/test_bugX000.py to test_bugX000.pyc
running install_egg_info
Writing /usr/lib64/python2.7/site-packages/psycopg2-2.5.4-py2.7.egg-info
[root@hbase2 psycopg2-2.5.4]#
```

运行上述命令后，点击：“重新运行” ，已解决。



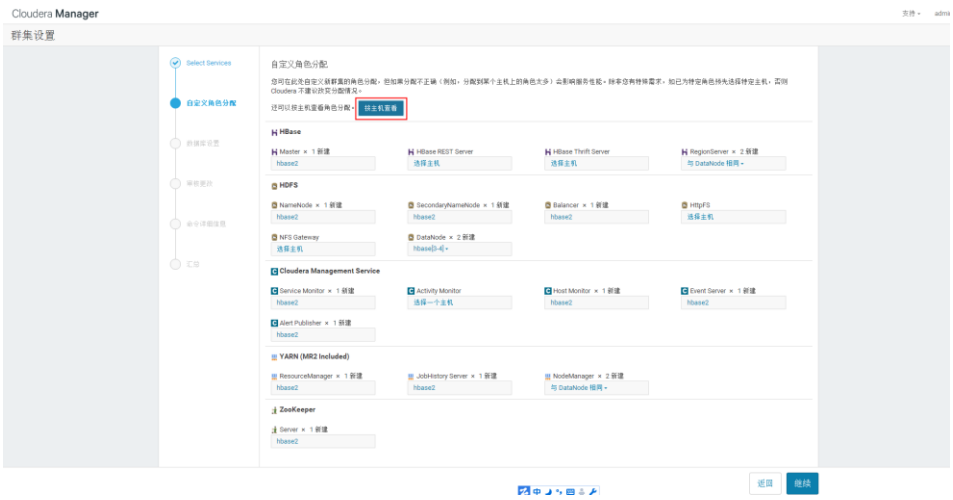
5.16.8 选择服务



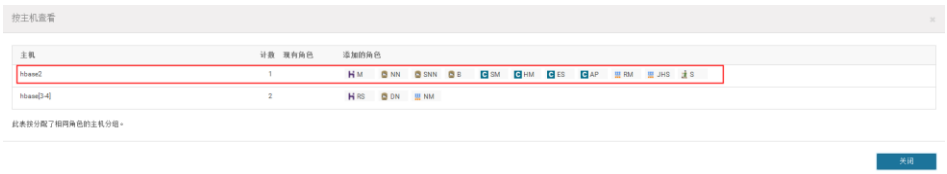
我选择了”自定义服务“

也可以在以后需要的时候，再添加服务。

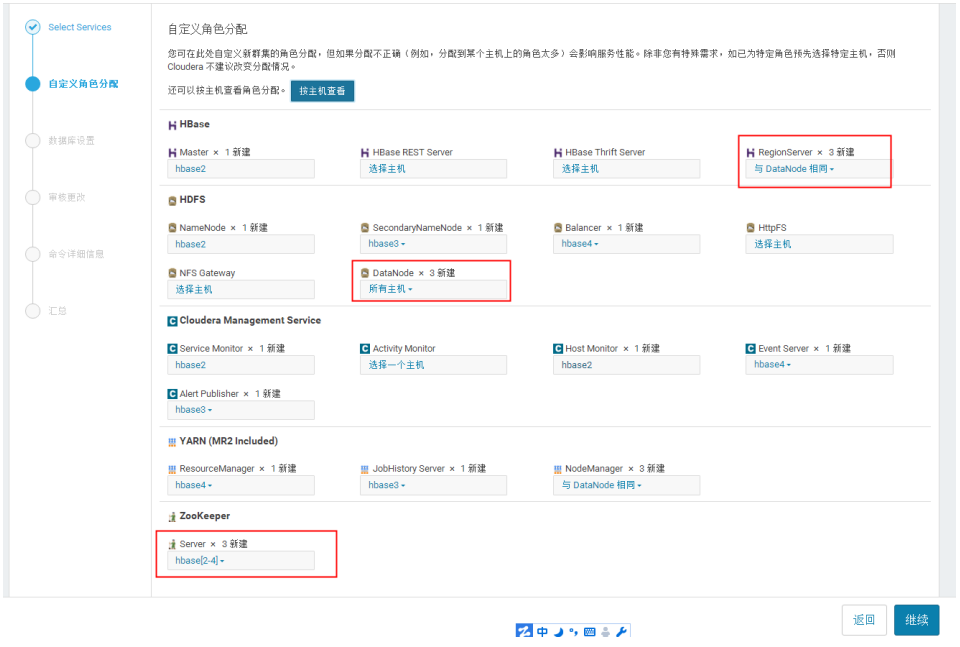
5.16.9 自定义角色分配



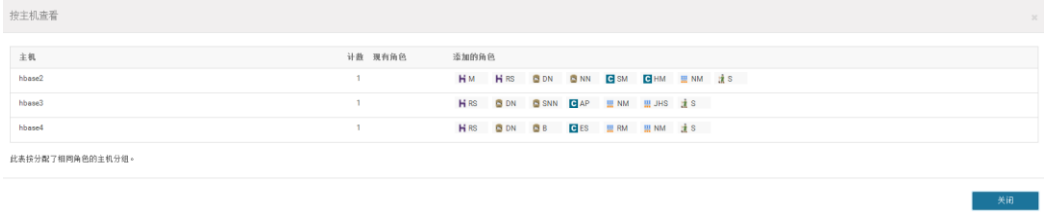
为了更加均衡的分配资源，我们”按主机查看“一下角色分配的具体情况



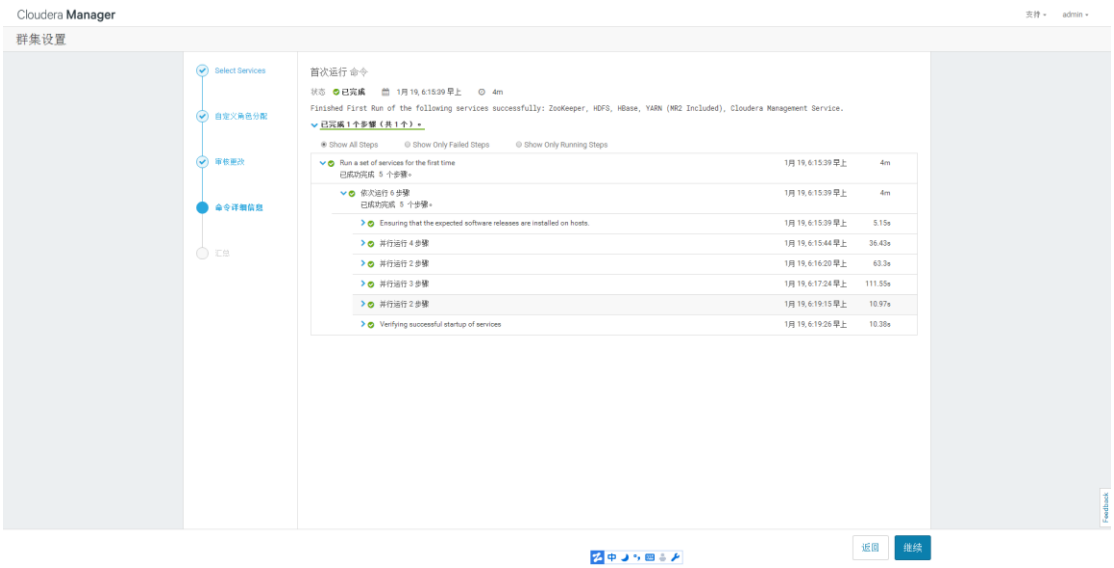
尤其要注意 zookeeper 的选择，至少 3 个以上



Hbase2 的角色比较多，再选择角色的时候，尽量分散开，选择完之后的角色分配情况。



选择好之后，继续进行安装



至此，CDH6.1.0 已经成功安装成功了，点击”完成“，主界面就出现了。