http://hdp-1/HDP-UTILS-1.1.0.20/repos/centos6/repodata/repomd.xml

Ambari2.5.0与HDP2.6.0集群安装配置

1. 环境准备

1.6. 修改YUM源

改用阿里云镜像站点

mv /etc/yum.repos.d/CentOS-Base.repo /etc/yum.repos.d/CentOS-Base.repo.bk

wget -O /etc/yum.repos.d/CentOS-Base.repo http://mirrors.aliyun.com/repo/Centos-6.repo

yum makecache

1.1. 关闭防火墙

CentOS 6：

chkconfig iptables off

service iptables stop

chkconfig --list iptables

CentOS 7：

systemctl disable firewalld.service

systemctl stop firewalld.service

1.2. 关闭SElinux

vi /etc/sysconfig/selinux

将SELINUX=enforcing改为SELINUX=disabled，执行该命令后重启机器生效

1.3. 配置hostname

vi /etc/sysconfig/network

NETWORKING=yes

HOSTNAME= hdp131.cancer.com

1.4. 配置hosts文件

vi /etc/hosts

192.168.100.131 hdp131.cancer.com

192.168.100.132 hdp132.cancer.com

192.168.100.133 hdp133.cancer.com

1.5. SSH配置

ssh-keygen -t rsa

cat ~/.ssh/id\_rsa.pub >> ~/.ssh/authorized\_keys

chmod 600 ~/.ssh/authorized\_keys

分发主节点里配置好的authorized\_keys到各从节点

ssh-copy-id -i ~root/.ssh/id\_rsa.pub root@hdp132.cancer.com #本节点对hdp132免密钥登录

连接从节点

ssh hdp132.cancer.com

1.7. 安装JDK

rpm -ivh /opt/jdk-8u131-linux-x64.rpm

java –version

配置JAVA\_HOME环境变量

vi /etc/profile

export JAVA\_HOME= /usr/java/jdk1.8.0\_131

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

export CLASSPATH=.:$JAVA\_HOME/lib/dt.jar:$JAVA\_HOME/lib/tools.jar

1.8. 安装NTP

开启ntpd服务（确保集群内部时钟统一）

CentOS 6：

yum install -y ntp

chkconfig --list ntpd

chkconfig ntpd on

service ntpd start

CentOS 7：

yum install -y ntp

chkconfig --list ntpd

systemctl is-enabled ntpd

systemctl enable ntpd

systemctl start ntpd

1.9. 关闭Linux的THP服务

如果不关闭transparent\_hugepage，HDFS会因为这个性能严重受影响。

关闭transparent\_hugepage方法是：

CentOS 6：

vi /etc/grub.conf

添加 transparent\_hugepage=never

vi /etc/rc.local

添加：

if test -f /sys/kernel/mm/transparent\_hugepage/defrag; then

echo never > /sys/kernel/mm/transparent\_hugepage/defrag

fi

if test -f /sys/kernel/mm/transparent\_hugepage/enabled; then

echo never > /sys/kernel/mm/transparent\_hugepage/enabled

fi

exit 0

CentOS 7：

vi /etc/default/grub

在有CMDLINE一行添加 transparent\_hugepage=never

grub2-mkconfig -o /boot/grub2/grub.cfg

systemctl disable tuned

重启之后，用下面的命令检查：

cat /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

有 [never]则表示THP被禁用

1.10. 配置UMASK

设定用户所创建目录的初始权限

umask 0022

1.11. 禁止离线更新

vi /etc/yum/pluginconf.d/refresh-packagekit.conf

添加：enabled=0

1.12. 备份克隆

以上的环境配置是最基本的，每个节点都需要的配置。可以做一备份节点，用于将来创建子节点克隆使用，减少重复工作。

当然克隆后还有小的调整，比如要重新配置hostname，还有SSH配置过程里，分发主节点里配置好的authorized\_keys到各从节点，

还是在克隆所有子节点后再操作。

2. 安装Ambari集群

2.1. 制作本地源

制作本地源是因为在线安装Ambari太慢。制作本地源只需在主节点上进行。

1) 配置HTTP 服务

配置HTTP 服务到系统层使其随系统自动启动

chkconfig httpd on

service httpd start

2) 安装工具

安装本地源制作相关工具

yum install yum-utils createrepo yum-plugin-priorities -y

vi /etc/yum/pluginconf.d/priorities.conf

添加gpgcheck=0

3) 下载 Ambari与HDP

CentOS 6：

http://public-repo-1.hortonworks.com/ambari/centos6/2.x/updates/2.5.0.3/ambari-2.5.0.3-centos6.tar.gz

http://public-repo-1.hortonworks.com/HDP/centos6/2.x/updates/2.6.0.3/HDP-2.6.0.3-centos6-rpm.tar.gz

http://public-repo-1.hortonworks.com/HDP-UTILS-1.1.0.21/repos/centos6/HDP-UTILS-1.1.0.21-centos6.tar.gz

CentOS 7：

http://public-repo-1.hortonworks.com/ambari/centos7/2.x/updates/2.5.0.3/ambari-2.5.0.3-centos7.tar.gz

http://public-repo-1.hortonworks.com/HDP/centos7/2.x/updates/2.6.0.3/HDP-2.6.0.3-centos7-rpm.tar.gz

http://public-repo-1.hortonworks.com/HDP-UTILS-1.1.0.21/repos/centos7/HDP-UTILS-1.1.0.21-centos7.tar.gz

4) 创建本地源

将下载的3个tar包解压到/var/www/html目录下：

tar zxvf /opt/ambari-2.5.0.3-centos6.tar.gz -C /var/www/html

tar zxvf /opt/HDP-2.6.0.3-centos6-rpm.tar.gz -C /var/www/html

tar zxvf /opt/HDP-UTILS-1.1.0.21-centos6.tar.gz -C /var/www/html

创建本地源

cd /var/www/html/

createrepo ./

下载ambari.repo

wget -nv http://public-repo-1.hortonworks.com/ambari/centos6/2.x/updates/2.5.0.3/ambari.repo -O /etc/yum.repos.d/ambari.repo

修改ambari.repo，配置为本地源

vi /etc/yum.repos.d/ambari.repo

#VERSION\_NUMBER=2.5.0.3-7

[ambari-2.5.0.3]

name=ambari Version - ambari-2.5.0.3

baseurl=http://hdp131.cancer.com/ambari/centos6/

gpgcheck=0

gpgkey=http://hdp131.cancer.com/ambari/centos6/RPM-GPG-KEY/RPM-GPG-KEY-Jenkins

enabled=1

priority=1

vi /etc/yum.repos.d/HDP.repo

[HDP-2.6.0.3-8]

name=HDP-2.6.0.3-8

baseurl=http://hdp131.cancer.com/HDP/centos6/

gpgcheck=0

gpgkey=http://hdp131.cancer.com/HDP/centos6/RPM-GPG-KEY/RPM-GPG-KEY-Jenkins

enabled=1

priority=1

vi /etc/yum.repos.d/HDP-UTILS.repo

[HDP-UTILS-1.1.0.21]

name=HDP-UTILS-1.1.0.21

baseurl=http://hdp131.cancer.com/

gpgcheck=0

gpgkey=http://hdp131.cancer.com/RPM-GPG-KEY/RPM-GPG-KEY-Jenkins

enabled=1

priority=1

yum clean all

yum makecache

yum repolist 查看Ambari 与 HDP 资源的资源库。

也可以打开浏览器查看一下：http://hdp131.cancer.com/ambari/centos6/

2.2. 安装MySQL

Ambari使用的默认数据库是PostgreSQL，用于存储安装元数据，可以使用自己安装MySQL数据库作为Ambari元数据库。

CentOS 6：

yum install -y mysql-server

chkconfig mysqld on

service mysqld start

CentOS 7：

wget http://dev.mysql.com/get/mysql-community-release-el7-5.noarch.rpm

rpm -ivh mysql-community-release-el7-5.noarch.rpm

yum install mysql-community-server

2.3. 安装Ambari

执行yum install ambari-server

执行yum install ambari-server成功后,针对mysql数据库再做一些工作：

将mysql-connector-java.jar复制到/usr/share/java目录下

mkdir /usr/share/java

cp /opt/mysql-connector-java-5.1.40.jar /usr/share/java/mysql-connector-java-5.1.40.jar

将mysql-connector-java.jar复制到/var/lib/ambari-server/resources目录下

cp /usr/share/java/mysql-connector-java-5.1.40.jar /var/lib/ambari-server/resources/mysql-jdbc-driver.jar

/usr/share/java/mysql-connector-java-5.1.40.jar

编辑ambari.properties

vi /etc/ambari-server/conf/ambari.properties

添加server.jdbc.driver.path=/usr/share/java/mysql-connector-java-5.1.40.jar

在mysql中分别创建数据库ambari，hive，oozie和其相应用户，创建相应的表：

CREATE DATABASE ambari;

use ambari;

CREATE USER 'ambari'@'%' IDENTIFIED BY 'bigdata';

GRANT ALL PRIVILEGES ON \*.\* TO 'ambari'@'%';

CREATE USER 'ambari'@'localhost' IDENTIFIED BY 'bigdata';

GRANT ALL PRIVILEGES ON \*.\* TO 'ambari'@'localhost';

CREATE USER 'ambari'@'hdp131.cancer.com' IDENTIFIED BY 'bigdata';

GRANT ALL PRIVILEGES ON \*.\* TO 'ambari'@'hdp131.cancer.com';

FLUSH PRIVILEGES;

source /var/lib/ambari-server/resources/Ambari-DDL-MySQL-CREATE.sql

注：在配置Ambari前先在mysql中建库建表，可以避免执行ambari-server setup时的中断。

2.4. 配置Ambari

adduser ambari

passwd ambari -- 密码ambari

执行ambari-server setup

下面是配置执行流程，按照提示操作

（1） 提示是否自定义设置。输入：y

Customize user account for ambari-server daemon [y/n] (n)? y

（2）ambari-server 账号。

Enter user account for ambari-server daemon (root):

如果直接回车就是默认选择root用户

如果输入已经创建的用户就会显示：

Enter user account for ambari-server daemon (root):ambari

Adjusting ambari-server permissions and ownership...

（3）检查防火墙是否关闭

Adjusting ambari-server permissions and ownership...

Checking firewall...

WARNING: iptables is running. Confirm the necessary Ambari ports are accessible. Refer to the Ambari documentation for more details on ports.

OK to continue [y/n] (y)?

直接回车

（4）设置JDK。输入：3

Checking JDK...

Do you want to change Oracle JDK [y/n] (n)? y

[1] Oracle JDK 1.8 + Java Cryptography Extension (JCE) Policy Files 8

[2] Oracle JDK 1.7 + Java Cryptography Extension (JCE) Policy Files 7

[3] Custom JDK

==============================================================================

Enter choice (1): 3

如果上面选择3自定义JDK,则需要设置JAVA\_HOME。输入：/usr/java/jdk1.8.0\_131

WARNING: JDK must be installed on all hosts and JAVA\_HOME must be valid on all hosts.

WARNING: JCE Policy files are required for configuring Kerberos security. If you plan to use Kerberos,please make sure JCE Unlimited Strength Jurisdiction Policy Files are valid on all hosts.

Path to JAVA\_HOME: /usr/java/jdk1.8.0\_131

Validating JDK on Ambari Server...done.

Completing setup...

（5）数据库配置。选择：y

Configuring database...

Enter advanced database configuration [y/n] (n)? y

（6）选择数据库类型。输入：3

Configuring database...

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Choose one of the following options:

[1] - PostgreSQL (Embedded)

[2] - Oracle

[3] - MySQL

[4] - PostgreSQL

[5] - Microsoft SQL Server (Tech Preview)

[6] - SQL Anywhere

==============================================================================

Enter choice (3): 3

（7）设置数据库的具体配置信息，根据实际情况输入，如果和括号内相同，则可以直接回车。如果想重命名，就输入。

Hostname (localhost):hdp131.cancer.com

Port (3306):

Database name (ambari):

Username (ambari):

Enter Database Password (bigdata):

Re-Enter password:

（8）将Ambari数据库脚本导入到数据库

WARNING: Before starting Ambari Server, you must run the following DDL against the database to create the schema: /var/lib/ambari-server/resources/Ambari-DDL-MySQL-CREATE.sql

Proceed with configuring remote database connection properties [y/n] (y)?

如果使用自己定义的数据库，必须在启动Ambari服务之前导入Ambari的sql脚本。这一点在安装Ambari环节提到过。









