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三. Cloudera Manager安装

3.1 部署CM Server & Agent

- **在所有节点**创建CM目录/opt/cloudera-manager

  ```
  mkdir /opt/cloudera-manager
  ```

- **在master节点**向其余节点分发cloudera-manager-centos7-cm5.16.1_x86_64.tar.gz

  ```
  for i in {1..3}; do scp /usr/local/src/cloudera-manager-centos7-cm5.16.1_x86_64.tar.gz  root@slave0$i:/usr/local/src/ ; done
  ```

- **在所有节点**解压cloudera-manager-centos7-cm5.16.1_x86_64.tar.gz到/opt/cloudera-manager/目录

  ```
  tar -zxvf /usr/local/src/cloudera-manager-centos7-cm5.16.1_x86_64.tar.gz -C /opt/cloudera-manager/
  ```

- **在所有slave节点**修改/opt/cloudera-manager/cm-5.16.1/etc/cloudera-scm-agent/config.ini的server_host参数为master节点ip或主机名

  ```
  sed -i "s/server_host=localhost/server_host=master/g" /opt/cloudera-manager/cm-5.16.1/etc/cloudera-scm-agent/config.ini
  ```

3.2 账号 && 权限

- **在所有节点**创建cloudera-scm账号，这是CM相关服务使用的默认账号

  ```
  # 禁止使用"cloudera-scm"账号登陆
  useradd --system --home=/opt/cloudera-manager/cm-5.16.1/run/cloudera-scm-server/ --no-create-home --shell=/bin/false --comment "Cloudera SCM User" cloudera-scm
  ```

- **在所有节点**为/opt/cloudera-manager目录赋权

  ```
  chown -R cloudera-scm:cloudera-scm /opt/cloudera-manager
  ```

3.3 设置开机启动

- **在master节点**设置系统服务

  ```
  # 设置使用"cloudera-scm-server"为系统启动服务
  cp /opt/cloudera-manager/cm-5.16.1/etc/init.d/cloudera-scm-server /etc/rc.d/init.d/
  chown cloudera-scm:cloudera-scm /etc/rc.d/init.d/cloudera-scm-server

  # 修改"CMF_DEFAULTS=${CMF_DEFAULTS:-/etc/default}"的路径
  vim /etc/rc.d/init.d/cloudera-scm-server
  CMF_DEFAULTS=/opt/cloudera-manager/cm-5.16.1/etc/default
  ```

- ```
  # 添加系统启动服务
  chkconfig --add cloudera-scm-server
  chkconfig --level 35 cloudera-scm-server on
  checkconfig --list
  ```

- **在所有slave节点**设置系统服务

  ```
  # 设置使用"cloudera-scm-agent"为系统启动服务
  cp /opt/cloudera-manager/cm-5.16.1/etc/init.d/cloudera-scm-agent /etc/rc.d/init.d/
  chown cloudera-scm:cloudera-scm /etc/rc.d/init.d/cloudera-scm-agent

  # 修改"CMF_DEFAULTS=${CMF_DEFAULTS:-/etc/default}"的路径"-/etc/default"
  vim /etc/rc.d/init.d/cloudera-scm-agent
  ```
  ```

```
CMF_DEFAULTS=${CMF_DEFAULTS:/opt/cloudera-manager/cm-5.16.1/etc/default}

# 添加系统启动服务
chkconfig --add cloudera-scm-agent
chkconfig --level 35 cloudera-scm-agent on
checkconfig --list
```

3.4 初始化数据库

- **在所有节点**设置MySQL驱动(JDBC)；
- **注意**：部署JDBC在任意节点，则后续"CDH安装配置"阶段Reports Manager被分配在任意节点都可以

```
cp /usr/local/src/mysql-connector-java-8.0.13.jar /opt/cloudera-manager/cm-5.16.1/share/cmf/lib/
chown cloudera-scm:cloudera-scm /opt/cloudera-manager/cm-5.16.1/share/cmf/lib/mysql-connector-java-8.0.13.jar
```

- **在master节点**重启MySQL服务

```
service mysqld restart
```

- **在任意节点**初始化CM
- **注意**：Cloudera服务需要的相关database如下：
  - 表中给出的是CM相关服务配置文件中默认的database与user，但不是必须使用；
  - database在数据库中可直接创建，但CM初始化时如果没有database，则自动创建。

Service	Database	User
Cloudera Manager Server	scm	scm
Activity Monitor	amon	amon
Reports Manager	rman	rman
Hue	hue	hue
Hive Metastore Server	metastore	metastore
Sentry Server	sentry	sentry
Cloudera Navigator Audit Server	nav	nav
Cloudera Navigator Metadata Server	navms	navms
Oozie	oozie	oozie

```
# 格式：scm_prepare_database.sh [options] (postgresql|mysql|oracle) database username [password]
# scm_prepare_database.sh：创建与配置CMS需要的数据库脚本，默认在"/opt/cloudera-manager/cm-5.16.1/share/cmf/schema/"目录；
# postgresql|mysql|oracle：必选项，数据库类型；
# database：必选项，针对postgresql|mysql，创建SCM数据库;针对oracle，填写sid；
# username：必选项，SCM数据库的账号；
# password：选填项，SCM数据库的账号密码，如果不指定，会提示输入；
# options：
# -h：数据库主机ip或hostname，默认是"localhost"；
# -u：数据库账号，需要具备增删改查的权限，默认是"root"；
# -p：账号密码，默认无密码；
# --scm-host：SCM server主机名，默认是"localhost"
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % hive hive hive
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % amon amon amon
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % rman rman rman
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % hue hue hue
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % nav nav nav
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % navms navms navms
sh /opt/cloudera-manager/cm-5.16.1/share/cmf/schema/scm_prepare_database.sh mysql -h gfdatamaster -uroot -proot --scm-host % oozie oozie oozie
```

返回如下信息，表示配置成功

```
[main] INFO  com.cloudera.enterprise.dbutil.DbCommandExecutor  - Successfully connected to database.
All done, your SCM database is configured correctly!
```

3.5 创建本地parcel源

- **在master节点**制作本地parcel源

```
# 创建本地parcel源目录
mkdir -p /opt/cloudera/parcel-repo

# 将parcel相关安装包放置到"/opt/cloudera/parcel-repo"目录;
# 说明："/opt/cloudera/parcel-repo"目录可放置多套parcel安装包;
# 将"CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel.sha1"重命名为"CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel.sha"，否则会重新下载"CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel"安装包
cp /opt/tmp/CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel /opt/cloudera/parcel-repo/CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel
cp /opt/tmp/CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel.sha1 /opt/cloudera/parcel-repo/CDH-5.16.1-1.cdh5.16.1.p0.3-el7.parcel.sha
cp /opt/tmp/manifest.json /opt/cloudera/parcel-repo/manifest.json

# 赋权
chown -R cloudera-scm:cloudera-scm /opt/cloudera/
```

- **在所有salve节点**创建软件安装目录

```
mkdir -p /opt/cloudera/parcels

# 赋权
chown -R cloudera-scm:cloudera-scm /opt/cloudera/
```

3.6 启动CM服务

- **在master节点**启动cloudera-scm-server服务

```
# "cloudera-scm-server"启动需要连接数据库，监听端口启动会延迟
service cloudera-scm-server restart
service cloudera-scm-server status -l

# 通过启动后的状态查看，脚本需要执行"pstree"命令，需要安装依赖包
yum install psmisc -y
```

- **在所有salve节点**启动cloudera-scm-agent服务

```
yum install psmisc -y
service cloudera-scm-agent restart
service cloudera-scm-agent status -l
```