**Heartbeat配置安装手册**

1. **实验目的**

**利用heartbeat搭建双服务器热备份高可用群集。**

1. **实验环境**

**两台linux服务器，双网卡。server1: eth0:10.0.0.1 (作为心跳线)**

**eth1:192.168.253.129**

**server2： eth0:10.0.0.2(作为心跳线)**

**eth1:192.168.253.130**

**虚拟IP : 192.168.253.200**

1. **修改/etc/hosts文件**

**1、在server1上加入以下内容：**

**10.0.0.1 server1**

**10.0.0.2 server2**

**2、在server2上加入以下内容：**

**10.0.0.2 server2**

**10.0.0.1 server1**

**注：保证uname –n 的返回结果分别为server1与server2。**

1. **安装heartbeat之前请先安装libnet（两台服务器都安装）**

**#tar -zxvf libnet.tar.gz**

**#cd libnet**

**#./configure**

**#make && make install**

1. **安装heartbeat（两台服务器都安装）**
2. **两个node分别创建heartbeat相关的用户和组**

**#** **groupadd haclient**

**#** **useradd -g haclient hacluster**

1. **安装heartbeat**

**#tar -zxvf heartbeat-2.1.3.tar.gz**

**#cd heartbeat-2.1.3**

**#./ConfigureMe configure**

**#make && make install**

1. **复制配置文件**

**#cp doc/ha.cf /etc/ha.d/**

**#cp doc/authkeys /etc/ha.d/**

**#cp doc/haresources /etc/ha.d/**

1. **编辑/etc/ha.d/ha.cf**

**1、server1上面**

**[root@server1 ~]# cat /etc/ha.d/ha.cf | grep -v '#'**

**logfile /var/log/ha-log**

**logfacility local0**

**keepalive 2**

**deadtime 20**

**warntime 5**

**initdead 120**

**udpport 694**

**ucast eth0 10.0.0.2**

**auto\_failback on**

**node server1**

**node server2**

**ping 192.168.253.254**

**hopfudge 1**

**deadping 30**

**2、server2上面**

**[root@server2 ~]# cat /etc/ha.d/ha.cf | grep -v '#'**

**logfile /var/log/ha-log**

**logfacility local0**

**keepalive 2**

**deadtime 20**

**warntime 5**

**initdead 120**

**udpport 694**

**ucast eth0 10.0.0.1**

**auto\_failback on**

**node server1**

**node server2**

**ping 192.168.253.254**

**hopfudge 1**

**deadping 30**

1. **编辑/etc/ha.d/authkeys(两台服务器一样)**

**1、开放以下两项**

**[root@server1 ~]# cat /etc/ha.d/authkeys | grep -v '#'**

**auth 1**

**1 crc**

**2、更改authkeys权限**

**#chmod 600 /etc/ha.d/authkeys**

1. **编辑/etc/ha.d/haresources，加入以下内容(两台服务器一样)**

**[root@server1 ~]# cat /etc/ha.d/haresources | grep -v '#'**

**server1 IPaddr::192.168.253.200/24/eth1 mysqld 注：mysqld为mysql的启动脚本（及在/etc/init.d/下的启动脚本）**

1. **启动heartbeat**

**#/etc/init.d/heartbeat start 或者 #service heartbeat start 启动两台服务器上的heartbeat。**

1. **检测实验结果**
2. **在启动heartbeat前，mysql服务处于停止状态**

**[root@server1 ~]# netstat -nltp|grep mysqld**

**[root@server1 ~]#**

1. **启动heartbeat后，server1上面的mysql处于启动状态，而server2上面mysql依然处于停止状态。**

**[root@server1 ~]# netstat -nltp|grep mysqld**

**tcp 0 0 0.0.0.0:3306 0.0.0.0:\* LISTEN 10678/mysqld**

**[root@server1 ~]#**

1. **启动heartbeat后，server1上面执行ip add 后在eth1里面多出一条记录（红色字体标注），而server2上没有。**

**[root@server1 ~]# ip add**

**1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 16436 qdisc noqueue**

**link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00**

**inet 127.0.0.1/8 scope host lo**

**inet6 ::1/128 scope host**

**valid\_lft forever preferred\_lft forever**

**2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast qlen 1000**

**link/ether 00:0c:29:47:fd:82 brd ff:ff:ff:ff:ff:ff**

**inet 10.0.0.1/24 brd 10.0.0.255 scope global eth0**

**inet6 fe80::20c:29ff:fe47:fd82/64 scope link**

**valid\_lft forever preferred\_lft forever**

**3: eth1: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast qlen 1000**

**link/ether 00:0c:29:47:fd:8c brd ff:ff:ff:ff:ff:ff**

**inet 192.168.253.129/24 brd 192.168.253.255 scope global eth1**

**inet 192.168.253.200/24 brd 192.168.253.255 scope global secondary eth1:0**

**inet6 fe80::20c:29ff:fe47:fd8c/64 scope link**

**valid\_lft forever preferred\_lft forever**

**4: sit0: <NOARP> mtu 1480 qdisc noop**

**link/sit 0.0.0.0 brd 0.0.0.0**

1. **停止server1的网卡eth0后，在server2上面执行命令查看接管状态，server2的eth1网卡多出一条记录（红色字体）。**

**[root@server2 ~]# netstat -nltp|grep mysqld**

**tcp 0 0 0.0.0.0:3306 0.0.0.0:\* LISTEN 9374/mysqld**

**[root@server2 ~]#**

**[root@server2 ~]# ip add**

**1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 16436 qdisc noqueue**

**link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00**

**inet 127.0.0.1/8 scope host lo**

**inet6 ::1/128 scope host**

**valid\_lft forever preferred\_lft forever**

**2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast qlen 1000**

**link/ether 00:0c:29:a7:61:59 brd ff:ff:ff:ff:ff:ff**

**inet 10.0.0.2/24 brd 10.0.0.255 scope global eth0**

**inet6 fe80::20c:29ff:fea7:6159/64 scope link**

**valid\_lft forever preferred\_lft forever**

**3: eth1: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast qlen 1000**

**link/ether 00:0c:29:a7:61:63 brd ff:ff:ff:ff:ff:ff**

**inet 192.168.253.130/24 brd 192.168.253.255 scope global eth1**

**inet 192.168.253.200/24 brd 192.168.253.255 scope global secondary eth1:0**

**inet6 fe80::20c:29ff:fea7:6163/64 scope link**

**valid\_lft forever preferred\_lft forever**

**4: sit0: <NOARP> mtu 1480 qdisc noop**

**link/sit 0.0.0.0 brd 0.0.0.0**

1. **结论**

**经过检测，试验成功。**

**当server1启动heartbeat时，将自身的mysql服务启动，并虚拟出IP 192.168.253.200对外网提供服务。**

**当server1挂点后（断开server1的eth0模拟），server2检测不到来自server1的心跳，一段时间内（ha.cf内设定）server2启动mysql服务并接管服务。**

**当server1恢复正常后，server1又重新接管服务。**