# iSCSI配置简介

2014/10/6 renyl

# 1 SERVER端配置

## 1.1 RHEL6系(TGT, Linux SCSI Target)

1. 安装“scsi-target-utils”包

|  |
| --- |
| #yum install scsi-target-utils\* |

2）启动tgtd服务

|  |
| --- |
| #service tgtd start |

1. 新增iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op new --mode target --tid 1 -T ign.2012-04.hostname:iSCSI-data1 |

注：iSCSI Qualified Name (iqn)的格式通常为：iqn.yyyy-mm.<reversed domain name>[:identifier]

1. 将要分享的分区(如：sda1和sda2)加入iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op new --mode logicalunit --tid 1 --lun 1 -b /dev/sda1  #tgtadm --lld iscsi --op new --mode logicalunit --tid 1 --lun 2 -b /dev/sda2 |

注：存储设备可以有以下三种：

1. 镜像文件：（制作过程如下）
2. if=/dev/zero of=/mnt/sdb1/iscsi\_disk.img bs=1M count=500
3. chcon -Rv -t tgtd\_var\_lib\_t /mnt/sdb1/
4. 磁盘分区：/dev/sdb2
5. LVM逻辑卷:/dev/my\_vg/my\_lv
6. 设置指定CLIENT端（iSCSI Initiator Device）可获取本iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op bind --mode target --tid 1 -I 193.168.116.53 |

注：

192.168.116.53为CLIENT端（iSCSI Initiator Device）的 IP，若不設定具体的IP，也可以设定为ALL，这样就表示所有的CLIENT端都可使用。

1. 取消指定CLIENT端（iSCSI Initiator Device）可获取本iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op unbind --mode target --tid 1 -I 193.168.116.53 |

1. 设置指定用户可获取本iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op new --mode account --user redhat --password redhat12345678  #tgtadm --lld iscsi --op bind --mode account --tid 1 --user redhat |

注：密码要求是12-16个字符。

1. 取消指定用户可获取本iSCSI Target Device

|  |
| --- |
| #tgtadm --lld iscsi --op unbind --mode target --tid 1 --user user\_1 |

1. 确认iSCSI Targe Device设定以及查看添加的分区

|  |
| --- |
| #tgtadm --lld iscsi --op show --mode target  #tgt-admin --show |

1. 删除iSCSI Target Device已分享的分区

|  |
| --- |
| #tgtadm --lld iscsi --op delete --mode logicalunit --tid 1 --lun 1  #tgtadm --lld iscsi --op delete --mode logicalunit --tid 1 --lun 2 |

1. 删除target

|  |
| --- |
| #tgtadm --lld iscsi --op delete --mode target --tid 1 |

注：

SERVER端需要关闭防火墙，或者打开3260/tcp端口（命令为：firewall-cmd --add-port 3260/tcp），否则CLIENT端（iSCSI Initiator Device）访问target可能会失败。

## 1.2 RHEL7系(LIO, Linux-IO Target)

1. 安装“targetcli”包

|  |
| --- |
| #yum install targetcli\* |

1. 向“backstore”中添加分区

|  |
| --- |
| # targetcli  targetcli shell version 2.1.fb34  Copyright 2011-2013 by Datera, Inc and others.  For help on commands, type 'help'.  /> ls  o-/ .............................................................................. [...]  o-backstores ....................................................... ........... [...]  | o- block ........................................................[Storage Objects: 0]  | o- fileio .......................................................[Storage Objects: 0]  | o- pscsi ........................................................[Storage Objects: 0]  | o- ramdisk ................................................... .. [Storage Objects: 0]  o- iscsi ................................................................ [Targets: 0]  o- loopback ............................................................. [Targets: 0]  /> cd /backstores/block/  /backstores/block> create name=my\_disk dev=/dev/sdd3  Created block storage object my\_disk using /dev/sdd3.  /backstores/block> ls  o- block .......................................................... [Storage Objects: 1]  o- my\_disk ............................... [/dev/sdd3 (18.6GiB) write-thru deactivated]  /backstores/block>cd /  /> exit  Global pref auto\_save\_on\_exit=true  Last 10 configs saved in /etc/target/backup.  Configuration saved to /etc/target/saveconfig.json  # |

1. 创建iSCSI target

|  |
| --- |
| # targetcli  targetcli shell version 2.1.fb34  Copyright 2011-2013 by Datera, Inc and others.  For help on commands, type 'help'.  /> ls  o- / ............................................................................. [...]  o- backstores ................................................................. [...]  | o- block ................................................... [Storage Objects: 1]  | | o- my\_disk ......................... [/dev/sdd3 (18.6GiB) write-thru deactivated]  | o- fileio .................................................. [Storage Objects: 0]  | o- pscsi ................................................... [Storage Objects: 0]  | o- ramdisk .................................................. [Storage Objects: 0]  o- iscsi ............................................................. [Targets: 0]  o- loopback .......................................................... [Targets: 0]  /> cd iscsi  /iscsi> create  Created target iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.8be45ad4a30a.  Created TPG 1.  /iscsi> ls  o- iscsi ................................................................... [Targets: 1]  o- iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.8be45ad4a30a ....... [TPGs: 1]  o- tpg1 .................................................. [no-gen-acls, no-auth]  o- acls ............................................................. [ACLs: 0]  o- luns ............................................................. [LUNs: 0]  o- portals ....................................................... [Portals: 0]  /iscsi>cd /  /> exit  Global pref auto\_save\_on\_exit=true  Last 10 configs saved in /etc/target/backup.  Configuration saved to /etc/target/saveconfig.json  # |

1. 向已创建的iSCSI target设置acls、luns、portals

|  |
| --- |
| # targetcli  targetcli shell version 2.1.fb34  Copyright 2011-2013 by Datera, Inc and others.  For help on commands, type 'help'.  /> ls  o- / .............................................................................. [...]  o- backstores .............................................................. [...]  | o- block .................................................. [Storage Objects: 1]  | | o- my\_disk ...................... [/dev/sdd3 (18.6GiB) write-thru deactivated]  | o- fileio ................................................. [Storage Objects: 0]  | o- pscsi .................................................. [Storage Objects: 0]  | o- ramdisk ................................................ [Storage Objects: 0]  o- iscsi ............................................................ [Targets: 1]  | o- iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.8be45ad4a30a ..... [TPGs: 1]  | o- tpg1 ............................................... [no-gen-acls, no-auth]  | o- acls .......................................................... [ACLs: 0]  | o- luns .......................................................... [LUNs: 0]  | o- portals ..................................................... [Portals: 0]  o- loopback .......................................................... [Targets: 0]  /> cd iscsi/iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.8be45ad4a30a/tpg1/  /iscsi/iqn.20...5ad4a30a/tpg1> ls  o- tpg1 ...................................................... [no-gen-acls, no-auth]  o- acls ................................................................. [ACLs: 0]  o- luns ................................................................. [LUNs: 0]  o- portals .......................................................... [Portals: 0]  /iscsi/iqn.20...5ad4a30a/tpg1>cd acls  /iscsi/iqn.20...30a/tpg1/acls> create iqn.1994-05.com.redhat:ef2fe972d17c  Created Node ACL for iqn.1994-05.com.redhat:ef2fe972d17c  该iqn为CLIENT端的，可以在CLIENT端通过命令“cat /etc/iscsi/initiatorname.iscsi”查看  /iscsi/iqn.20...30a/tpg1/acls>cd ../luns  /iscsi/iqn.20...30a/tpg1/luns>create /backstores/block/my\_disk  Created LUN 0.  Created LUN 0->0 mapping in node ACL iqn.1994-05.com.redhat:ef2fe972d17c  /iscsi/iqn.20...30a/tpg1/luns> cd ../portals  /iscsi/iqn.20.../tpg1/portals> create   这条命令如果报错，那么可以使用命令“netstat –nlp |grep 3260”看下，是不是tgtd服务占用了3260号端口。  Using default IP port 3260  Binding to INADDR\_ANY (0.0.0.0)  Created network portal 0.0.0.0:3260.  /iscsi/iqn.20.../tpg1/portals> cd /  /> ls  o- / ......................................................................... [...]  o- backstores .............................................................. [...]  | o- block .................................................. [Storage Objects: 1]  | | o- my\_disk ........................ [/dev/sdd3 (18.6GiB) write-thru activated]  | o- fileio .................................................. [Storage Objects: 0]  | o- pscsi .................................................. [Storage Objects: 0]  | o- ramdisk ................................................ [Storage Objects: 0]  o- iscsi ............................................................. [Targets: 1]  | o- iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.8be45ad4a30a ..... [TPGs: 1]  | o- tpg1 ............................................... [no-gen-acls, no-auth]  | o- acls ......................................................... [ACLs: 1]  | | o- iqn.1994-05.com.redhat:ef2fe972d17c ................. [Mapped LUNs: 1]  | | o- mapped\_lun0 .............................. [lun0 block/my\_disk (rw)]  | o- luns ......................................................... [LUNs: 1]  | | o- lun0 ..................................... [block/my\_disk (/dev/sdd3)]  | o- portals ................................................... [Portals: 1]  | o- 0.0.0.0:3260 .................................................... [OK]  o- loopback ........................................................ [Targets: 0]  /> saveconfig  切换到根目录保存配置，这样重启后配置依然生效。  Last 10 configs saved in /etc/target/backup.  Configuration saved to /etc/target/saveconfig.json  /> exit  Global pref auto\_save\_on\_exit=true  Last 10 configs saved in /etc/target/backup.  Configuration saved to /etc/target/saveconfig.json  # |

注：

1. targetcli是通过交换式的方式执行的，不同目录下可执行的命令是不同的，可以通过双击Tab键来显示在不同目录可执行的命令，以及可用参数。
2. 需要注意，默认情况下全局参数auto\_save\_on\_exit=ture。

# 2 CLIENT端配置

1. 安装“iscsi-initiator-utils”包

|  |
| --- |
| #yum install yum install iscsi-initiator-utils\* |

1. 启动iscsi 和iscsid服务

|  |
| --- |
| #service iscsi start && service iscsid start |

注：iscsi服务其实可以不用启动。iscsiadm命令会自动启动iscsid服务。

1. 侦测SERVER端的target

|  |
| --- |
| #iscsiadm -m discovery -t sendtargets -p 193.168.181.231  193.168.181.231:3260,1 iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb  # |

1. 查看可用的target

|  |
| --- |
| # ls -al /var/lib/iscsi/nodes/\*  total 0  drw-------. 3 root root 35 Apr 23 12:58 .  drwxr-xr-x. 3 root root 75 Apr 23 12:58 ..  drw-------. 2 root root 20 Apr 23 12:58 193.168.181.231,3260,1  # iscsiadm -m node  193.168.181.231:3260,1 iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb  # |

1. 设置Server的访问账号和密码（7系不需要设置）

|  |
| --- |
| #cat /etc/iscsi/iscsid.conf  #将相关项前面的注释符#删除掉  …  node.session.auth.authmethod = CHAP   //开启CHAP认证  node.session.auth.username = redhat    //配置账号  node.session.auth.password = redhat12345678  //密码  … |

1. 载入target

|  |
| --- |
| #iscsiadm -m node -T iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb --login  Logging in to [iface: default, target: iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb, portal: 193.168.181.231,3260] (multiple)  Login to [iface: default, target: iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb, portal: 193.168.181.231,3260] successful.  # |

1. 验证target

|  |
| --- |
| # lsblk  NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT  sda 8:0 0 465.8G 0 disk  `-sda2 8:2 0 465.3G 0 part  |-rhel-root 253:0 0 50G 0 lvm /  |-rhel-swap 253:1 0 3.8G 0 lvm [SWAP]  看到SERVER端的磁盘了。  `-rhel-home 253:2 0 411.5G 0 lvm /home  sdb 8:16 0 8G 0 disk  # |

1. 查看活动的会话，并且列出有效的LUNs

|  |
| --- |
| # iscsiadm -m session -P 3  iSCSI Transport Class version 2.0-870  version 6.2.0.873-28  …  scsi6 Channel 00 Id 0 Lun: 0  Attached scsi disk sdb State: running |

1. 格式化

|  |
| --- |
| # parted /dev/sdb -s mklabel gpt  # parted -s /dev/sdb mkpart primary xfs 1049KB 4GB  Warning: The resulting partition is not properly aligned for best performance.  # mkfs.xfs -f /dev/sdb1  meta-data=/dev/sdb1 isize=256 agcount=8, agsize=122039 blks  = sectsz=4096 attr=2, projid32bit=1  = crc=0  data = bsize=4096 blocks=976306, imaxpct=25  = sunit=0 swidth=0 blks  naming =version 2 bsize=4096 ascii-ci=0 ftype=0  log =internal log bsize=4096 blocks=2560, version=2  = sectsz=4096 sunit=1 blks, lazy-count=1  realtime =none extsz=4096 blocks=0, rtextents=0  # lsblk  NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT  sda 8:0 0 465.8G 0 disk  |-sda1 8:1 0 500M 0 part /boot  `-sda2 8:2 0 465.3G 0 part  |-rhel-root 253:0 0 50G 0 lvm /  |-rhel-swap 253:1 0 3.8G 0 lvm [SWAP]  `-rhel-home 253:2 0 411.5G 0 lvm /home  sdb 8:16 0 8G 0 disk  `-sdb1 8:17 0 3.7G 0 part  # |

注：

1. 在/etc/fstab中要使用UUID，而不要使用具体路径比如/dev/sdb。
2. 具体的路径在你重新连接磁盘的时候可能会发生改变，比如第一次是/dev/sd，第二次是/dev/sdc。（可以使用blkid命令查看块设备和分区的UUID）
3. 卸载target

|  |
| --- |
| #iscsiadm -m node -T iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb --logout  Logging out of session [sid: 1, target: iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb, portal: 193.168.181.231,3260]  Logout of [sid: 1, target: iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb, portal: 193.168.181.231,3260] successful.  # lsblk  NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT  sda 8:0 0 465.8G 0 disk  |-sda1 8:1 0 500M 0 part /boot  `-sda2 8:2 0 465.3G 0 part  |-rhel-root 253:0 0 50G 0 lvm /  卸载后，就看不到sdb磁盘了。  |-rhel-swap 253:1 0 3.8G 0 lvm [SWAP]  `-rhel-home 253:2 0 411.5G 0 lvm /home  # |

1. 删除target

|  |
| --- |
| # ls -al /var/lib/iscsi/nodes/\*  total 0  drw-------. 3 root root 35 Apr 23 12:58 .  drwxr-xr-x. 3 root root 75 Apr 23 12:58 ..  drw-------. 2 root root 20 Apr 23 12:58 193.168.181.231,3260,1  #iscsiadm -m node -o delete -T iqn.2003-01.org.linux-iscsi.compute-node.x8664:sn.426e96765bdb  删除后，就看不到target连接了。  # ls -al /var/lib/iscsi/nodes/\*  ls: cannot access /var/lib/iscsi/nodes/\*: No such file or directory  # |

# 3 参考

1. <http://www.cnitblog.com/201/archive/2012/05/04/79560.html>
2. <http://linux-iscsi.org/wiki/Targetcli>
3. <http://dngood.blog.51cto.com/446195/842658/>
4. <https://www.ibm.com/developerworks/community/blogs/5144904d-5d75-45ed-9d2b-cf1754ee936a/entry/linux_io_target%25e4%25bb%258b%25e7%25bb%258d_%25e4%25b8%2580?lang=en>