RHCSA 题库

1. 重置 root 密码

重置系统密码

请修改系统的root帐号密码为rrhh9708,确保能够使用root帐号能够登陆系统。

返回

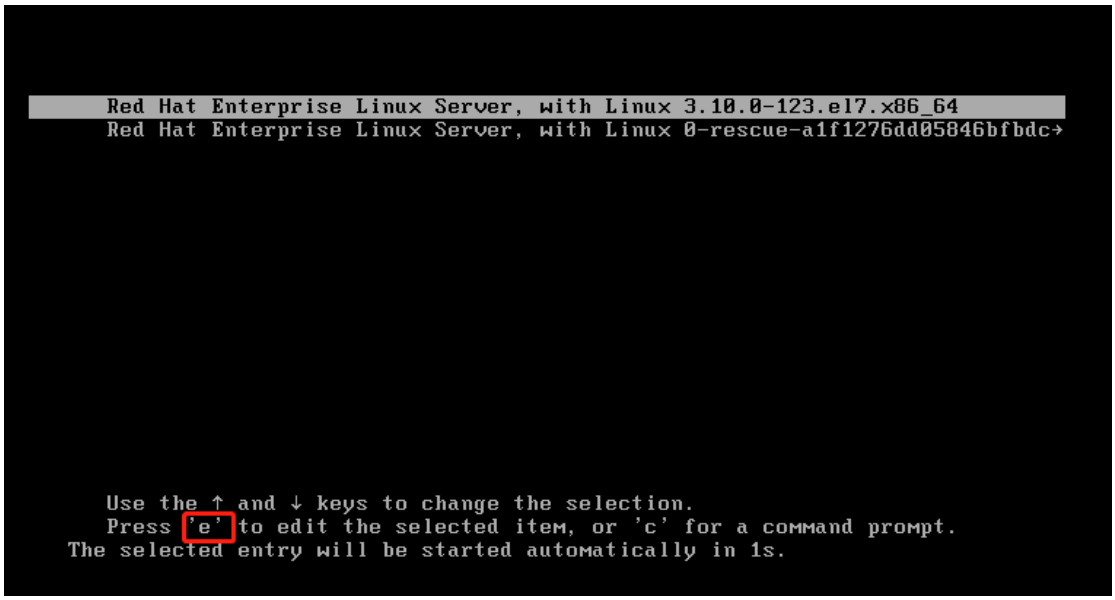
解:

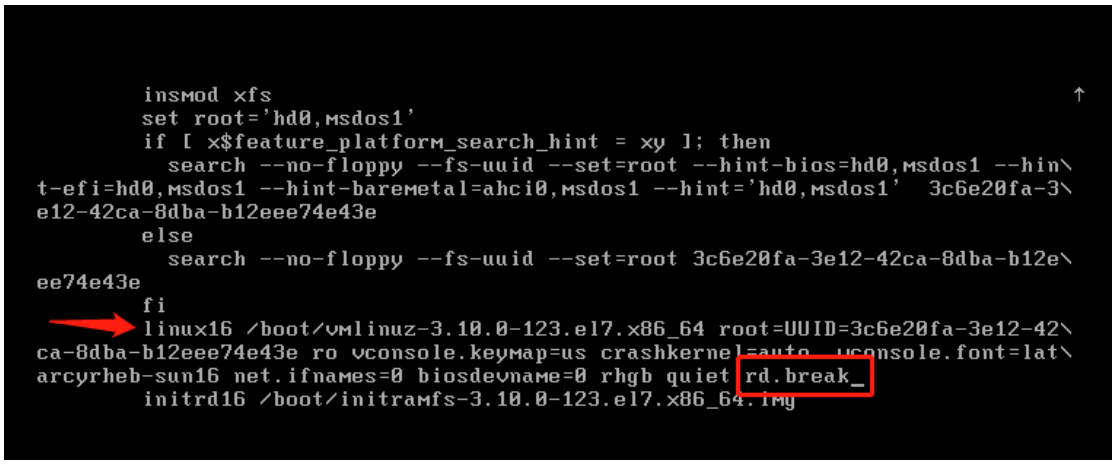
a) 开机按任意键中断启动加载器倒计时

b) 所示按下“e”编辑选定的条目

c) 将光标移动搭内核命令行（以 Linux16 开头行）

d) 行末添加 rd.break (从 initramfs 向实际系统移交控制权)





```
switch_root:#mount -oremount,rw /sysroot      以读写的形式重新挂载 /sysroot
switch_root:#chroot /sysroot                  将/sysroot 视为系统树的root
sh-4.2#passwd root
sh-4.2#touch /.autorelabel                    重新挂载密码文件

两次exit
```

2. 配置 IP 和主机名

请首先按找以下要求配置考试系统:

* Hostname: **desktop.group8.example.com**
* IP address: **172.24.8.10**
* Netmask: **255.255.255.0**
* Gateway: **172.24.8.254**
* Name server: **172.24.8.254**
* **所有配置要求系统重启后依然生效**

解:

使用 nmcli 工具

```
[root@desktop ~]# nmcli connection modify eth0 connection.autoconnect yes
[root@desktop ~]# nmcli connection modify eth0 ipv4.addresses "172.24.8.10/24 172.24.8.254"
[root@desktop ~]# nmcli connection modify eth0 ipv4.dns 172.24.8.254
[root@desktop ~]# nmcli connection modify eth0 ipv4.method manual
[root@desktop ~]# nmcli connection show eth0 | grep ipv4
ipv4.method:                            manual
ipv4.dns:                               172.24.8.254
ipv4.dns-search:
ipv4.addresses:                         { ip = 172.24.8.10/24, gw = 172.24.8.254 }
ipv4.routes:
ipv4.ignore-auto-routes:                no
ipv4.ignore-auto-dns:                   no
ipv4.dhcp-client-id:                    --
ipv4.dhcp-send-hostname:                yes
ipv4.dhcp-hostname:                     --
ipv4.never-default:                     no
ipv4.may-fail:                          yes
[root@desktop ~]#
```

检查

```
[root@desktop ~]#
[root@desktop ~]# nslookup server.group8.example.com
Server:         172.24.8.254
Address:        172.24.8.254#53

Name:   server.group8.example.com
Address: 172.24.8.254

[root@desktop ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         172.24.8.254    0.0.0.0         UG    1024   0        0 eth0
172.24.8.0      0.0.0.0         255.255.255.0   U     0      0        0 eth0
[root@desktop ~]#
```

3. 设置 selinux

设定SeLinux

请按下列要求设定系统：

☐ **SeLinux的工作模式为enforcing**

☐ **要求系统重启后依然生效**

解：

```
[root@desktop ~]# getenforce
Permissive
[root@desktop ~]# setenforce 1
[root@desktop ~]# vim /etc/se
securetty       security/       selinux/        services        sestatus
[root@desktop ~]# vim /etc/selinux/config
[root@desktop ~]#
```

查看selinux模式

设置enforcing模式 当前生效

编辑配置文件永久生效

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
SELINUX=enforcing
# SELINUXTYPE= can take one of these two values:
#     targeted - Targeted processes are protected,
#     minimum - Modification of targeted policy. Only selected processes are pro
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

4. yum 仓库

设定YUM软件仓库

配置你的本地默认YUM软件仓库，仓库地址为 http://server.group8.example.com/yum

解：

在《/etc/yum.repod/》创建以 .repo 结尾的文件，文件内容如下图所示。

```
[root@desktop ~]# cat /etc/yum.repos.d/server.group8.example.com_yum.repo

[server.group8.example.com_yum]
name=added from: http://server.group8.example.com/yum
baseurl=http://server.group8.example.com/yum
enabled=1
gpgcheck=0
[root@desktop ~]#
```

检查:

```
[root@desktop ~]#
[root@desktop ~]# yum repolist
Loaded plugins: langpacks, product-id, subscription-manager
This system is not registered to Red Hat Subscription Management. You can use subscriptio
n-manager to register.
repo id                          repo name                                          status
server.group8.example.com_yum    added from: http://server.group8.example.com/yum   103
repolist: 103
[root@desktop ~]#
```

5. 调整逻辑卷大小

调整逻辑卷容量

请按照以下要求调整本地逻辑卷lv0的容量:

- ☐ **调整后的逻辑卷及文件系统大小为290MiB**
- ☐ **调整后确保文件系统中已存在的内容不能被破坏**
- ☐ **调整后的容量可能出现误差，只要在270MiB - 320MiB之间都是允许的**
- ☐ **调整后，保证其挂载目录不改变，文件系统完成**

解:

```
[root@desktop ~]# lsblk                  查看挂载目录
NAME            MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda               8:0    0    20G  0 disk
├─sda1            8:1    0   9.8G  0 part /
├─sda2            8:2    0     2G  0 part [SWAP]
└─sda3            8:3    0   500M  0 part
  └─vg0-lv0 253:0    0   200M  0 lvm  /home
[root@desktop ~]# lvs
  LV   VG   Attr       LSize   Pool Origin Data%  Move Log Cpy%Sync Convert
  lv0  vg0  -wi-ao---- 200.00m
[root@desktop ~]# vgs
  VG   #PV #LV #SN Attr   VSize   VFree
  vg0    1   1   0 wz--n- 496.00m 296.00m
```

```
[root@desktop ~]# lvextend -L 290M /dev/vg0/lv0
  Rounding size to boundary between physical extents: 292.00 MiB
  Extending logical volume lv0 to 292.00 MiB
  Logical volume lv0 successfully resized
[root@desktop ~]# lvs
  LV   VG   Attr       LSize   Pool Origin Data%  Move Log Cpy%Sync Convert
  lv0  vg0  -wi-ao---- 292.00m
[root@desktop ~]# df -h
Filesystem              Size  Used Avail Use% Mounted on
/dev/sda1               9.8G  3.0G  6.8G  31% /
devtmpfs                667M     0  667M   0% /dev
tmpfs                   675M     0  675M   0% /dev/shm
tmpfs                   675M  8.8M  667M   2% /run
tmpfs                   675M     0  675M   0% /sys/fs/cgroup
/dev/mapper/vg0-lv0     190M  1.6M  175M   1% /home
[root@desktop ~]# resize2fs /dev/vg0/lv0          刷新
resize2fs 1.42.9 (28-Dec-2013)
Filesystem at /dev/vg0/lv0 is mounted on /home; on-line resizing required
old_desc_blocks = 1, new_desc_blocks = 2
The filesystem on /dev/vg0/lv0 is now 299008 blocks long.

[root@desktop ~]# df -h
Filesystem              Size  Used Avail Use% Mounted on
/dev/sda1               9.8G  3.0G  6.8G  31% /
devtmpfs                667M     0  667M   0% /dev
tmpfs                   675M     0  675M   0% /dev/shm
tmpfs                   675M  8.8M  667M   2% /run
tmpfs                   675M     0  675M   0% /sys/fs/cgroup
/dev/mapper/vg0-lv0     279M  2.1M  259M   1% /home
```

6.创建用户和用户组

解:

```
[root@desktop ~]# groupadd -g 40000 adminuser
[root@desktop ~]# useradd -G adminuser natasha
[root@desktop ~]# useradd -G adminuser harry
[root@desktop ~]# useradd -s /sbin/nologin sarah
[root@desktop ~]# echo "redhat" | passwd --stdin natasha
Changing password for user natasha.
passwd: all authentication tokens updated successfully.
[root@desktop ~]# echo "redhat" | passwd --stdin harry
Changing password for user harry.
passwd: all authentication tokens updated successfully.
[root@desktop ~]# echo "redhat" | passwd --stdin sarah
Changing password for user sarah.
passwd: all authentication tokens updated successfully.
```

检查:

```
[root@desktop ~]# tail -4 /etc/group
adminuser:x:40000:natasha,harry
natasha:x:1001:
harry:x:1002:
sarah:x:1003:
[root@desktop ~]# id natasha
uid=1001(natasha) gid=1001(natasha) groups=1001(natasha),40000(adminuser)
[root@desktop ~]# id harry
uid=1002(harry) gid=1002(harry) groups=1002(harry),40000(adminuser)
[root@desktop ~]# id sarah
uid=1003(sarah) gid=1003(sarah) groups=1003(sarah)
```

7 文件权限

文件权限设定

复制文件/etc/fstab到/var/tmp目录下，并按照以下要求配置/var/tmp/fstab文件的权限:

- ☐ **该文件的所属人为root**
- ☐ **该文件的所属组为root**
- ☐ **该文件对任何人均没有执行权限**
- ☐ **用户natasha对该文件有读和写的权限**
- ☐ **用户harry对该文件既不能读也不能写**
- ☐ **所有其他用户（包括当前已有用户及未来创建的用户）对该文件都有读的权限**

解:

```
[root@desktop ~]# cp /etc/fstab /var/tmp/fstab
[root@desktop ~]# cd /var/tmp/
[root@desktop tmp]# ls -l
total 4
drwxr-xr-x. 2 abrt abrt     6 Mar  3  2014 abrt
-rw-r--r--. 1 root root 451 Nov 11 13:02 fstab
[root@desktop tmp]# chown root.root ./fstab
[root@desktop tmp]# ls -l
total 4
drwxr-xr-x. 2 abrt abrt     6 Mar  3  2014 abrt
-rw-r--r--. 1 root root 451 Nov 11 13:02 fstab
[root@desktop tmp]# chmod a-x ./fstab
[root@desktop tmp]# setfacl -m u:natasha:rw-,u:harry:--- ./fstab
```

检查:

```
[root@desktop tmp]# getfacl ./fstab
# file: fstab
# owner: root
# group: root
user::rw-
user:natasha:rw-
user:harry:---
group::r--
mask::rw-
other::r--

[root@desktop tmp]#
```

8.建立计划任务

建立计划任务

对natasha用户建立计划任务，要求在本地时间的每天14：23执行以下命令：/bin/echo "rhcsa"

解:

```
[root@desktop ~]# systemctl status crond.service
crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled)
   Active: active (running) since Mon 2019-11-11 19:00:45 CST; 5h 50min left
 Main PID: 901 (crond)
   CGroup: /system.slice/crond.service
           └─901 /usr/sbin/crond -n
```

[root@desktop ~]# crontab -e -u natasha
no crontab for natasha - using an empty one

23 14 * * * /bin/echo "rhcsa"
检查:
[root@desktop ~]# crontab -l -u natasha
23 14 * * * /bin/echo "rhcsa"

9 文件特殊权限

文件特殊权限设定

在/home目录下创建名为admins的子目录，并按以下要求设置权限：

- ☐ **/home/admins的所属组为adminuser**
- ☐ **该目录对adminuser组的成员可读可执行可写，但对其他用户没有任何权限，但root不受限制**
- ☐ **在/home/admins目录下所创建的文件的所属组自动被设置为adminuser**

解:
[root@desktop ~]# mkdir /home/admins
[root@desktop ~]# ls -l /home/
total 21
drwxr-xr-x. 2 root root 1024 Nov 11 13:15 admins
[root@desktop ~]# chgrp adminuser /home/admins/
[root@desktop ~]# chmod 2770 /home/admins/
[root@desktop ~]#
[root@desktop ~]# ls -ld /home/admins/
drwxrws---. 2 root adminuser 1024 Nov 11 13:15 /home/admins/

10 升级内核

升级系统内核

请按下列要求更新系统的内核：

- ☐ **新内核的RPM包位于http://server.group8.example.com/pub/下**
- ☐ **系统重启后，默认以新内核启动系统，原始的内核将继续可用**

解：

```
[root@desktop ~]# uname -r
3.10.0-123.el7.x86_64
[root@desktop ~]#
[root@desktop ~]# wget http://172.24.8.254/pub/kernel-3.10.0-123.el7.x86_64.rpm
--2019-11-11 13:21:25--  http://172.24.8.254/pub/kernel-3.10.0-123.el7.x86_64.rpm
Connecting to 172.24.8.254:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 30264588 (29M) [application/x-rpm]
Saving to: 'kernel-3.10.0-123.el7.x86_64.rpm'

100%[==============================================>] 30,264,588
19.3MB/s   in 1.5s

2019-11-11 13:21:27 (19.3 MB/s) - 'kernel-3.10.0-123.el7.x86_64.rpm' saved
[30264588/30264588]

[root@desktop ~]# rpm -ivh kernel-3.10.0-123.el7.x86_64.rpm
warning: kernel-3.10.0-123.el7.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID
fd431d51: NOKEY
Preparing...                          ################################
[100%]
        package kernel-3.10.0-123.el7.x86_64 is already installed
[root@desktop ~]# uname -r
3.10.0-123.el7.x86_64
[root@desktop ~]#
```

11 同步时间

同步时间

配置您的系统时间与服务器server.group8.example.com同步，要求系统重启后依然生效

解:

```
[root@desktop ~]# timedatectl
           Local time: Mon 2019-11-11 13:55:05 CST
     Universal time: Mon 2019-11-11 05:55:05 UTC
                 RTC time: Mon 2019-11-11 13:55:05
                 Timezone: Asia/Shanghai (CST, +0800)
          NTP enabled: yes
NTP synchronized: no
  RTC in local TZ: no
           DST active: n/a
[root@desktop ~]# vim /etc/chrony.conf
[root@desktop ~]#
[root@desktop ~]#
[root@desktop ~]# systemctl reload chronyd
Failed to issue method call: Job type reload is not applicable for unit chronyd.service.
[root@desktop ~]#
[root@desktop ~]# systemctl restart chronyd.service
[root@desktop ~]#
[root@desktop ~]#
[root@desktop ~]# timedatectl
           Local time: Tue 2019-10-29 00:02:08 CST
     Universal time: Mon 2019-10-28 16:02:08 UTC
                 RTC time: Mon 2019-11-11 13:56:10
                 Timezone: Asia/Shanghai (CST, +0800)
          NTP enabled: yes
NTP synchronized: yes
  RTC in local TZ: no
           DST active: n/a
[root@desktop ~]#
```

12.配置 ldap 客服端

配置LDAP客户端

在server.group8.example.com上已经部署了一台LDAP认证服务器，按以下要求将你的系统加入到该LDAP服务中，并使用Kerberos认证用户密码：

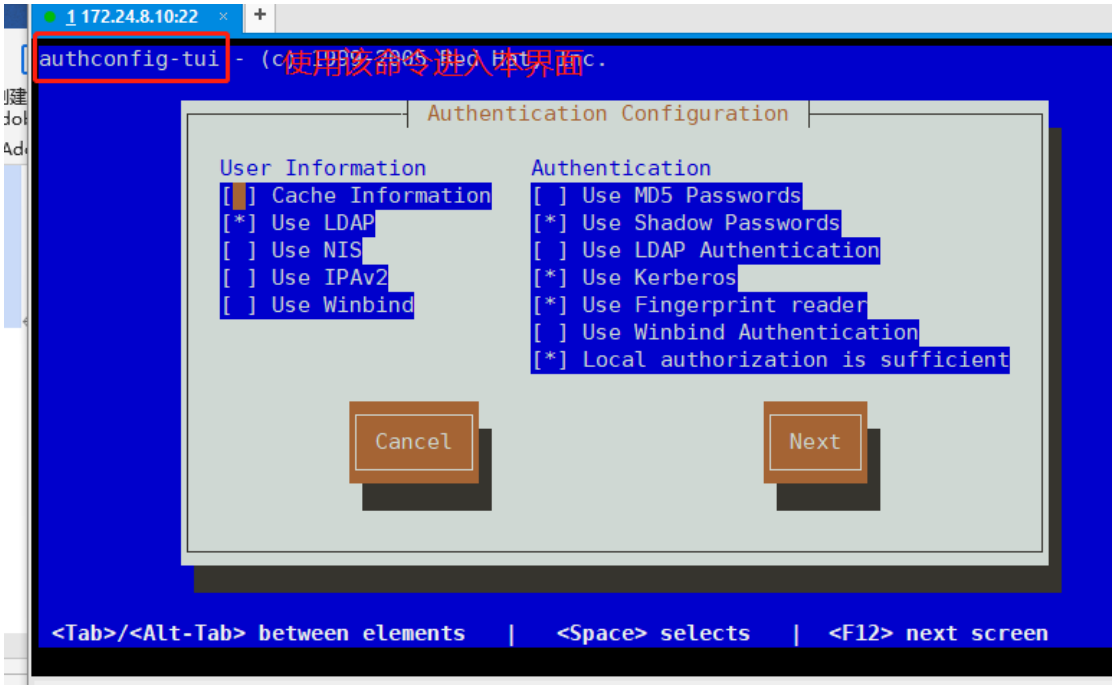
- ☐ **该LDAP认证服务的Base DN为：dc=group8,dc=example,dc=com**
- ☐ **该LDAP认证服务的LDAP Server为：server.group8.example.com**
- ☐ **认证的会话连接需要使用TLS加密，加密所用证书请在此下载 http://server.group8.example.com/pub/cacert.crt**
- ☐ **当正确的配置后，thales可以登录系统，登录密码是redhat**

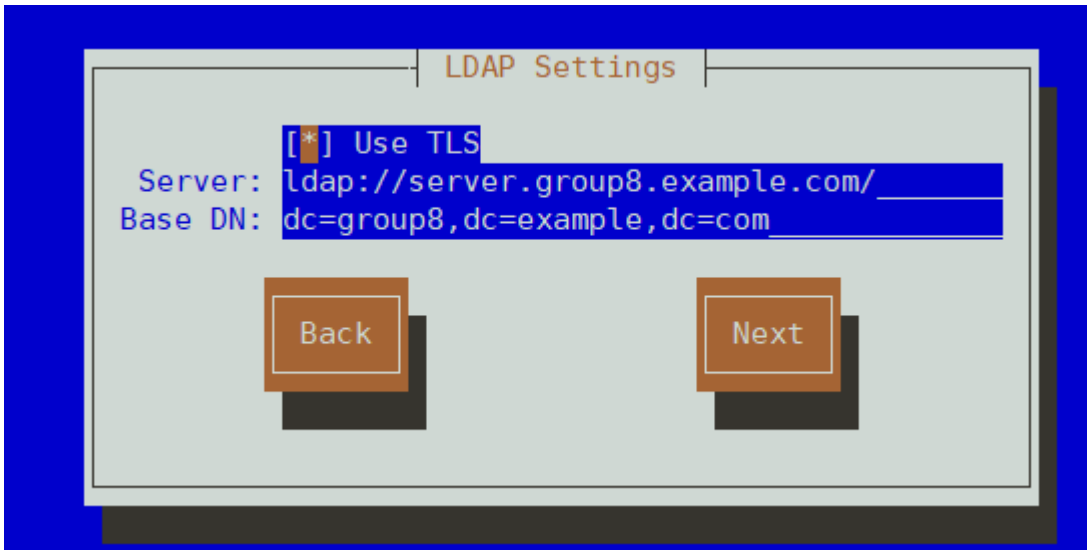
解:

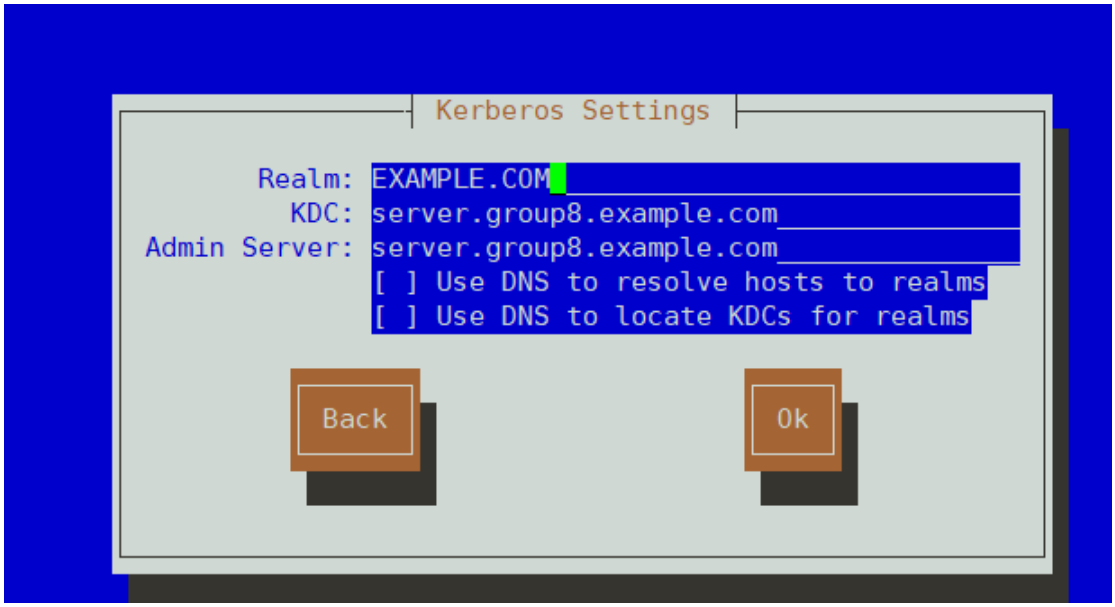
yum install sssd authconfig-gtk.x86_64 authconfig-tui krb5-workstation.x86_64 -y

安装相关软件

systemctl start sssd	启动服务
systemctl enable sssd.service	开机启动服务







cd /etc/openldap/cacerts

wget http://server.group8.example.com/pub/cacert.crt 下载证书

证书下载之后该为“.pem” 为后缀

证书下载之后需要重新认证

检查:

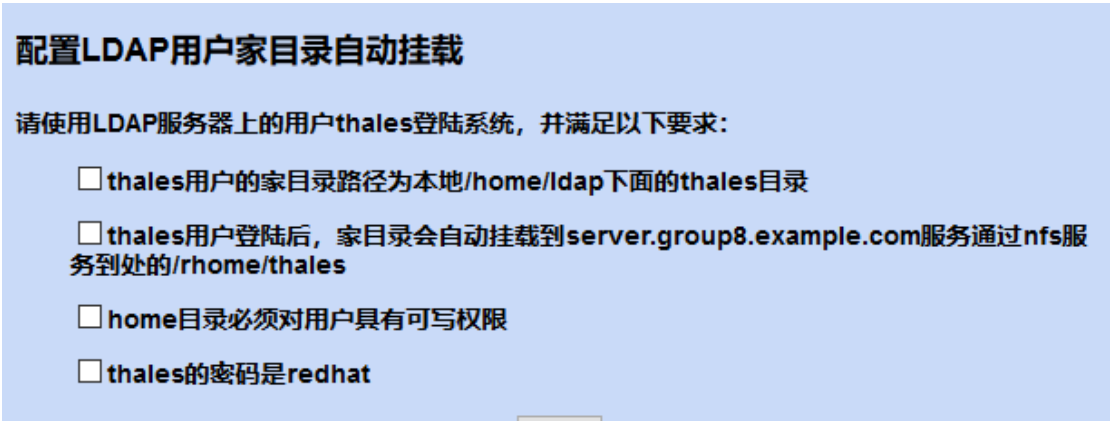
[root@desktop ~]# id thales

uid=2001(thales) gid=2001(thales) groups=2001(thales)

[root@desktop ~]# getent passwd thales

thales:*:2001:2001:thales:/home/ldap/thales:/bin/bash

13 挂载 ldap 家目录



解

[root@desktop ~]# rpm -qc autofs　　查看是否有 autofs 包，没有则需要安装

/etc/auto.master

/etc/auto.misc

/etc/auto.net

/etc/auto.smb

/etc/autofs_ldap_auth.conf

/etc/sysconfig/autofs

/usr/lib/systemd/system/autofs.service

[root@desktop ~]#

[root@desktop ~]# systemctl restart autofs

[root@desktop ~]# systemctl enable autofs

ln -s '/usr/lib/systemd/system/autofs.service' '/etc/systemd/system/multi-user.target.wants/autofs.service'

[root@desktop ~]#

[root@desktop ~]# vim /etc/auto.master

添加一行“/home/ldap /etc/ldap.autofs”

[root@desktop ~]#

[root@desktop ~]# vim /etc/ldap.autofs

添加一行“ * -rw,sync,soft server.group9.example.com:/rhome/&”

[root@desktop ~]# systemctl restart autofs

验证：

[root@desktop ~]# su - thales

Last login: Tue Oct 29 00:46:17 CST 2019 on pts/0

[thales@desktop ~]$

[thales@desktop ~]$

[thales@desktop ~]$ pwd

/home/ldap/thales

[thales@desktop ~]$ touch a

```
[thales@desktop ~]$ ls -l
total 0
-rw-rw-r--. 1 thales thales 0 Oct 29 00:47 a
-rw-rw-r--. 1 thales thales 0 Oct  4  2016 file1
-rw-rw-r--. 1 thales thales 0 Oct  4  2016 file2
-rw-rw-r--. 1 thales thales 0 Oct  4  2016 file3
```

14.归档文件

打包文件

请对/etc/sysconfig目录进行打包并用bzip2压缩，生成的文件保存为/root/sysconfig.tar.bz2

解:

```
[root@desktop ~]# tar -jcvf /root/sysconfig.tar.bz2 /etc/sysconfig
tar: Removing leading `/' from member names
/etc/sysconfig/
/etc/sysconfig/selinux
/etc/sysconfig/ip6tables-config
/etc/sysconfig/iptables-config
/etc/sysconfig/cbq/
/etc/sysconfig/cbq/avpkt
/etc/sysconfig/cbq/cbq-0000.example
/etc/sysconfig/rdisc
/etc/sysconfig/console/
/etc/sysconfig/init
/etc/sysconfig/modules/
/etc/sysconfig/modules/bluez-uinput.modules
/etc/sysconfig/netconsole
/etc/sysconfig/network-scripts/
/etc/sysconfig/network-scripts/ifcfg-lo
/etc/sysconfig/network-scripts/ifdown
/etc/sysconfig/network-scripts/ifdown-bnep
/etc/sysconfig/network-scripts/ifdown-eth
/etc/sysconfig/network-scripts/ifdown-ippp
/etc/sysconfig/network-scripts/ifdown-ipv6
/etc/sysconfig/network-scripts/ifdown-isdn
/etc/sysconfig/network-scripts/ifdown-post
/etc/sysconfig/network-scripts/ifdown-ppp
/etc/sysconfig/network-scripts/ifdown-routes
/etc/sysconfig/network-scripts/ifdown-sit
/etc/sysconfig/network-scripts/ifdown-tunnel
/etc/sysconfig/network-scripts/ifup
```

/etc/sysconfig/network-scripts/ifup-aliases
/etc/sysconfig/network-scripts/ifup-bnep
/etc/sysconfig/network-scripts/ifup-eth
/etc/sysconfig/network-scripts/ifup-ippp
/etc/sysconfig/network-scripts/ifup-ipv6
/etc/sysconfig/network-scripts/ifup-isdn
/etc/sysconfig/network-scripts/ifup-plip
/etc/sysconfig/network-scripts/ifup-plusb
/etc/sysconfig/network-scripts/ifup-post
/etc/sysconfig/network-scripts/ifup-ppp
/etc/sysconfig/network-scripts/ifup-routes
/etc/sysconfig/network-scripts/ifup-sit
/etc/sysconfig/network-scripts/ifup-tunnel
/etc/sysconfig/network-scripts/ifup-wireless
/etc/sysconfig/network-scripts/init.ipv6-global
/etc/sysconfig/network-scripts/network-functions
/etc/sysconfig/network-scripts/network-functions-ipv6
/etc/sysconfig/network-scripts/ifdown-Team
/etc/sysconfig/network-scripts/ifdown-TeamPort
/etc/sysconfig/network-scripts/ifup-Team
/etc/sysconfig/network-scripts/ifup-TeamPort
/etc/sysconfig/network-scripts/ifcfg-eth0
/etc/sysconfig/readonly-root
/etc/sysconfig/run-parts
/etc/sysconfig/crond
/etc/sysconfig/ebtables-config
/etc/sysconfig/firewalld
/etc/sysconfig/ip6tables
/etc/sysconfig/iptables
/etc/sysconfig/raid-check
/etc/sysconfig/grub
/etc/sysconfig/kdump
/etc/sysconfig/pluto
/etc/sysconfig/samba
/etc/sysconfig/saslauthd
/etc/sysconfig/libvirt-guests
/etc/sysconfig/libvirtd
/etc/sysconfig/virtlockd
/etc/sysconfig/wpa_supplicant
/etc/sysconfig/rpcbind
/etc/sysconfig/nfs
/etc/sysconfig/rsyncd
/etc/sysconfig/radvd
/etc/sysconfig/ntpdate

/etc/sysconfig/rsyslog
/etc/sysconfig/ksm
/etc/sysconfig/rhn/
/etc/sysconfig/rhn/allowed-actions/
/etc/sysconfig/rhn/allowed-actions/configfiles/
/etc/sysconfig/rhn/allowed-actions/script/
/etc/sysconfig/rhn/clientCaps.d/
/etc/sysconfig/rhn/up2date
/etc/sysconfig/rhn/rhnsd
/etc/sysconfig/fcoe
/etc/sysconfig/sysstat
/etc/sysconfig/sysstat.ioconf
/etc/sysconfig/irqbalance
/etc/sysconfig/smartmontools
/etc/sysconfig/qemu-ga
/etc/sysconfig/sshd
/etc/sysconfig/atd
/etc/sysconfig/man-db
/etc/sysconfig/cpupower
/etc/sysconfig/kernel
/etc/sysconfig/authconfig
/etc/sysconfig/network
/etc/sysconfig/firstboot
/etc/sysconfig/autofs
[root@desktop ~]#

15.创建用户

创建用户

请创建一个名为jay的用户，并满足以下要求：

- ☐ **用户id为3456**
- ☐ **密码为glegunge**

解:
[root@desktop ~]# useradd -u 3456 jay
[root@desktop ~]# echo "glegunge" | passwd --stdin jay
Changing password for user jay.
passwd: all authentication tokens updated successfully.
[root@desktop ~]#
[root@desktop ~]# id jay

uid=3456(jay) gid=3456(jay) groups=3456(jay)

16.创建 swap 分区

创建swap分区

为系统新增加一个swap分区：

- ☐ **新建的swap分区容量为512MiB**
- ☐ **重启系统后，新建的swap分区会自动激活**
- ☐ **不能删除或者修改原有的swap分区**

解:

```
[root@desktop ~]# lsblk
NAME            MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda               8:0    0   20G  0 disk
├─sda1            8:1    0  9.8G  0 part /
├─sda2            8:2    0    2G  0 part [SWAP]
└─sda3            8:3    0  500M  0 part
  └─vg0-lv0 253:0    0  292M  0 lvm  /home
[root@desktop ~]# free -m
             total       used       free     shared    buffers     cached
Mem:          1349        493        856          8          1        246
-/+ buffers/cache:        245       1104
Swap:         1999          0       1999
[root@desktop ~]# fdisk /dev/sda
Welcome to fdisk (util-linux 2.23.2).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.


Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad
```

```
   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux

Command (m for help): n
Partition type:
   p   primary (3 primary, 0 extended, 1 free)
   e   extended
Select (default e): e
Selected partition 4
First sector (25602048-41943039, default 25602048):
Using default value 25602048
Last sector, +sectors or +size{K,M,G} (25602048-41943039, default 41943039):
Using default value 41943039
Partition 4 of type Extended and of size 7.8 GiB is set

Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended

Command (m for help): n
All primary partitions are in use
Adding logical partition 5
First sector (25604096-41943039, default 25604096):
Using default value 25604096
Last sector, +sectors or +size{K,M,G} (25604096-41943039, default 41943039): +512M
Partition 5 of type Linux and of size 512 MiB is set

Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
```

```
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended
/dev/sda5        25604096    26652671      524288   83  Linux

Command (m for help): t
Partition number (1-5, default 5):
Hex code (type L to list all codes): l

 0  Empty           24  NEC DOS         81  Minix / old Lin bf  Solaris
 1  FAT12           27  Hidden NTFS Win 82  Linux swap / So c1  DRDOS/sec (FAT-
 2  XENIX root      39  Plan 9          83  Linux           c4  DRDOS/sec (FAT-
 3  XENIX usr       3c  PartitionMagic  84  OS/2 hidden C:  c6  DRDOS/sec (FAT-
 4  FAT16 <32M      40  Venix 80286     85  Linux extended  c7  Syrinx
 5  Extended        41  PPC PReP Boot   86  NTFS volume set da  Non-FS data
 6  FAT16           42  SFS             87  NTFS volume set db  CP/M / CTOS / .
 7  HPFS/NTFS/exFAT 4d  QNX4.x          88  Linux plaintext de  Dell Utility
 8  AIX             4e  QNX4.x 2nd part 8e  Linux LVM       df  BootIt
 9  AIX bootable    4f  QNX4.x 3rd part 93  Amoeba          e1  DOS access
 a  OS/2 Boot Manag 50  OnTrack DM      94  Amoeba BBT      e3  DOS R/O
 b  W95 FAT32       51  OnTrack DM6 Aux 9f  BSD/OS          e4  SpeedStor
 c  W95 FAT32 (LBA) 52  CP/M            a0  IBM Thinkpad hi eb  BeOS fs
 e  W95 FAT16 (LBA) 53  OnTrack DM6 Aux a5  FreeBSD         ee  GPT
 f  W95 Ext'd (LBA) 54  OnTrackDM6      a6  OpenBSD         ef  EFI (FAT-12/16/
10  OPUS            55  EZ-Drive        a7  NeXTSTEP        f0  Linux/PA-RISC
b
11  Hidden FAT12    56  Golden Bow      a8  Darwin UFS      f1  SpeedStor
12  Compaq diagnost 5c  Priam Edisk     a9  NetBSD          f4  SpeedStor
14  Hidden FAT16 <3 61  SpeedStor       ab  Darwin boot     f2  DOS secondary
16  Hidden FAT16    63  GNU HURD or Sys af  HFS / HFS+      fb  VMware VMFS
17  Hidden HPFS/NTF 64  Novell Netware  b7  BSDI fs         fc  VMware VMKCORE
18  AST SmartSleep  65  Novell Netware  b8  BSDI swap       fd  Linux raid auto
1b  Hidden W95 FAT3 70  DiskSecure Mult bb  Boot Wizard hid fe  LANstep
1c  Hidden W95 FAT3 75  PC/IX           be  Solaris boot    ff  BBT
1e  Hidden W95 FAT1 80  Old Minix
Hex code (type L to list all codes): 82
Changed type of partition 'Linux' to 'Linux swap / Solaris'
```

```
Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended
/dev/sda5        25604096    26652671      524288   82  Linux swap / Solaris

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 16: Device or resource busy.
The kernel still uses the old table. The new table will be used at
the next reboot or after you run partprobe(8) or kpartx(8)
Syncing disks.
[root@desktop ~]# partprobe
[root@desktop ~]# partprobe
[root@desktop ~]# mkswap /dev/sda5
Setting up swapspace version 1, size = 524284 KiB
no label, UUID=b3433490-eb4b-4290-9efe-b5c9f2ad4bb0
[root@desktop ~]#
[root@desktop ~]#
[root@desktop ~]# vim /etc/fstab
[root@desktop ~]# swapo
swapoff    swapon
[root@desktop ~]# swapon -a
[root@desktop ~]# swapon -s
Filename                        Type            Size    Used    Priority
/dev/sda2                                       partition       2047996 0       -1
/dev/sda5                                       partition       524284  0       -2
[root@desktop ~]# free -m
             total       used       free     shared    buffers     cached
Mem:          1349        494        855          8          1        247
```

```
-/+ buffers/cache:              246          1103
Swap:                 2511             0          2511
[root@desktop ~]# lsblk
NAME              MAJ:MIN RM    SIZE RO TYPE MOUNTPOINT
sda                 8:0       0     20G    0 disk
 ├──sda1              8:1       0    9.8G    0 part /
 ├──sda2              8:2       0       2G    0 part [SWAP]
 ├──sda3              8:3       0    500M    0 part
 │   └──vg0-lv0 253:0       0    292M    0 lvm    /home
 ├──sda4              8:4       0       1K    0 part
 └──sda5              8:5       0    512M    0 part [SWAP]
[root@desktop ~]#
```

17.查找文件

查找文件

请把系统上拥有者为jay用户的所有文件，并将其拷贝到/root/findfiles目录中

解:

```
[root@desktop ~]# mkdir /root/findfiles
[root@desktop ~]# find / -user jay -exec cp -a {} /root/findfiles/ \;
ll -a /root/findfiles/
```

18.过滤文件

过滤文件

把/usr/share/dict/words文件中所有包含seismic字符串的行找到，并将这些行按照原始文件中的顺序存放到/root/wordlist中，/root/wordlist文件不能包含空行

解

```
[root@desktop ~]# cat /usr/share/dict/words | grep "seismic" > /root/wordlist
[root@desktop ~]# cat /root/wordlist
```

19.新建逻辑卷

解:

```
[root@desktop ~]# lsblk
NAME            MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda               8:0    0    20G  0 disk
├─sda1            8:1    0   9.8G  0 part /
├─sda2            8:2    0     2G  0 part [SWAP]
├─sda3            8:3    0   500M  0 part
│ └─vg0-lv0 253:0    0   292M  0 lvm  /home
├─sda4            8:4    0     1K  0 part
└─sda5            8:5    0   512M  0 part [SWAP]
[root@desktop ~]# fdisk /dev/sda
Welcome to fdisk (util-linux 2.23.2).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.


Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended
/dev/sda5        25604096    26652671      524288   82  Linux swap / Solaris
```

```
Command (m for help): n
All primary partitions are in use
Adding logical partition 6
First sector (26654720-41943039, default 26654720):
Using default value 26654720
Last sector, +sectors or +size{K,M,G} (26654720-41943039, default 41943039): +1G
Partition 6 of type Linux and of size 1 GiB is set

Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended
/dev/sda5        25604096    26652671      524288   82  Linux swap / Solaris
/dev/sda6        26654720    28751871     1048576   83  Linux

Command (m for help): l

 0  Empty           24  NEC DOS         81  Minix / old Lin bf  Solaris
 1  FAT12           27  Hidden NTFS Win 82  Linux swap / So c1  DRDOS/sec (FAT-
 2  XENIX root      39  Plan 9          83  Linux           c4  DRDOS/sec (FAT-
 3  XENIX usr       3c  PartitionMagic  84  OS/2 hidden C:  c6  DRDOS/sec (FAT-
 4  FAT16 <32M      40  Venix 80286     85  Linux extended  c7  Syrinx
 5  Extended        41  PPC PReP Boot   86  NTFS volume set da  Non-FS data
 6  FAT16           42  SFS             87  NTFS volume set db  CP/M / CTOS / .
 7  HPFS/NTFS/exFAT 4d  QNX4.x          88  Linux plaintext de  Dell Utility
 8  AIX             4e  QNX4.x 2nd part 8e  Linux LVM       df  BootIt
 9  AIX bootable    4f  QNX4.x 3rd part 93  Amoeba          e1  DOS access
 a  OS/2 Boot Manag 50  OnTrack DM      94  Amoeba BBT      e3  DOS R/O
 b  W95 FAT32       51  OnTrack DM6 Aux 9f  BSD/OS          e4  SpeedStor
 c  W95 FAT32 (LBA) 52  CP/M            a0  IBM Thinkpad hi eb  BeOS fs
 e  W95 FAT16 (LBA) 53  OnTrack DM6 Aux a5  FreeBSD         ee  GPT
 f  W95 Ext'd (LBA) 54  OnTrackDM6      a6  OpenBSD         ef  EFI (FAT-12/16/
10  OPUS            55  EZ-Drive        a7  NeXTSTEP        f0  Linux/PA-RISC
```

```
b
11  Hidden FAT12       56  Golden Bow          a8  Darwin UFS          f1  SpeedStor
12  Compaq diagnost 5c  Priam Edisk         a9  NetBSD              f4  SpeedStor
14  Hidden FAT16 <3 61  SpeedStor           ab  Darwin boot         f2  DOS secondary
16  Hidden FAT16       63  GNU HURD or Sys af  HFS / HFS+          fb  VMware VMFS
17  Hidden HPFS/NTF 64  Novell Netware   b7  BSDI fs             fc  VMware VMKCORE
18  AST SmartSleep     65  Novell Netware   b8  BSDI swap           fd  Linux raid auto
1b  Hidden W95 FAT3 70  DiskSecure Mult bb  Boot Wizard hid fe  LANstep
1c  Hidden W95 FAT3 75  PC/IX                be  Solaris boot       ff  BBT
1e  Hidden W95 FAT1 80  Old Minix

Command (m for help): t
Partition number (1-6, default 6):
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): p

Disk /dev/sda: 21.5 GB, 21474836480 bytes, 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000bffad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048    20482047    10240000   83  Linux
/dev/sda2        20482048    24578047     2048000   82  Linux swap / Solaris
/dev/sda3        24578048    25602047      512000   83  Linux
/dev/sda4        25602048    41943039     8170496    5  Extended
/dev/sda5        25604096    26652671      524288   82  Linux swap / Solaris
/dev/sda6        26654720    28751871     1048576   8e  Linux LVM

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 16: Device or resource busy.
The kernel still uses the old table. The new table will be used at
the next reboot or after you run partprobe(8) or kpartx(8)
Syncing disks.
[root@desktop ~]# partprobe
[root@desktop ~]# partprobe
```

```
[root@desktop ~]#
[root@desktop ~]# ll /dev/sha
ls: cannot access /dev/sha: No such file or directory
[root@desktop ~]# ll /dev/sha6
ls: cannot access /dev/sha6: No such file or directory
[root@desktop ~]# pvcreate /dev/sda6
  Physical volume "/dev/sda6" successfully created
[root@desktop ~]# vgcreate -s 16M datastore /dev/sda6
  Volume group "datastore" successfully created
[root@desktop ~]# lvcreate -l 50 -n database datastore
  Logical volume "database" created
[root@desktop ~]# vgdisplay
  --- Volume group ---
  VG Name               datastore
  System ID
  Format                lvm2
  Metadata Areas        1
  Metadata Sequence No  2
  VG Access             read/write
  VG Status             resizable
  MAX LV                0
  Cur LV                1
  Open LV               0
  Max PV                0
  Cur PV                1
  Act PV                1
  VG Size               1008.00 MiB
  PE Size               16.00 MiB
  Total PE              63
  Alloc PE / Size       50 / 800.00 MiB
  Free  PE / Size       13 / 208.00 MiB
  VG UUID               1G2ugU-BH5X-UcwT-SACe-lFKn-mIlP-KDEvMk

  --- Volume group ---
  VG Name               vg0
  System ID
  Format                lvm2
  Metadata Areas        1
  Metadata Sequence No  3
  VG Access             read/write
  VG Status             resizable
  MAX LV                0
  Cur LV                1
  Open LV               1
```

```
  Max PV                0
  Cur PV                1
  Act PV                1
  VG Size               496.00 MiB
  PE Size               4.00 MiB
  Total PE              124
  Alloc PE / Size       73 / 292.00 MiB
  Free  PE / Size       51 / 204.00 MiB
  VG UUID               SiZ1KE-OaeZ-w1v5-I9Me-AcVI-awpc-ixeq5t

[root@desktop ~]# lvdisplay
  --- Logical volume ---
  LV Path                /dev/datastore/database
  LV Name                database
  VG Name                datastore
  LV UUID                41RGFD-cDpj-NJHQ-cyB0-OtBC-IdCj-VnmIRx
  LV Write Access        read/write
  LV Creation host, time desktop.group8.example.com, 2019-10-29 01:33:21 +0800
  LV Status              available
  # open                 0
  LV Size                800.00 MiB
  Current LE             50
  Segments               1
  Allocation             inherit
  Read ahead sectors     auto
  - currently set to     8192
  Block device           253:1

  --- Logical volume ---
  LV Path                /dev/vg0/lv0
  LV Name                lv0
  VG Name                vg0
  LV UUID                iqQ7BM-M19R-6vG3-8mRG-igJ6-cMaE-WpmT5J
  LV Write Access        read/write
  LV Creation host, time localhost.localdomain, 2016-07-24 19:36:42 +0800
  LV Status              available
  # open                 1
  LV Size                292.00 MiB
  Current LE             73
  Segments               1
  Allocation             inherit
  Read ahead sectors     auto
  - currently set to     256
  Block device           253:0
```

```
[root@desktop ~]# mkfs
mkfs              mkfs.cramfs   mkfs.ext3      mkfs.fat       mkfs.msdos     mkfs.xfs
mkfs.btrfs    mkfs.ext2      mkfs.ext4      mkfs.minix     mkfs.vfat
[root@desktop ~]# mkfs.xfs /dev/datastore/database
meta-data=/dev/datastore/database isize=256       agcount=4, agsize=51200 blks
         =                                sectsz=512     attr=2, projid32bit=1
         =                                crc=0
data     =                                bsize=4096     blocks=204800, imaxpct=25
         =                                sunit=0        swidth=0 blks
naming   =version 2                       bsize=4096     ascii-ci=0 ftype=0
log      =internal log                    bsize=4096     blocks=853, version=2
         =                                sectsz=512     sunit=0 blks, lazy-count=1
realtime =none                            extsz=4096     blocks=0, rtextents=0
[root@desktop ~]#
[root@desktop ~]# blkid
/dev/sda1: UUID="3c6e20fa-3e12-42ca-8dba-b12eee74e43e" TYPE="xfs"
/dev/sda2: UUID="ff7d2e6d-c2d7-46a0-af09-70c85898ab46" TYPE="swap"
/dev/sda3: UUID="4Ntfep-th0e-bCXr-Qo3b-EPJ1-SRsu-nfeOru" TYPE="LVM2_member"
/dev/sda5: UUID="b3433490-eb4b-4290-9efe-b5c9f2ad4bb0" TYPE="swap"
/dev/sda6: UUID="W9pFC4-nyqK-6J2g-JHhL-8fxX-6R11-P4DSwC" TYPE="LVM2_member"
/dev/mapper/vg0-lv0: UUID="b2285e5e-de78-4392-945a-817843fd7f10" TYPE="ext3"
/dev/mapper/datastore-database:        UUID="ae9010e3-ed23-43e6-af33-72cc712760b8"
TYPE="xfs"
[root@desktop ~]#
[root@desktop ~]#
[root@desktop ~]# vim /etc/fstab
[root@desktop ~]# mkdir /mnt/database
[root@desktop ~]# mount -a
[root@desktop ~]#
[root@desktop ~]#
[root@desktop ~]# df -h
Filesystem                      Size  Used Avail Use% Mounted on
/dev/sda1                       9.8G  3.1G  6.8G  32% /
devtmpfs                        667M     0  667M   0% /dev
tmpfs                           675M     0  675M   0% /dev/shm
tmpfs                           675M  8.8M  667M   2% /run
tmpfs                           675M     0  675M   0% /sys/fs/cgroup
/dev/mapper/vg0-lv0             279M  2.1M  259M   1% /home
/dev/mapper/datastore-database  797M   33M  765M   5% /mnt/database
[root@desktop ~]#
[root@desktop ~]# lsblk
NAME                    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda                       8:0    0   20G  0 disk
```

```
├──sda1                          8:1    0   9.8G  0 part /
├──sda2                          8:2    0     2G  0 part [SWAP]
├──sda3                          8:3    0   500M  0 part
│  └──vg0-lv0                  253:0    0   292M  0 lvm  /home
├──sda4                          8:4    0     1K  0 part
├──sda5                          8:5    0   512M  0 part [SWAP]
└──sda6                          8:6    0     1G  0 part
   └──datastore-database 253:1    0   800M  0 lvm  /mnt/database
[root@desktop ~]#
```