How-to-access NTFS from CentOS 5

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According to the website, http://www.linux-ntfs.org, there are three possible options to gain an access to NTFS by the linux kernel: to install (1) linux integrated kernel driver, (2) *ntfsmount*, an improved driver by ntfsprorg team, and (3) *ntfs-3g* driver, recently developed by one of project members Szabolcs Szakacsits. In this short how-to report, the 1st and 3rd solutions will be tested to access NTFS from CentOS 5.

1 Integrated kernel driver

The driver can be installed and tested by following the procedure described below.

1. Check current kernel version of the OS.

   ```
   # uname -r
   2.6.18-8.1.8.el5
   ```

2. Download the corresponding kernel driver. I downloaded NTFS RPM for RedHat Enterprise Linux 5 from the website, http://www.linux-ntfs.org/content/view/257/92/. Currently, the latest kernel version to support NTFS RPM package is 2.6.18-8.1.8.el5. If your kernel version is more updated, read another how-to report about downgrading kernel.

3. Install RPM pacakage using install command.

   ```
   # rpm -ivh kernel-module-ntfs-2.6.18-8.1.8.el5-2.1.27-0.rr.10.11.i686.rpm
   ```

4. To verify installation, type

   ```
   # /sbin/modprobe ntfs
   ```

   If it gives no error message, run

   ```
   # cat /proc/filesystem
   ```

   If you see `ntfs` from the output, now you can mount NTFS drive. If the NTFS drive is not automatically mounted, you may refer Ref.[1]

2 ntfs-3g driver

Even if the installation of integrated kernel driver is quick and easy, it can allow only reading files. For the full access to NTFS, we need to install *ntfs-3g* driver, which can be downloaded from http://www.ntfs-3g.org/

1. Check to see if you have the required pacakge, FUSE 2.6.0 or later. We assume your system already has one. If not, read the next section first and come back.

   ```
   # yum list installed | grep fuse
   ```

2. Download the source code, `ntfs-3g-1.913.tgz`.

3. Extract the source codes.

   ```
   # tar xvzf ntfs-3g-1.913.tgz
   ```

4. Install ntfs-3g driver by typing

   ```
   # cd ntfs-3g-1.913
   # ./configure
   # make
   # make install
   ```

5. Try to mount NTFS hard disk. In the command below, `/dev/sdb1` and `/mnt/windows` can be changed appropriately, if needed.

   ```
   # mkdir /mnt/windows
   # mount -t ntfs-3g /dev/sdb1 /mnt/windows
   ```

   If it had already been mounted somehow, unmount it first.

   ```
   # umount /meia/My\ Book/
   # mount -t ntfs-3g /dev/sdb1 /mnt/windows
   ```

   Sometimes, you may need to enforce mounting like

   ```
   # mount -t ntfs-3g /dev/sdb1 /mnt/windows -o force
   ```

6. To unmount the volume, type

   ```
   # umount /mnt/windows
   ```

7. To mount and unmount the volume with non-root account, type

   ```
   $ ntfs-3g /dev/sdb1 /mnt/windows/
   ```

```
$ fusermount -u /mnt/windows/
```

8. To see the mounting information, type

```
# mount
/dev/mapper/VolGroup00-LogVol00 on / type ext3 (rw)
proc on /proc type proc (rw)
sysfs on /sys type sysfs (rw)
devpts on /dev/pts type devpts (rw,gid=5,mode=620)
/dev/sda1 on /boot type ext3 (rw)
tmpfs on /dev/shm type tmpfs (rw)
none on /proc/sys/fs/binfmt_misc type binfmt_misc (rw)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw)
/dev/sdb1 on /mnt/windows type fuseblk (rw,nosuid,nodev,noatime,allow_other,blksize=409
# more /etc/fstab
/dev/VolGroup00/LogVol00 /         ext3   defaults       1 1
LABEL=/boot              /boot     ext3   defaults       1 2
devpts                   /dev/pts  devpts gid=5,mode=620 0 0
tmpfs                    /dev/shm  tmpfs  defaults       0 0
proc                     /proc     proc   defaults       0 0
sysfs                    /sys      sysfs  defaults       0 0
/dev/VolGroup00/LogVol01 swap      swap   defaults       0 0
```

3 Installing FUSE (Filesystem in Userspace)

1. Download the latest stable release from http://fuse.sourceforge.net and extract it.

```
# tar xvzf fuse-2.7.0.tar.gz
```

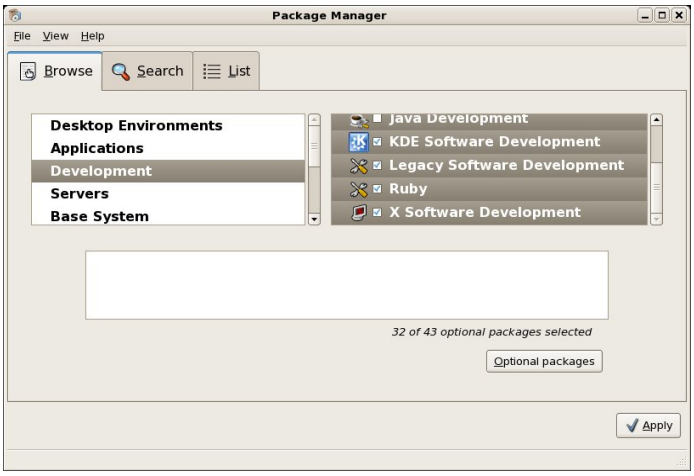
2. Install FUSE by typing

```
# cd fuse-2.7.0
# ./configure
# make
# make install
```

3. You may encounter several error messages while running `./configure`. If you see the following message,

```
configure: error: no acceptable C compiler found in $PATH
```

You may need to install whole packages related with Development to have a C compiler.



If you see another message like

```
checking kernel source directory... Not found
configure: error:
    *** Please specify the location of the kernel source with
    *** the '--with-kernel=SRCDIR' option
configure: error: ./configure failed for kernel
```

You must install kernel-devel with appropriate version

```
# yum install kernel-devel-2.6.18-8.1.8.el5
Loading "priorities" plugin
Loading "fastestmirror" plugin
Loading "installonlyn" plugin
Setting up Install Process
Setting up repositories
Loading mirror speeds from cached hostfile
Reading repository metadata in from local files
0 packages excluded due to repository priority protections
Parsing package install arguments
Resolving Dependencies
--> Populating transaction set with selected packages. Please
--> wait. Package kernel-devel.i686 0:2.6.18-8.1.8.el5 set to
--> be installed.
--> Running transaction check

Dependencies Resolved

================================================================
 Package       Arch        Version         Repository     Size
```

```
================================================================
Installing:
 kernel-devel i686   2.6.18-8.1.8.el5    updates       4.5 M

Transaction Summary
================================================================
Install      1 Package(s)
Update       0 Package(s)
Remove       0 Package(s)

Total download size: 4.5 M
Is this ok [y/N]: y
Downloading Packages:
Running Transaction Test
Finished Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing: kernel-devel    ########################## [1/1]

Installed: kernel-devel.i686 0:2.6.18-8.1.8.el5
Complete!
```

Then running `./configure` should do work. You may see the following warning message, but you can ignore it.

```
************************************************************
* WARNING WARNING WARNING WARNING WARNING WARNING WARNING *
* The FUSE user space binaries were NOT installed with    *
* root directory executable prefix. This means that       *
* automounting NTFS volumes during boot could fail. This  *
* can be fixed the below way by reinstalling FUSE using   *
* the right 'configure' option during FUSE compilation:   *
*       ./configure --exec-prefix=/                       *
*       make && sudo make install                         *
* WARNING WARNING WARNING WARNING WARNING WARNING WARNING *
************************************************************
```

4. Note that you need to reinstall FUSE if you upgrade the kernel.

References

[1] http://www.interwebworld.co.uk/29/hacking-centos-for-ntfs-support/

[2] http://www.ntfs-3g.org/

[3] http://fuse.sourceforge.net/

[4] http://devhen.wordpress.com/2006/06/08/howto-install-sshfs-on-centos-linux/