

Mount USB mass storage device in exfat on CentOS 7

To mount USB mass storage device on CentOS 7, you need to add a package repository first and install some exfat utilities.

Check your attached devices by fdisk

In my case, I am planning to mount 10T Harddisk, and it is shown as 9.1T in /dev/hda2 like below when I run **fdisk -l**

```
# fdisk -l
WARNING: fdisk GPT support is currently new, and therefore in an experimental phase. Use at your own discretion.

Disk /dev/sda: 10000.8 GB, 10000831348736 bytes, 19532873728 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk label type: gpt
Disk identifier: 8EEF9C29-5082-4436-AF97-D99E6C49C7B0


#               Start               End           Size Type              Name
 1                34                262177       128M Microsoft reser Microsoft reserved partition
Partition 1 does not start on physical sector boundary.
 2            264192       19532871679        9.1T Microsoft basic Basic data partition
WARNING: fdisk GPT support is currently new, and therefore in an experimental phase. Use at your own discretion.

Disk /dev/sdb: 2000.4 GB, 2000398934016 bytes, 3907029168 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk label type: gpt
Disk identifier: E453250C-A828-43E8-AC48-CBE474111F11


#               Start               End           Size Type              Name
 1                2048                411647       200M EFI System      EFI System Partition
 2            411648       2508799         1G Microsoft basic
 3           2508800       3907028991       1.8T Linux LVM

Disk /dev/mapper/centos-root: 1982.3 GB, 1982261624832 bytes, 3871604736 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes


Disk /dev/mapper/centos-swap: 16.8 GB, 16844324864 bytes, 32899072 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
```

Install exfat utilities

In order to mount that device in exfat, you will need to add package repository for exfat as following

```
# sudo yum install -y http://li.nux.ro/download/nux/dextop/el7/x86_64/nux-dextop-release-0-1.el7.nux.noarch.rpm
```

Once you run above command, you will see below

```

Loaded plugins: fastestmirror
nux-dextop-release-0-1.el7.nux.noarch.
rpm | 9.6 kB 00:00:00
Examining /var/tmp/yum-root-LUgBEg/nux-dextop-release-0-1.el7.nux.noarch.rpm: nux-dextop-release-0-1.el7.nux.
noarch
Marking /var/tmp/yum-root-LUgBEg/nux-dextop-release-0-1.el7.nux.noarch.rpm to be installed
Resolving Dependencies
--> Running transaction check
--> Package nux-dextop-release.noarch 0:0-1.el7.nux will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
=====
Package Arch Version
Repository Size
=====
=====
Installing:
nux-dextop-release noarch 0-1.el7.nux /nux-dextop-release-0-
1.el7.nux.noarch 3.5 k

Transaction Summary
=====
=====
Install 1 Package

Total size: 3.5 k
Installed size: 3.5 k
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : nux-dextop-release-0-1.el7.nux.
noarch 1/1
Verifying : nux-dextop-release-0-1.el7.nux.
noarch 1/1

Installed:
nux-dextop-release.noarch 0:0-1.el7.nux

Complete!

```

Once you added the repository, you can install it as following

```
# sudo yum install -y exfat-utils fuse-exfat
```

Followings are the ouputs in my case

```

Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
epel/x86_64
/metalink
| 9.1 kB 00:00:00
* base: mirror.opensourcelab.co.kr
* epel: fedora.cs.nctu.edu.tw
* extras: mirror.opensourcelab.co.kr
* nux-dextop: mirror.li.nux.ro
* remi-safe: mirrors.thzhost.com
* updates: mirror.opensourcelab.co.kr
base
| 3.6 kB 00:00:00
epel

```

```

| 4.7 kB 00:00:00
extras
| 2.9 kB 00:00:00
mysql-connectors-
community
2.5 kB 00:00:00
mysql-tools-
community
| 2.5 kB 00:00:00
mysql57-
community
| 2.5 kB 00:00:00
nux-
dextop
| 2.9 kB 00:00:00
remi-
safe
| 3.0 kB 00:00:00
updates
| 2.9 kB 00:00:00
(1/8): mysql-connectors-community/x86_64
/primary_db | 62 kB 00:00:00
(2/8): mysql-tools-community/x86_64
/primary_db | 76 kB 00:00:00
(3/8): mysql57-community/x86_64
/primary_db | 224 kB 00:00:
00
(4/8): updates/7/x86_64
/primary_db | 3.0
MB 00:00:00
(5/8): epel/x86_64
/updateinfo |
1.0 MB 00:00:00
(6/8): remi-safe
/primary_db
| 1.7 MB 00:00:01
(7/8): epel/x86_64
/primary_db |
6.8 MB 00:00:02
(8/8): nux-dextop/x86_64
/primary_db | 1.8
MB 00:00:02
Resolving Dependencies
--> Running transaction check
--> Package exfat-utils.x86_64 0:1.2.7-1.el7.nux will be installed
--> Package fuse-exfat.x86_64 0:1.2.7-1.el7.nux will be installed
--> Processing Dependency: libfuse.so.2(FUSE_2.6)(64bit) for package: fuse-exfat-1.2.7-1.el7.nux.x86_64
--> Processing Dependency: libfuse.so.2(FUSE_2.5)(64bit) for package: fuse-exfat-1.2.7-1.el7.nux.x86_64
--> Processing Dependency: libfuse.so.2(FUSE_2.2)(64bit) for package: fuse-exfat-1.2.7-1.el7.nux.x86_64
--> Processing Dependency: libfuse.so.2()(64bit) for package: fuse-exfat-1.2.7-1.el7.nux.x86_64
--> Running transaction check
--> Package fuse-libs.x86_64 0:2.9.2-11.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
=====
Package Arch Version
Repository Size
=====
Installing:
exfat-utils x86_64 1.2.7-1.el7.nux
nux-dextop 58 k
fuse-exfat x86_64 1.2.7-1.el7.nux
nux-dextop 39 k
Installing for dependencies:
fuse-libs x86_64 2.9.2-11.el7
base 93 k

```

```

Transaction Summary
=====
Install  2 Packages (+1 Dependent package)

Total download size: 190 k
Installed size: 574 k
Downloading packages:
(1/3): fuse-libs-2.9.2-11.el7.x86_64.
rpm                                     | 93 kB  00:00:00
warning: /var/cache/yum/x86_64/7/nux-dextop/packages/fuse-exfat-1.2.7-1.el7.nux.x86_64.rpm: Header V4 RSA/SHA1
Signature, key ID 85c6cd8a: NOKEY2 ETA
Public key for fuse-exfat-1.2.7-1.el7.nux.x86_64.rpm is not installed
(2/3): fuse-exfat-1.2.7-1.el7.nux.x86_64.
rpm                                     | 39 kB  00:00:01
(3/3): exfat-utils-1.2.7-1.el7.nux.x86_64.
rpm                                     | 58 kB  00:00:01
-----

Total
108 kB/s | 190 kB  00:00:01
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-nux.ro
Importing GPG key 0x85C6CD8A:
  Userid      : "Nux.Ro (rpm builder) <rpm@li.nux.ro>"
  Fingerprint: 561c 96bd 2f7f dc2a db5a fd46 e98b fbe7 85c6 cd8a
  Package     : nux-dextop-release-0-1.el7.nux.noarch (@/nux-dextop-release-0-1.el7.nux.noarch)
  From        : /etc/pki/rpm-gpg/RPM-GPG-KEY-nux.ro
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : fuse-libs-2.9.2-11.el7.
x86_64                                             1/3
  Installing : fuse-exfat-1.2.7-1.el7.nux.
x86_64                                             2/3
  Installing : exfat-utils-1.2.7-1.el7.nux.
x86_64                                             3/3
  Verifying  : fuse-libs-2.9.2-11.el7.
x86_64                                             1/3
  Verifying  : exfat-utils-1.2.7-1.el7.nux.
x86_64                                             2/3
  Verifying  : fuse-exfat-1.2.7-1.el7.nux.
x86_64                                             3/3

Installed:
  exfat-utils.x86_64 0:1.2.7-1.el7.nux                fuse-exfat.x86_64 0:1.2.7-1.el7.nux

Dependency Installed:
  fuse-libs.x86_64 0:2.9.2-11.el7

Complete!

```

Format and label

Format in exfat

```
# mkfs.exfat /dev/sda2
```

Once formatting is started, you will see below results

```
mkexfatfs 1.2.7
Creating... done.
Flushing... done.
File system created successfully.
```

Give label to partition as following - **this is very import !!**

```
# exfatlabel /dev/sda2 EX_PART
```

Mount

Create a folder in some nice location

```
# mkdir /mnt/10T
```

And you can simply mount it as following

```
mount /dev/sda2 /mnt/10T
```

Auto-mount USB mass storage while booting

The first thing what I tried is to get UUID for the required disk partition by **ls -al /dev/disk/by-uuid/** as following

```
# ls -al /dev/disk/by-uuid/
```

Then you will see the table like below

```
drwxr-xr-x 2 root root 140 Jul 13 13:58 .
drwxr-xr-x 8 root root 160 Jul 13 13:58 ..
lrwxrwxrwx 1 root root 10 Jul 13 13:58 0C80-DEDB -> ../../sda1
lrwxrwxrwx 1 root root 10 Jul 13 13:58 2e3fddc0-f6db-4b5b-a4b1-f8cd51da5095 -> ../../dm-1
lrwxrwxrwx 1 root root 10 Jul 13 13:58 8a27fe79-e520-4eff-bf2d-69088cb95b83 -> ../../dm-0
lrwxrwxrwx 1 root root 10 Jul 13 13:58 9096-6D1E -> ../../sdb2
lrwxrwxrwx 1 root root 10 Jul 13 13:58 dd68fbad-bf99-4fd7-ae4-76fb8c0323f9 -> ../../sda2
```

In my case, I tried to mount /dev/sda2 above and its UUID is 636e9a0f-5fdf-43ca-8158-8f1af0a84f29, and I it at /etc/fstab like below:

```
UUID=9096-6D1E          /mnt/10T          ext4          defaults          0 0
```

What I intended is to mount the partition having the UUID like above to /mnt/10T, and it worked as I wanted.