

# Some Ext4 Filesystems Cannot Be Converted to Btrfs

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Not all *ext4* filesystems can be converted to a *btrfs* filesystem using the *btrfs-convert* utility.

*Btrfs* has some limitations. The *mkfs.btrfs* utility will complain if you try to create a filesystem that is less than 256Mb. *Btrfs-convert* used fail when a file had more than 244 hard links associated with it but that limitation is long gone.

I hit another limitation recently when I tried to convert a 477Mb *ext4* filesystem to *btrfs*. *Btrfs-convert* failed with a message of:

```
block size is too small
```

For some reason this Oracle [document](#) states that you cannot convert an *ext4* /*boot* filesystem to *btrfs* because it is bootable. Maybe on an MBR-labeled disk but this should not apply to a GPT-labeled disk.

A look at the [source code](#) for the *btrfs-convert* utility revealed the real culprit:

```
ret = open_ext2fs(devname, &ext2_fs);
if (ret) {
    fprintf(stderr, "unable to open the Ext2fsn");
    goto fail;
}
blocksize = ext2_fs->blocksize;
total_bytes = (u64)ext2_fs->super->s_blocks_count * blocksize;
if (blocksize < 4096) {
    fprintf(stderr, "block size is too smalln");
    goto fail;
}
```

It seems the target filesystem blocksize has to be 4K or larger.

This (excellent) [article](#) on [kernel.org](#) explains how *btrfs-convert* does the conversion. Quite a complex operation!

By the way, the utility preserves an image of the original file system in a snapshot named *ext2\_saved*. This snapshot allows you to roll back the conversion, even if you have made changes to the *btrfs* filesystem.

Note, on Fedora, *btrfs-convert* is part of the optional *btrfs-progs* package.