**use input/output redirection**

|  |  |
| --- | --- |
| **operator** | **description** |
| > | redirect STDOUT to a file |
| 2> | redirect STDERR to a file |
| &> | redirect all output to a file |
| 2>&1 | redirect all output to a pipe |

#### add new partitions, filesystems, and swap to existing systems

##### partitions

manage partitions:

fdisk <device> partprobe

##### filesystems

make filesystems:

mkfs.<ext2|ext3>

label filesystems:

e2label <partition> <label> blkid

manage filesystem settings:

tune2fs <partition> dumpe2fs <partition>

## une2fs

tune2fs [options] device

System administration command. Tune the parameters of a Linux Second Extended Filesystem by adjusting various parameters. You must specify the device on which the filesystem resides; it must not be mounted read/write when you change its parameters.

### Options

**-c** max-mount-counts

Specify the maximum number of mount counts between two checks on the filesystem.

**-C** mount-count

Specify the mount count. For use with **-c** to force a check the next time the system boots.

**-e** behavior

Specify the kernel's behavior when encountering errors. behavior must be one of:

**continue**

Continue as usual.

**remount-ro**

Remount the offending filesystem in read-only mode.

**panic**

Cause a kernel panic.

**-f**

Force completion even if there are errors.

**-g** group

Allow group (a group ID or name) to use reserved blocks.

**-i** interval[**d**|**w**|**m**]

Specify the maximum interval between filesystem checks. Units may be in days (**d**), weeks (**w**), or months (**m**). If interval is 0, checking will not be time-dependent.

**-j**

Add an ext3 journal to the filesystem. If specified without **-J**, use the default journal parameters.

**-J** jrnl-options

Specify ext3 journal parameters as a comma-separated list of option=value pairs. The specified options override the default values. Only one size or device option can be specified for a filesystem. Possible options are:

**device=**ext-jrnl

Attach to the journal block device on ext-jrnl, which must exist and must have the same block size as the filesystem to be journaled. ext-jrnl can be specified by its device name, by the volume label (**LABEL**=label), or by the Universal Unique Identifier (UUID) stored in the journal's ext2 superblock (**UUID**=uuid; see **uuidgen**). Create the external journal with:

**mke2fs -O** jrnl-dev ext-jrnl

**size=**jrnl-size

The size of the journal in megabytes. The size must be at least equivalent to 1024 blocks and not more than 102,400 blocks.

**-l**

Display a list of the superblock's contents.

**-L** label

Specify the volume label of filesystem. The label must be no more than 16 characters.

**-m** percentage

Specify the percentage of blocks that will be reserved for use by privileged users.

**-M** dir

Specify the filesystem's last-mounted directory.

**-o** mount-options

Set or clear the specified default mount-options. Mount options specified in /etc/fstab or on the command line for **mount** will override these defaults. Specify multiple options as a comma-separated list. Prefixing an option with a caret (**^**) clears the option. No prefix or a plus sign (**+**) causes the option to be set. The following options can be cleared or set:

**acl**

Enable Posix Acess Control Lists.

**bsdgroups**

Assign new files the group-id of the directory in which they are created instead of the group-id of the process creating them.

**debug**

Enable debugging code.

**journal\_data**

When journaling, commit all data to journal before writing to the filesystem.

**journal\_data\_ordered**

When journaling, force data to the filesystem before committing metadata to the journal.

**journal\_data\_writeback**

When journaling, force data to the filesystem after committing metadata to the journal.

**-O** option

Set or clear the specified filesystem options in the filesystem's superblock. Specify multiple options as a comma-separated list. Prefixing an option with a caret (**^**) clears the option. No prefix or a plus sign (**+**) causes the option to be set. Run **e2fsck** after changing **filetype** or **sparse\_super**. The following options can be cleared or set:

**dir\_index**

Use B-trees to speed up lookups on large directories.

**filetype**

Save file type information in directory entries.

**has\_journal**

Create an ext3 journal. Same as the **-j** option.

**sparse\_super**

Save space on large filesystems by limiting the number of backup superblocks. Same as **-s**.

**-r** num

Specify the number of blocks that will be reserved for use by privileged users.

**-s** [**0**|**1**]

Turn the sparse superblock feature on or off. Run **e2fsck** after changing this feature.

**-T** time

Set the time **e2fsck** was last run. The time specification is international date format, with the time optional—i.e., YYYYMMDD[[HHMM] SS] . If time is specified as **time-last-checked**, the current time is used.

**-u** user

Allow user (a user ID or name) to use reserved blocks.

**-U** uuid

Set the UUID of the filesystem to a UUID generated by **uuidgen** or to one of the following:

**clear**

Clear the existing UUID.

**random**

Randomly generate a new UUID.

**time**

Generate a new time-based UUID.

##### swap

note that it's possible to create a swap **file** instead of a partition:

**dd** if=/dev/zero of=<**file**> bs=1024 count=<**size**>

format the file/partition:

mkswap <partition|**file**> **nano** -w /etc/fstab swapon -va **cat** /proc/swaps