

# How to use Foremost to recover deleted files in Linux

Foremost is designed to diagnose your hard drive in order to recover any files you have deleted. This article provides a tutorial on how to use the Foremost tool.

The `rm` command is one of the most dangerous commands for Linux users. If you delete the wrong file or directory, you can make your entire operating system unusable. Recovering lost files is not easy, but it is also not possible. Foremost is designed to diagnose your hard drive in order to recover any files you have deleted. This article provides a tutorial on how to use the Foremost tool.

## What is foremost?

Developed by US federal agencies, Foremost (link: <http://foremost.sourceforge.net/>) is open source software. Instead of trying to retrieve files from the hard drive's file system, Foremost tries to directly recreate those files.

```

FOREMOST(8)                System Manager's Manual                FOREMOST(8)

NAME
  foremost - Recover files using their headers, footers, and data structures

SYNOPSIS
  foremost [-h] [-V] [-d] [-vqwQT] [-b <blocksize>] [-o <dir>] [-t <type>] [-s <num>] [-i <file>]

BUILTIN FORMATS
  Recover files from a disk image based on file types specified by the user using the -t switch.

  jpg    Support for the JFIF and Exif formats including implementations used in modern digital cameras.

  gif

  png

  bmp    Support for windows bmp format.

  avi

  exe    Support for Windows PE binaries, will extract DLL and EXE files along with their compile times.

Manual page foremost(8) line 1 (press h for help or q to quit)

```

Most operating systems do not delete files completely from the file system. They only delete metadata and leave the data written below. Foremost will then copy and analyze the drive for this information.

Foremost will store information temporarily using memory in your PC. From there, it will look for certain file segments (segments) until it matches other segments, stitching them together (like a jigsaw puzzle).

Foremost supports certain file types. Image files like JPG and GIF, Windows binary files like EXE, document files like DOC and PDF, as well as compressed file formats like ZIP or RAR are all supported.

# Install Foremost in Linux

Foremost is available as a package to install in most default Linux repositories. You can install it from the terminal using the package manager used by the Linux distribution.

```
desktop@vbpc:~$ sudo apt install foremost
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed
  foremost
0 to upgrade, 1 to newly install, 0 to remove and 0 not to upgrade.
Need to get 38.7 kB of archives.
After this operation, 99.3 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu disco/universe amd64 foremost amd64 1.5.7-8 [38.7 kB]
Fetched 38.7 kB in 0s (285 kB/s)
Selecting previously unselected package foremost.
(Reading database ... 262043 files and directories currently installed.)
Preparing to unpack ../foremost_1.5.7-8_amd64.deb ...
Unpacking foremost (1.5.7-8) ...
Setting up foremost (1.5.7-8) ...
Processing triggers for man-db (2.8.5-2) ...
desktop@vbpc:~$
```

Debian and Ubuntu-based distributions can install Foremost by opening a terminal and typing the following:

```
sudo apt install foremost
```

If you are running Arch Linux, you can install Foremost by entering:

```
pacman -S foremost
```

Fedora users can install Foremost from the terminal by typing:

```
dnf install foremost
```

## How to use Foremost

If you have deleted a file and want to retrieve it, you can use Foremost to search for all files of the same type that were previously deleted.

First, you will need to know your drive partition name in Linux, for example **'/ dev / sda1'**. If you do not know your partition, enter the following into the terminal:

```
df -h
```

You will see a list of hard drive partitions listed. Locate the drive you want Foremost to search, listed in **'Filesystem'**.

```
desktop@vbpc:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            960M   0  960M   0% /dev
tmpfs           200M  1.1M  199M   1% /run
/dev/sda1       9.8G  8.3G  998M  90% /
tmpfs           996M  7.3M  989M   1% /dev/shm
tmpfs           5.0M  4.0K  5.0M   1% /run/lock
tmpfs           996M   0  996M   0% /sys/fs/cgroup
/dev/loop0      89M   89M   0 100% /snap/core/7396
/dev/loop1      90M   90M   0 100% /snap/core/7713
/dev/loop2     118M  118M   0 100% /snap/blender/33
tmpfs           200M  8.0K  200M   1% /run/user/1000
/dev/sr0        74M   74M   0 100% /media/desktop/VBox_GAs_6.0.10
```

Once you know your hard drive partition, you can use Foremost to search your drive. For example, if you are looking for a deleted PNG file, open a terminal window and type the following:

```
foremost -v -t png -i /dev/sda1 -o ~/recovery/
```

Replace **' / dev / sda1'** with your hard drive partition. The **-t** flag allows you to select the file type to search for. The **-i** flag selects the drive you want to search, while the **-o** flag lists the directory where any restored files are stored.

```
desktop@vbpc:~/Desktop$ foremost -v -t png -i /dev/sda1 -o ~/recovery/
Foremost version 1.5.7 by Jesse Kornblum, Kris Kendall, and Nick Mikus
Audit File

Foremost started at Thu Oct  3 15:08:24 2019
Invocation: foremost -v -t png -i /dev/sda1 -o /home/desktop/recovery/
Output directory: /home/desktop/recovery
Configuration file: /etc/foremost.conf
Processing: stdin
|-----|
File: stdin
Start: Thu Oct  3 15:08:24 2019
Length: Unknown

Num      Name (bs=512)      Size      File Offset      Comment
```

You can use a similar procedure for any type of file you want to use. Replace **png** with your file type. You can search the entire drive or through specific directories.

When Forecast completes the search, all the files it locates will be saved in the output directory you listed under the **-o** flag . If you have difficulty, you can search through the Forecast's user guide by typing in the terminal:

```
man foremost
```

## Retrieve deleted data in Linux

There is no guarantee that Foremost can recover any data you have lost or deleted. However, this is still one of the best free tools for retrieving data.

Unless you're willing to spend money on a better tool, Foremost is one of the best options available for accessing data in Linux. If Foremost doesn't work in your case, there are other Linux recovery tools available that you can try instead.

Hope you are succesful.

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