

How to Fix the Hard Disk Size After Deleting Large Files?

written by sysadmin | 3 September 2025

I once deleted large files on my Linux server, but when I saw the disk size using the **df -h** command, it turned out that the hard disk size on the server had not changed.

Problem

How to fix the hard disk size after deleting large files?

Solution

I have a Linux server that has a hard disk size as shown below:

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/root	33G	27G	5.9G	83%	/
tmpfs	983M	0	983M	0%	/dev/shm
tmpfs	393M	1.2M	392M	1%	/run
tmpfs	5.0M	0	5.0M	0%	/run/lock
efivarfs	56K	24K	27K	48%	/sys/firmware/efi/efivars
/dev/sda16	881M	63M	757M	8%	/boot
/dev/sda15	105M	6.2M	99M	6%	/boot/efi
tmpfs	197M	12K	197M	1%	/run/user/1017
tmpfs	197M	12K	197M	1%	/run/user/1002

Initial Harddisk size

And you see the partition / only 17 percent left, and I want to delete large files on the server. After seeing in various partitions, I saw a large file in the log folder, as shown below:

12K	zabbix_agentd.log
12K	zabbix_agentd.log.1
15G	zabbix_server.log
6.8G	zabbix_server.log.1

The big file

And I did the command to delete the file. But after deletion, the size of the hard drive on the server is still the same as in the image above. After I find out the reason why the hard disk size has not changed, it turns out this is due to the deleted files still held open by a process commonly known as the zombie file. As a result, the system cannot release the disk space occupied by these files. Because these files are marked as deleted, the df and du commands cannot account for their space usage. So, to see files that are still open by a process, use the lsof command. If on your Linux server, there is no lsof package, use the commands below to install the lsof package:

RockyLinux/AlmaLinux/CentOS

```
dnf install lsof
```

Ubuntu/Debian

```
sudo apt update  
sudo apt install lsof
```

Use the command below to see the deleted files still held open by a process:

```
lsof +L1
```

And in my case, it will look like in the image below:

COMMAND	PID	USER	FD	TYPE	DEVICE	SIZE/OFF	NLINK	NODE	NAME
networkd-	693	root	txt	REG	8,1	8021824	0	2163	/usr/bin/python3.12 (deleted)
unattended	777	root	txt	REG	8,1	8021824	0	2163	/usr/bin/python3.12 (deleted)
mariadb	21897	mysql	7u	REG	8,1	0	0	33890	/tmp/#33890 (deleted)
mariadb	21897	mysql	8u	REG	8,1	0	0	33891	/tmp/#33891 (deleted)
mariadb	21897	mysql	13u	REG	8,1	0	0	33892	/tmp/#33892 (deleted)
mariadb	21897	mysql	16u	REG	8,1	0	0	33893	/tmp/#33893 (deleted)
sudo	111117	root	0u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
sudo	111117	root	1u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
sudo	111117	root	2u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
sudo	111118	root	0u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
sudo	111118	root	1u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
sudo	111118	root	2u	CHR	136,0	0t0	0	3	/dev/pts/0 (deleted)
tail	111119	root	3r	REG	8,1	10819	0	528809	/var/log/zabbix/zabbix_agentd.log.1 (deleted)
zabbix_se	119254	zabbix	1w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
zabbix_se	119254	zabbix	2w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
zabbix_se	119255	zabbix	1w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
zabbix_se	119255	zabbix	2w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
zabbix_se	119256	zabbix	1w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
zabbix_se	119256	zabbix	2w	REG	8,1	7207503973	0	530161	/var/log/zabbix/zabbix_server.log.1 (deleted)
apache2	119443	root	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	917760	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	918511	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920526	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920527	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920528	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920540	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920676	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	921995	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	922015	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	925199	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)

The file(s) are still open by a process

After that, use the command to delete the files using the kill command based on the pid number, as shown in the image below:

```
kill -9 111119 119254 119255 119256
```

And the above command should delete the process that uses the PID number, as shown in the image below:

COMMAND	PID	USER	FD	TYPE	DEVICE	SIZE/OFF	NLINK	NODE	NAME
networkd-	693	root	txt	REG	8,1	8021824	0	2163	/usr/bin/python3.12 (deleted)
unattende	777	root	txt	REG	8,1	8021824	0	2163	/usr/bin/python3.12 (deleted)
mariadb	21897	mysql	7u	REG	8,1	0	0	33890	/tmp/#33890 (deleted)
mariadb	21897	mysql	8u	REG	8,1	0	0	33891	/tmp/#33891 (deleted)
mariadb	21897	mysql	13u	REG	8,1	0	0	33892	/tmp/#33892 (deleted)
mariadb	21897	mysql	16u	REG	8,1	0	0	33893	/tmp/#33893 (deleted)
apache2	119443	root	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	917760	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	918511	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920526	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920527	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920528	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920540	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	920676	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	921995	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	922015	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)
apache2	925199	www-data	9u	REG	0,1	0	0	7876	/memfd:opcache_lock (deleted)

The files that we have deleted are no longer on the list

And if you run the **df -h** command, the size of the hard disk on the Linux server should be reduced according to the size of the files that we deleted earlier, like in the image below:

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/root	33G	21G	13G	62%	/
tmpfs	983M	0	983M	0%	/dev/shm
tmpfs	393M	1.2M	392M	1%	/run
tmpfs	5.0M	0	5.0M	0%	/run/lock
efivarfs	56K	24K	27K	48%	/sys/firmware/efi/efivars
/dev/sda16	881M	63M	757M	8%	/boot
/dev/sda15	105M	6.2M	99M	6%	/boot/efi
tmpfs	197M	12K	197M	1%	/run/user/1017
tmpfs	197M	12K	197M	1%	/run/user/1002

The final hard disk size

Note

If, after you delete using a kill based on the PID number, but the size of the hard disk on the Linux server still hasn't changed, then the server must be restarted, and after you restart the server, the size of the hard disk will correspond to the number of files you deleted earlier.

References

pietervogelaar.nl
howtoforge.com
access.redhat.com
alibabacloud.com