

How to Replace a String in Multiple Files in a Linux Folder?

written by sysadmin | 17 January 2026

I want to replace a string that is in multiple files in a Linux folder.

Problem

How to replace a string in multiple files in a Linux folder?

Solution

For example, I want to search for the database.php word scattered across multiple PHP files in a folder, and I use the Linux command below:

```
grep -R database.php *
```

```
root@docker:/var/www# ls
portal portal-ori
root@docker:/var/www#
root@docker:/var/www# grep -R database.php *
portal/app1/index.php:require_once '../includes/database.php';
portal/app1/create.php:require_once '../includes/database.php';
portal/app1/delete.php:require_once '../includes/database.php';
portal/app1/edit.php:require_once '../includes/database.php';
portal/reset_password.php:require_once 'includes/database.php';
portal/app2/index.php:require_once '../includes/database.php';
portal/app2/create.php:require_once '../includes/database.php';
portal/app2/delete.php:require_once '../includes/database.php';
portal/app2/edit.php:require_once '../includes/database.php';
portal/register.php:require_once 'includes/database.php';
portal/login.php:require_once 'includes/database.php';
portal/run_scripts/add.php:placeholder="e.g., backup_database.php"
portal/create_admin.php:require_once 'includes/database.php';
portal-ori/app1/index.php:require_once '../includes/database.php';
portal-ori/app1/create.php:require_once '../includes/database.php';
portal-ori/app1/delete.php:require_once '../includes/database.php';
portal-ori/app1/edit.php:require_once '../includes/database.php';
portal-ori/reset_password.php:require_once 'includes/database.php';
portal-ori/app2/index.php:require_once '../includes/database.php';
portal-ori/app2/create.php:require_once '../includes/database.php';
portal-ori/app2/delete.php:require_once '../includes/database.php';
portal-ori/app2/edit.php:require_once '../includes/database.php';
portal-ori/register.php:require_once 'includes/database.php';
portal-ori/login.php:require_once 'includes/database.php';
portal-ori/create_admin.php:require_once 'includes/database.php';
root@docker:/var/www#
```

Find the string in multiple folders



In the image above, the word is scattered across multiple Linux files and in different Linux folders. So that you don't go into the file that is in a different folder one by one and then change the word database.php, for example, to config.php manually, but you can run the command below:

```
find . -type f -name "*.php" -exec sed -i 's/database\.php/config.php/g' {} +
```

which results in the image below:

```
root@docker:/var/www# find . -type f -name "*.php" -exec sed -i 's/database\.php/config.php/g' {} +
root@docker:/var/www#
root@docker:/var/www# grep -R database.php *
root@docker:/var/www#
```



Replace the string in multiple folders

In the image above, you can see that the word has been successfully changed to config.php, which is not found when you search for database.php. If you just change the database.php word to config.php in a folder, as shown in the image below:

```
root@docker:/var/www/portal/logs# ls
add.php      add.php.ori    config.php.bkp5  edit.php      edit.php.bkp2  edit.php.ori    index.php      index.php.bkp2  index.php.bkp5  search.php     view.php
add.php.bkp  config.php     config.php.ori  edit.php.bkp  edit.php.bkp3  files.php       index.php.bkp  index.php.bkp3  index.php.ori  style.css     view.php.bkp
add.php.bkp1 config.php.bkp3 delete.php      edit.php.bkp1 edit.php.bkp4  files.php.ori  index.php.bkp1 index.php.bkp4  readme.txt    uploads      view.php.ori
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# grep -R database.php *
add.php:require 'database.php';
delete.php:require 'database.php';
edit.php:require 'database.php';
files.php:require 'database.php';
index.php:require 'database.php';
search.php:require 'database.php';
view.php:require 'database.php';
root@docker:/var/www/portal/logs#
```



Find the string in a folder

You can use the format below to replace the word:

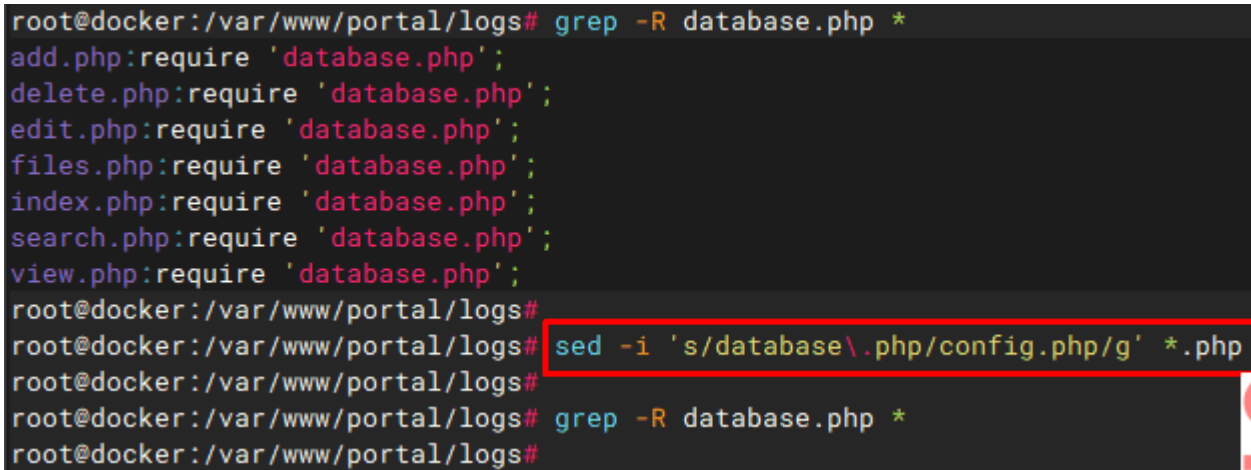
```
sed -i 's/old_word/new_word/g' filename
```

So you can run the command below to change the word database.conf to config.php

```
sed -i 's/database\.php/config.php/g' *.php
```

So it will look like the image below:

```
root@docker:/var/www/portal/logs# grep -R database.php *
add.php:require 'database.php';
delete.php:require 'database.php';
edit.php:require 'database.php';
files.php:require 'database.php';
index.php:require 'database.php';
search.php:require 'database.php';
view.php:require 'database.php';
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# sed -i 's/database\.php/config.php/g' *.php
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# grep -R database.php *
root@docker:/var/www/portal/logs#
```



Replace the string in a folder

In the image above, you can see that the string database.php has been changed to config.php.

Note

If you're still unsure about running the two commands above to change a word scattered across multiple files, you can preview the results you expect. For example, if you want to preview the results first before you permanently change the changes in a folder, then you can run the command below:


```
sed 's/database\.php/config.php/g' *.php | grep database.php
```

and the result will be as shown in the image below:

```

root@docker:/var/www/portal/logs# grep -R database.php *
add.php:require 'database.php';
delete.php:require 'database.php';
edit.php:require 'database.php';
files.php:require 'database.php';
index.php:require 'database.php';
search.php:require 'database.php';
view.php:require 'database.php';
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# sed 's/database\.php/config.php/g' *.php | grep config.php
require 'config.php';
require 'config.php';
require 'config.php';
require 'config.php';
require 'config.php';
require 'config.php';
require 'config.php';

```



Preview the result

And if you want to automatically back up when changing a string in multiple files, then use the command below:


```
sed -i.bak 's/database\.php/config.php/g' *.php
```

Then the result will be as shown in the image below:

```

root@docker:/var/www/portal/logs# grep -R database.php *
add.php:require 'database.php';
delete.php:require 'database.php';
edit.php:require 'database.php';
files.php:require 'database.php';
index.php:require 'database.php';
search.php:require 'database.php';
view.php:require 'database.php';
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# sed -i.bak 's/database\.php/config.php/g' *.php
root@docker:/var/www/portal/logs#
root@docker:/var/www/portal/logs# grep -R database.php *
add.php.bak:require 'database.php';
delete.php.bak:require 'database.php';
edit.php.bak:require 'database.php';
files.php.bak:require 'database.php';
index.php.bak:require 'database.php';
search.php.bak:require 'database.php';
view.php.bak:require 'database.php';
root@docker:/var/www/portal/logs#

```



Back up the file(s) automatically

In the image, you can see that files that have the word database.php are automatically backed up to files with the

.bak extension.

References

unix.stackexchange.com

askubuntu.com

stackoverflow.com

[How to Backup And Restore Uptime Kuma Database in Docker?](#)

written by sysadmin | 17 January 2026

[The previous article](#) explained how to install Uptime Kuma using Docker on Linux. This article will explain how to back up and restore the Kuma uptime database in Docker.

Problem

How to back up and restore the Uptime Kuma database in Docker?

Solution

Below are the steps to back up and restore the Uptime Kuma database in Docker:

A. Database SQLite

Here is the method to back up and restore a SQLite database in Docker:

1. Backup database

If you want to back up the Uptime Kuma database in Docker, you can run the command below to get the Kuma database on your host:

```
docker run --rm
-v uptime-kuma:/data
-v $(pwd):/backup
alpine tar czf /backup/kuma-backup.tar.gz /data
```

After that, look in your current folder; the database should appear like the image below:

```
sysadmin@docker:~$ docker run --rm \
-v uptime-kuma:/data \
-v $(pwd):/backup \
alpine tar czf /backup/kuma-backup.tar.gz /data
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
1074353eec0d: Pull complete
5c1f58ba4e0d: Download complete
644afed44dca: Download complete
Digest: sha256:865b95f46d98cf867a156fe4a135ad3fe50d2056aa3f25ed31662dff6da4eb62
Status: Downloaded newer image for alpine:latest
tar: removing leading '/' from member names
sysadmin@docker:~$ ls
crud  get-docker.sh  kuma-backup.tar.gz  main.zip
```

Back up the uptime Kuma database

However, if you want to back up automatically, then follow the steps below:

a. Create a backup folder on the host

Run the commands below to create a backup folder in the host:

```
sudo mkdir -p /opt/kuma-backup
sudo chown root:root /opt/kuma-backup
sudo chmod 700 /opt/kuma-backup
```

b. Run the backup script

Create a file, for example, backup-kuma.sh, in the root folder containing the bash script below:

```
#!/bin/bash
set -e

# CONFIG
```

```

CONTAINER_NAME="uptime-kuma"
VOLUME_NAME="uptime-kuma"
BACKUP_DIR="/opt/kuma-backup"
RETENTION_DAYS=14
DATE=$(date +"%Y%m%d-%H%M%S")
BACKUP_FILE="$BACKUP_DIR/kuma-backup-$DATE.tar.gz"

# Backup
docker run --rm \
  -v $VOLUME_NAME:/data:ro \
  -v $BACKUP_DIR:/backup \
  alpine \
  tar czf /backup/$(basename $BACKUP_FILE) /data

# Cleanup old backups
find $BACKUP_DIR -type f -name "kuma-backup-*.tar.gz" -mtime +$RETENTION_DAYS
-delete

```

Save the file and make it executable using the command:

```
sudo chmod +x /root/backup-kuma.sh
```

If you run the script, the backup database file should be in the **/opt/backup** folder.

c. Set up a Cron Job

If you want to run the script every 2:30 AM, then on the crontab, write the script as shown in the image below

```
0 2 * * * /root/backup-kuma.sh >> /root/kuma-backup.log 2>&1
```

2. Restore database

Before you restore the database, make sure the container has been running first. If you want to restore the Uptime Kuma database that you have previously backed up, then you can run the command below on the host:

```

docker run --rm \
  -v uptime-kuma:/data \
  -v /opt/kuma-backup:/backup \
  alpine \
  tar xzf /backup/kuma-backup-YYYYMMDD-HHMMSS.tar.gz -C /

```

If the restore process is complete, the hosts that were monitored in the previous container should be monitored again by the new container.

B. Database MariaDB

Here is the method to back up and restore a MariaDB database in Docker:

1. Backup database

If you want to back up the MariaDB database in Docker, you can run the command below to get the database on your host:

```
docker exec mariadb \  
  mysqldump -u root -p kuma > kuma.sql
```

Change the kuma with your database name. Or use the command below if you want to compress the result:

```
docker exec mariadb \  
  mysqldump -u root -p kuma | gzip > kuma.sql.gz
```

You can use the script below to back up the database:

```
#!/bin/bash  
  
# =====  
# CONFIGURATION  
# =====  
CONTAINER_NAME="mariadb"  
DB_USER="backup_user"  
DB_PASSWORD="PASSWORD_DB"  
DB_NAME="appdb"  
  
BACKUP_DIR="/opt/backup/mariadb"  
RETENTION_DAYS=7  
DATE=$(date +"%Y-%m-%d_%H-%M-%S")  
BACKUP_FILE="$BACKUP_DIR/${DB_NAME}_${DATE}.sql.gz"  
LOG_FILE="$BACKUP_DIR/backup.log"  
  
# =====  
# PREPARATION  
# =====
```

```

mkdir -p "$BACKUP_DIR"

echo "[$(date)] Backup started" >> "$LOG_FILE"

# =====
# BACKUP DATABASE
# =====
docker exec "$CONTAINER_NAME" \
  mysqldump -u"$DB_USER" -p"$DB_PASSWORD" "$DB_NAME" \
  --single-transaction \
  --quick \
  --routines \
  --triggers \
  --events \
  | gzip > "$BACKUP_FILE"

# =====
# VALIDATION
# =====
if [ $? -eq 0 ]; then
  echo "[$(date)] Backup SUCCESS: $BACKUP_FILE" >> "$LOG_FILE"
else
  echo "[$(date)] Backup FAILED" >> "$LOG_FILE"
  exit 1
fi

# =====
# BACKUP ROTATION (DELETE OLD FILE)
# =====
find "$BACKUP_DIR" -type f -name "*.sql.gz" -mtime +$RETENTION_DAYS -delete

echo "[$(date)] Old backups cleaned (>${RETENTION_DAYS} days)" >> "$LOG_FILE"
echo "[$(date)] Backup finished" >> "$LOG_FILE"

```

And you can insert the script above in the crontab.

2. Restore database

Before you restore the database, make sure the container has been running first. If you want to restore the database that you have previously backed up, then you can run the command below on the host:

```

docker exec -i mariadb \
  mysql -u root -p -e "CREATE DATABASE kuma;"

docker exec -i mariadb \
  mysql -u root -p kuma < kuma.sql

```

Note

If you have a failure to back up the database, you can see the logs in the `/root/backup-kuma.log` file.

References

fishparts.net

homelab.anita-fred.net

[How to Display All Crontabs Running Using a Bash Script?](#)

written by sysadmin | 17 January 2026

I would like to know who is running crontab on the Linux server.

Problem

How to display all crontabs running using a Bash script?

Solution

By default, run the command below if you want to display the crontab command:

```
crontab -l
```

However, if you want to display another user, for example, user john, use the command below:

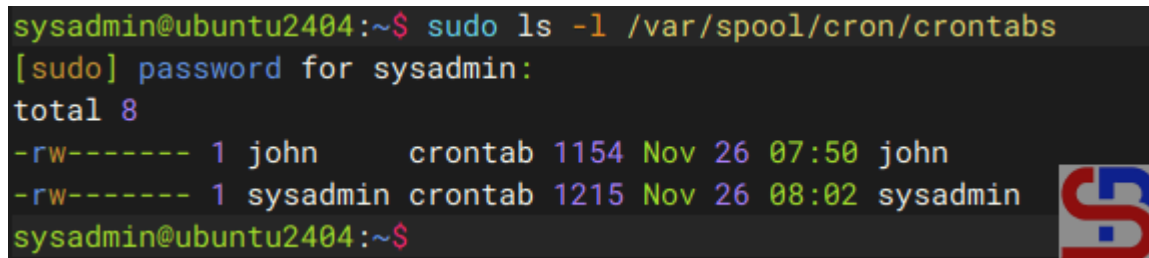
```
sudo crontab -l -u john
```

If you want to see all users running crontab, then you can run the command below:

Ubuntu/Debian

```
ls -l /var/spool/cron/crontabs
```

```
sysadmin@ubuntu2404:~$ sudo ls -l /var/spool/cron/crontabs
[sudo] password for sysadmin:
total 8
-rw----- 1 john      crontab 1154 Nov 26 07:50 john
-rw----- 1 sysadmin crontab 1215 Nov 26 08:02 sysadmin
sysadmin@ubuntu2404:~$
```



Displays all users running crontab

RockyLinux/AlmaLinux/RHEL/CentOS

```
ls -l /var/spool/cron/
```

Use the command below if you want to see all users running crontab and display each user's crontab at the same time:

```
awk -F: '$3>=1000 || $1=="root" {print $1}' /etc/passwd |
while read u; do
    if sudo crontab -l -u "$u" &>/dev/null; then
        echo
        echo "=== $u ==="
        sudo crontab -l -u "$u" | grep -v '^#' | sed '/^\s*$/d'
        echo ""
    fi
done
```

```

sysadmin@ubuntu2404:~$ awk -F: '$3>=1000 || $1=="root" {print $1}' /etc/passwd |
while read u; do
    if sudo crontab -l -u "$u" &>/dev/null; then
        echo
        echo "=== $u ==="
        sudo crontab -l -u "$u" | grep -v '^#' | sed '/^\s*$/d'
        echo ""
    fi
done

=== sysadmin ===
@reboot sleep 900 &&    cd /home/sysadmin;./time.sh
0 0 * * 6            cd /home/sysadmin;./saturday.sh
15 7 24-31 * 6      date > time.txt

=== john ===
30 10 * * *          sudo systemctl restart apache2

sysadmin@ubuntu2404:~$

```

Displays all users running crontab and their script(s) on crontab

If you want the result of the above command to be entered as a CSV file, then run the command below:

```

echo "user,cron_entry" > all_user_crontab.csv; \
awk -F: '$3>=1000||$1=="root"{print $1}' /etc/passwd | while read u; do \
    if sudo crontab -l -u "$u" &>/dev/null; then \
        sudo crontab -l -u "$u" | \
        grep -v '^[[:space:]]*#' | grep -v '^[[:space:]]*$' | \
        while read line; do \
            echo "$u,\"$line\"" >> all_user_crontab.csv; \
        done; \
    fi; \
done

```

```

sysadmin@ubuntu2404:~$ echo "user,cron_entry" > all_user_crontab.csv; \
awk -F: '$3>=1000||$1=="root"{print $1}' /etc/passwd | while read u; do \
  if sudo crontab -l -u "$u" &>/dev/null; then \
    sudo crontab -l -u "$u" | \
    grep -v '^[[[:space:]]*# ' | grep -v '^[[[:space:]]*$ ' | \
    while read line; do \
      echo "$u,\"$line\" " >> all_user_crontab.csv; \
    done; \
  fi; \
done
sysadmin@ubuntu2404:~$ cat all_user_crontab.csv
user,cron_entry
sysadmin,"@reboot      sleep 900 &&      cd /home/sysadmin;./time.sh"
sysadmin,"0 0 * * 6    cd /home/sysadmin;./saturday.sh"
sysadmin,"15 7 24-31 * 6      date > time.txt"
john,"30 10 * * *      sudo systemctl restart apache2"
sysadmin@ubuntu2404:~$

```



Run the command to display all the users and their crontab, and save it to the CSV file

However, if you want to display all crontabs, whether run by the user or the Linux system, then you can use the command below:

```

#!/bin/bash

clean_output() {
  grep -v '^[[[:space:]]*# ' | grep -v '^[[[:space:]]*$ '
}

echo "=== SYSTEM CRONTABS ==="
echo ""

# Main crontab system
if [[ -f /etc/crontab ]]; then
  echo "--- /etc/crontab ---"
  clean_output < /etc/crontab
  echo ""
fi

# Cron.d directory
if [[ -d /etc/cron.d ]]; then
  echo "--- /etc/cron.d/ ---"
  for f in /etc/cron.d/*; do
    [[ -f "$f" ]] || continue
    echo "File: $f"
    clean_output < "$f"
  done
fi

```

```

        echo ""
    done
fi

# Cron.daily, cron.hourly, cron.weekly, cron.monthly
for dir in daily hourly weekly monthly; do
    path="/etc/cron.$dir"
    if [[ -d "$path" ]]; then
        echo "--- /etc/cron.$dir/ ---"
        # List script names only (normally no '#' inside)
        ls -l "$path"
        echo ""
    fi
done

echo "=== USER CRONTABS ==="
echo ""

# All user in /etc/passwd
for user in $(cut -f1 -d: /etc/passwd); do
    uid=$(id -u "$user" 2>/dev/null)
    [[ $? -ne 0 ]] && continue
    if [[ $uid -lt 1000 && $user != "root" ]]; then
        continue
    fi

    crontab_content=$(sudo crontab -l -u "$user" 2>/dev/null | clean_output)

    if [[ -n "$crontab_content" ]]; then
        echo "--- Crontab for user: $user ---"
        echo "$crontab_content"
        echo ""
    fi
done

```

And use the script below if you want to insert the result into a CSV file:

```

#!/bin/bash

OUTPUT="cron_inventory.csv"

echo "type,owner,source,cron_entry" > "$OUTPUT"

filter_clean() {
    grep -v '^[[:space:]]*#' | grep -v '^[[:space:]]*$'
}

```

```
#####
```

```

# SYSTEM CRONTAB
#####

if [[ -f /etc/crontab ]]; then
    cat /etc/crontab | filter_clean | while read line; do
        echo "system,root,/etc/crontab,\"$line\" " >> "$OUTPUT"
    done
fi

#####
# /etc/cron.d
#####

if [[ -d /etc/cron.d ]]; then
    for file in /etc/cron.d/*; do
        [[ -f "$file" ]] || continue
        cat "$file" | filter_clean | while read line; do
            echo "system,root,$file,\"$line\" " >> "$OUTPUT"
        done
    done
fi

#####
# cron.daily / cron.hourly / cron.weekly / cron.monthly
#####

for dir in daily hourly weekly monthly; do
    path="/etc/cron.$dir"
    if [[ -d "$path" ]]; then
        for script in "$path"/*; do
            [[ -f "$script" ]] || continue
            echo "system,root,$path,$(basename "$script")" >> "$OUTPUT"
        done
    fi
done

#####
# USER CRONTABS
#####

for user in $(cut -f1 -d: /etc/passwd); do
    uid=$(id -u "$user" 2>/dev/null)
    [[ $? -ne 0 ]] && continue
    if [[ $uid -lt 1000 && $user != "root" ]]; then
        continue
    fi

    crontab -l -u "$user" 2>/dev/null | filter_clean | while read line; do
        echo "user,$user,crontab,\"$line\" " >> "$OUTPUT"
    done
done

```

```
echo "== CSV generated: $OUTPUT =="
```

Note

By displaying users who use crontab on a Linux server, you can save your time and effort investigating if there are commands running at a certain time on that server.

References

stackoverflow.com

unix.stackexchange.com

cyberciti.biz

[How to Convert the Comma\(s\) into the Space\(s\) on a Linux File?](#)

written by sysadmin | 17 January 2026

[The previous article](#) explained how to convert spaces into commas in a Linux file. This article will explain how to convert a comma into a space on Linux.


Problem

How to convert the comma(s) into the space(s) on a Linux file?

Solution

For example, you have a **test.txt** file as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu, Debian, CentOS, Red, Gentoo, Fedora, OpenSUSE, Scientific, CloudLinux, Elementary,
sysadmin@Ubuntu2404:~$
```



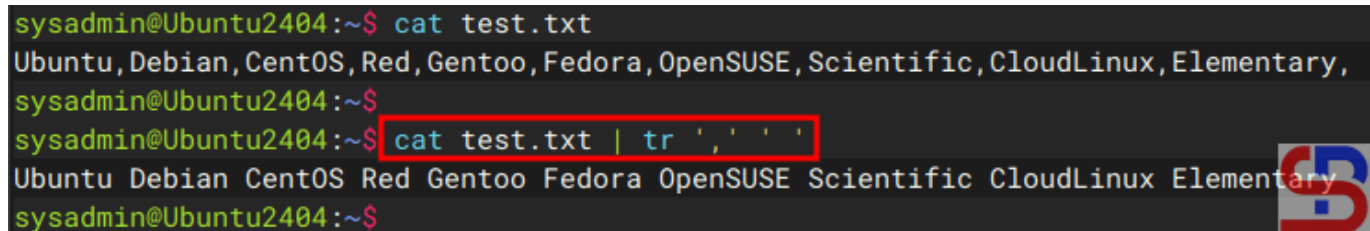
The test.txt file

So that the file is a comma sign into a space, then use the command below:

```
cat test.txt | tr ',' ' '
```

So the results will be like the picture below:

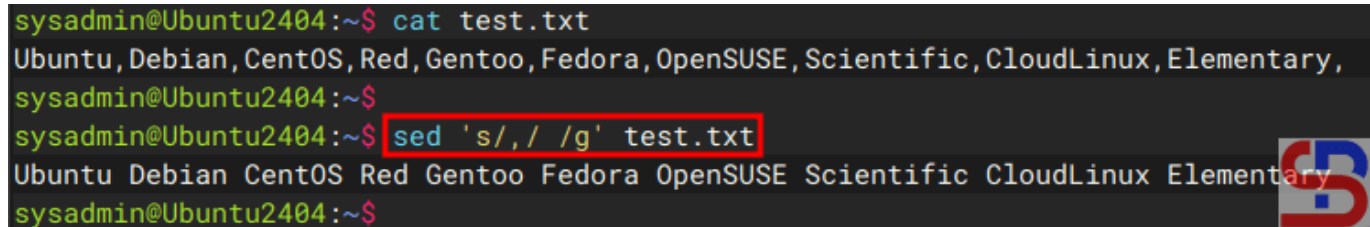
```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ cat test.txt | tr ',' ' '
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

A terminal window showing the execution of the tr command. The first command is 'cat test.txt' which outputs 'Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,'. The second command is 'cat test.txt | tr ',' ' ' ' which outputs 'Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary'. The terminal prompt is 'sysadmin@Ubuntu2404:~\$'.

Convert the comma to a space using the tr command

You can also use the command below to convert the comma(s) to the space(s):

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ sed 's/,/ /g' test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

A terminal window showing the execution of the sed command. The first command is 'cat test.txt' which outputs 'Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,'. The second command is 'sed 's/,/ /g' test.txt' which outputs 'Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary'. The terminal prompt is 'sysadmin@Ubuntu2404:~\$'.

Convert the comma to a space using the sed command

Note

If your file uses other symbols besides the comma symbol, for example, the symbol of the colon(:), just change the comma into a colon on the two commands above. For example, if you use the tr command, then use the command below:

```
cat test.txt | tr ':' ' '
```

And the file should be as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu:Debian:CentOS:Red:Gentoo:Fedora:OpenSUSE:Scientific:CloudLinux:Elementary:
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ cat test.txt | tr ':' ' '
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

Change the colon(s) to a space

References

stackoverflow.com

phoenixnap.com

[How to Convert the Space\(s\) to a Comma in a Linux File?](#)

written by sysadmin | 17 January 2026

I want to convert the space(s) in a Linux file to a comma.

Problem

How to convert the space(s) to a comma in a Linux file?

Solution

For example, you have a **test.txt** file as shown in the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

The test.txt file

Use the command below if you want to convert the space to a comma:

```
tr -s '[:blank:]' ',' < test.txt
```

So that your file will convert to the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr -s '[:blank:]' ',' < test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
```

Convert a space to a comma

Not only that, the command can also be used if you have a file that has irregular spaces as shown in the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu  Debian  CentOS  Red          Gentoo      Fedora      OpenSUSE      Scientific      CloudLinux  Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr -s '[:blank:]' ',' < test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
```

Convert an irregular space to a comma

Even the above command can also convert the free space created using the **Tab** key, as shown in the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu  Debian  CentOS  Red          Gentoo  Fedora  OpenSUSE      Scientific      CloudLinux      Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr -s '[:blank:]' ',' < test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
```

Convert a Tab space to a comma

You can also use the below command in addition to the above command to make the space(s) in a Linux file a comma:

```
sed 's/\s\+/,/g' < test.txt
```

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu  Debian  CentOS  Red          Gentoo  Fedora  OpenSUSE      Scientific      CloudLinux      Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ sed 's/\s\+/,/g' < test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
```

Convert the space(s) using the sed command

Note

If you want the free space to convert to something other than a comma, for example, to a colon (:), Then convert the comma in both commands above to become a colon as in the command below:

```
tr -s '[:blank:]' ':' < test.txt
```

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr -s '[:blank:]' ':' < test.txt
Ubuntu:Debian:CentOS:Red:Gentoo:Fedora:OpenSUSE:Scientific:CloudLinux:Elementary:
sysadmin@Ubuntu2404:~$
```

Convert the space(s) to a colon

References

unix.stackexchange.com
stackoverflow.com

[How to Convert a Row to a Column in Linux File?](#)

written by sysadmin | 17 January 2026

[The previous article](#) explained how to convert a column into a row in a Linux file. This article will explain how to convert a row into a column.

Problem

How to convert a row to a column in a Linux file?

Solution

Suppose you have a **test.txt** file as below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

The test.txt file

Use the command below to convert the file into a column:

```
tr -s ' ' '\n' < test.txt
```

Then the file will become like the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr -s ' ' '\n' < test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
```

Using the tr command

Or you can use the command below:

```
fmt -1 test.txt
```

so that the file will be as shown in the image below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ fmt -1 test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
```



Using the fmt command

Note

If you want to enter the results in a file, for example, the result.txt file, then you can use the standard output redirection or stdout on Linux. For example, you use the tr command to change the file, so you can use the command below:

```
tr -s ' ' '\n' < test.txt > result.txt
```

Then the results of these changes are in the result.txt file as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$ tr -s ' ' '\n' < test.txt > result.txt
sysadmin@Ubuntu2404:~$ cat result.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
```

Using the redirection to save the result

Likewise, by using another command above, you can simply add stdout at the end of the command.

References

- unix.stackexchange.com
- odin.mdacc.tmc.edu

[How to Convert a Column into a Row in a Linux File?](#)

written by sysadmin | 17 January 2026

I want to convert a file containing a column into a row in a Linux file.

Problem

How to convert a column into a row in a Linux file?

Solution

For your information, columns are vertical, or what you arrange from top to bottom, while rows are horizontal, or what you can arrange from left to right. Consider the picture below to distinguish between columns and rows:



Columns vs rows

For example, you have a **test.txt** file as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
```

The test.txt file

To convert into a row, use the command below:

```
awk 'BEGIN { ORS=" " } { print } END { print "\n" }' test.txt
```

Then the file changes to as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$ awk 'BEGIN { ORS=" " } { print } END { print "\n" }' test.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

Using the awk command

You can also use the command below:

```
tr '\n' ' ' < test.txt && echo
```

So that the file becomes as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ tr '\n' ' ' < test.txt && echo
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

Using the tr command

Or you can also use the command below:

```
paste -sd" " test.txt
```

To make the file look like this:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ awk 'BEGIN { ORS=" " } { print } END { print "\n" }' test.txt > result.txt
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ cat result.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

Using the paste command

Note

If you want to enter the results in a file, for example, the result.txt file, then you can use the standard output redirection or stdout on Linux. For example, you use the awk command to change the file, so you can use the command below:

```
awk 'BEGIN { ORS=" " } { print } END { print "\n" }' test.txt > result.txt
```

Then the results of these changes are in the result.txt file as shown below:

```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu
Debian
CentOS
Red
Gentoo
Fedora
OpenSUSE
Scientific
CloudLinux
Elementary
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ awk 'BEGIN { ORS=" " } { print } END { print "\n" }' test.txt > result.txt
sysadmin@Ubuntu2404:~$
sysadmin@Ubuntu2404:~$ cat result.txt
Ubuntu Debian CentOS Red Gentoo Fedora OpenSUSE Scientific CloudLinux Elementary
sysadmin@Ubuntu2404:~$
```

Using the redirection to save the result

Likewise, by using the two commands above, you can simply add `stdout` at the end of the two commands.

References

keydifferences.com
community.unix.com