How to Display the Total Size of the Entire MariaDB Database in the CLI?

written by sysadmin | 10 September 2025

I want to know the total size of the entire MariaDB database.

Problem

How to display the total size of the entire MariaDB database in the CLI?

Solution

There are two methods for displaying the total size of the entire MariaDB database in the CLI:

1. Using a query

If you have entered the MariaDB database, you can use the command below to display the total size of a MariaDB database:

```
SELECT table_schema AS "Database",
ROUND(SUM(data_length + index_length) / 1024 / 1024, 2) AS "Size (MB)"
FROM information_schema.TABLES
GROUP BY table_schema;
```

The above query will display the total size of the entire MariaDB database in MegaBytes (MB) as shown in the image below:

```
MariaDB [(none)]> SELECT table_schema AS "Database",
    -> ROUND(SUM(data_length + index_length) / 1024 / 1024, 2) AS "Size (MB)"
    -> FROM information_schema.TABLES
    -> GROUP BY table_schema;
+--------------------+-----------+
| Database           | Size (MB) |
+--------------------+-----------+
| information_schema |      0.20 |
| instances          |    488.72 |
| mysql              |      3.33 |
| nodes              |    540.02 |
| performance_schema |      0.00 |
| sys                |      0.03 |
+--------------------+-----------+
6 rows in set (0.013 sec)
```

Display the total size of the databases using the query in Megabytes

If you want to display in Gigabytes (GB), use the command below:

```
SELECT table_schema AS "Database",
ROUND(SUM(data_length + index_length) / 1024 / 1024 / 1024, 2) AS "Size (GB)"
FROM information_schema.TABLES
GROUP BY table_schema;
```

so that it will display as shown in the image below:

```
MariaDB [(none)]> SELECT table_schema AS "Database",
    -> ROUND(SUM(data_length + index_length) / 1024 / 1024 / 1024, 2) AS "Size (GB)"
    -> FROM information_schema.TABLES
    -> GROUP BY table_schema;
+--------------------+-----------+
| Database           | Size (GB) |
+--------------------+-----------+
| information_schema |      0.00 |
| instances          |      0.48 |
| mysql              |      0.00 |
| nodes              |      0.53 |
| performance_schema |      0.00 |
| sys                |      0.00 |
+--------------------+-----------+
6 rows in set (0.012 sec)
```

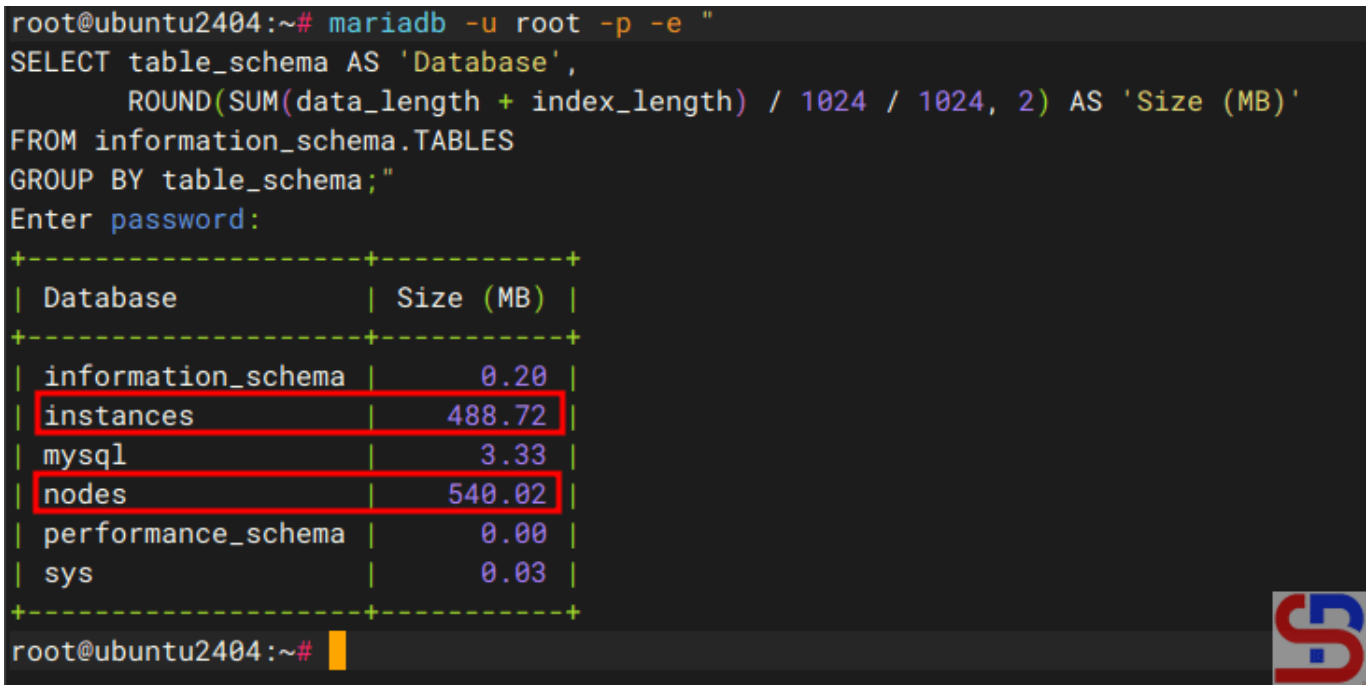
Display the total size of the databases using the query in GigaBytes

2. Using Linux Command

If you want to display the total size of the entire MariaDB database using Linux commands, use the command below:

```
mariadb -u root -p -e "
SELECT table_schema AS 'Database',
ROUND(SUM(data_length + index_length) / 1024 / 1024, 2) AS 'Size (MB)'
FROM information_schema.TABLES
GROUP BY table_schema;"
```

If you run the above command, it will display like the image below:



Display the total size of the databases using the Linux command in Megabytes

If you want to display it in GigaBytes, use the command below:

```
mariadb -u root -p -e "
SELECT table_schema AS 'Database',
ROUND(SUM(data_length + index_length) / 1024 / 1024 / 1024, 2) AS 'Size (GB)'
FROM information_schema.TABLES
GROUP BY table_schema;"
```

and it will display like the image below:

```
root@ubuntu2404:~# mariadb -u root -p -e "
SELECT table_schema AS 'Database',
       ROUND(SUM(data_length + index_length) / 1024 / 1024 / 1024, 2) AS 'Size (GB)'
FROM information_schema.TABLES
GROUP BY table_schema;"
Enter password:
+--------------------+-----------+
| Database           | Size (GB) |
+--------------------+-----------+
| information_schema |      0.00 |
| instances          |      0.48 |
| mysql              |      0.00 |
| nodes              |      0.53 |
| performance_schema |      0.00 |
| sys                |      0.00 |
+--------------------+-----------+
root@ubuntu2404:~#
```

Display the total size of the databases using the Linux command in Gigabytes

Or in a short time, you can use the Linux command below to see the total size of the entire database in MariaDB:

```
cd /var/lib/mysql/
du -sh *
```

```
root@ubuntu2404:~# cd /var/lib/mysql/
root@ubuntu2404:/var/lib/mysql#
root@ubuntu2404:/var/lib/mysql# du -sh *
412K    aria_log.00000001
4.0K    aria_log_control
16K     ddl_recovery.log
0       debian-10.11.flag
4.0K    ib_buffer_pool
76M     ibdata1
96M     ib_logfile0
12M     ibtmp1
543M    instances
0       multi-master.info
3.7M    mysql
4.0K    mysql_upgrade_info
610M    nodes
8.0K    performance_schema
600K    sys
root@ubuntu2404:/var/lib/mysql#
```

Display the total size of the databases using the Linux command

Note

If you want to display the total size of the entire MariaDB database in KiloBytes, then in the **ROUND(SUM(data_length + index_length)** section, simply divide it by 1024 so that it becomes as follows:

```
mariadb -u root -p -e "
SELECT table_schema AS "Database",
ROUND(SUM(data_length + index_length) / 1024 , 2) AS "Size (KB)"
FROM information_schema. TABLES
GROUP BY table_schema;"
```

And if you want to display in TeraBytes size, then in the **ROUND(SUM(data_length + index_length)** section, divide by 1024 4 times, so that the command is as follows:

```
mariadb -u root -p -e "
SELECT table_schema AS 'Database',
ROUND(SUM(data_length + index_length) / 1024 / 1024 / 1024 / 1024 , 2) AS
'Size (KB)'
FROM information_schema.TABLES
GROUP BY table_schema;"
```

References

a2hosting.com
database.guide
tecmint.com

How to Reset MariaDB Root Password?

written by sysadmin | 10 September 2025

I want to access the MariaDB database using the root user, but I forgot the password of the root user.

Problem

How to reset MariaDB root password?

Solution

When I insert my password root to access MariaDB, here is the error:

```
sysadmin@ubuntu2404:~$ mariadb -u root -p
Enter password:
ERROR 1698 (28000): Access denied for user 'root'@'localhost'
```

Error when accessing MariaDB

Here are the steps to reset the root password in MariaDB:

1. Stop the service

Use the command below to stop MariaDB's service:

```
sudo systemctl stop mariadb
```

2. Running Mariadb in Safe Mode

Run the command below to run the MariaDB service without access rights and networks:

```
sudo mysqld_safe --skip-grant-tables --skip-networking &
```

3. Change the password

Enter MariaDB using the command:

```
sudo mariadb -uroot -p
```

Press the **Enter** button and after that, type the commands below, and I use the **qwerty** password as my new password:

```
FLUSH PRIVILEGES;
ALTER USER root@localhost IDENTIFIED BY 'qwerty';
```

```
FLUSH PRIVILEGES;
exit
```

4. Stop MariaDB

Use the command below to stop MariaDB’s service:

```
sudo mysqladmin -u root -p shutdown
```

Enter the password you just created if you are asked to enter a password.

5. Running the Service

Run the command below to turn on MariaDB’s service:

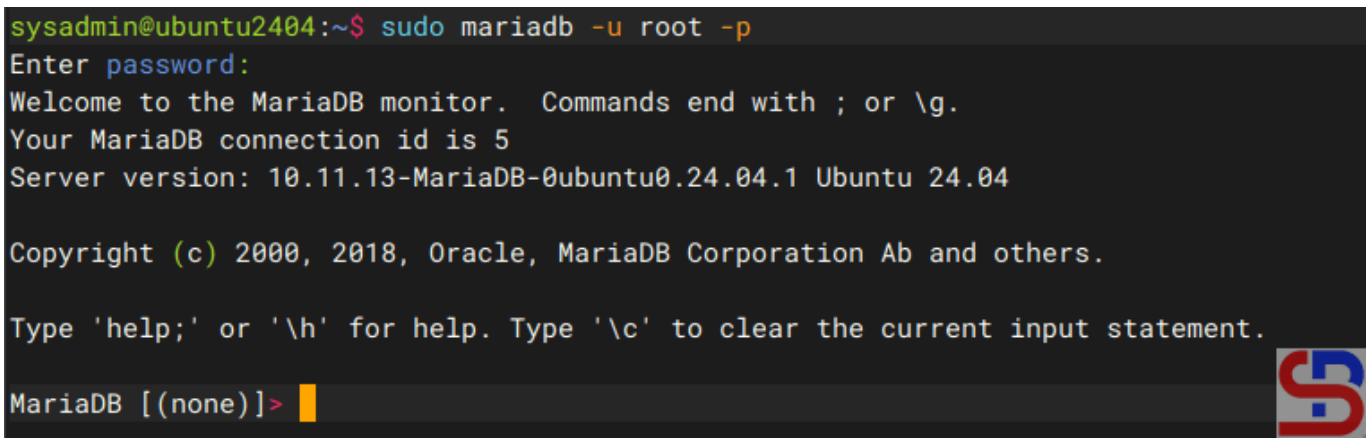
```
sudo systemctl start mariadb
```

6. Try a new password

Enter MariaDB by using the password that you created previously using the command below:

```
sudo mariadb -u root -p
```

Insert your new password, and if you type the correct password, then you should be able to enter Mariadb as in the image below:



Test your new password to access MariaDB

Note

Maybe as an alternative to storing passwords for the root user in MariaDB, you can store the password in a file, but using an encrypted Vim editor.

References

musaamin.web.id
serverspace.io
vexxhost.com
stackoverflow.com

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

written by sysadmin | 10 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
```

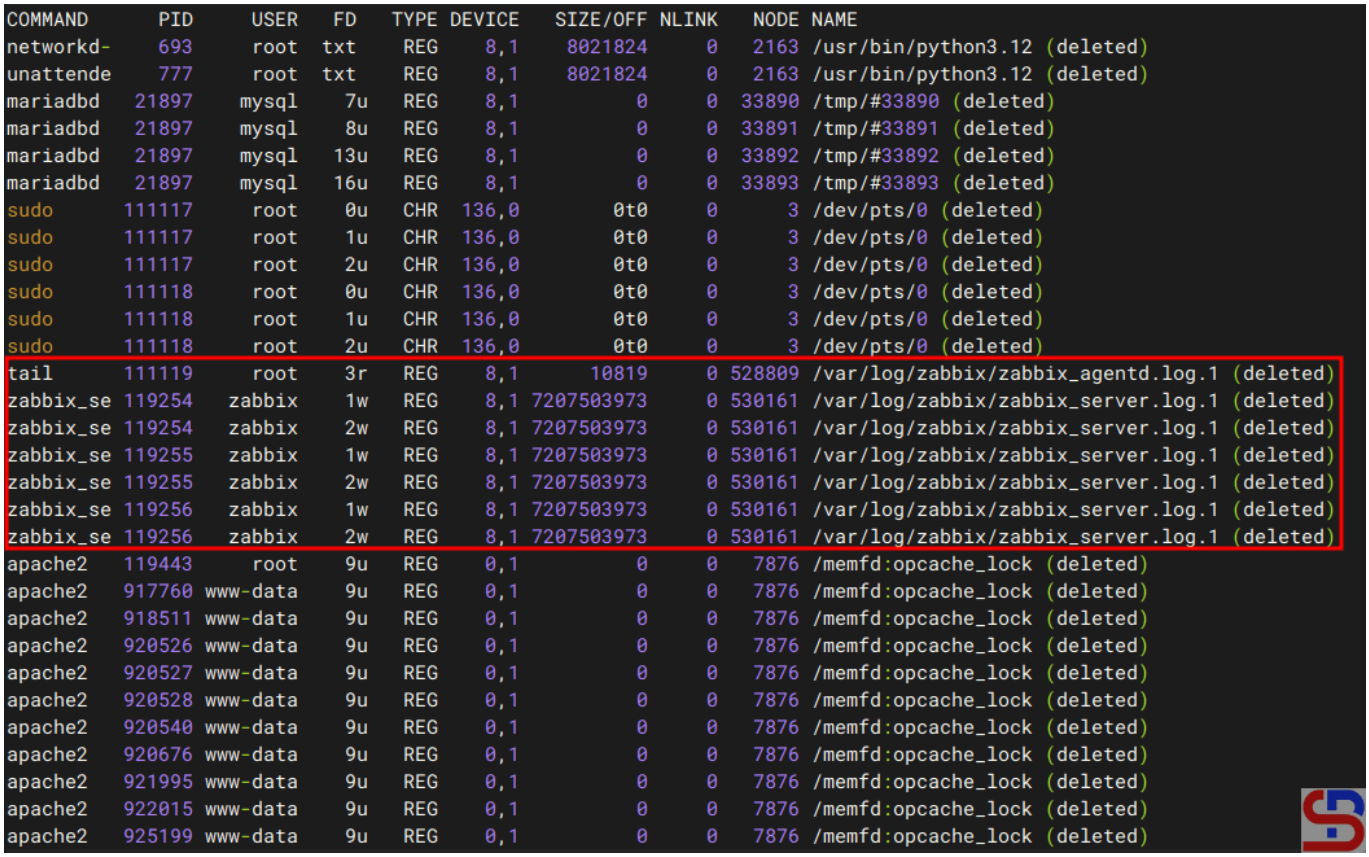
Ubuntu/Debian

```
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)
unattende	777	root	txt	REG	8,1	8021824	0	2163	/usr/bin/python3.12 (deleted)
mariadbd	21897	mysql	7u	REG	8,1	0	0	33890	/tmp/#33890 (deleted)
mariadbd	21897	mysql	8u	REG	8,1	0	0	33891	/tmp/#33891 (deleted)
mariadbd	21897	mysql	13u	REG	8,1	0	0	33892	/tmp/#33892 (deleted)
mariadbd	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)

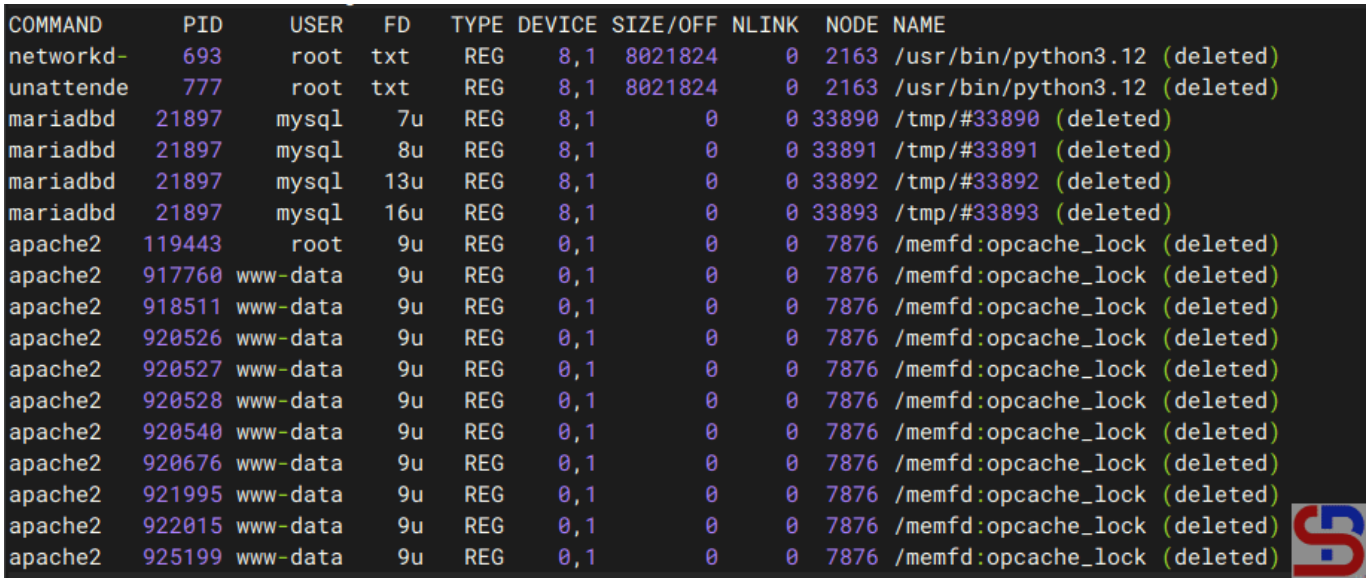
The file(s) are still open by a process

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

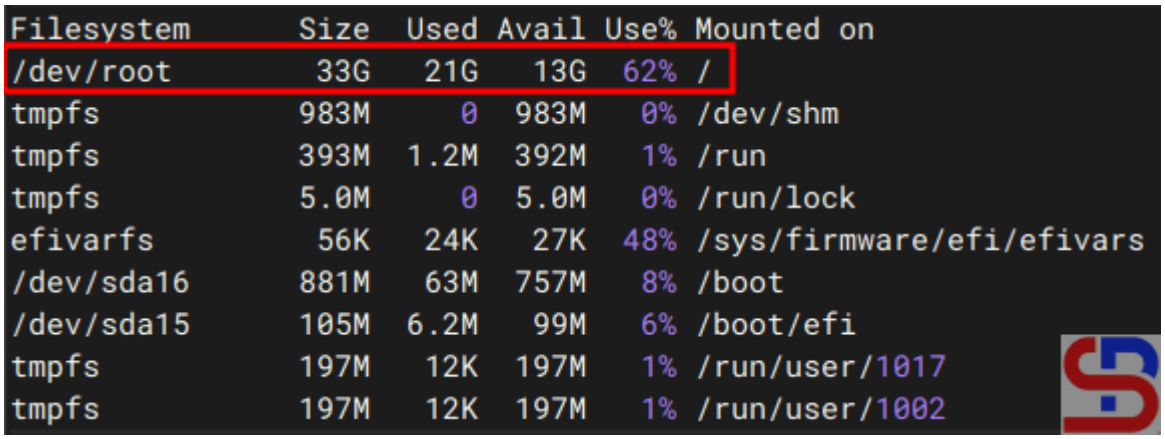
the PID number, as shown in the image below:



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)
mariadbd	21897	mysql	7u	REG	8,1	0	0	33890	/tmp/#33890 (deleted)
mariadbd	21897	mysql	8u	REG	8,1	0	0	33891	/tmp/#33891 (deleted)
mariadbd	21897	mysql	13u	REG	8,1	0	0	33892	/tmp/#33892 (deleted)
mariadbd	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

How to Install NagiosQL in Ubuntu/Debian?

written by sysadmin | 10 September 2025

After you install the Nagios application on the Ubuntu/Debian server, by default, Nagios Core does not provide a web-based interface to manage Nagios configuration for adding/deleting/changing hosts and services. Therefore, some developers create a web-based interface so users can manage the hosts and services easily. This article will explain how to install the NagiosQL application to set up the device or service on Nagios.

Problem

How to install NagiosQL in Ubuntu/Debian?

Solution

NagiosQL is a professional, web-based configuration tool for Nagios 2.x/3.x/4.x and other Nagios-based monitoring tools. It is designed for large enterprise requirements as well as small environments, and any Nagios functionality is supported. I ran the steps below in Ubuntu 24.04, and I think it will work in Debian too. Here are the steps to install the NagioSQL application, and

A. Install the dependencies

Use the following command to install the dependencies:

```
sudo apt update
sudo apt-get install -y php libmcrypt-dev php-cli php-gd php-curl php-mysql
php-ldap php-zip php-fileinfo php-pear gcc php-dev php zlib1g-dev libssh2-1
libssh2-1-dev php-ssh2  mariadb-server build-essential
sudo pear channel-update pear.php.net
sudo pear install HTML_Template_IT
```

B. Install PHP Modules

After that, install PHP Modules using the following command:

```
sudo pecl install mcrypt
```

C. Configure PHP

Type the following commands to configure PHP:

```
echo "extension=mcrypt.so" >> /etc/php/*/apache2/php.ini
echo "date.timezone=Asia/Singapore"  >> /etc/php/*/apache2/php.ini
sudo systemctl restart apache2
```

D. Configure the database

Start MariaDB and give the password using the following commands:

```
sudo systemctl start mariadb
sudo mariadb-secure-installation
```

Access to MariaDB using the following command:

```
mariadb -uroot -p
```

Type your root password and then run the following commands to create a database for NagiosQL:

```
CREATE DATABASE nagiosql;
```

```
GRANT ALL PRIVILEGES ON nagiosql.* TO `nagiosql_user`@`%` IDENTIFIED BY
'qwerty';
FLUSH PRIVILEGES;
```

E. Download NagiosQL

Download the latest release of the NagiosQL application, as of this writing (August 2025), has reached version 3.5.0, and configure it by typing the commands below:

```
cd /tmp/
wget https://sourceforge.net/projects/nagiosql/files/latest/download -O
nagiosql.tar.gz
tar -zxvf nagiosql.tar.gz
sudo cp -vprf nagiosql-*/ /usr/local/nagios/share/nagiosql
```

F. Configure files and folders

Copy the commands below to configure files and folders:

```
sudo mkdir /usr/local/nagios/etc/nagiosql;
sudo mkdir /usr/local/nagios/etc/nagiosql/hosts;
sudo mkdir /usr/local/nagios/etc/nagiosql/services;
sudo mkdir /usr/local/nagios/etc/nagiosql/backup;
sudo mkdir /usr/local/nagios/etc/nagiosql/backup/hosts;
sudo mkdir /usr/local/nagios/etc/nagiosql/backup/services;
sudo chown nagios:nagcmd /usr/local/nagios/var/rw
sudo chown nagios:nagcmd /usr/local/nagios/var/rw/nagios.cmd
sudo chown nagios:www-data /usr/local/nagios/etc/nagios.cfg;
sudo chown nagios:www-data /usr/local/nagios/etc/cgi.cfg;
sudo chown nagios:www-data /usr/local/nagios/etc/resource.cfg;
sudo chown nagios:www-data /usr/local/nagios/var/spool/checkresults;
sudo chown nagios:www-data /usr/local/nagios/bin/nagios;
sudo chmod 775 /usr/local/nagios/etc/
sudo chmod 777 /usr/local/nagios/bin/nagios
sudo chmod -R 777 /usr/local/nagios/share/nagiosql/config
sudo chmod -R 6775 /usr/local/nagios/etc/nagiosql;
sudo chmod 660 /usr/local/nagios/var/rw/nagios.cmd;
sudo chmod 775 /usr/local/nagios/etc/;
sudo chmod 664 /usr/local/nagios/etc/nagios.cfg;
sudo chmod 664 /usr/local/nagios/etc/cgi.cfg;
sudo chmod g+x /usr/local/nagios/var/rw/;
sudo chgrp www-data /usr/local/nagios/etc/;
sudo chgrp www-data /usr/local/nagios/etc/nagios.cfg;
sudo chgrp www-data /usr/local/nagios/etc/cgi.cfg;
sudo sed -i 's/^cfg/#cfg/' /usr/local/nagios/etc/nagios.cfg
echo "" | sudo tee -a /usr/local/nagios/etc/nagios.cfg
```

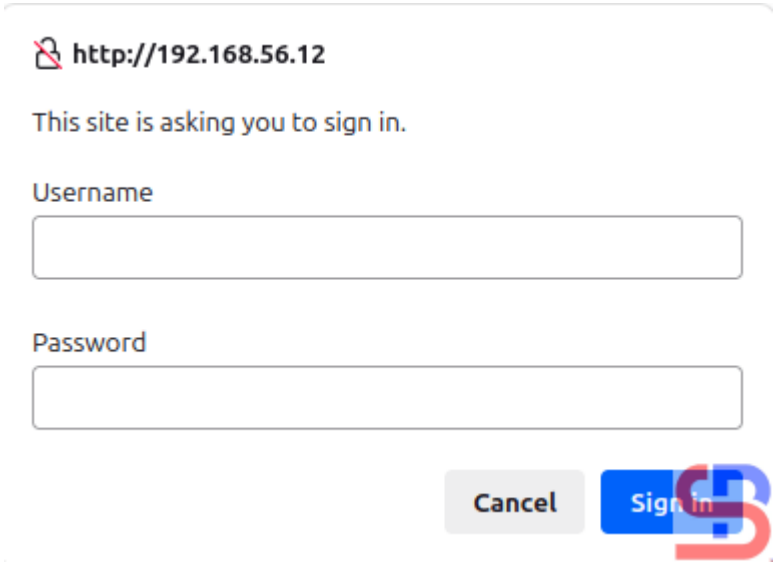
```
echo "cfg_dir=/usr/local/nagios/etc/nagiosql" | sudo tee -a
/usr/local/nagios/etc/nagios.cfg
```

G. Configure NagiosQL in the browser

Next, configure the application in the browser by typing the command in the browser:

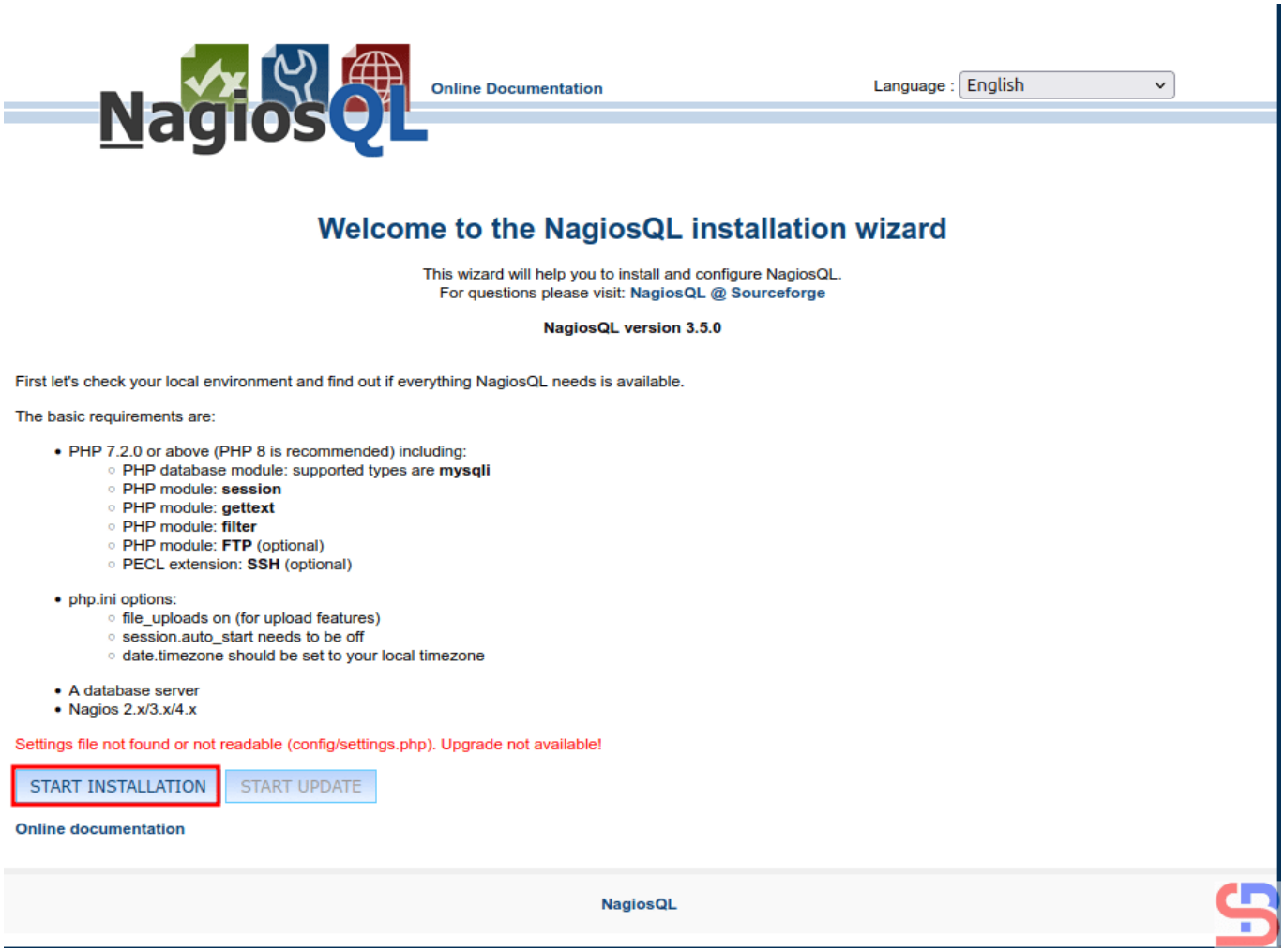
```
http://your_ip_server/nagios/nagiosql
```

If the browser asks to insert the username and password, insert your Nagios username and password.



Insert username and password

After you insert the password, there will be a display like this:

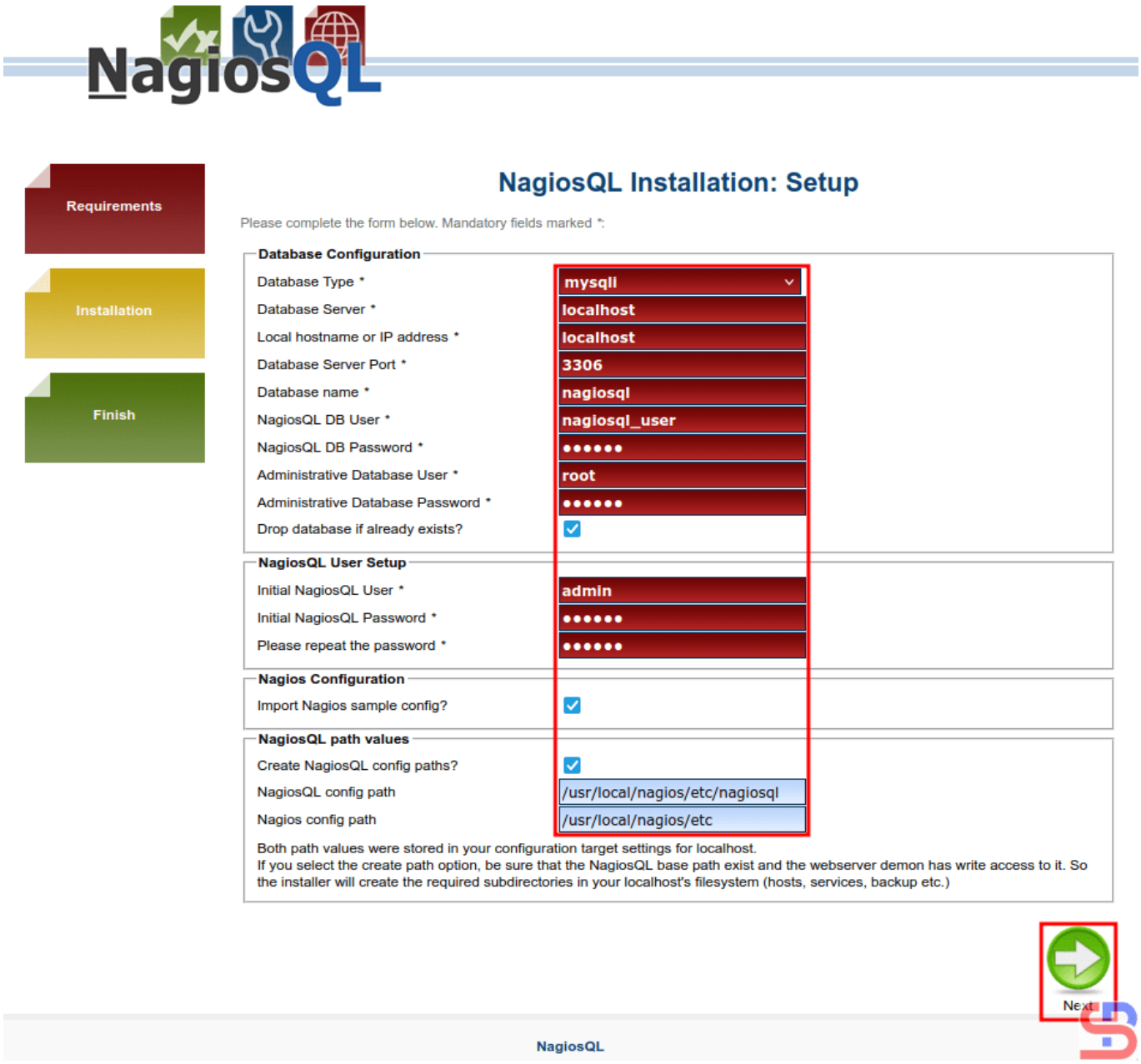


Configure the NagiosQL button

Click the **START INSTALLATION** button, and there is a display like the image below:

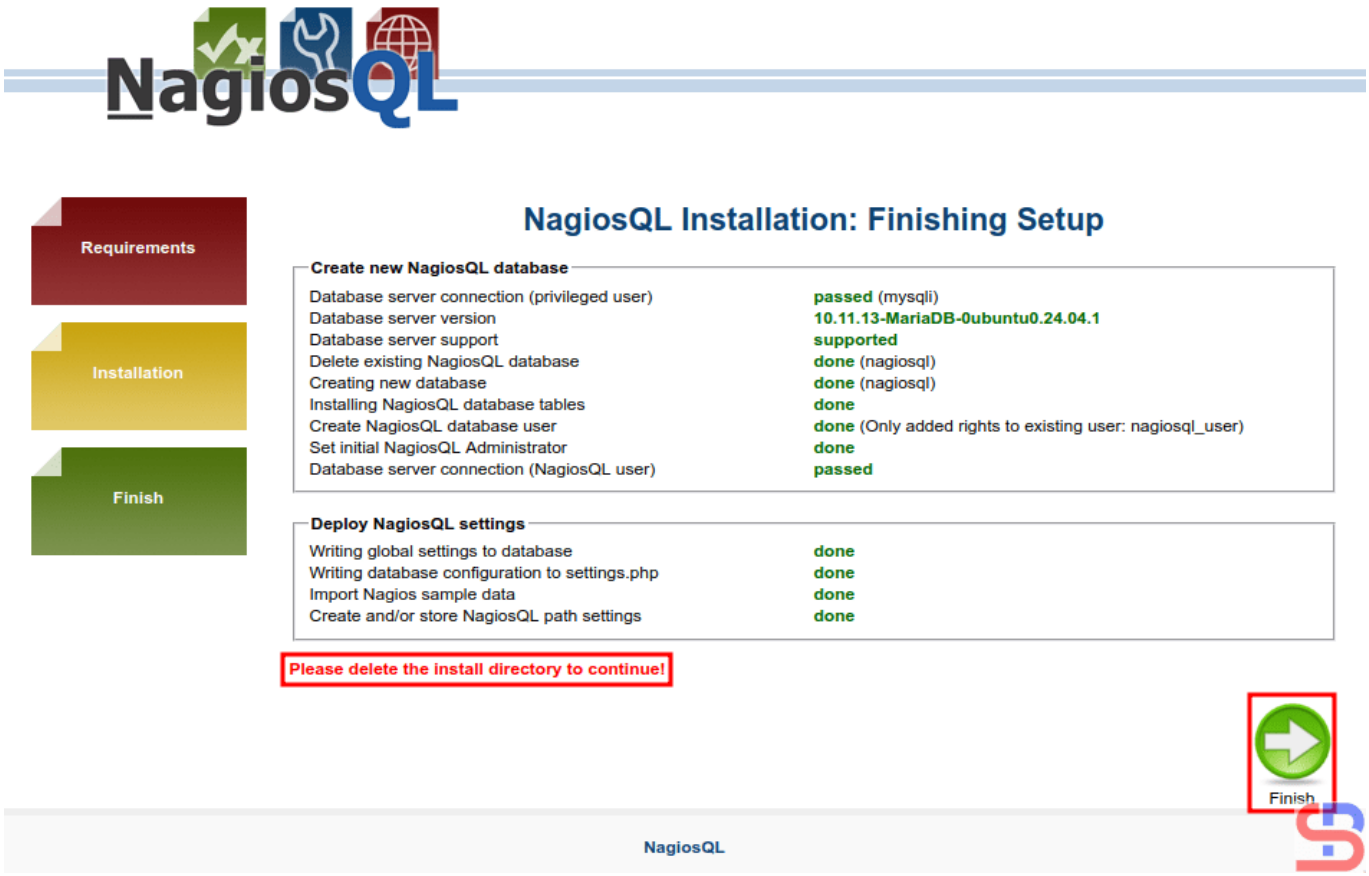
Checking requirements

Make sure there is no error like in the image above. Click the **Next** button, and it will be an image like this:



Setup NagiosQL

You must fill in the configuration columns, and I fill in like in this image above. After you fill it out, press the Next button, and there is a display like the image below:



The finishing setup

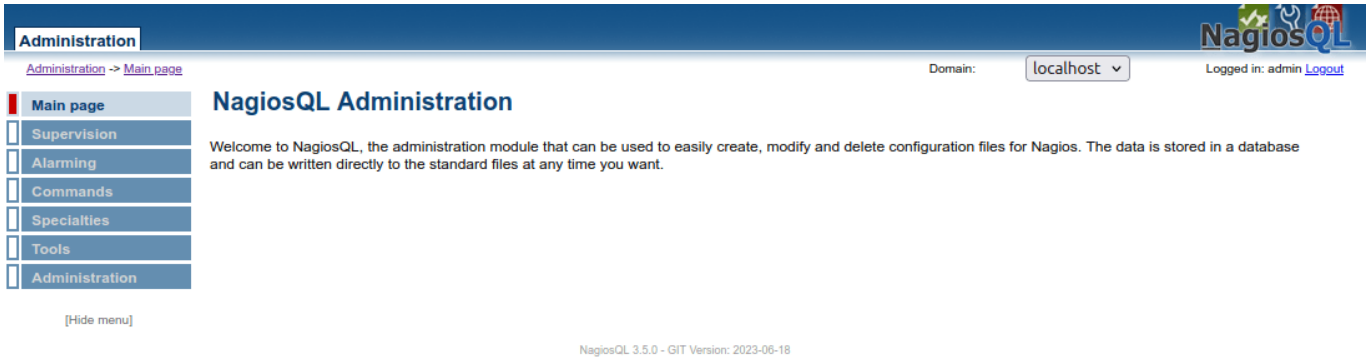
Before you click the **Finish** button, use the command below to delete the install directory:

```
rm -rf /usr/local/nagios/share/nagiosql/install/
```

After that, click the Finish button, and it should display an image like the image below:

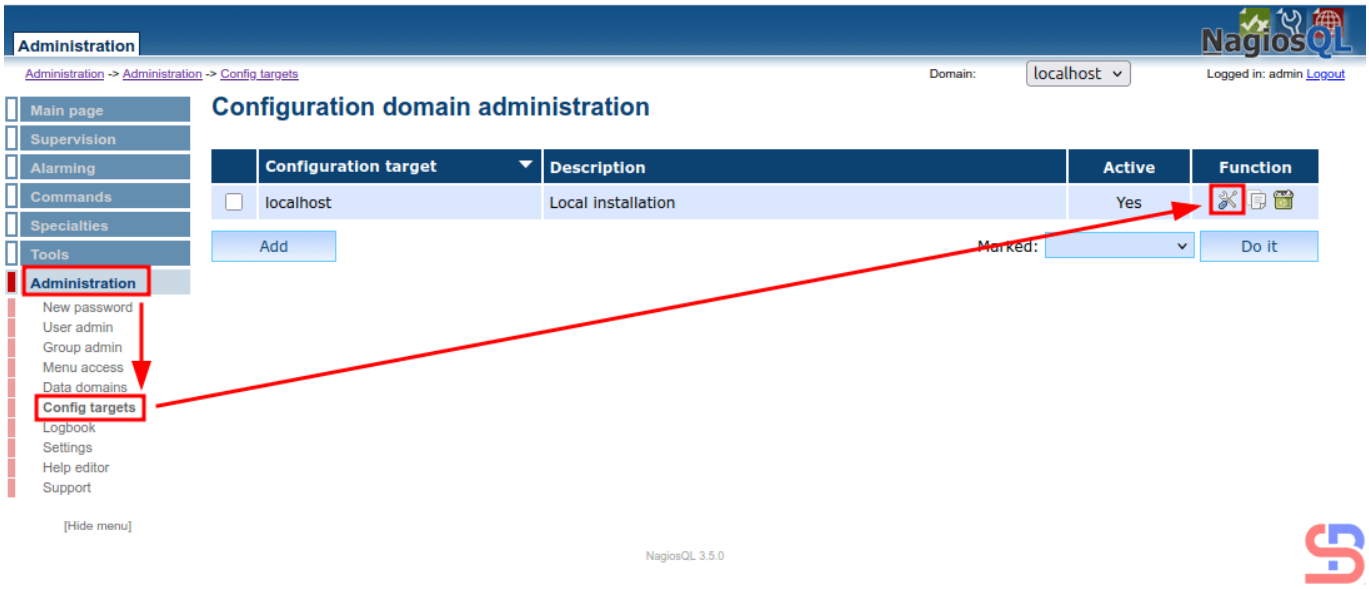
The NagiosQL login

Enter the username (**admin**) and password, and if nothing is wrong, the NagiosQL application will appear like the image below:



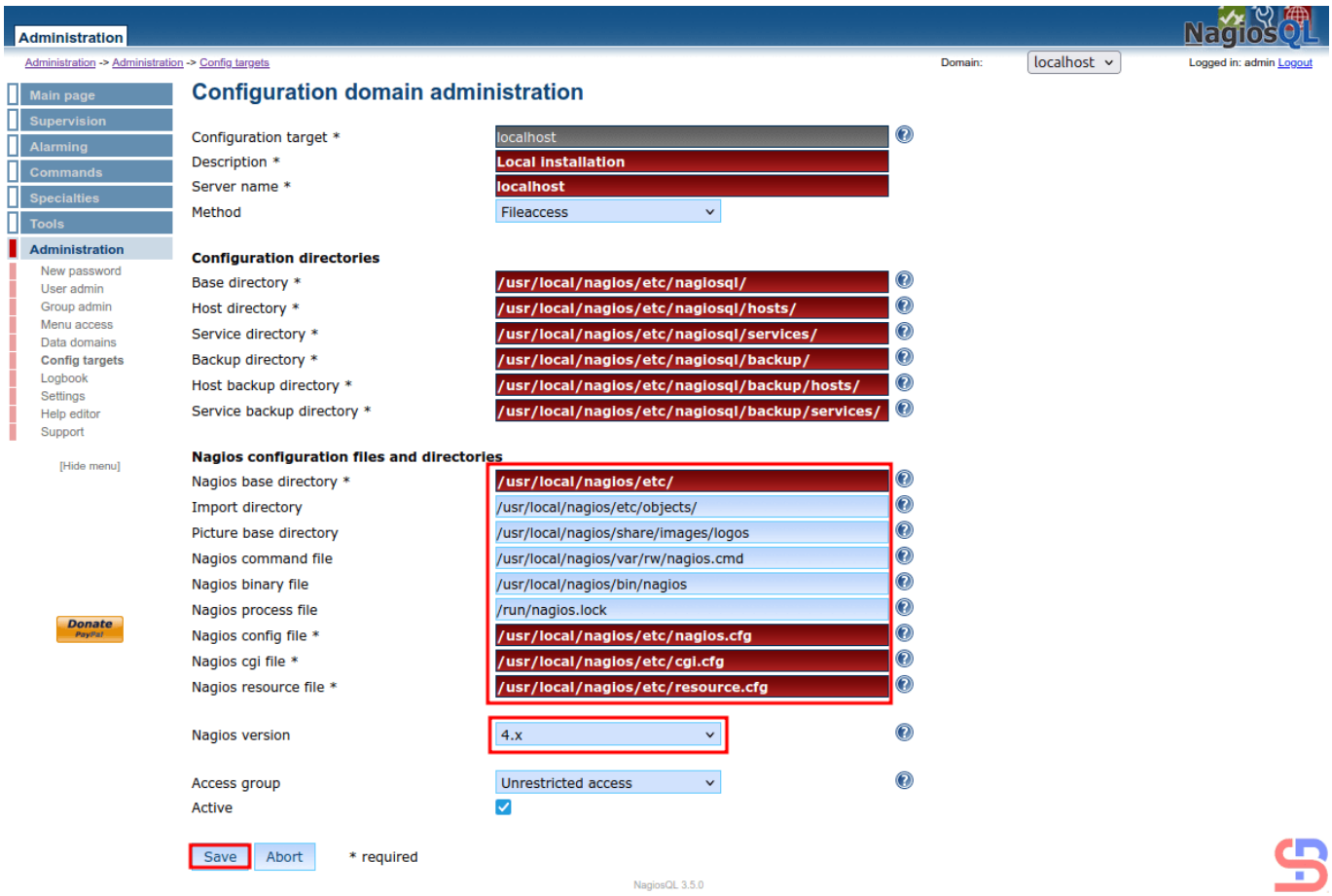
The page of NagioQL administration

Now, configure the NagiosQL application to integrate it with Nagios. Click **Administration > Config targets > Modify**, like in the image below:



Configure domain administration

And there will be a display like the image below:



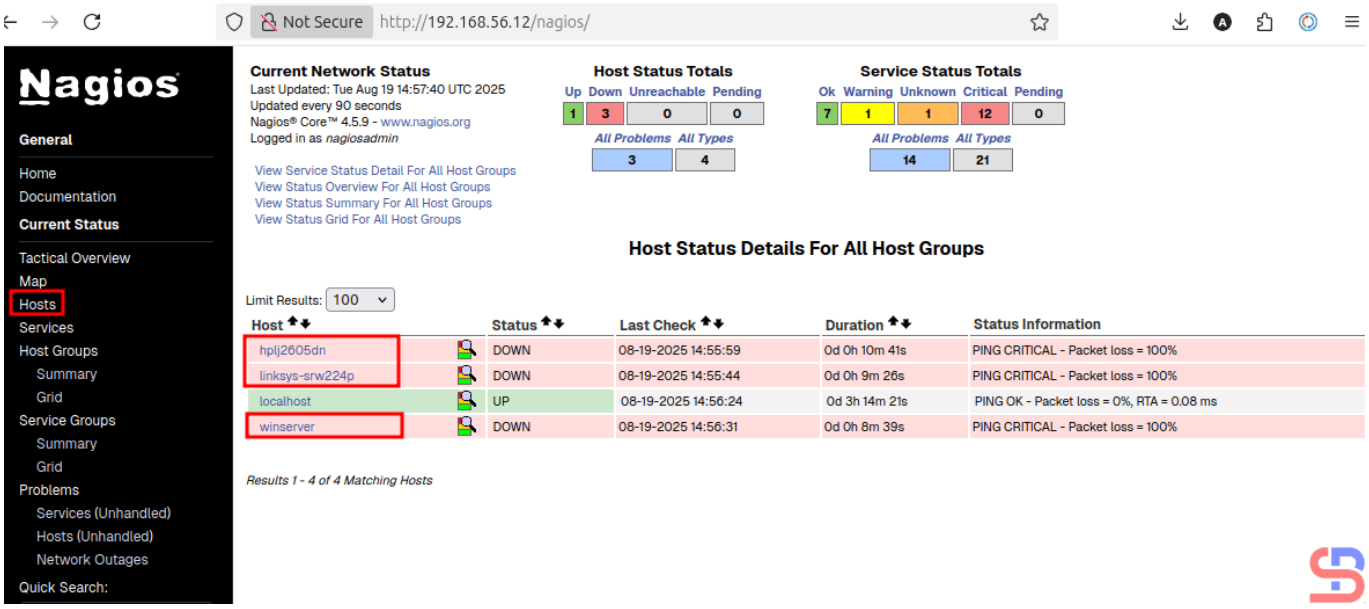
Configure the NagiosQL

Configure in the red box like my configuration in the image above, and click the **Save** button. After that, go to **Tools >**

Nagios control and click all the buttons like the image below, and make sure there is no error:

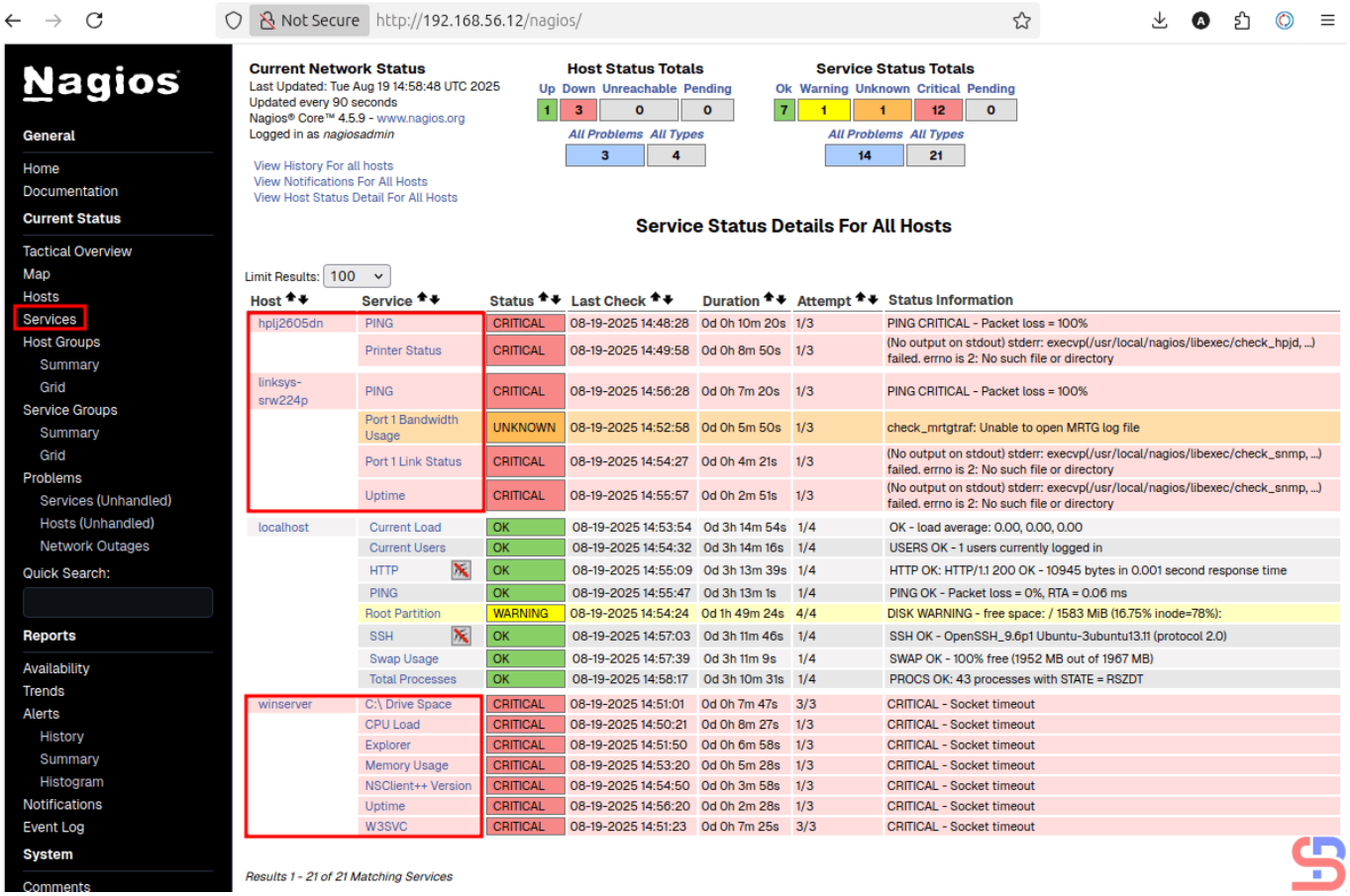
Click all the Do it buttons

Now go to the Nagios application in the **Hosts** page and make sure that on the page, 3 default hosts appear in Nagios (**hplj2605dn**, **linksys-srw224p**, and **winserver**) besides localhost, like in the image below:



3 new hosts in the Hosts page on Nagios

Now go to the **Services** section, and there should be services that appear on the 3 new default hosts:



Services in the 3 new hosts

If there are 3 additional hosts in the Hosts and Services

section in Nagios, you have successfully integrated the Nagios application with the NagiosQL application.

Note

You have to be careful when filling in the Configuration domain administration section, because if it is wrong in this section, then the NagiosQL application will not run properly

References

sourceforge.net
tecadmin.net

How to Convert the Comma(s) into the Space(s) on a Linux File?

written by sysadmin | 10 September 2025

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:

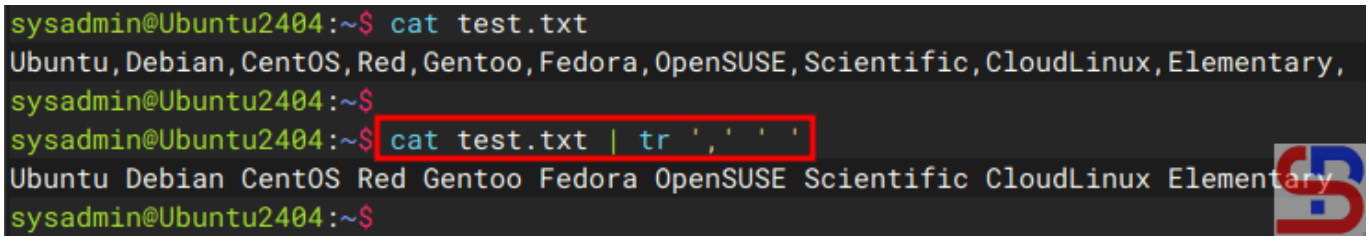
```
sysadmin@Ubuntu2404:~$ cat test.txt
Ubuntu,Debian,CentOS,Red,Gentoo,Fedora,OpenSUSE,Scientific,CloudLinux,Elementary,
sysadmin@Ubuntu2404:~$
```

The test.txt file

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

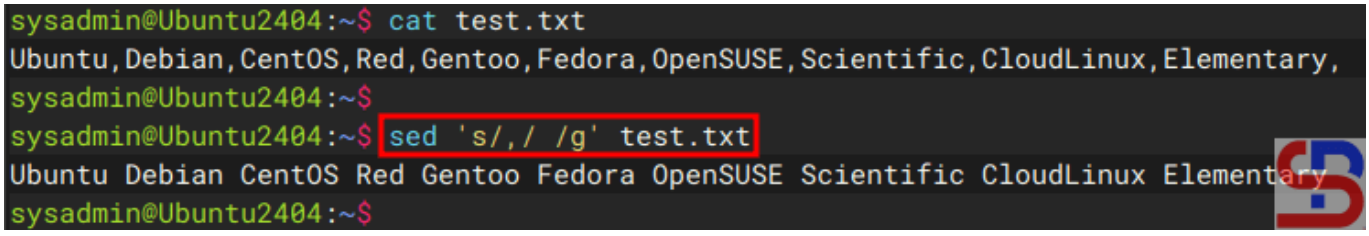
```
cat test.txt | tr ',' ' '
```

So the results will be like the picture below:



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):



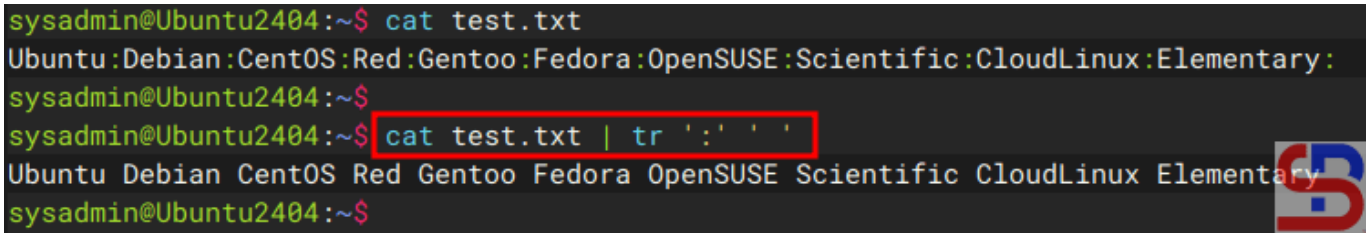
Convert the comma to a space using the sed command

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:



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 | 10 September 2025

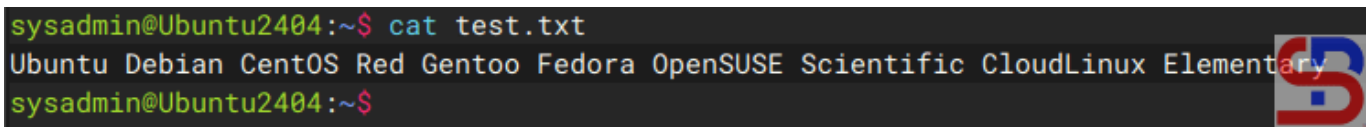
I want to convert the space(s) in a Linux file to a comma.

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:

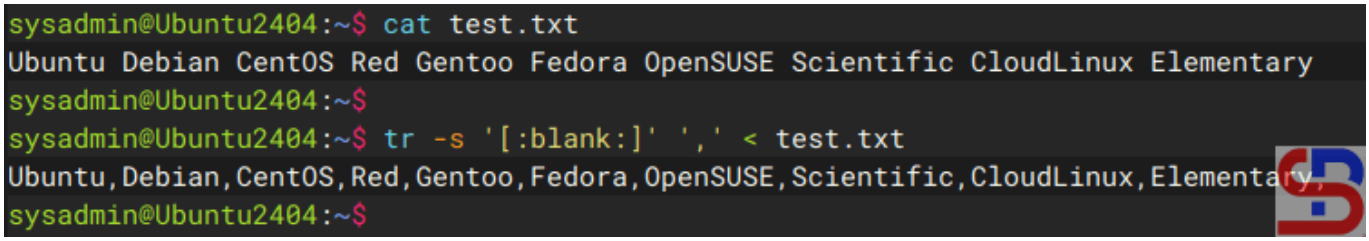


The test.txt file

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

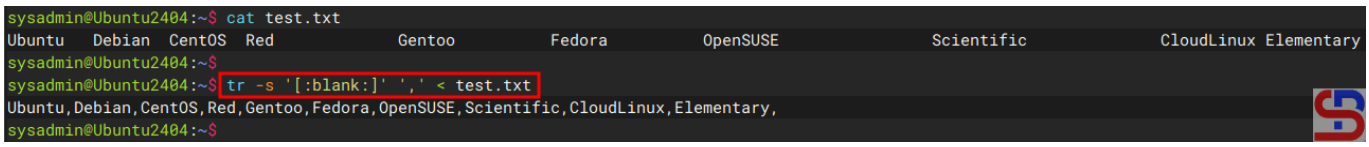
```
tr -s '[:blank:]' ',' < test.txt
```

So that your file will convert to the image below:



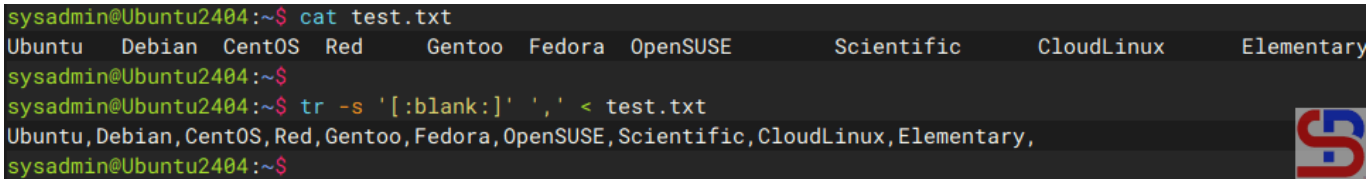
Convert a space to a comma

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



Convert an irregular space to a comma

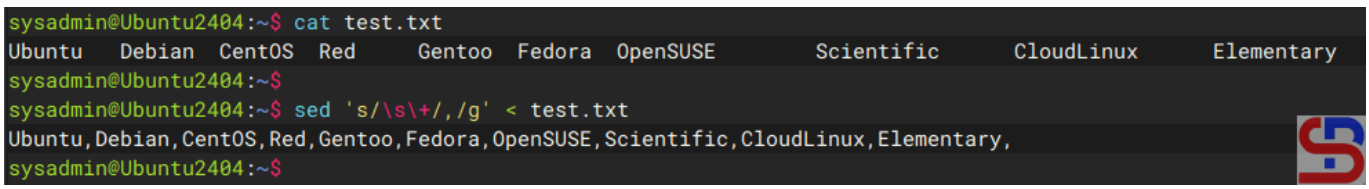
Even the above command can also convert the free space created using the **Tab** key, as shown in the image below:



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
```

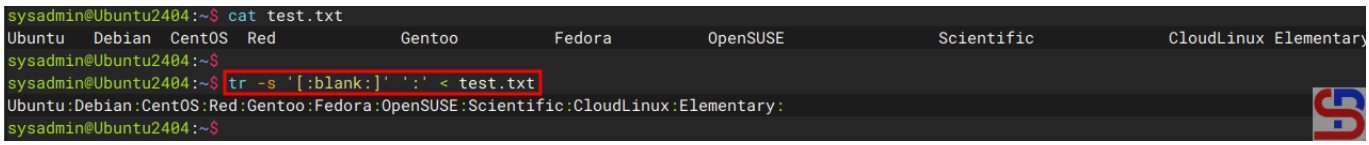


Convert the space(s) using the sed command

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
```



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 | 10 September 2025

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:~$
sysadmin@Ubuntu2404:~$ tr -s ' '   '\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 another command above, you can simply add stdout at the end of the command.

References

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