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12/09/21

## Continue my system set up – Centos

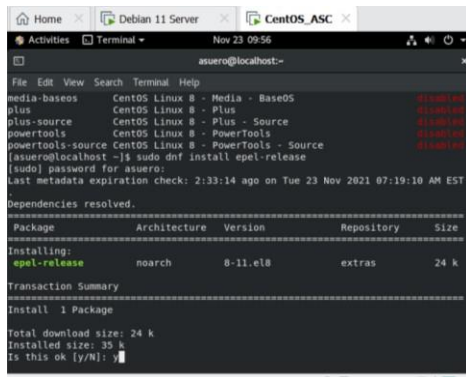
**Note:** Remember that to do any installation on a Linux system you will run as a root or have root privileges.

**Check your repositories that are included by default on your server. find out how you'd go about adding a repository, (both official and PPA) and make sure you can install programs.**

To check the repositories included by default on your CentOS server you must type the following command: **yum repolist all**. By typing this command, you see all the disabled and the enabled repositories.

```
asuario@localhost:~$ yum repolist all
repo id      repo name      status
appstream    CentOS Linux 8 - AppStream    enabled
appstream-source CentOS Linux 8 - AppStream - Source disabled
baseos       CentOS Linux 8 - BaseOS      enabled
baseos-source CentOS Linux 8 - BaseOS - Source disabled
cr           CentOS Linux 8 - ContinuousRelease disabled
debuginfo    CentOS Linux 8 - Debuginfo    disabled
devel        CentOS Linux 8 - Devel WARNING! FOR BUILDROOT USE 0 disabled
extras       CentOS Linux 8 - Extras       enabled
extras-source CentOS Linux 8 - Extras - Source disabled
fasttrack    CentOS Linux 8 - FastTrack     disabled
ha           CentOS Linux 8 - HighAvailability disabled
media-appstream CentOS Linux 8 - Media - AppStream disabled
media-baseos CentOS Linux 8 - Media - BaseOS disabled
plus         CentOS Linux 8 - Plus         disabled
plus-source  CentOS Linux 8 - Plus - Source disabled
powertools   CentOS Linux 8 - PowerTools    disabled
powertools-source CentOS Linux 8 - PowerTools - Source disabled
```

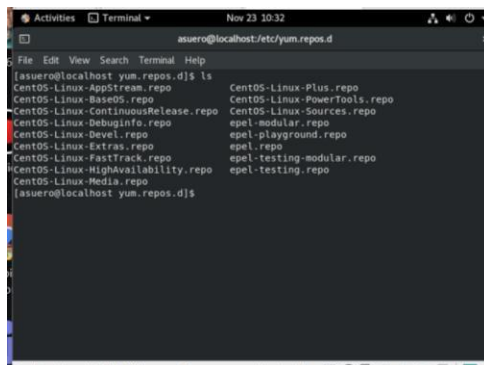
Now we are going to get repo from 3rd party repositories, not CentOS, let say we want to install the epel repository, so we must use the following command **sudo dnf install epel-release**, later it will ask you to confirm the installation, type **y** for yes



```
File Edit View Search Terminal Help
media-baseos CentOS Linux 8 - Media - BaseOS disabled
plus CentOS Linux 8 - Plus disabled
plus-source CentOS Linux 8 - Plus - Source disabled
powertools CentOS Linux 8 - PowerTools disabled
powertools-source CentOS Linux 8 - PowerTools - Source disabled
[asuro@localhost ~]$ sudo dnf install epel-release
[sudo] password for asuro:
Last metadata expiration check: 2:33:14 ago on Tue 23 Nov 2021 07:19:10 AM EST
Dependencies resolved.
=====
Package Architecture Version Repository Size
Installing:
epel-release noarch 8-11.el8 extras 24 k
Transaction Summary
=====
Install 1 Package
Total download size: 24 k
Installed size: 35 k
Is this ok [y/N]: y
```

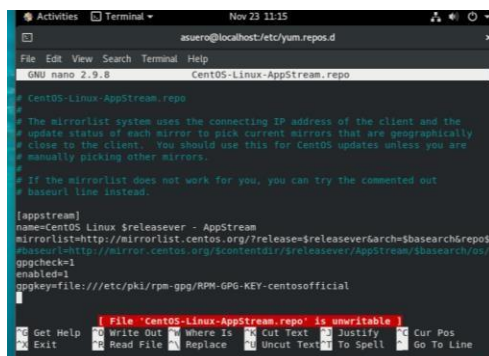
## Where my repositories lives?

Type the following command to enter the directory where your repositories are, **cd /etc/yum.repos.d** later do a **ls** to show all the information in this directory.



```
File Edit View Search Terminal Help
[asuro@localhost yum.repos.d]$ ls
CentOS-Linux-AppStream.repo      CentOS-Linux-Plus.repo
CentOS-Linux-BaseOS.repo        CentOS-Linux-PowerTools.repo
CentOS-Linux-ContinuousRelease.repo  CentOS-Linux-Sources.repo
CentOS-Linux-Debuginfo.repo     epel-modular.repo
CentOS-Linux-Devel.repo          epel-playground.repo
CentOS-Linux-Extras.repo         epel.repo
CentOS-Linux-FastTrack.repo      epel-testing-modular.repo
CentOS-Linux-HighAvailability.repo epel-testing.repo
CentOS-Linux-Media.repo
[asuro@localhost yum.repos.d]$
```

Let's try to **edit** the first repository, type **nano CentOS-LinuxAppStream.repo**, on there you will see the configuration of this repo and you will be able to edit it.



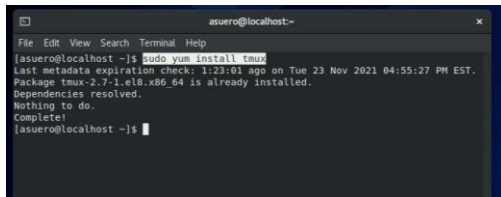
```
File Edit View Search Terminal Help
GNU nano 2.9.8 CentOS-Linux-AppStream.repo
# CentOS-Linux-AppStream.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client. You should use this for CentOS updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.
#
[appstream]
name=CentOS Linux $releasever - AppStream
mirrorlist=http://mirrorlist.centos.org/?release=$releasever&arch=$basearch&repo=
baseurl=http://mirror.centos.org/$contentdir/$releasever/AppStream/$basearch/os/
gpgcheck=1
enabled=1
gpgkeyfile:///etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
File 'CentOS-Linux-AppStream.repo' is unwritable
Get Help Write Out Where Is Cut Text Justify Cur Pos
Exit Read File Replace Uncut Text To Spell Go To Line
```

-To add a new repository, you will need to type any of the following commands **sudo dnf install name of the repository or repository link** or **sudo yum install Package name**. Let's do some installations.

## Installation on CentOS Server:

### Tmux

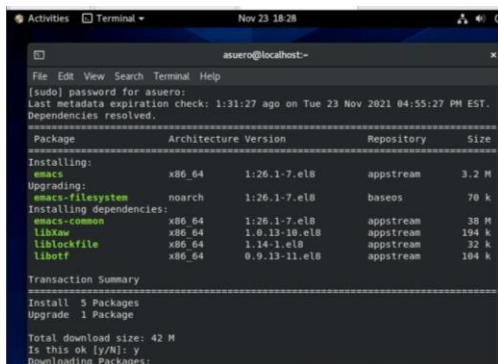
Type the following command to install tmux on your server  
**sudo yum install tmux**



```
asuro@localhost~$ sudo yum install tmux
Last metadata expiration check: 1:23:01 ago on Tue 23 Nov 2021 04:55:27 PM EST.
Package tmux-2.7-1.el8.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[asuro@localhost ~]$
```

### Emacs

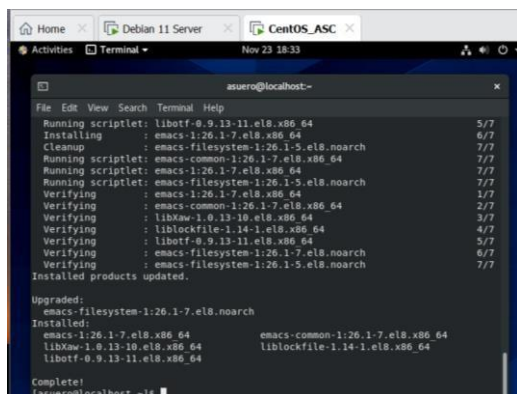
Type the following command to install emacs on your server  
**sudo yum install emacs**, then you will be asked y/n to confirm.



```
asuro@localhost~$ sudo yum install emacs
[sudo] password for asuro:
Last metadata expiration check: 1:31:27 ago on Tue 23 Nov 2021 04:55:27 PM EST.
Dependencies resolved.
=====
Package                Architecture Version      Repository    Size
=====
Installing:
emacs                  x86_64      1:26.1-7.el8 appstream     3.2 M
Upgrading:
emacsfilesystem        noarch      1:26.1-7.el8 baseos        70 k
Installing dependencies:
emacs-common           x86_64      1:26.1-7.el8 appstream     38 M
libXaw                 x86_64      1.0.13-10.el8 appstream     194 k
libblockfile           x86_64      1.14-1.el8   appstream     32 k
libotf                  x86_64      0.9.13-11.el8 appstream     104 k
Transaction Summary
-----
Install 5 Packages
Upgrade 1 Package

Total download size: 42 M
Is this ok [y/N]: y
Downloading Packages:
```

Later, wait until the installation is completed.

A terminal window titled 'asuro@localhost' showing the output of a yum installation command. The output lists various emacs packages being installed, including emacs-common, emacs-noarch, emacs-x86\_64, and emacs-filesystem. It also shows the progress of the installation, with progress bars for each package. The terminal output is as follows:

```
asuro@localhost:~$ sudo yum install emacs
Running scriptlet: libotf-0.9.13-11.el8.x86_64 5/7
Installing : emacs-1:26.1-7.el8.x86_64 6/7
Cleaning : emacs-filesystem-1:26.1-5.el8.noarch 7/7
Running scriptlet: emacs-common-1:26.1-7.el8.x86_64 7/7
Running scriptlet: emacs-1:26.1-7.el8.x86_64 7/7
Running scriptlet: emacs-filesystem-1:26.1-5.el8.noarch 7/7
Verifying : emacs-1:26.1-7.el8.x86_64 1/7
Verifying : emacs-common-1:26.1-7.el8.x86_64 2/7
Verifying : libotf-0.9.13-11.el8.x86_64 3/7
Verifying : liblockfile-1.14-1.el8.x86_64 4/7
Verifying : libotf-0.9.13-11.el8.x86_64 5/7
Verifying : emacs-filesystem-1:26.1-7.el8.noarch 6/7
Verifying : emacs-filesystem-1:26.1-5.el8.noarch 7/7
Installed products updated.

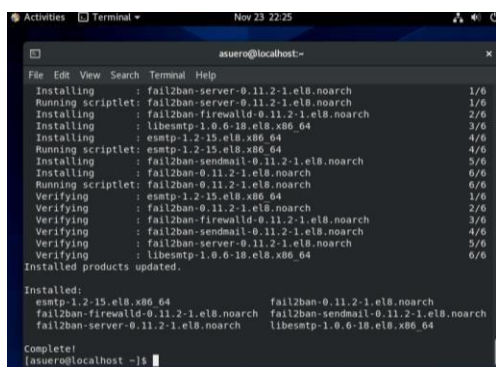
Upgraded:
  emacs-filesystem-1:26.1-7.el8.noarch
Installed:
  emacs-1:26.1-7.el8.x86_64      emacs-common-1:26.1-7.el8.x86_64
  libotf-0.9.13-11.el8.x86_64  liblockfile-1.14-1.el8.x86_64

Complete!
[asuro@localhost ~]$
```

## Fail2Ban

Type the following command to install Fail2Ban on your server, **sudo yum install Fail2Ban**, then you will be asked **y/n** to confirm type **y** for yes. And again, it will ask you for another confirmation about your installation, type **y** for yes.

I already installed the epel-release. Without installing this repo we can not install Fail2Ban.

A terminal window titled 'asuro@localhost' showing the output of a yum installation command. The output lists various Fail2Ban packages being installed, including fail2ban-server, fail2ban-firewalld, fail2ban-sendmail, fail2ban-0, fail2ban-1, fail2ban-2, fail2ban-3, fail2ban-4, fail2ban-5, fail2ban-6, fail2ban-7, fail2ban-8, fail2ban-9, fail2ban-10, fail2ban-11, fail2ban-12, fail2ban-13, fail2ban-14, fail2ban-15, fail2ban-16, fail2ban-17, fail2ban-18, fail2ban-19, fail2ban-20, fail2ban-21, fail2ban-22, fail2ban-23, fail2ban-24, fail2ban-25, fail2ban-26, fail2ban-27, fail2ban-28, fail2ban-29, fail2ban-30, fail2ban-31, fail2ban-32, fail2ban-33, fail2ban-34, fail2ban-35, fail2ban-36, fail2ban-37, fail2ban-38, fail2ban-39, fail2ban-40, fail2ban-41, fail2ban-42, fail2ban-43, fail2ban-44, fail2ban-45, fail2ban-46, fail2ban-47, fail2ban-48, fail2ban-49, fail2ban-50, fail2ban-51, fail2ban-52, fail2ban-53, fail2ban-54, fail2ban-55, fail2ban-56, fail2ban-57, fail2ban-58, fail2ban-59, fail2ban-60, fail2ban-61, fail2ban-62, fail2ban-63, fail2ban-64, fail2ban-65, fail2ban-66, fail2ban-67, fail2ban-68, fail2ban-69, fail2ban-70, fail2ban-71, fail2ban-72, fail2ban-73, fail2ban-74, fail2ban-75, fail2ban-76, fail2ban-77, fail2ban-78, fail2ban-79, fail2ban-80, fail2ban-81, fail2ban-82, fail2ban-83, fail2ban-84, fail2ban-85, fail2ban-86, fail2ban-87, fail2ban-88, fail2ban-89, fail2ban-90, fail2ban-91, fail2ban-92, fail2ban-93, fail2ban-94, fail2ban-95, fail2ban-96, fail2ban-97, fail2ban-98, fail2ban-99, fail2ban-100. The terminal output is as follows:

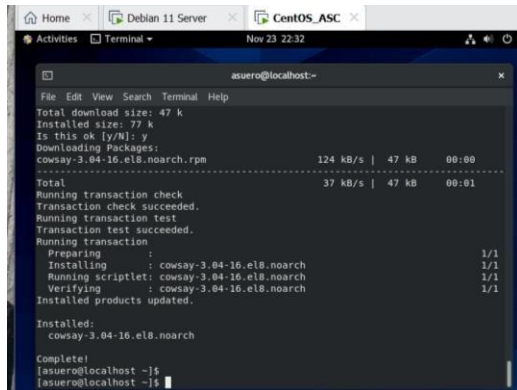
```
asuro@localhost:~$ sudo yum install fail2ban
Installing : fail2ban-server-0.11.2-1.el8.noarch 1/6
Running scriptlet: fail2ban-server-0.11.2-1.el8.noarch 1/6
Installing : fail2ban-firewalld-0.11.2-1.el8.noarch 2/6
Installing : libesmtplib-1.0.6-18.el8.x86_64 3/6
Installing : esmtplib-1.2-15.el8.x86_64 4/6
Running scriptlet: esmtplib-1.2-15.el8.x86_64 4/6
Installing : fail2ban-sendmail-0.11.2-1.el8.noarch 5/6
Installing : fail2ban-0.11.2-1.el8.noarch 6/6
Running scriptlet: fail2ban-0.11.2-1.el8.noarch 6/6
Verifying : esmtplib-1.2-15.el8.x86_64 1/4
Verifying : fail2ban-0.11.2-1.el8.noarch 2/6
Verifying : fail2ban-firewalld-0.11.2-1.el8.noarch 3/6
Verifying : fail2ban-sendmail-0.11.2-1.el8.noarch 4/6
Verifying : fail2ban-server-0.11.2-1.el8.noarch 5/6
Verifying : libesmtplib-1.0.6-18.el8.x86_64 6/6
Installed products updated.

Installed:
  esmtplib-1.2-15.el8.x86_64      fail2ban-0.11.2-1.el8.noarch
  fail2ban-firewalld-0.11.2-1.el8.noarch  fail2ban-sendmail-0.11.2-1.el8.noarch
  fail2ban-server-0.11.2-1.el8.noarch  libesmtplib-1.0.6-18.el8.x86_64

Complete!
[asuro@localhost ~]$
```

## Cowsay

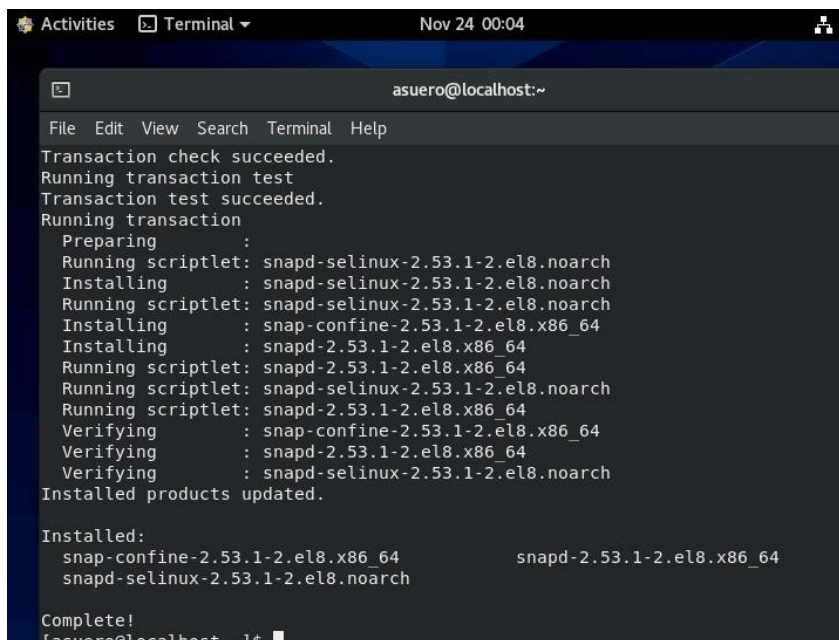
Type the following command to install **cowsay** on your server, **sudo yum install cowsay**, then you will be asked **y/n** to confirm type **y** for yes.



```
asuro@localhost:~  
File Edit View Search Terminal Help  
Total download size: 47 k  
Installed size: 77 k  
Is this ok [y/N]: y  
Downloading Packages:  
cowsay-3.04-16.el8.noarch.rpm 124 kB/s | 47 kB 00:00  
-----  
Total 37 kB/s | 47 kB 00:01  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
Preparing : 1/1  
Installing : cowsay-3.04-16.el8.noarch 1/1  
Running scriptlet: cowsay-3.04-16.el8.noarch 1/1  
Verifying : cowsay-3.04-16.el8.noarch 1/1  
Installed products updated.  
Installed:  
cowsay-3.04-16.el8.noarch  
Complete!  
[asuro@localhost ~]$  
[asuro@localhost ~]$
```

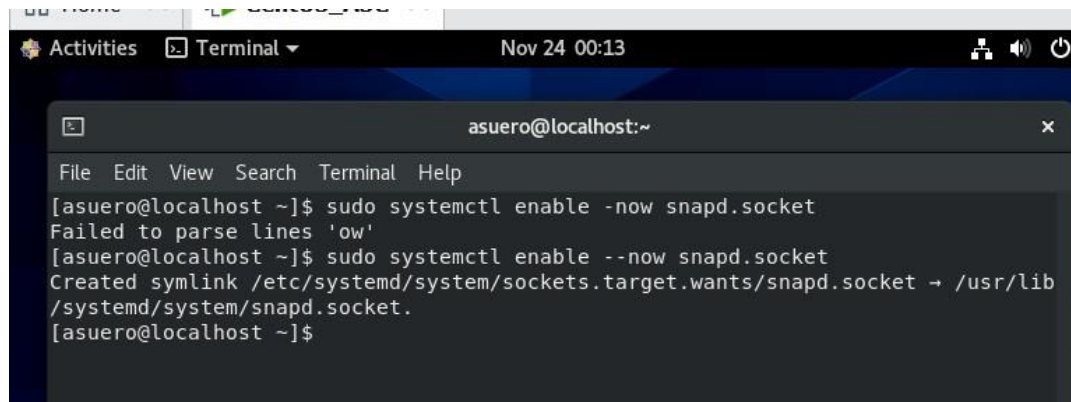
## Lolcat

To install Lolcat you need to install an extra package first. the **snappy** package first. To install snappy type the following command, **sudo yum install snappy**



```
asuro@localhost:~  
File Edit View Search Terminal Help  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
Preparing : 1/1  
Running scriptlet: snappy-selinux-2.53.1-2.el8.noarch 1/1  
Installing : snappy-selinux-2.53.1-2.el8.noarch 1/1  
Running scriptlet: snappy-selinux-2.53.1-2.el8.noarch 1/1  
Installing : snappy-confine-2.53.1-2.el8.x86_64 2/2  
Installing : snappy-2.53.1-2.el8.x86_64 3/3  
Running scriptlet: snappy-2.53.1-2.el8.x86_64 3/3  
Running scriptlet: snappy-selinux-2.53.1-2.el8.noarch 3/3  
Running scriptlet: snappy-2.53.1-2.el8.x86_64 3/3  
Verifying : snappy-confine-2.53.1-2.el8.x86_64 1/1  
Verifying : snappy-2.53.1-2.el8.x86_64 2/2  
Verifying : snappy-selinux-2.53.1-2.el8.noarch 3/3  
Installed products updated.  
Installed:  
snappy-confine-2.53.1-2.el8.x86_64 snappy-2.53.1-2.el8.x86_64  
snappy-selinux-2.53.1-2.el8.noarch  
Complete!  
[asuro@localhost ~]$
```

Later, please install the systemctl unit, this one provides the main communication of snappy. Type the following command to install the systemctl unit **sudo systemctl enable --now snappy.socket**



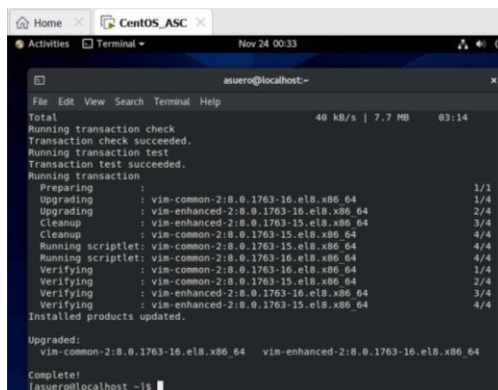
```
asuero@localhost:~  
File Edit View Search Terminal Help  
[asuero@localhost ~]$ sudo systemctl enable --now snapd.socket  
Failed to parse lines 'ow'  
[asuero@localhost ~]$ sudo systemctl enable --now snapd.socket  
Created symlink /etc/systemd/system/sockets.target.wants/snapd.socket → /usr/lib  
/systemd/system/snapd.socket.  
[asuero@localhost ~]$
```

Later, **reboot** your system to update the changes.

Now, you can install lolcat type this command to do that **sudo snap install lolcat**

## Update or install vi to vim

Now, to update vim we just type the following command **sudo yum install vi**



```
asuero@localhost:~  
File Edit View Search Terminal Help  
Total 48 kB/s | 7.7 MB 03:14  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
Preparing : 1/1  
Upgrading : vim-common-2:8.0.1763-16.el8.x86_64 1/4  
Upgrading : vim-enhanced-2:8.0.1763-16.el8.x86_64 2/4  
Cleanup : vim-common-2:8.0.1763-15.el8.x86_64 3/4  
Running scriptlet: vim-common-2:8.0.1763-15.el8.x86_64 4/4  
Running scriptlet: vim-common-2:8.0.1763-16.el8.x86_64 4/4  
Verifying : vim-common-2:8.0.1763-16.el8.x86_64 1/4  
Verifying : vim-common-2:8.0.1763-15.el8.x86_64 2/4  
Verifying : vim-enhanced-2:8.0.1763-16.el8.x86_64 3/4  
Verifying : vim-enhanced-2:8.0.1763-15.el8.x86_64 4/4  
Installed products updated.  
Upgraded:  
vim-common-2:8.0.1763-16.el8.x86_64 vim-enhanced-2:8.0.1763-16.el8.x86_64  
Complete!  
[asuero@localhost ~]$
```

Any updates and dependencies that needed to be done or changed and the dates that you did this.

n/a

Anything you've turned on/off should be included as well, don't forget the dates.

I enable snapd.

**For Fail2ban make sure you note what you've changed (if anything) and why you made that change.**

I installed epel

## Showing my installed applications.

Type this command to see your installed apps. **sudo yum history**

```
[asuero@localhost ~]$ yum history
```

ID	Command line	Date and time	Action(s)	Altered
19	-y install libvirt qemu-k	2021-12-10 01:04	Install	31
18	install -y kubelet kubead	2021-12-10 00:42	Install	10
17	install docker-ce --nobes	2021-12-09 23:36	E, I, O	12
16	install -y yum-utils	2021-12-09 22:04	Install	1
15	update	2021-12-09 21:47	I, O, U	534 EE
14	install sendEmail	2021-12-05 23:27	Install	3
13	install lynis	2021-12-04 19:43	Install	1
12		2021-12-03 21:24	Install	2
11		2021-12-03 21:22	Install	1
10	install snapd	2021-12-02 16:39	Upgrade	5
9	install nload	2021-11-30 00:50	Install	1
8	install vim	2021-11-24 00:33	Upgrade	2
7	install snapd	2021-11-24 00:03	Install	3
6	install cowsay	2021-11-23 22:27	Install	1
5	install fail2ban	2021-11-23 22:22	Install	6
4	install emacs	2021-11-23 18:33	I, U	6
3	install epel-release	2021-11-23 09:57	Install	1
2	update	2021-10-23 14:10	I, U	40 EE
1		2021-09-22 19:20	Install	1400 EE

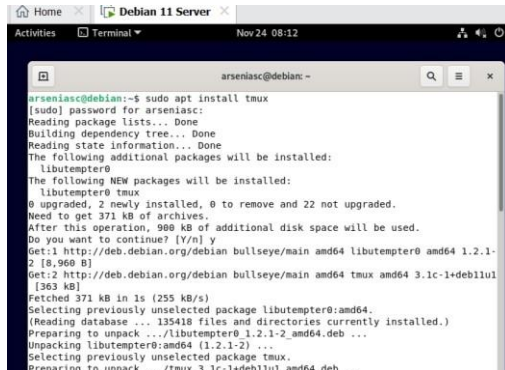
```
[asuero@localhost ~]$
```

# Debian

**Installations:**

## Tmux

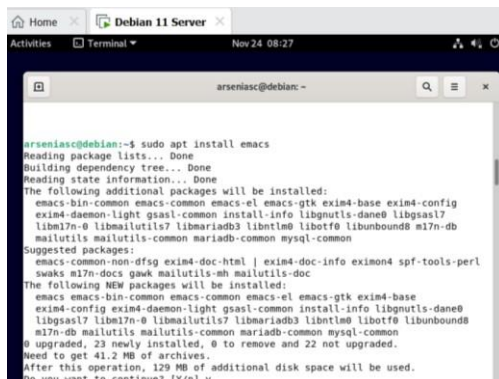
Type the following command to install `tmux` on your server, **sudo apt install tmux**, then you will be asked y/n to confirm type **y** for yes.

A terminal window titled 'Debian 11 Server' showing the command 'sudo apt install tmux' being executed. The output shows the package lists being read, the dependency tree being built, and the state information being read. It then lists the additional packages to be installed (libutempter0) and the new packages to be installed (libutempter0 and tmux). It shows the disk space requirements and the confirmation to proceed with the installation. The terminal output is as follows:

```
arseniasc@debian:~$ sudo apt install tmux
[sudo] password for arseniasc:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libutempter0
The following NEW packages will be installed:
  libutempter0 tmux
0 upgraded, 2 newly installed, 0 to remove and 22 not upgraded.
Need to get 371 kB of archives.
After this operation, 900 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bullseye/main amd64 libutempter0 amd64 1.2.1-2 [8,960 B]
Get:2 http://deb.debian.org/debian bullseye/main amd64 tmux amd64 3.1c-1-deb11u1 [363 kB]
Fetched 371 kB in 1s (255 kB/s)
Selecting previously unselected package libutempter0:amd64.
(Reading database ... 135418 files and directories currently installed.)
Preparing to unpack .../libutempter0_1.2.1-2_amd64.deb ...
Unpacking libutempter0:amd64 (1.2.1-2) ...
Selecting previously unselected package tmux.
Preparing to unpack .../tmux_3.1c-1-deb11u1_amd64.deb ...
```

## Emacs

Type the following command to install `emacs` on your server, **sudo apt install emacs**, then you will be asked y/n to confirm type **y** for yes.

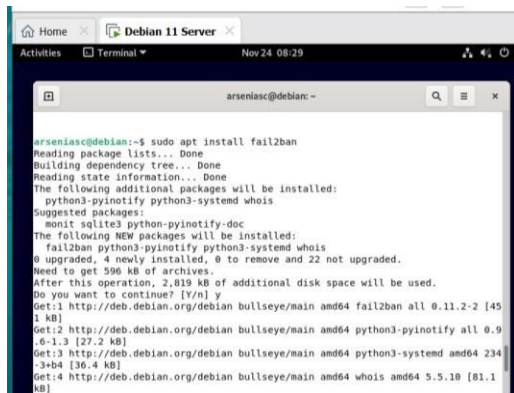
A terminal window titled 'Debian 11 Server' showing the command 'sudo apt install emacs' being executed. The output shows the package lists being read, the dependency tree being built, and the state information being read. It then lists the additional packages to be installed (emacs-bin-common, emacs-common, emacs-el, emacs-gtk, exim4-base, exim4-config, exim4-daemon-light, gssapi-common, install-info, libgnutls-dane0, libgsasl7, libl7n-0, libmailutils7, libmariadb3, libntlm0, libotf0, libunbound8, m17n-db, mailutils, mailutils-common, mariadb-common, mysql-common). It shows the disk space requirements and the confirmation to proceed with the installation. The terminal output is as follows:

```
arseniasc@debian:~$ sudo apt install emacs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  emacs-bin-common emacs-common emacs-el emacs-gtk exim4-base exim4-config
  exim4-daemon-light gssapi-common install-info libgnutls-dane0 libgsasl7
  libl7n-0 libmailutils7 libmariadb3 libntlm0 libotf0 libunbound8 m17n-db
  mailutils mailutils-common mariadb-common mysql-common
Suggested packages:
  emacs-common-non-dfsg exim4-doc-html | exim4-doc-info eximon4 spf-tools-perl
  swaks m17n-docs gawk mailutils-mh mailutils-doc
The following NEW packages will be installed:
  emacs emacs-bin-common emacs-common emacs-el emacs-gtk exim4-base
  exim4-config exim4-daemon-light gssapi-common install-info libgnutls-dane0
  libgsasl7 libl7n-0 libmailutils7 libmariadb3 libntlm0 libotf0 libunbound8
  m17n-db mailutils mailutils-common mariadb-common mysql-common
0 upgraded, 23 newly installed, 0 to remove and 22 not upgraded.
Need to get 41.2 MB of archives.
After this operation, 129 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

## Fail2ban

Type the following command to install `Fail2Ban` on your server, **sudo apt install fail2ban**, then you will be asked y/n to confirm type **y** for yes.

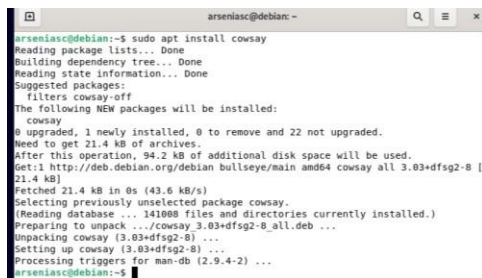


A terminal window titled 'Debian 11 Server' showing the command 'sudo apt install fail2ban' being executed. The output shows the package lists, dependency tree, and state information. It lists additional packages to be installed: python3-pyinotify, python3-systemd, and whois. It also lists suggested packages: monit, sblites, and python-pyinotify-doc. The terminal shows the progress of downloading and installing the packages, including the disk space requirements and the sources from which the packages are being fetched.

```
arseniasc@debian:~$ sudo apt install fail2ban
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  python3-pyinotify python3-systemd whois
Suggested packages:
  monit sblites python-pyinotify-doc
The following NEW packages will be installed:
  fail2ban python3-pyinotify python3-systemd whois
0 upgraded, 4 newly installed, 0 to remove and 22 not upgraded.
Need to get 596 kB of archives.
After this operation, 2,819 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bullseye/main amd64 fail2ban all 0.11.2-2 [45
1 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 python3-pyinotify all 0.9
.6-1.3 [27.2 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 python3-systemd amd64 234
.3+b4 [36.4 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 whois amd64 5.5.10 [81.1
kB]
```

## Cowsay

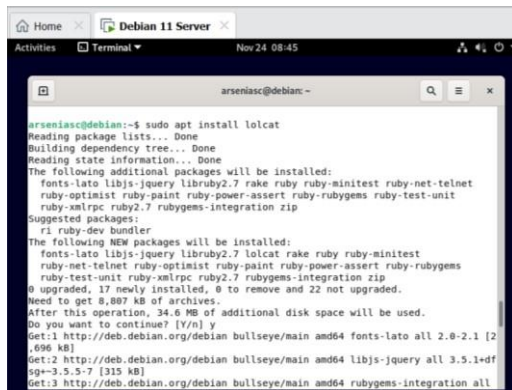
Type the following command to install `cowsay` on your server, **sudo apt install cowsay**, then you will be asked y/n to confirm type **y** for yes.

A terminal window titled 'Debian 11 Server' showing the command 'sudo apt install cowsay' being executed. The output shows the package lists, dependency tree, and state information. It lists the package to be installed: cowsay. It also lists suggested packages: filters, cowsay-off, and cowsay. The terminal shows the progress of downloading and installing the package, including the disk space requirements and the sources from which the package is being fetched.

```
arseniasc@debian:~$ sudo apt install cowsay
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  filters cowsay-off
The following NEW packages will be installed:
  cowsay
0 upgraded, 1 newly installed, 0 to remove and 22 not upgraded.
Need to get 21.4 kB of archives.
After this operation, 94.2 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bullseye/main amd64 cowsay all 3.03+dfsg2-8 [
21.4 kB]
Fetched 21.4 kB in 0s (43.6 kB/s)
Selecting previously unselected package cowsay.
(Reading database ... 141008 files and directories currently installed.)
Preparing to unpack .../cowsay 3.03+dfsg2-8_all.deb ...
Unpacking cowsay (3.03+dfsg2-8) ...
Setting up cowsay (3.03+dfsg2-8) ...
Processing triggers for man-db (2.9.4-2) ...
arseniasc@debian:~$
```

## Lolcat

Type the following command to install `lolcat` on your server, **sudo apt install lolcat**, then you will be asked y/n to confirm type **y** for yes.



```
arseniasc@debian:~$ sudo apt install lolcat
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fonts-lato libjs-jquery libruby2.7 rake ruby ruby-minitest ruby-net-telnet
  ruby-optimist ruby-paint ruby-power-assert ruby-rubygems ruby-test-unit
  ruby-xmlrpc ruby2.7 rubygems-integration zip
Suggested packages:
  ri ruby-dev bundler
The following NEW packages will be installed:
  fonts-lato libjs-jquery libruby2.7 lolcat rake ruby ruby-minitest
  ruby-net-telnet ruby-optimist ruby-paint ruby-power-assert ruby-rubygems
  ruby-test-unit ruby-xmlrpc ruby2.7 rubygems-integration zip
0 upgraded, 17 newly installed, 0 to remove and 22 not upgraded.
Need to get 8,807 kB of archives.
After this operation, 34.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bullseye/main amd64 fonts-lato all 2.0-2.1 [2
,696 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 libjs-jquery all 3.5.1+df
sg+~3.5.5-7 [315 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 rubygems-integration all
```

A short document showing where your repos live on both servers as well as how to add/modify a repo or PPA.

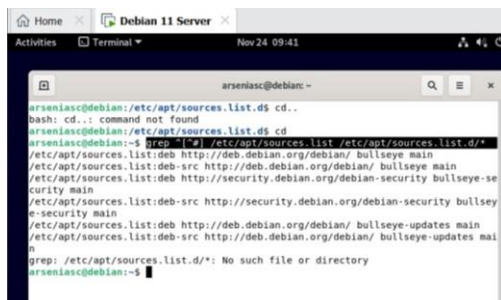
To modify a repo, type the following command `sudo nano /etc/apt/sources.list`

To add a repository, you must type the following command `apt-add-`

`repository repository link`

**Repository storage**

To see where my repo lives, enter to the following directory `grep ^[^#] /etc/apt/sources.list /etc/apt/sources.list.d/*`



```
arseniasc@debian:~$ cd ..
bash: cd.: command not found
arseniasc@debian:~$ cd /etc/apt/sources.list.d
arseniasc@debian:/etc/apt/sources.list.d$ cd
arseniasc@debian:~$ grep ^[^#] /etc/apt/sources.list /etc/apt/sources.list.d/*
/etc/apt/sources.list:deb http://deb.debian.org/debian/ bullseye main
/etc/apt/sources.list:deb-src http://deb.debian.org/debian/ bullseye main
/etc/apt/sources.list:deb http://security.debian.org/debian-security bullseye-se
curity main
/etc/apt/sources.list:deb-src http://security.debian.org/debian-security bullsey
e-security main
/etc/apt/sources.list:deb http://deb.debian.org/debian/ bullseye-updates main
/etc/apt/sources.list:deb-src http://deb.debian.org/debian/ bullseye-updates mai
n
grep: /etc/apt/sources.list.d/*: No such file or directory
arseniasc@debian:~$
```

Any updates and dependencies that needed to be done or changed and the dates that you did this. Anything you've turned on/off should be included as well, don't forget the dates.

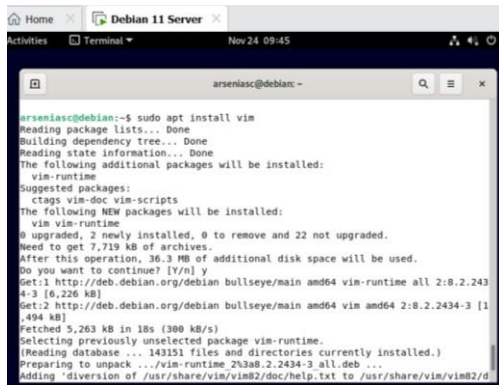
I did not need any updates to install the programs

**For Fail2ban make sure you note what you've changed (if anything) and why you made that change.**

I just installed the application I did not required anything else.

**Vim installation**

Type the following command to install vim **sudo apt install vim**



```
arseniasc@debian:~$ sudo apt install vim
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 22 not upgraded.
Need to get 7,719 kB of archives.
After this operation, 36.3 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bullseye/main amd64 vim-runtime all 2:8.2.243-4~3 [6,226 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 vim amd64 2:8.2.2434-3 [1,494 kB]
Fetched 5,263 kB in 18s (300 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 143151 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2:8.2.2434-3_all.deb ...
Adding 'diversion of /usr/share/vim/vim82/doc/help.txt to /usr/share/vim/vim82/d
```

## Showing my installed applications.

To see you installed application on Debian type the following  
**grep "install" /var/log/dpkg.log**

```
2021-12-01 21:47:29 install squashfs-tools:amd64 <none> 1:4.4-2+deb11u2
2021-12-01 21:47:29 install snapd:amd64 <none> 2.49-1+b5
2021-12-02 20:10:00 install rsync:amd64 <none> 3.2.3-4+deb11u1
2021-12-06 19:59:18 install lynis:all <none> 3.0.2-1
2021-12-06 19:59:18 install menu:amd64 <none> 2.1.48
2021-12-06 20:27:45 install liberror-perl:all <none> 0.17029-1
2021-12-06 20:27:45 install git-man:all <none> 1:2.30.2-1
2021-12-06 20:27:45 install git:amd64 <none> 1:2.30.2-1
2021-12-06 20:27:45 install patch:amd64 <none> 2.7.6-7
2021-12-06 22:19:56 install linux-image-5.10.0-9-amd64:amd64 <none> 5.10.70-1
2021-12-06 22:45:43 install libpam-pwquality:amd64 <none> 1.4.4-1
2021-12-06 23:58:29 install sysstat:amd64 <none> 12.5.2-2
2021-12-08 10:55:49 install wmdocker:amd64 <none> 1.5-2
2021-12-08 10:55:49 install docker:all <none> 1.5-2
2021-12-08 14:03:05 install apt-transport-https:all <none> 2.2.4
2021-12-08 14:03:05 install curl:amd64 <none> 7.74.0-1.3+b1
2021-12-08 14:28:33 install conntrack:amd64 <none> 1:1.4.6-2
2021-12-08 14:28:33 install cri-tools:amd64 <none> 1.19.0-00
2021-12-08 14:28:33 install ebttables:amd64 <none> 2.0.11-4+b1
2021-12-08 14:28:34 install kubernetes-cni:amd64 <none> 0.8.7-00
2021-12-08 14:28:35 install socat:amd64 <none> 1.7.4.1-3
2021-12-08 14:28:35 install kubelet:amd64 <none> 1.23.0-00
2021-12-08 14:28:37 install kubectrl:amd64 <none> 1.23.0-00
2021-12-08 14:28:38 install kubeadm:amd64 <none> 1.23.0-00
2021-12-08 17:51:20 install minikube:amd64 <none> 1.24.0-0
```

2021-12-08 19:03:12 install gnupg2:all <none> 2.2.27-2  
2021-12-08 19:06:32 install pigz:amd64 <none> 2.6-1  
2021-12-08 19:06:32 install containerd.io:amd64 <none> 1.4.12-1  
2021-12-08 19:06:35 install docker-ce-cli:amd64 <none> 5:20.10.11~3-0~debian-buster  
2021-12-08 19:06:39 install docker-ce:amd64 <none> 5:20.10.11~3-0~debian-buster  
2021-12-08 19:06:42 install docker-ce-rootless-extras:amd64 <none> 5:20.10.11~3-0~debian-buster  
2021-12-08 19:06:43 install docker-scan-plugin:amd64 <none> 0.9.0~debian-buster  
2021-12-08 19:06:44 install libslirp0:amd64 <none> 4.4.0-1+deb11u2  
2021-12-08 19:06:44 install slirp4netns:amd64 <none> 1.0.1-2  
2021-12-08 19:47:38 install uidmap:amd64 <none> 1:4.8.1-1  
2021-12-08 23:10:55 install python3-cffi-backend:amd64 <none> 1.14.5-1  
2021-12-08 23:10:55 install python3-cryptography:amd64 <none> 3.3.2-1  
2021-12-08 23:10:55 install python3-jinja2:all <none> 2.11.3-1  
2021-12-08 23:10:55 install python3-pyparsing:all <none> 2.4.7-1  
2021-12-08 23:10:55 install python3-packaging:all <none> 20.9-2  
2021-12-08 23:10:55 install python3-yaml:amd64 <none> 5.3.1-5  
2021-12-08 23:10:56 install python3-pycryptodome:amd64 <none> 3.9.7+dfsg1-1+b2  
2021-12-08 23:10:57 install python3-lib2to3:all <none> 3.9.2-1  
2021-12-08 23:10:57 install python3-distutils:all <none> 3.9.2-1  
2021-12-08 23:10:57 install python3-dnspython:all <none> 2.0.0-1  
2021-12-08 23:10:57 install ieee-data:all <none> 20210605.1  
2021-12-08 23:10:57 install python3-netaddr:all <none> 0.7.19-5  
2021-12-08 23:10:57 install ansible:all <none> 2.10.7+merged+base+2.10.8+dfsg-1  
2021-12-08 23:11:06 install python3-argcomplete:all <none> 1.8.1-1.5  
2021-12-08 23:11:06 install python3-jmespath:all <none> 0.10.0-1  
2021-12-08 23:11:06 install python3-kerberos:amd64 <none> 1.1.14-3.1+b3  
2021-12-08 23:11:06 install python3-lockfile:all <none> 1:0.12.2-2.2  
2021-12-08 23:11:06 install python3-simplejson:amd64 <none> 3.17.2-1  
2021-12-08 23:11:06 install python3-libcloud:all <none> 3.2.0-2  
2021-12-08 23:11:07 install python3-ntlm-auth:all <none> 1.4.0-1  
2021-12-08 23:11:07 install python3-requests-kerberos:all <none> 0.12.0-2  
2021-12-08 23:11:07 install python3-requests-ntlm:all <none> 1.1.0-1.1  
2021-12-08 23:11:07 install python3-requests-toolbelt:all <none> 0.9.1-1  
2021-12-08 23:11:07 install python3-selinux:amd64 <none> 3.1-3  
2021-12-08 23:11:07 install python3-xmltodict:all <none> 0.12.0-2  
2021-12-08 23:11:07 install python3-winrm:all <none> 0.3.0-2  
2021-12-08 23:14:53 install binutils-common:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install libbinutils:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install libctf-nobfd0:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install libctf0:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install binutils-x86-64-linux-gnu:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install binutils:amd64 <none> 2.35.2-2  
2021-12-08 23:14:53 install libc-dev-bin:amd64 <none> 2.31-13+deb11u2  
2021-12-08 23:14:53 install linux-libc-dev:amd64 <none> 5.10.70-1

2021-12-08 23:14:54 install libcrypt-dev:amd64 <none> 1:4.4.18-4  
2021-12-08 23:14:54 install libtirpc-dev:amd64 <none> 1.3.1-1  
2021-12-08 23:14:54 install libnsl-dev:amd64 <none> 1.3.0-2  
2021-12-08 23:14:54 install libc6-dev:amd64 <none> 2.31-13+deb11u2  
2021-12-08 23:14:54 install libcc1-0:amd64 <none> 10.2.1-6  
2021-12-08 23:14:54 install libitm1:amd64 <none> 10.2.1-6  
2021-12-08 23:14:54 install libatomic1:amd64 <none> 10.2.1-6  
2021-12-08 23:14:54 install libasan6:amd64 <none> 10.2.1-6  
2021-12-08 23:14:55 install liblsan0:amd64 <none> 10.2.1-6  
2021-12-08 23:14:55 install libtsan0:amd64 <none> 10.2.1-6  
2021-12-08 23:14:55 install libubsan1:amd64 <none> 10.2.1-6  
2021-12-08 23:14:55 install libgcc-10-dev:amd64 <none> 10.2.1-6  
2021-12-08 23:14:55 install gcc-10:amd64 <none> 10.2.1-6  
2021-12-08 23:14:57 install gcc:amd64 <none> 4:10.2.1-1  
2021-12-08 23:14:57 install libstdc++-10-dev:amd64 <none> 10.2.1-6  
2021-12-08 23:14:57 install g++-10:amd64 <none> 10.2.1-6  
2021-12-08 23:14:58 install g++:amd64 <none> 4:10.2.1-1  
2021-12-08 23:14:58 install make:amd64 <none> 4.3-4.1  
2021-12-08 23:14:58 install dpkg-dev:all <none> 1.20.9  
2021-12-08 23:14:59 install build-essential:amd64 <none> 12.9  
2021-12-08 23:14:59 install libfakeroot:amd64 <none> 1.25.3-1.1  
2021-12-08 23:14:59 install fakeroot:amd64 <none> 1.25.3-1.1  
2021-12-08 23:14:59 install libalgorithm-diff-perl:all <none> 1.201-1  
2021-12-08 23:14:59 install libalgorithm-diff-xs-perl:amd64 <none> 0.04-6+b1  
2021-12-08 23:14:59 install libalgorithm-merge-perl:all <none> 0.08-3  
2021-12-08 23:14:59 install libc-devtools:amd64 <none> 2.31-13+deb11u2  
2021-12-08 23:14:59 install libexpat1-dev:amd64 <none> 2.2.10-2  
2021-12-08 23:14:59 install libjs-underscore:all <none> 1.9.1~dfsg-3  
2021-12-08 23:14:59 install libjs-sphinxdoc:all <none> 3.4.3-2  
2021-12-08 23:14:59 install libpython3.9-dev:amd64 <none> 3.9.2-1  
2021-12-08 23:14:59 install libpython3-dev:amd64 <none> 3.9.2-3  
2021-12-08 23:15:00 install manpages-dev:all <none> 5.10-1  
2021-12-08 23:15:00 install python-pip-whl:all <none> 20.3.4-4  
2021-12-08 23:15:00 install zlib1g-dev:amd64 <none> 1:1.2.11.dfsg-2  
2021-12-08 23:15:00 install python3.9-dev:amd64 <none> 3.9.2-1  
2021-12-08 23:15:00 install python3-dev:amd64 <none> 3.9.2-3  
2021-12-08 23:15:00 install python3-setuptools:all <none> 52.0.0-4  
2021-12-08 23:15:00 install python3-wheel:all <none> 0.34.2-1  
2021-12-08 23:15:00 install python3-pip:all <none> 20.3.4-4

