

Linux Kernel

Compile Linux Kernel on CentOS7

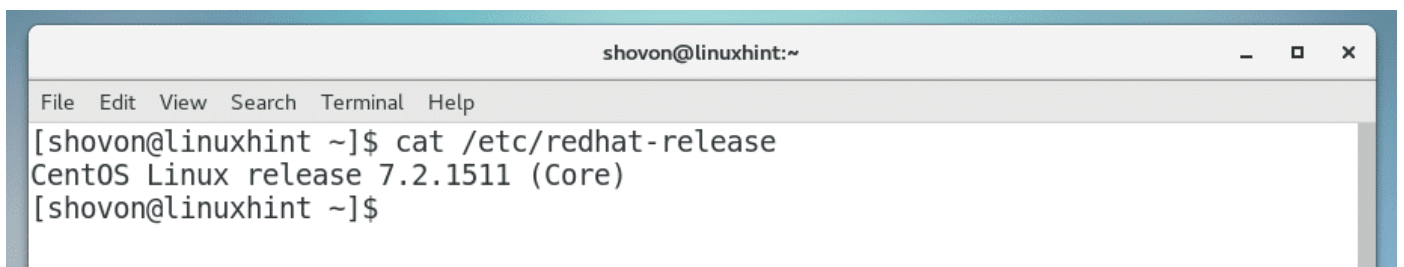
4 years agoby Shahriar Shovon

Compile the Latest Linux Kernel from Source on CentOS 7

In this article I will show you how to download the latest Linux kernel source from the official website of [Linux kernel](#), compile Linux kernel from source and use the compiled kernel on CentOS 7. Let's get started.

Checking Currently Used Kernel:

You can see from the following screenshot that I am using CentOS 7.

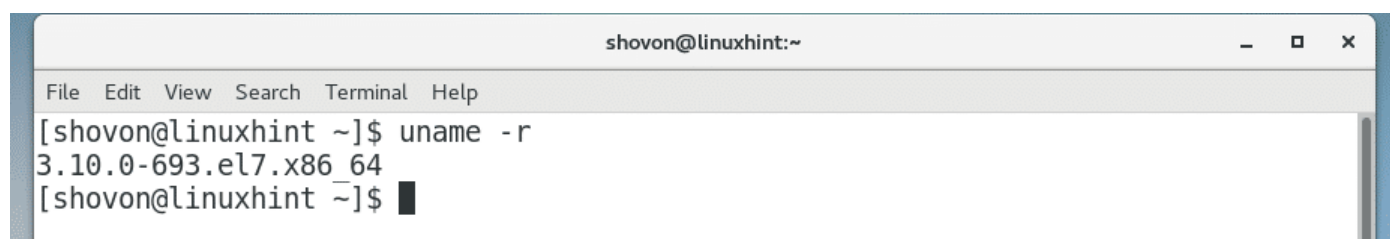


```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
[shovon@linuxhint ~]$ cat /etc/redhat-release  
CentOS Linux release 7.2.1511 (Core)  
[shovon@linuxhint ~]$
```

MY LATEST VIDEOS

00:0503:10

And the current kernel version is 3.10

A terminal window titled 'shovon@linuxhint:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the command '[shovon@linuxhint ~]\$ uname -r' and its output '3.10.0-693.el7.x86_64'. The prompt '[shovon@linuxhint ~]\$' is followed by a black cursor block.

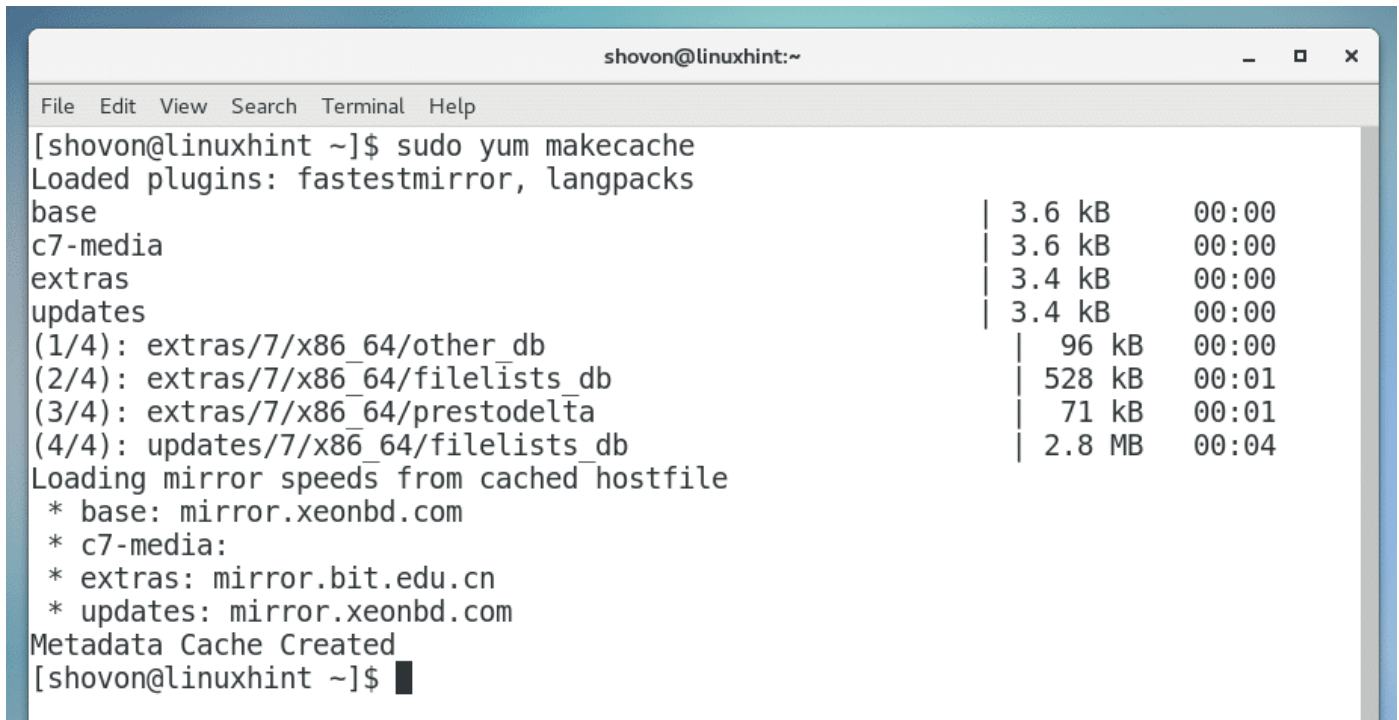
```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
[shovon@linuxhint ~]$ uname -r  
3.10.0-693.el7.x86_64  
[shovon@linuxhint ~]$
```

Installing the prerequisites:

To compile the latest Linux kernel from source on CentOS 7, you must have a build tool and some other packages installed on your CentOS 7 operating system.

Before you install anything, run the following command to update package cache:

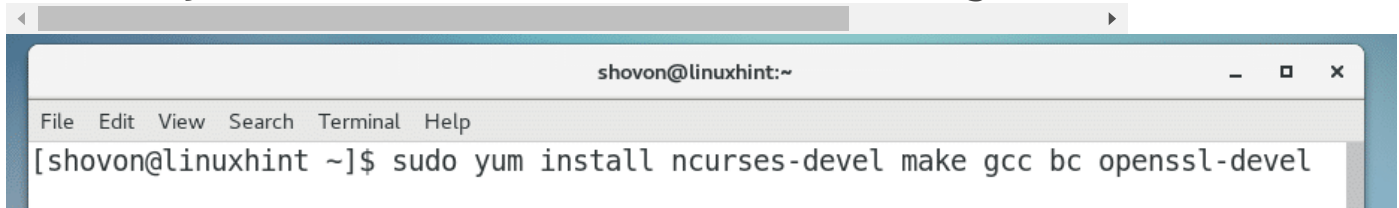
```
$ sudo yum makecache
```



```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
[shovon@linuxhint ~]$ sudo yum makecache  
Loaded plugins: fastestmirror, langpacks  
base | 3.6 kB 00:00  
c7-media | 3.6 kB 00:00  
extras | 3.4 kB 00:00  
updates | 3.4 kB 00:00  
(1/4): extras/7/x86_64/other_db | 96 kB 00:00  
(2/4): extras/7/x86_64/filelists_db | 528 kB 00:01  
(3/4): extras/7/x86_64/prestodelta | 71 kB 00:01  
(4/4): updates/7/x86_64/filelists_db | 2.8 MB 00:04  
Loading mirror speeds from cached hostfile  
* base: mirror.xeonbd.com  
* c7-media:  
* extras: mirror.bit.edu.cn  
* updates: mirror.xeonbd.com  
Metadata Cache Created  
[shovon@linuxhint ~]$
```

Now you can install the compilers and libraries required for compiling the kernel with the following command:

```
$ sudo yum install ncurses-devel make gcc bc
```



```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
[shovon@linuxhint ~]$ sudo yum install ncurses-devel make gcc bc openssl-devel
```

Press 'y' and then press <Enter> to continue.

```

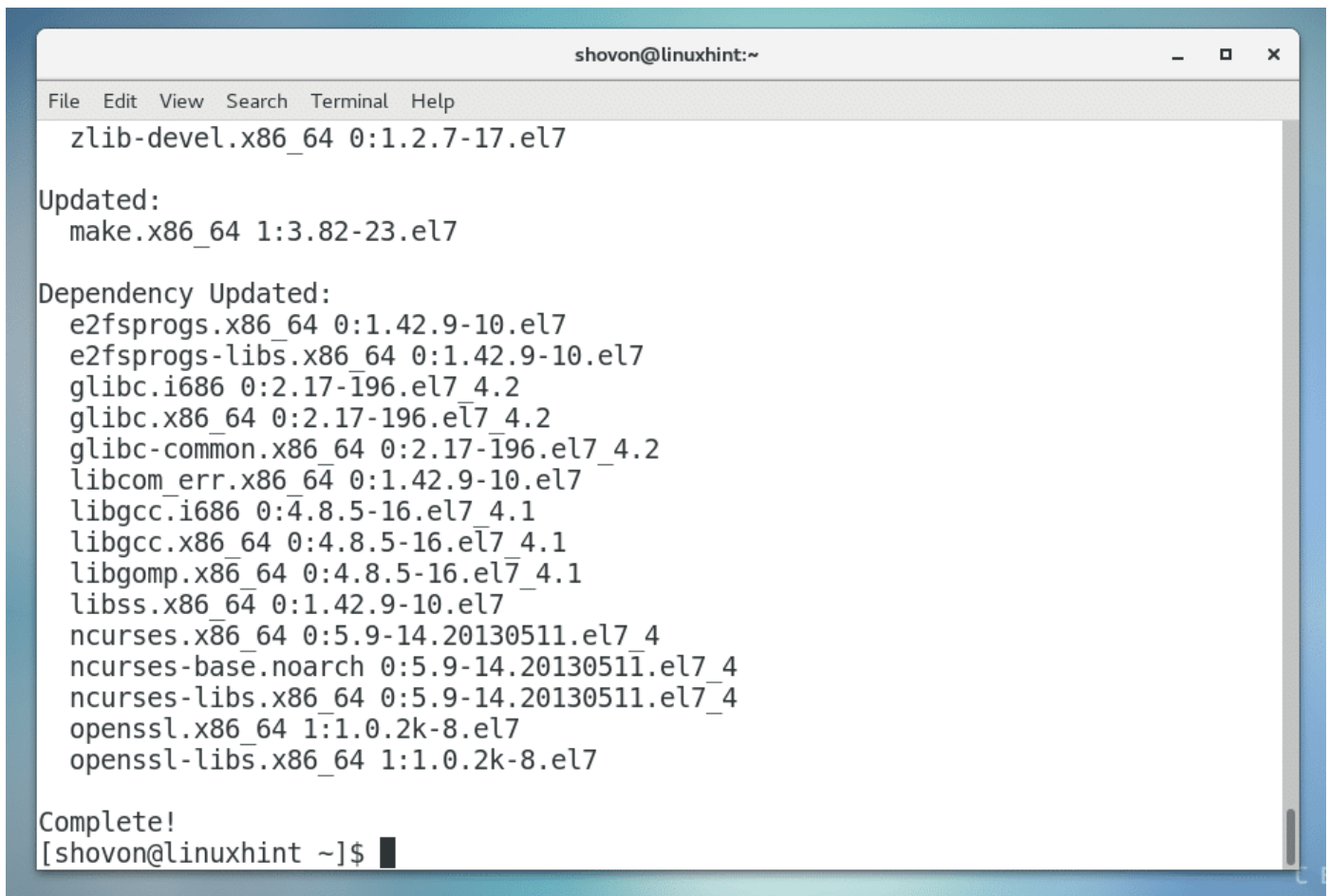
shovon@linuxhint:~
File Edit View Search Terminal Help
e2fsprogs                x86_64      1.42.9-10.el7          base           698 k
e2fsprogs-libs          x86_64      1.42.9-10.el7          base           166 k
glibc                  i686        2.17-196.el7_4.2       updates        4.2 M
glibc                  x86_64      2.17-196.el7_4.2       updates        3.6 M
glibc-common             x86_64      2.17-196.el7_4.2       updates        11 M
libcom_err             x86_64      1.42.9-10.el7          base           40 k
libgcc                 i686        4.8.5-16.el7_4.1       updates        106 k
libgcc                 x86_64      4.8.5-16.el7_4.1       updates        98 k
libgomp                x86_64      4.8.5-16.el7_4.1       updates        154 k
libss                  x86_64      1.42.9-10.el7          base           45 k
ncurses                x86_64      5.9-14.20130511.el7_4  updates        304 k
ncurses-base           noarch      5.9-14.20130511.el7_4  updates        68 k
ncurses-libs           x86_64      5.9-14.20130511.el7_4  updates        316 k
openssl                x86_64      1:1.0.2k-8.el7         base           492 k
openssl-libs           x86_64      1:1.0.2k-8.el7         base           1.2 M

Transaction Summary
=====
Install  3 Packages (+14 Dependent packages)
Upgrade  1 Package  (+15 Dependent packages)

Total size: 57 M
Total download size: 45 M
Is this ok [y/d/N]: █

```

The build tools should be installed.



```

shovon@linuxhint:~
File Edit View Search Terminal Help
zlib-devel.x86_64 0:1.2.7-17.el7

Updated:
  make.x86_64 1:3.82-23.el7

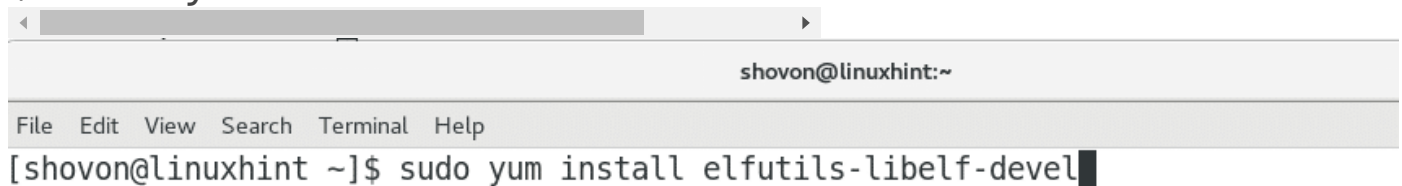
Dependency Updated:
  e2fsprogs.x86_64 0:1.42.9-10.el7
  e2fsprogs-libs.x86_64 0:1.42.9-10.el7
  glibc.i686 0:2.17-196.el7 4.2
  glibc.x86_64 0:2.17-196.el7 4.2
  glibc-common.x86_64 0:2.17-196.el7 4.2
  libcom_err.x86_64 0:1.42.9-10.el7
  libgcc.i686 0:4.8.5-16.el7 4.1
  libgcc.x86_64 0:4.8.5-16.el7 4.1
  libgomp.x86_64 0:4.8.5-16.el7 4.1
  libss.x86_64 0:1.42.9-10.el7
  ncurses.x86_64 0:5.9-14.20130511.el7 4
  ncurses-base.noarch 0:5.9-14.20130511.el7 4
  ncurses-libs.x86_64 0:5.9-14.20130511.el7 4
  openssl.x86_64 1:1.0.2k-8.el7
  openssl-libs.x86_64 1:1.0.2k-8.el7

Complete!
[shovon@linuxhint ~]$

```

Now you have to install elfutils package. Run the following command to install it:

```
$ sudo yum install elfutils-libelf
```



```

shovon@linuxhint:~
File Edit View Search Terminal Help
[shovon@linuxhint ~]$ sudo yum install elfutils-libelf

```

Press 'y' and press <Enter> to continue.

shovon@linuxhint:~

File Edit View Search Terminal Help

Resolving Dependencies
--> Running transaction check
--> Package elfutils-libelf-devel.x86_64 0:0.168-8.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

Package	Arch	Version	Repository	Size
Installing:				
elfutils-libelf-devel	x86_64	0.168-8.el7	base	37 k

Transaction Summary

Install 1 Package

Total download size: 37 k
Installed size: 31 k
Is this ok [y/d/N]: y

‘elfutils’ should be installed.

```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
=====
```

Install 1 Package		
Total download size: 37 k		
Installed size: 31 k		
Is this ok [y/d/N]: y		
Downloading packages:		
elfutils-libelf-devel-0.168-8.el7.x86_64.rpm	37 kB	00:00:00
Running transaction check		
Running transaction test		
Transaction test succeeded		
Running transaction		
Installing : elfutils-libelf-devel-0.168-8.el7.x86_64		1/1
Verifying : elfutils-libelf-devel-0.168-8.el7.x86_64		1/1
Installed:		
elfutils-libelf-devel.x86_64 0:0.168-8.el7		
Complete!		
[shovon@linuxhint ~]\$		

Now you have to install rpm-build with the following command:

```
$ sudo yum install rpm-build
```

```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
[shovon@linuxhint ~]$ sudo yum install rpm-build
```

Press 'y' and then press <Enter> to continue.

```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
--> Finished Dependency Resolution  
Dependencies Resolved  
  
=====
```

Package	Arch	Version	Repository	Size
---------	------	---------	------------	------

```
=====
```

Installing:

rpm-build	x86_64	4.11.3-25.el7	base	146 k
-----------	--------	---------------	------	-------

Installing for dependencies:

dwz	x86_64	0.11-3.el7	base	99 k
patch	x86_64	2.7.1-8.el7	base	110 k
perl-Thread-Queue	noarch	3.02-2.el7	base	17 k
perl-srpm-macros	noarch	1-8.el7	base	4.6 k
redhat-rpm-config	noarch	9.1.0-76.el7.centos	base	79 k

```
=====
```

Transaction Summary

```
=====
```

Install 1 Package (+5 Dependent packages)

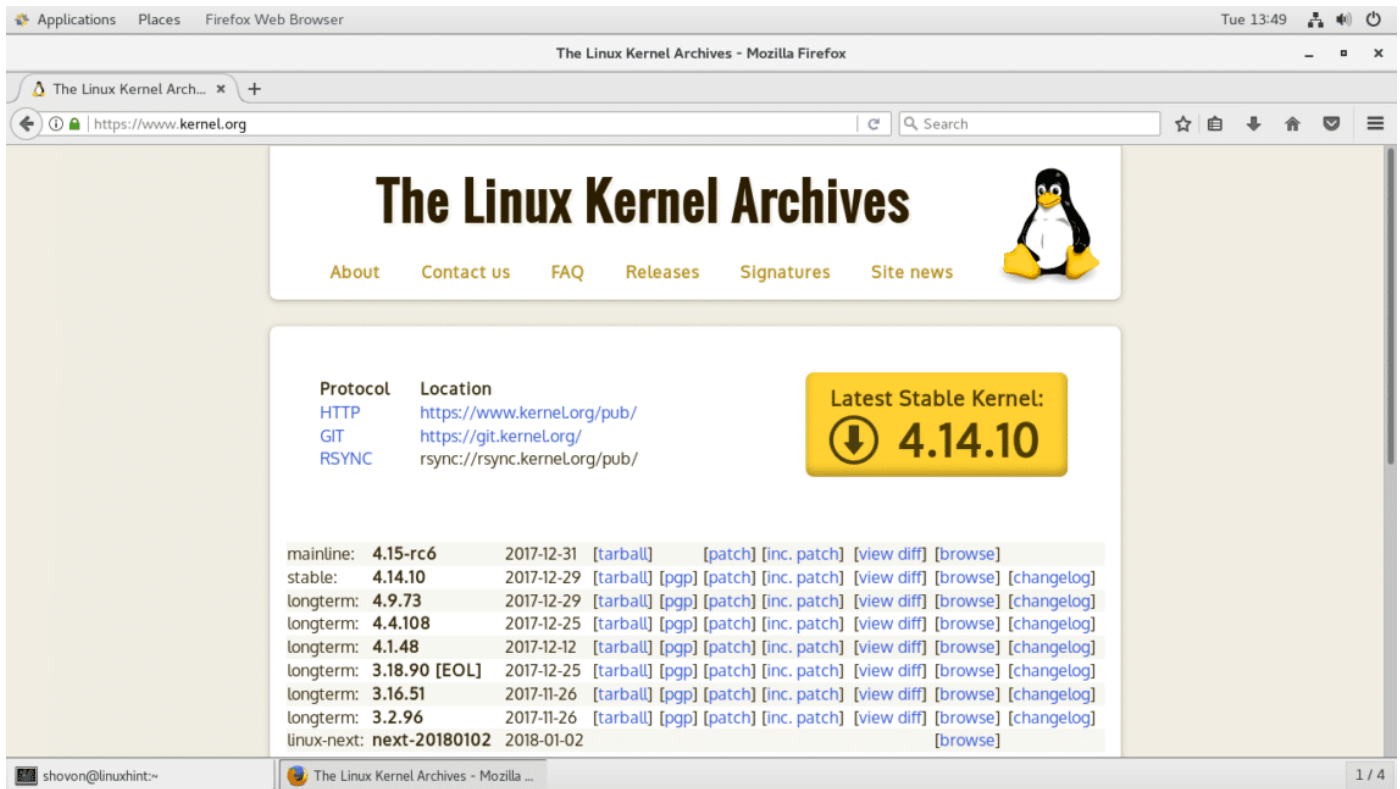
Total download size: 454 k
Installed size: 945 k
Is this ok [y/d/N]:

‘rpm-build’ package should be installed.


```
shovon@linuxhint:~  
File Edit View Search Terminal Help  
Installing : perl-Thread-Queue-3.02-2.el7.noarch 2/6  
Installing : dwz-0.11-3.el7.x86_64 3/6  
Installing : perl-srpm-macros-1-8.el7.noarch 4/6  
Installing : redhat-rpm-config-9.1.0-76.el7.centos.noarch 5/6  
Installing : rpm-build-4.11.3-25.el7.x86_64 6/6  
Verifying : perl-srpm-macros-1-8.el7.noarch 1/6  
Verifying : redhat-rpm-config-9.1.0-76.el7.centos.noarch 2/6  
Verifying : rpm-build-4.11.3-25.el7.x86_64 3/6  
Verifying : dwz-0.11-3.el7.x86_64 4/6  
Verifying : perl-Thread-Queue-3.02-2.el7.noarch 5/6  
Verifying : patch-2.7.1-8.el7.x86_64 6/6  
  
Installed:  
rpm-build.x86_64 0:4.11.3-25.el7  
  
Dependency Installed:  
dwz.x86_64 0:0.11-3.el7  
patch.x86_64 0:2.7.1-8.el7  
perl-Thread-Queue.noarch 0:3.02-2.el7  
perl-srpm-macros.noarch 0:1-8.el7  
redhat-rpm-config.noarch 0:9.1.0-76.el7.centos  
  
Complete!  
[shovon@linuxhint ~]$
```

Downloading the Linux Kernel Source:

Go to the official website of Linux Kernel at <https://www.kernel.org> and you should be the following page.



Click on the “Latest Stable Kernel” button as marked on the screenshot below.

www.kernel.org

The Linux Kernel Archives

About Contact us FAQ Releases Signatures Site news

Protocol Location

HTTP <https://www.kernel.org/pub/>

GIT <https://git.kernel.org/>

RSYNC <rsync://rsync.kernel.org/pub/>

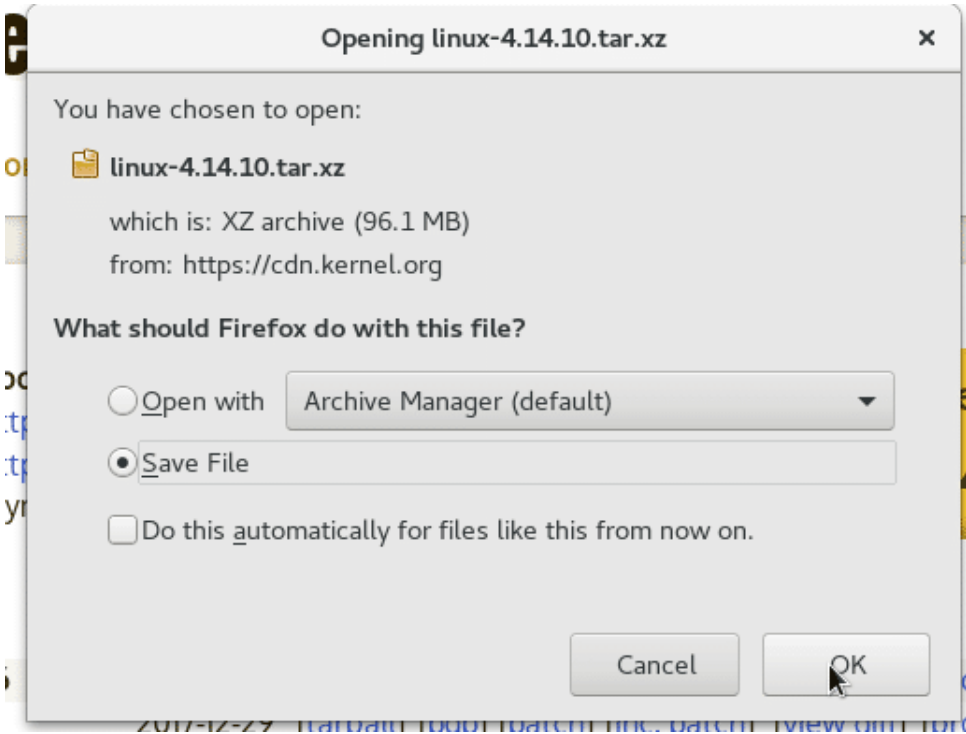
Latest Stable Kernel:

4.14.10

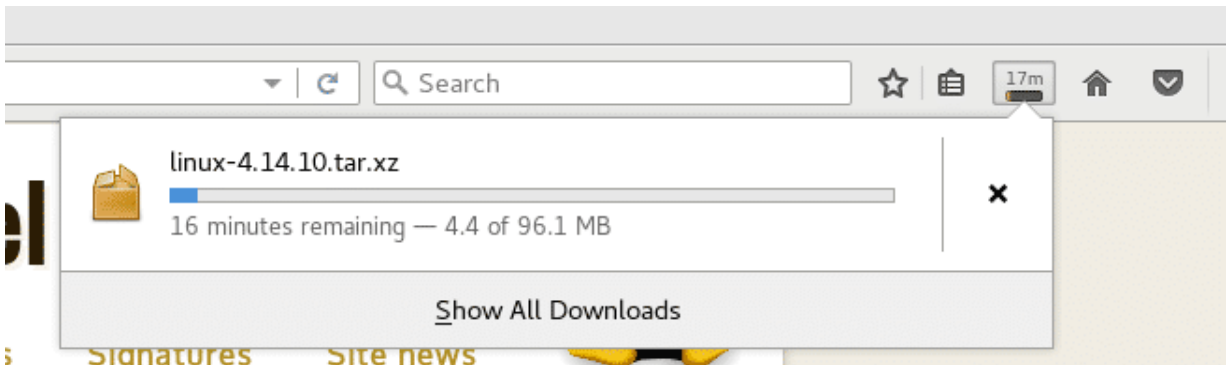
mainline:	4.15-rc6	2017-12-31	[tarball]	[patch]	[inc. patch]	[view diff]	[browse]
stable:	4.14.10	2017-12-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	4.9.73	2017-12-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	4.4.108	2017-12-25	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	4.1.48	2017-12-12	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	3.18.90 [EOL]	2017-12-25	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	3.16.51	2017-11-26	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	3.2.96	2017-11-26	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
		2018-01-02					[browse]

ub/linux/kernel/v4.x/linux-4.14.10.tar.xz

Your browser should prompt you to save the file. Just click on “Save File” and click on “OK”.



Your download should begin.

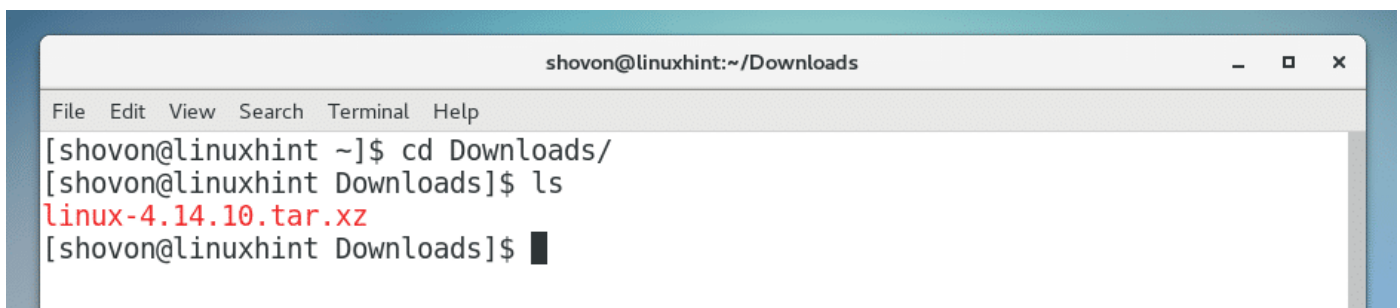


Compiling the Kernel:

Once the download is complete, navigate to the directory where you downloaded the file. In my case it is the Downloads directory in my user's HOME directory.

```
$ cd ~/Downloads
```

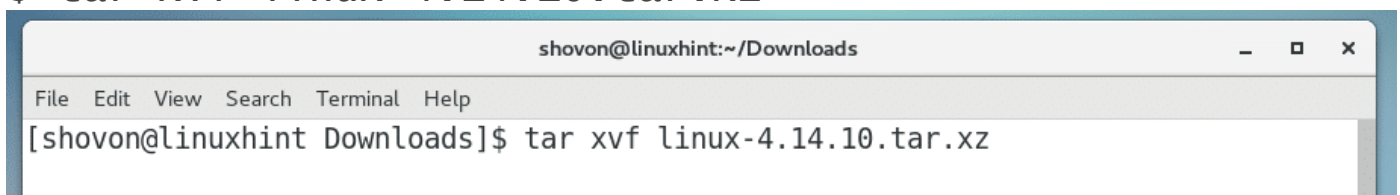
From the output of 'ls' you can see that the downloaded file is 'linux-4.14.10.tar.xz'. Which is a compressed tar file.

A terminal window titled 'shovon@linuxhint:~/Downloads' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[shovon@linuxhint ~]$ cd Downloads/
[shovon@linuxhint Downloads]$ ls
linux-4.14.10.tar.xz
[shovon@linuxhint Downloads]$
```

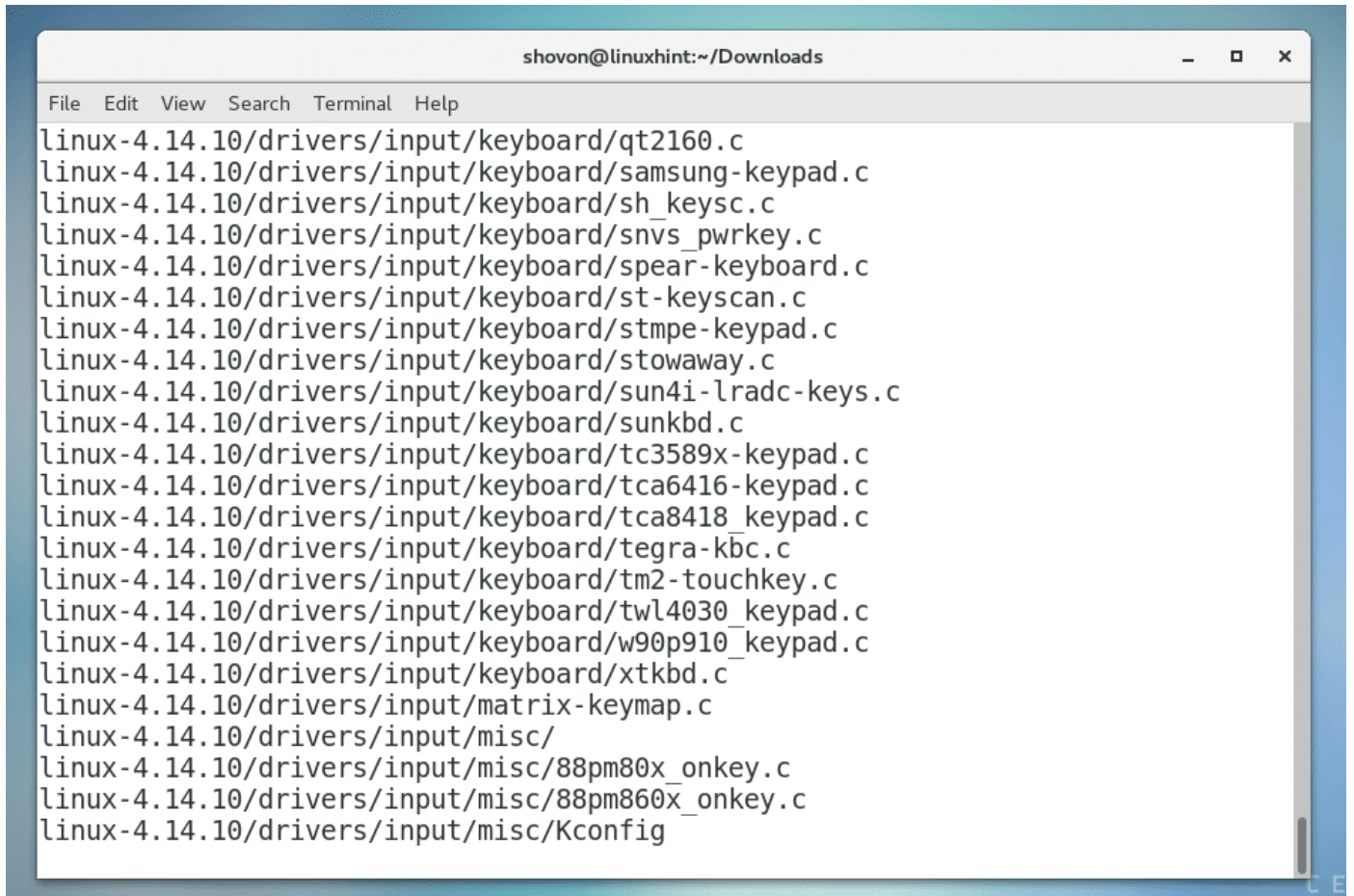
Now extract the compressed tar file with the following command:

```
$ tar xvf linux-4.14.10.tar.xz
```

A terminal window titled 'shovon@linuxhint:~/Downloads' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following command and output:

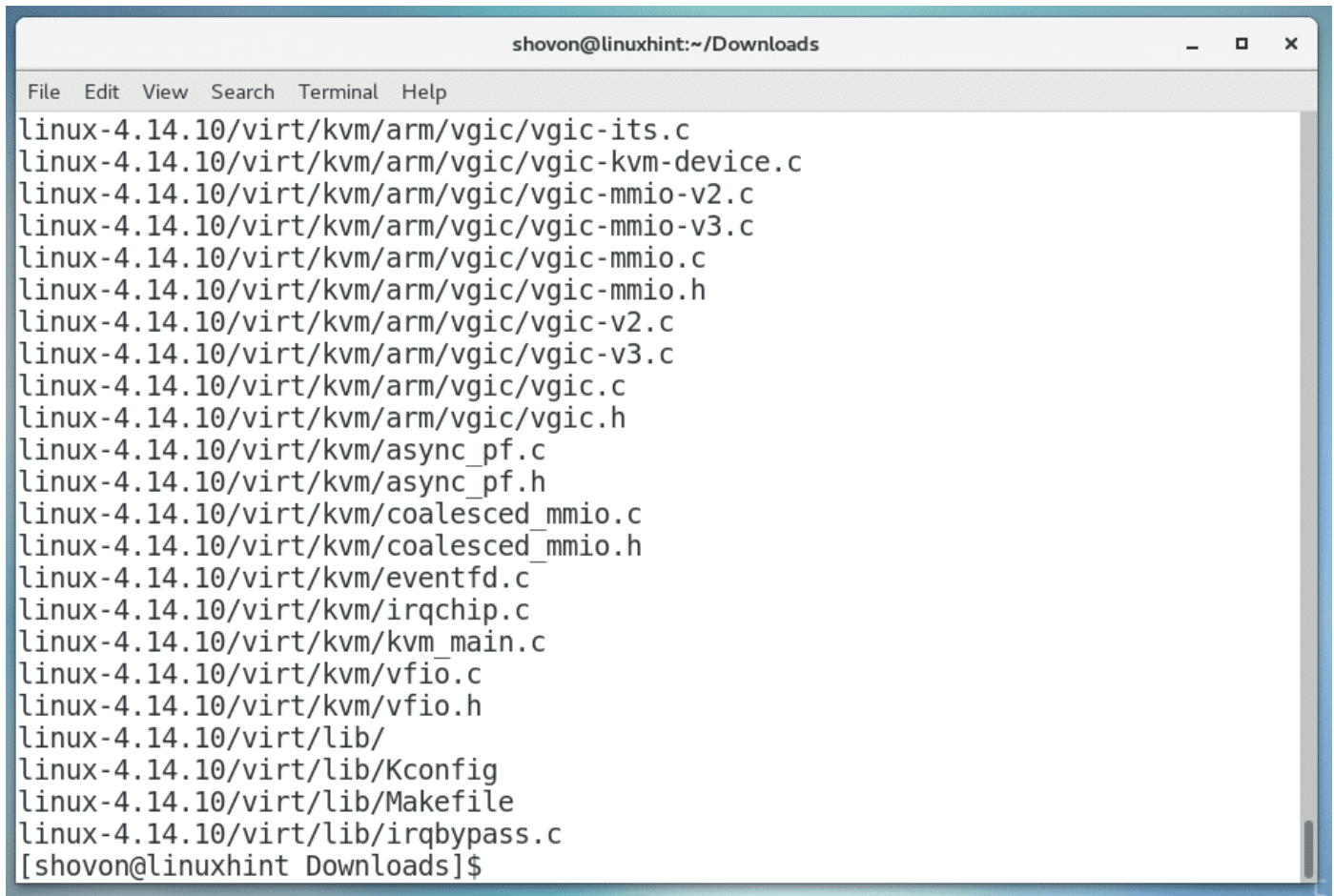
```
[shovon@linuxhint Downloads]$ tar xvf linux-4.14.10.tar.xz
```

tar is extracting the compressed file.

A screenshot of a terminal window titled "shovon@linuxhint: ~/Downloads". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal displays a list of Linux kernel driver files, all starting with "linux-4.14.10/drivers/input/". The files are: keyboard/qt2160.c, keyboard/samsung-keypad.c, keyboard/sh_keysc.c, keyboard/snvs_pwrkey.c, keyboard/spear-keyboard.c, keyboard/st-keyscan.c, keyboard/stmpe-keypad.c, keyboard/stowaway.c, keyboard/sun4i-lradc-keys.c, keyboard/sunkbd.c, keyboard/tc3589x-keypad.c, keyboard/tca6416-keypad.c, keyboard/tca8418_keypad.c, keyboard/tegra-kbc.c, keyboard/tm2-touchkey.c, keyboard/twl4030_keypad.c, keyboard/w90p910_keypad.c, keyboard/xtkbd.c, matrix-keymap.c, misc/, misc/88pm80x_onkey.c, misc/88pm860x_onkey.c, and misc/Kconfig.

```
shovon@linuxhint: ~/Downloads
File Edit View Search Terminal Help
linux-4.14.10/drivers/input/keyboard/qt2160.c
linux-4.14.10/drivers/input/keyboard/samsung-keypad.c
linux-4.14.10/drivers/input/keyboard/sh_keysc.c
linux-4.14.10/drivers/input/keyboard/snvs_pwrkey.c
linux-4.14.10/drivers/input/keyboard/spear-keyboard.c
linux-4.14.10/drivers/input/keyboard/st-keyscan.c
linux-4.14.10/drivers/input/keyboard/stmpe-keypad.c
linux-4.14.10/drivers/input/keyboard/stowaway.c
linux-4.14.10/drivers/input/keyboard/sun4i-lradc-keys.c
linux-4.14.10/drivers/input/keyboard/sunkbd.c
linux-4.14.10/drivers/input/keyboard/tc3589x-keypad.c
linux-4.14.10/drivers/input/keyboard/tca6416-keypad.c
linux-4.14.10/drivers/input/keyboard/tca8418_keypad.c
linux-4.14.10/drivers/input/keyboard/tegra-kbc.c
linux-4.14.10/drivers/input/keyboard/tm2-touchkey.c
linux-4.14.10/drivers/input/keyboard/twl4030_keypad.c
linux-4.14.10/drivers/input/keyboard/w90p910_keypad.c
linux-4.14.10/drivers/input/keyboard/xtkbd.c
linux-4.14.10/drivers/input/matrix-keymap.c
linux-4.14.10/drivers/input/misc/
linux-4.14.10/drivers/input/misc/88pm80x_onkey.c
linux-4.14.10/drivers/input/misc/88pm860x_onkey.c
linux-4.14.10/drivers/input/misc/Kconfig
```

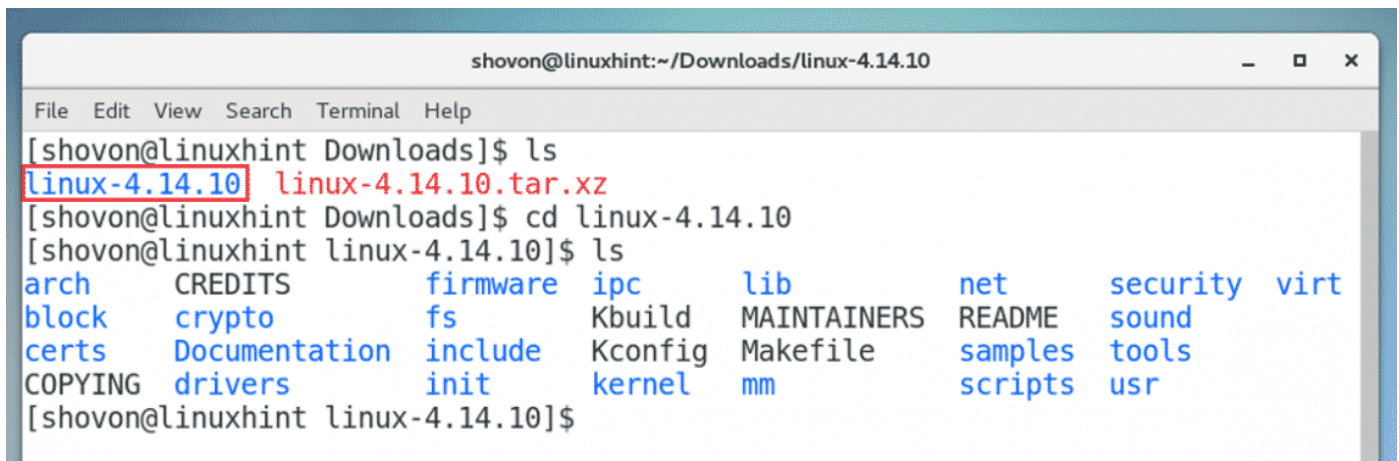
Once the file is extracted, you should see the following window.

A screenshot of a terminal window titled 'shovon@linuxhint:~/Downloads'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal displays a list of files and directories from the 'linux-4.14.10' directory. The files listed are: 'linux-4.14.10/virt/kvm/arm/vgic/vgic-its.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-kvm-device.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio-v2.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio-v3.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio.h', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-v2.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic-v3.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic.c', 'linux-4.14.10/virt/kvm/arm/vgic/vgic.h', 'linux-4.14.10/virt/kvm/async_pf.c', 'linux-4.14.10/virt/kvm/async_pf.h', 'linux-4.14.10/virt/kvm/coalesced_mmio.c', 'linux-4.14.10/virt/kvm/coalesced_mmio.h', 'linux-4.14.10/virt/kvm/eventfd.c', 'linux-4.14.10/virt/kvm/irqchip.c', 'linux-4.14.10/virt/kvm/kvm_main.c', 'linux-4.14.10/virt/kvm/vfio.c', 'linux-4.14.10/virt/kvm/vfio.h', 'linux-4.14.10/virt/lib/', 'linux-4.14.10/virt/lib/Kconfig', 'linux-4.14.10/virt/lib/Makefile', and 'linux-4.14.10/virt/lib/irqbypass.c'. The prompt '[shovon@linuxhint Downloads]\$' is at the bottom.

```
shovon@linuxhint:~/Downloads
File Edit View Search Terminal Help
linux-4.14.10/virt/kvm/arm/vgic/vgic-its.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-kvm-device.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio-v2.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio-v3.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-mmio.h
linux-4.14.10/virt/kvm/arm/vgic/vgic-v2.c
linux-4.14.10/virt/kvm/arm/vgic/vgic-v3.c
linux-4.14.10/virt/kvm/arm/vgic/vgic.c
linux-4.14.10/virt/kvm/arm/vgic/vgic.h
linux-4.14.10/virt/kvm/async_pf.c
linux-4.14.10/virt/kvm/async_pf.h
linux-4.14.10/virt/kvm/coalesced_mmio.c
linux-4.14.10/virt/kvm/coalesced_mmio.h
linux-4.14.10/virt/kvm/eventfd.c
linux-4.14.10/virt/kvm/irqchip.c
linux-4.14.10/virt/kvm/kvm_main.c
linux-4.14.10/virt/kvm/vfio.c
linux-4.14.10/virt/kvm/vfio.h
linux-4.14.10/virt/lib/
linux-4.14.10/virt/lib/Kconfig
linux-4.14.10/virt/lib/Makefile
linux-4.14.10/virt/lib/irqbypass.c
[shovon@linuxhint Downloads]$
```

After extraction, you should see a new directory as marked red in the screenshot below. Navigate to the directory with the following command.

```
$ cd linux-4.14.10
```

```
shovon@linuxhint:~/Downloads/linux-4.14.10
File Edit View Search Terminal Help
[shovon@linuxhint Downloads]$ ls
linux-4.14.10 linux-4.14.10.tar.xz
[shovon@linuxhint Downloads]$ cd linux-4.14.10
[shovon@linuxhint linux-4.14.10]$ ls
arch      CREDITS      firmware  ipc         lib         net         security  virt
block     crypto       fs        Kbuild     MAINTAINERS README     sound
certs     Documentation include  Kconfig    Makefile   samples    tools
COPYING   drivers      init      kernel     mm         scripts    usr
[shovon@linuxhint linux-4.14.10]$
```

If you run the following command, you should see a list of config files used by the kernels that are installed on your system. You can run 'uname -r' command to find the one that you need. The filename should match with the output of the 'uname -r' command.

```
[shovon@linuxhint linux-4.14.10]$ ls /boot/config*
/boot/config-3.10.0-327.el7.x86_64 /boot/config-3.10.0-693.el7.x86_64
[shovon@linuxhint linux-4.14.10]$
```

Then copy the config file to the linux-4.14.10 directory with the following command:

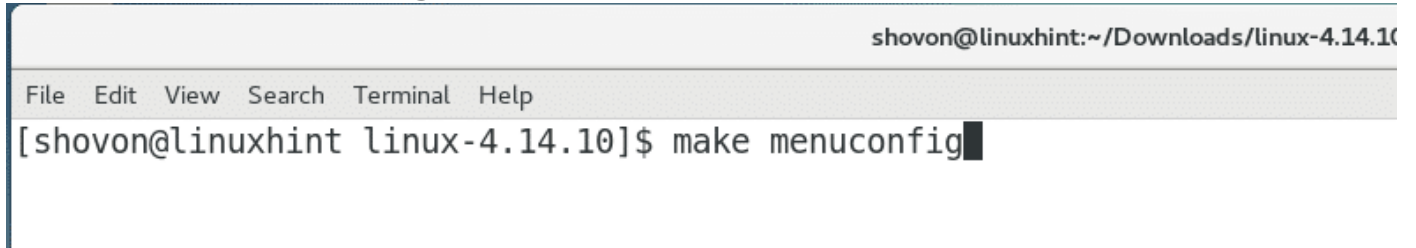

```
$ sudo cp -v /boot/config-3.10.0-693.el7.x86_
```

A terminal window titled 'shovon@linuxhint:~/Downloads/linux-4.14.10'. The terminal shows the command 'sudo cp -v /boot/config-3.10.0-693.el7.x86_64 .config' being executed. The output shows the file being copied and the command being run with verbose flags. The prompt returns to the user.

```
shovon@linuxhint:~/Downloads/linux-4.14.10  
File Edit View Search Terminal Help  
[shovon@linuxhint linux-4.14.10]$ sudo cp -v /boot/config-3.10.0-693.el7.x86_64 .config  
'/boot/config-3.10.0-693.el7.x86_64' -> '.config'  
[shovon@linuxhint linux-4.14.10]$
```

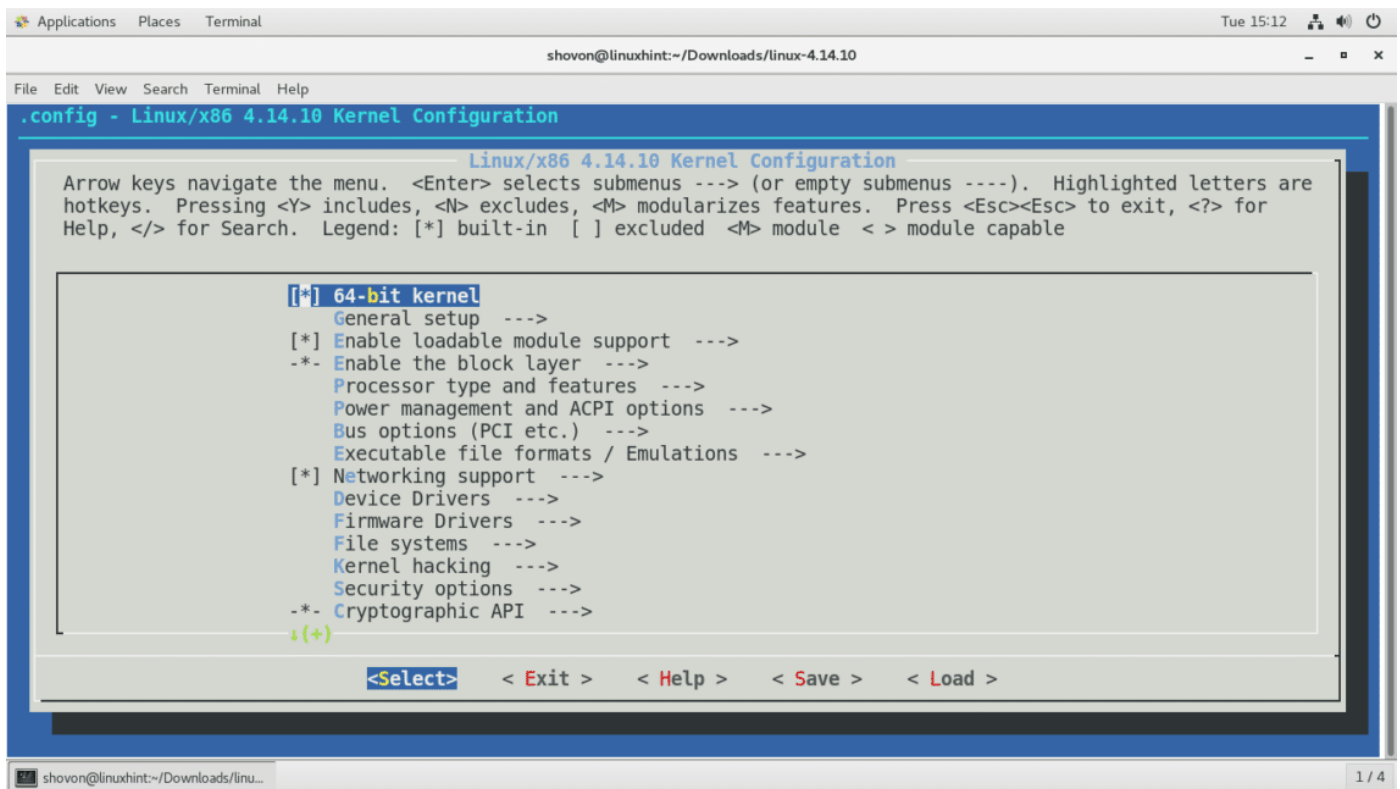
Now run the following command:

```
$ make menuconfig
```

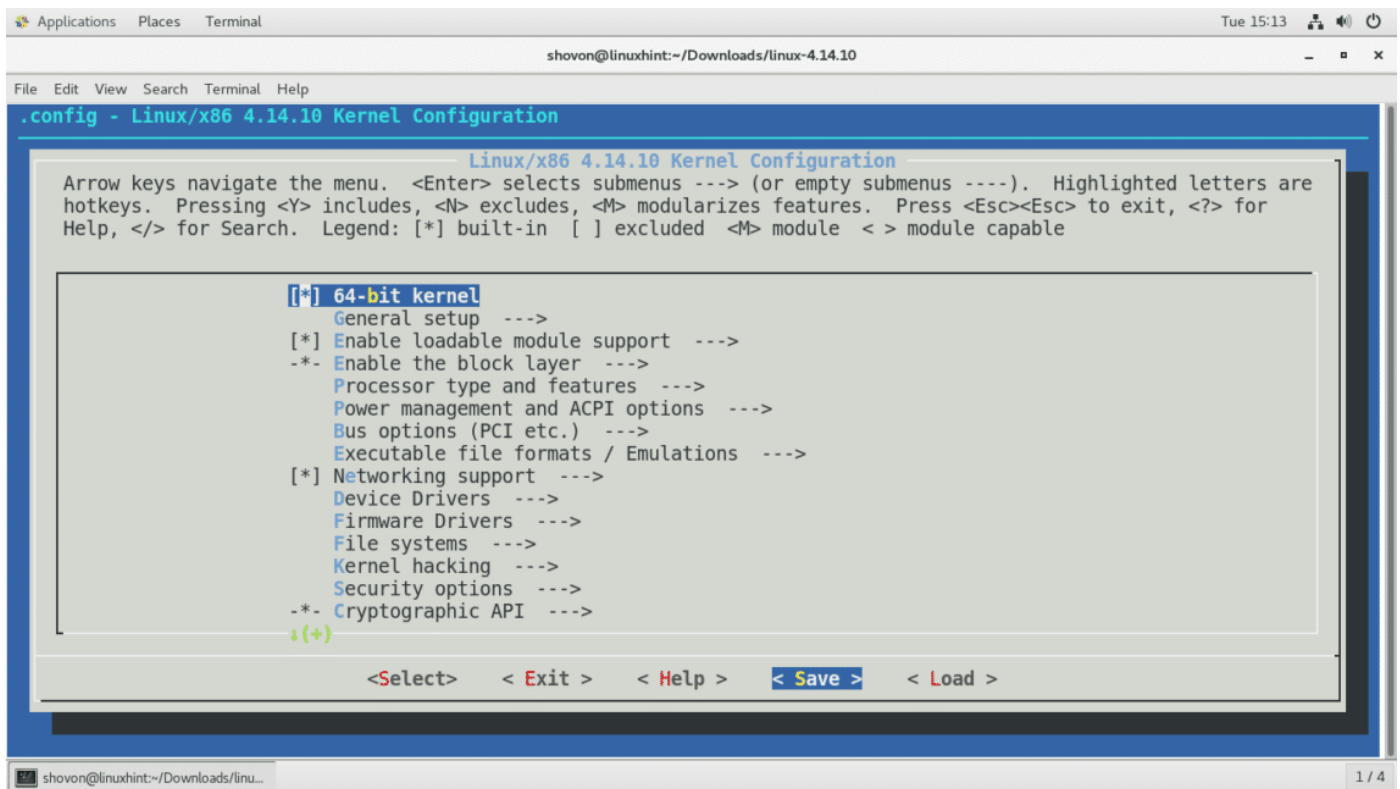
A terminal window titled 'shovon@linuxhint:~/Downloads/linux-4.14.10'. The terminal shows the command 'make menuconfig' being executed. The prompt returns to the user.

```
shovon@linuxhint:~/Downloads/linux-4.14.10  
File Edit View Search Terminal Help  
[shovon@linuxhint linux-4.14.10]$ make menuconfig
```

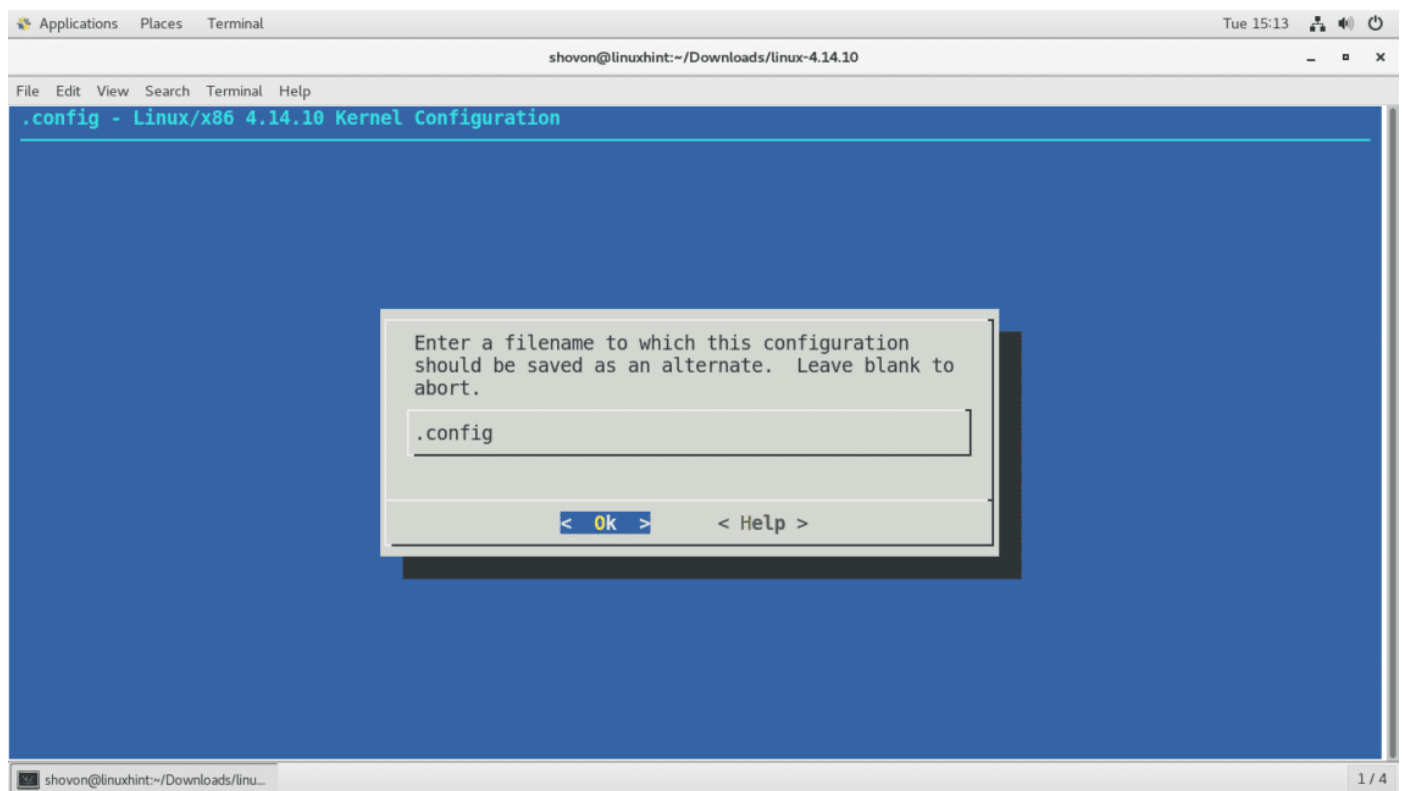
You should see the following window. This is where you enable or disable certain kernel features. If you don't know what to do here, then just leave the defaults.



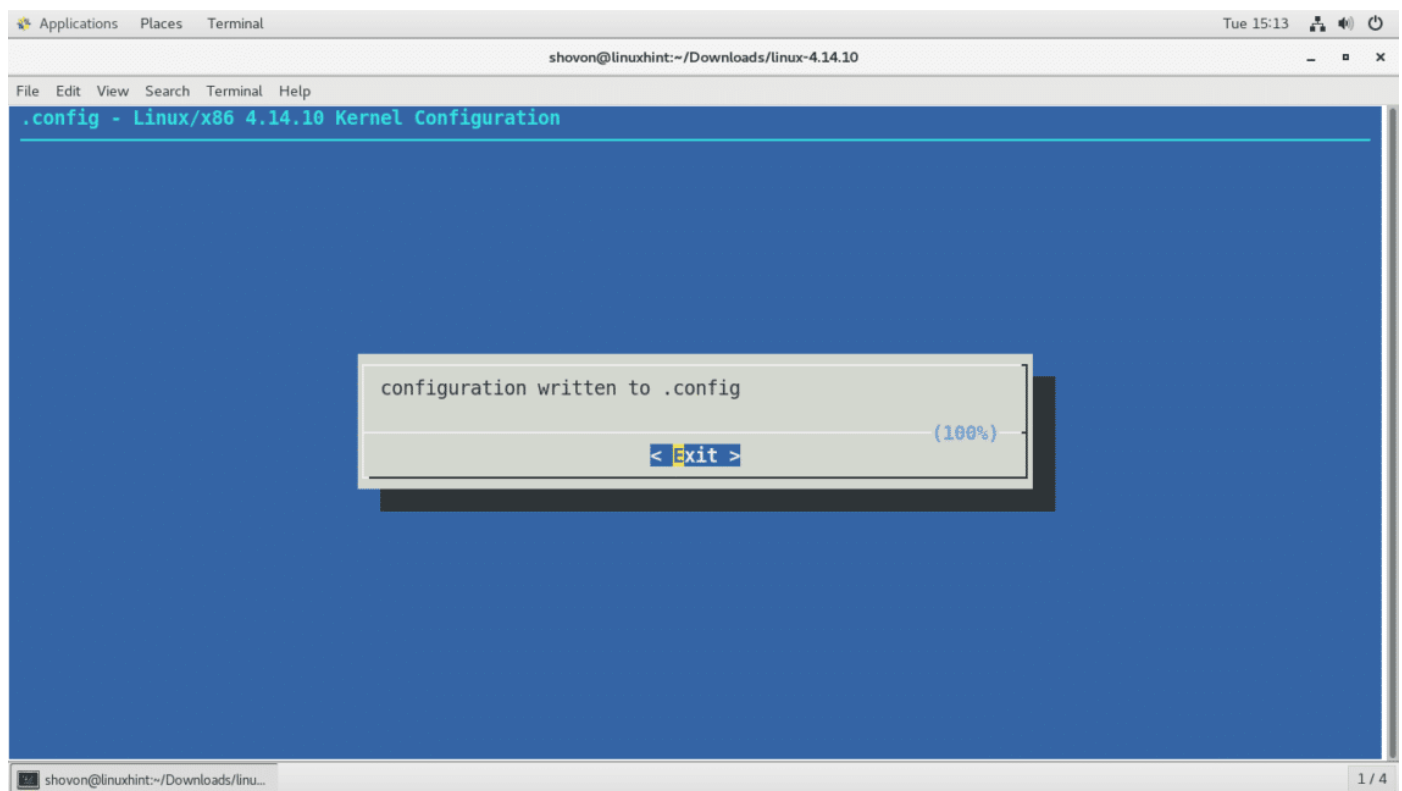
Once you're done, press <Left Arrow> button several times and go to "< Save >" as shown in the screenshot below. Then press <Enter>.



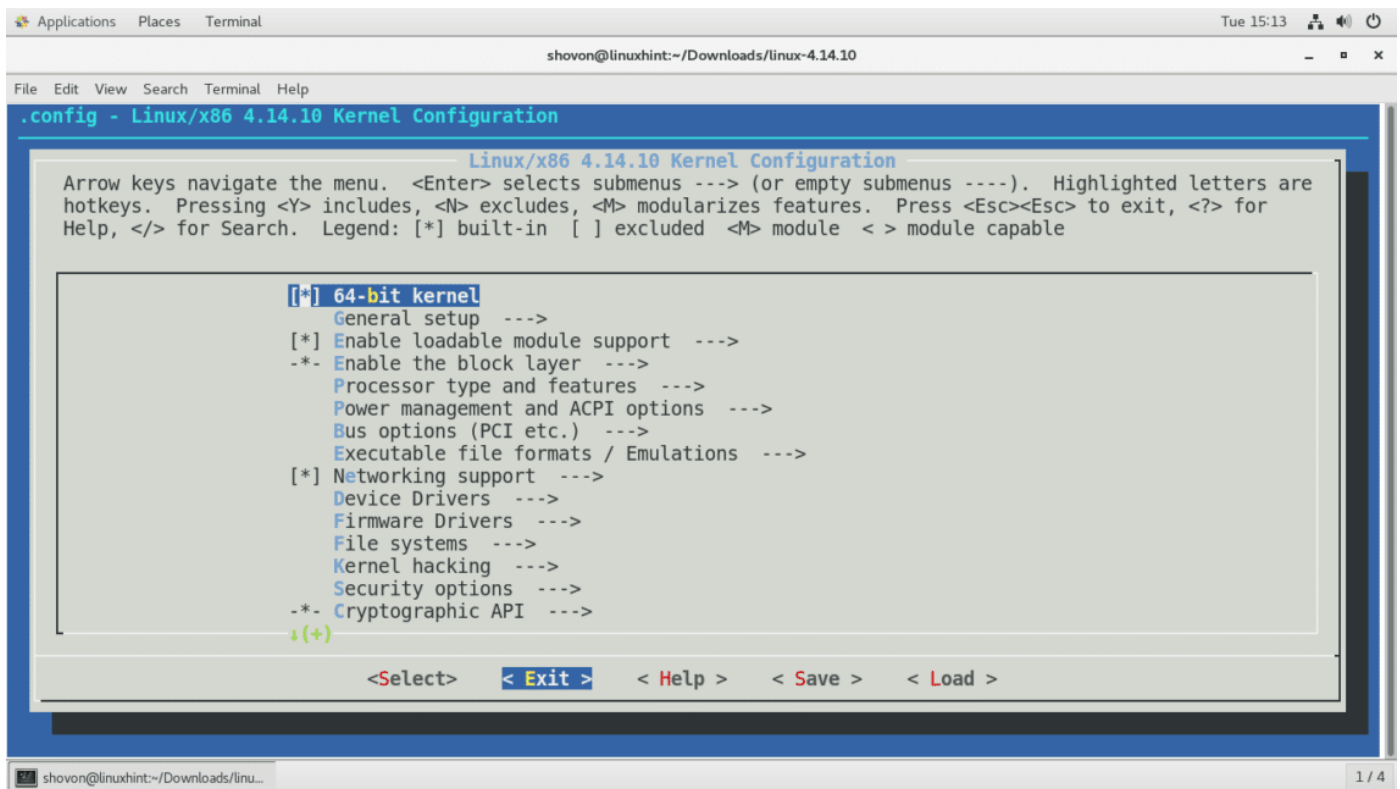
Then press <Enter> again.



Press <Enter> again.



Now navigate to "< Exit >" and press <Enter>



The .config file is updated for the new kernel.

```
[shovon@linuxhint linux-4.14.10]$ make menuconfig
HOSTCC  scripts/kconfig/mconf.o
HOSTCC  scripts/kconfig/lxdialog/checklist.o
HOSTCC  scripts/kconfig/lxdialog/util.o
HOSTCC  scripts/kconfig/lxdialog/inputbox.o
HOSTCC  scripts/kconfig/lxdialog/textbox.o
HOSTCC  scripts/kconfig/lxdialog/yesno.o
HOSTCC  scripts/kconfig/lxdialog/menubox.o
HOSTLD  scripts/kconfig/mconf
scripts/kconfig/mconf Kconfig
.config:655:warning: symbol value 'm' invalid for CPU_FREQ_STAT

*** End of the configuration.
*** Execute 'make' to start the build or try 'make help'.

[shovon@linuxhint linux-4.14.10]$
```

Before you start compiling the new kernels, make sure you have more than 20GB of free space on the filesystem where you're compiling the kernel.

You can check how much space you have available with the following command:

`$ df -h`

shovon@linuxhint: ~/Downloads/linux-4

File	Edit	View	Search	Terminal	Help
[shovon@linuxhint linux-4.14.10]\$ df -h					
Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/mapper/centos-root	37G	5.2G	32G	15%	/
devtmpfs	897M	0	897M	0%	/dev
tmpfs	912M	0	912M	0%	/dev/shm
tmpfs	912M	9.1M	903M	1%	/run
tmpfs	912M	0	912M	0%	/sys/fs/cgroup
/dev/sr0	8.1G	8.1G	0	100%	/media/CentOS
/dev/sda1	497M	190M	308M	39%	/boot
tmpfs	183M	4.0K	183M	1%	/run/user/42
tmpfs	183M	24K	183M	1%	/run/user/1000
[shovon@linuxhint linux-4.14.10]\$					

Now run the following command to start the compilation process:

`$ make rpm-pkg`

```
File Edit View Search Terminal Help
[shovon@linuxhint linux-4.14.10]$ make rpm-pkg
  CHK      include/config/kernel.release
  UPD      include/config/kernel.release
make clean
/bin/sh ./scripts/package/mkspec >./kernel.spec
  TAR      kernel-4.14.10.tar.gz
```

The kernel should be compiling just fine. It should take a long time.

```
shovon@linuxhint:~/Downloads/linux-4.14.10
File Edit View Search Terminal Help
[shovon@linuxhint linux-4.14.10]$ make rpm-pkg
  CHK      include/config/kernel.release
make clean
/bin/sh ./scripts/package/mkspec >./kernel.spec
  TAR      kernel-4.14.10.tar.gz
rpmbuild --target x86_64 -ta kernel-4.14.10.tar.gz
Building target platforms: x86_64
Building for target x86_64
Executing(%prep): /bin/sh -e /var/tmp/rpm-tmp.jMN33Y
+ umask 022
+ cd /home/shovon/rpmbuild/BUILD
+ cd /home/shovon/rpmbuild/BUILD
+ rm -rf kernel-4.14.10
+ /usr/bin/gzip -dc /home/shovon/Downloads/linux-4.14.10/kernel-4.14.10.tar.gz
+ /usr/bin/tar -xf -
+ STATUS=0
+ '[' 0 -ne 0 ']'
+ cd kernel-4.14.10
+ /usr/bin/chmod -Rf a+rX,u+w,g-w,o-w .
+ exit 0
Executing(%build): /bin/sh -e /var/tmp/rpm-tmp.Ry7S1Z
+ umask 022
+ cd /home/shovon/rpmbuild/BUILD
+ cd kernel-4.14.10
+ make clean
```

On completion, you should see the following window. Some rpm package file was created on the user's home directory as you can see from the screenshot.


```

shovon@linuxhint: ~/Downloads/linux-4.14.10
File Edit View Search Terminal Help
Requires(interp): /bin/sh /bin/sh /bin/sh
Requires(rpmlib): rpmlib(CompressedFileNames) <= 3.0.4-1 rpmlib(FileDigests) <= 4.6.0-1 rpmlib(PayloadFilesHavePrefix) <= 4.0-1
Requires(post): /bin/sh
Requires(preun): /bin/sh
Requires(postun): /bin/sh
Processing files: kernel-headers-4.14.10-1.x86_64
Provides: kernel-headers = 4.14.10 kernel-headers = 4.14.10-1 kernel-headers(x86-64) = 4.14.10-1
Requires(rpmlib): rpmlib(CompressedFileNames) <= 3.0.4-1 rpmlib(FileDigests) <= 4.6.0-1 rpmlib(PayloadFilesHavePrefix) <= 4.0-1
Obsoletes: kernel-headers
Processing files: kernel-devel-4.14.10-1.x86_64
Provides: kernel-devel = 4.14.10-1 kernel-devel(x86-64) = 4.14.10-1
Requires(rpmlib): rpmlib(FileDigests) <= 4.6.0-1 rpmlib(PayloadFilesHavePrefix) <= 4.0-1 rpmlib(CompressedFileNames) <= 3.0.4-1
Checking for unpackaged file(s): /usr/lib/rpm/check-files /home/shovon/rpmbuild/BUILDROOT/kernel-4.14.10-1.x86_64
warning: Could not canonicalize hostname: linuxhint
Wrote: /home/shovon/rpmbuild/SRPMS/kernel-4.14.10-1.src.rpm
Wrote: /home/shovon/rpmbuild/RPMS/x86_64/kernel-4.14.10-1.x86_64.rpm
Wrote: /home/shovon/rpmbuild/RPMS/x86_64/kernel-headers-4.14.10-1.x86_64.rpm
Wrote: /home/shovon/rpmbuild/RPMS/x86_64/kernel-devel-4.14.10-1.x86_64.rpm
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.Utl60c
+ umask 022
+ cd /home/shovon/rpmbuild/BUILD
+ cd kernel-4.14.10
+ rm -rf /home/shovon/rpmbuild/BUILDROOT/kernel-4.14.10-1.x86_64
+ exit 0
rm kernel-4.14.10.tar.gz kernel.spec
[shovon@linuxhint linux-4.14.10]$

```

The generated rpm package files.

```

shovon@linuxhint: ~/Downloads/linux-4.14.10
File Edit View Search Terminal Help
[shovon@linuxhint linux-4.14.10]$ ls ~/rpmbuild/RPMS/x86_64/
kernel-4.14.10-1.x86_64.rpm kernel-devel-4.14.10-1.x86_64.rpm kernel-headers-4.14.10-1.x86_64.rpm
[shovon@linuxhint linux-4.14.10]$

```

Now you can run the following command to install the rpm packages:

```

$ sudo rpm -iUv ~/rpmbuild/RPMS/
[shovon@linuxhint linux-4.14.10]$ sudo rpm -iUv ~/rpmbuild/RPMS/x86_64/*.rpm
Preparing packages...
kernel-headers-4.14.10-1.x86_64
kernel-devel-4.14.10-1.x86_64
kernel-4.14.10-1.x86_64
kernel-headers-3.10.0-693.11.1.el7.x86_64
kernel-3.10.0-693.el7.x86_64
kernel-3.10.0-327.el7.x86_64
[shovon@linuxhint linux-4.14.10]$

```

Once the installation is complete, run the following command to restart your computer.

```
$ reboot
```

shovon@linuxl

File Edit View Search Terminal Help

```
[shovon@linuxhint linux-4.14.10]$ reboot
```

Once your computer starts, you can run the following command to check the version of the kernel that you're currently using.

```
$ uname -r
```

You should see that it's the version that you just installed. For me, it is '4.14.10'.

shovon@linuxhint:~

File Edit View Search Terminal Help

```
[shovon@linuxhint ~]$ uname -r  
4.14.10  
[shovon@linuxhint ~]$
```

So that's how you compile the latest kernel from source and use it on CentOS 7. Thanks for reading this article.