



链滴

# Debian 11 编译安装最新的 5.18 内核

作者: [lanlandezei](#)

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Latest Release

5.18

mainline:	<b>5.18</b>	2022-05-22	<a href="#">[tarball]</a> <a href="#">[pgp]</a> <a href="#">[patch]</a>	<a href="#">[view diff]</a> <a href="#">[browse]</a>
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longterm:	<b>4.19.245</b>	2022-05-25	<a href="#">[tarball]</a> <a href="#">[pgp]</a> <a href="#">[patch]</a> <a href="#">[inc. patch]</a>	<a href="#">[view diff]</a> <a href="#">[browse]</a> <a href="#">[changelog]</a>
longterm:	<b>4.14.281</b>	2022-05-25	<a href="#">[tarball]</a> <a href="#">[pgp]</a> <a href="#">[patch]</a> <a href="#">[inc. patch]</a>	<a href="#">[view diff]</a> <a href="#">[browse]</a> <a href="#">[changelog]</a>
longterm:	<b>4.9.316</b>	2022-05-25	<a href="#">[tarball]</a> <a href="#">[pgp]</a> <a href="#">[patch]</a> <a href="#">[inc. patch]</a>	<a href="#">[view diff]</a> <a href="#">[browse]</a> <a href="#">[changelog]</a>
linux-next:	<b>next-20220527</b>	2022-05-27		<a href="#">[browse]</a>

## 编译安装环境

更新

```
apt update  
apt upgrade
```

安装编译所需的软件包

```
apt install build-essential libncurses5-dev gcc libssl-dev bc libelf-dev flex bison rsync
```

下载压缩包

```
wget https://cdn.kernel.org/pub/linux/kernel/v5.x/linux-5.18.tar.xz
```

解压进入目录

```
tar xvf linux-5.18.tar.xz  
cd linux-5.18
```

## 复制配置文件

现在我们必须将引导配置复制到“linux-5.18”目录中。我们这样做是因为要弄清楚要启用什么内核

块，要禁用什么才能获得一个正常工作的系统，需要做很多工作。所以我们可以只使用当前内核正在用的配置。

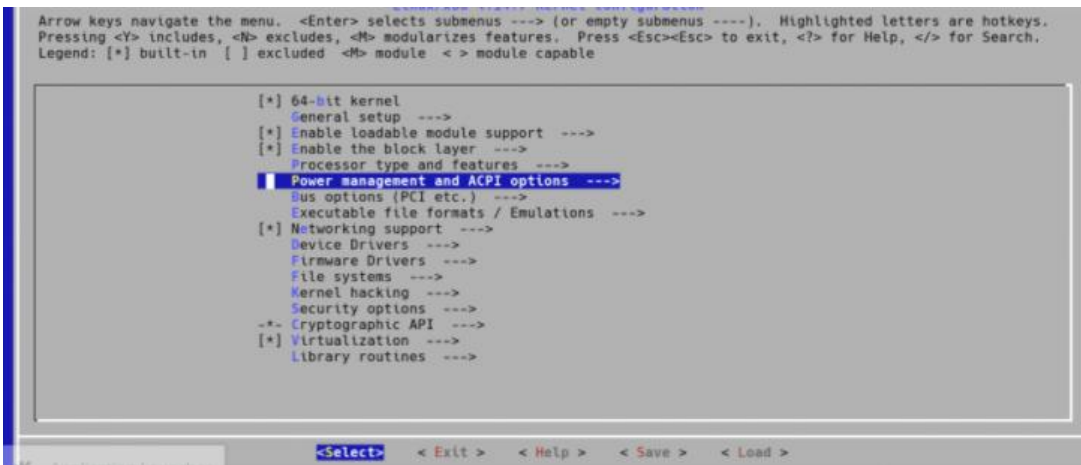
新内核可能有很多旧内核没有的新特性。因此，最好运行以下命令将旧配置文件转换为新配置文件。则我们会被问到很多对您来说可能没有意义的问题。

```
root@debian:~# cp -v /boot/config-5.10.0-14-cloud-amd64 .config  
'/boot/config-5.10.0-14-cloud-amd64' -> '.config/config-5.10.0-14-cloud-amd64'
```

## 编辑配置

make menuconfig

您将看到以下窗口。从这里您可以启用和禁用特定的内核功能。如果您不知道在此处做什么，请保留认值。



选择 Save 保存退出

## 开始编译

我的 VPS 是2CPU 所以使用 -j 2 选项

```
make -j 2 deb-pkg
```

## 报错

```
make[2]: *** [debian/rules:7: build-arch] Error 2  
dpkg-buildpackage: error: debian/rules binary subprocess returned exit status 2  
make[1]: *** [scripts/Makefile.package:77: deb-pkg] Error 2  
make: *** [Makefile:1542: deb-pkg] Error 2
```

```
make[2]: *** [debian/rules:7: build-arch] Error 2  
dpkg-buildpackage: error: debian/rules binary subprocess returned exit status 2  
make[1]: *** [scripts/Makefile.package:77: deb-pkg] Error 2  
make: *** [Makefile:1542: deb-pkg] Error 2
```

解决方法: 编辑linux-5.18目录下.config

```
# Certificates for signature checking  
#  
CONFIG_MODULE_SIG_KEY=""  
CONFIG_SYSTEM_TRUSTED_KEYRING=y  
CONFIG_SYSTEM_TRUSTED_KEYS="debian/certs/debian-uefi-certs.pem"  
# CONFIG_SYSTEM_EXTRA_CERTIFICATE is not set  
CONFIG_SECONDARY_TRUSTED_KEYRING=y  
CONFIG_SYSTEM_BLACKLIST_KEYRING=y  
CONFIG_SYSTEM_BLACKLIST_HASH_LIST=""
```

```
CONFIG_SYSTEM_TRUSTED_KEYS="debian/certs/debian-uefi-certs.pem" # 找到
CONFIG_SYSTEM_TRUSTED_KEYS="" # 改为空值
```

## 编译完成

完成后root目录下 有3个deb包

```
/root/
```

名称	大小 (KB)	上次修改
..		
linux-5.18		2022-05-28 .
linux-upstream_5.18.0.orig.tar.gz	207 102	2022-05-28 .
linux-upstream_5.18.0-1_amd64.changes	2	2022-05-28 .
linux-upstream_5.18.0-1_amd64.buildinfo	5	2022-05-28 .
linux-upstream_5.18.0-1.dsc	1	2022-05-28 .
linux-upstream_5.18.0-1.diff.gz	266	2022-05-28 .
linux-libc-dev_5.18.0-1_amd64.deb	1 210	2022-05-28 .
linux-image-5.18.0_5.18.0-1_amd64.deb	53 573	2022-05-28 .
linux-headers-5.18.0_5.18.0-1_amd64.deb	8 365	2022-05-28 .
..		2022-05-28 .

## 安装deb包

```
dpkg -i ./linux-*.deb
```

```
root@debian:~# dpkg -i ./linux-*.deb
Selecting previously unselected package linux-headers-5.18.0.
(Reading database ... 36385 files and directories currently installed.)
Preparing to unpack .../linux-headers-5.18.0_5.18.0-1_amd64.deb ...
Unpacking linux-headers-5.18.0 (5.18.0-1) ...
Selecting previously unselected package linux-image-5.18.0.
Preparing to unpack .../linux-image-5.18.0_5.18.0-1_amd64.deb ...
Unpacking linux-image-5.18.0 (5.18.0-1) ...
Preparing to unpack .../linux-libc-dev_5.18.0-1_amd64.deb ...
Unpacking linux-libc-dev:amd64 (5.18.0-1) over (5.10.113-1) ...
Setting up linux-headers-5.18.0 (5.18.0-1) ...
Setting up linux-image-5.18.0 (5.18.0-1) ...
update-initramfs: Generating /boot/initrd.img-5.18.0
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.18.0
Found initrd image: /boot/initrd.img-5.18.0
Found linux image: /boot/vmlinuz-5.10.0-14-amd64
Found initrd image: /boot/initrd.img-5.10.0-14-amd64
Found linux image: /boot/vmlinuz-5.10.0-13-amd64
Found initrd image: /boot/initrd.img-5.10.0-13-amd64
done
Setting up linux-libc-dev:amd64 (5.18.0-1) ...
root@debian:~# uname -a
```

查看当前安装的内核，已经有5.18的了

```
dpkg --get-selections | grep linux-image
```

```
root@debian:~# dpkg --get-selections | grep linux-image
ii linux-image-5.10.0-13-amd64 5.10.106-1 amd64 Linux 5.10 for 64-bit PCs (signed)
ii linux-image-5.10.0-14-amd64 5.10.113-1 amd64 Linux 5.10 for 64-bit PCs (signed)
ii linux-image-5.18.0 5.18.0-1 amd64 Linux kernel, version 5.18.0
ii linux-image-amd64 5.10.113-1 amd64 Linux for 64-bit PCs (meta-package)
root@debian:~# ^C
```

## 更新grub2配置

```
update-grub2
```

重启 **reboot** 内核启动成功变成5.18了

```
Linux debian 5.18.0 #1 SMP PREEMPT_DYNAMIC Sat May 28 01:34:22 EDT 2022 x86_64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat May 28 04:36:05 2022 from [REDACTED]
root@debian:~# uname -a
Linux debian 5.18.0 #1 SMP PREEMPT_DYNAMIC Sat May 28 01:34:22 EDT 2022 x86_64 GNU/Linux
root@debian:~# █
```

## 删除旧内核，再更新下grub2配置

```
dpkg --get-selections | grep linux-image
apt remove --purge linux-image-5.10.0-13-amd64
apt autoremove
apt autoclean
update-grub2
```

参考文章:

<https://linuxhint.com/how-to-upgrade-kernel-of-debian-9-stretch-from-source/>

<https://gitlab.com/CalcProgrammer1/OpenRGB/-/issues/950>

<https://askubuntu.com/questions/1245882/kernel-make-menuconfig-error>