

<https://github.com/YanHaoChen/Learning-SDN/tree/master/Switch/OpenvSwitch/InstallwithSourceCode>

```
pinyu@sdnlab: ~  
File Edit View Search Terminal Help  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
pinyu@sdnlab:~$ gcc  
  
Command 'gcc' not found, but can be installed with:  
  
sudo apt install gcc  
  
pinyu@sdnlab:~$ gcc -v  
  
Command 'gcc' not found, but can be installed with:  
  
sudo apt install gcc
```

Error :

<https://askubuntu.com/questions/1109982/e-could-not-get-lock-var-lib-dpkg-lock-frontend-open-11-resource-temporari>

```
* 命令 - 记事本  
编辑(E) 格式(O) 视图(V) 帮助  
E: Could not get lock /var/lib/dpkg/lock-frontend - open (11: Resource temporarily unavailable)  
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontend),  
is another process using it?  
  
sol :  
sudo killall apt apt-get // no use  
---  
sudo rm /var/lib/apt/lists/lock  
sudo rm /var/cache/apt/archives/lock  
sudo rm /var/lib/dpkg/lock*  
---  
sudo dpkg --configure -a  
---  
sudo apt update
```

```
Activities Terminal 五 13:38
pinyu@sdnlab: ~
File Edit View Search Terminal Help
Preparing to unpack .../13-linux-libc-dev_4.15.0-74.84_amd64.deb ...
Unpacking linux-libc-dev:amd64 (4.15.0-74.84) ...
Selecting previously unselected package libc-dev:amd64.
Preparing to unpack .../14-libc-dev_2.27-3ubuntu1_amd64.deb ...
Unpacking libc-dev:amd64 (2.27-3ubuntu1) ...
Selecting previously unselected package manpages-dev.
Preparing to unpack .../15-manpages-dev_4.15-1_all.deb ...
Unpacking manpages-dev (4.15-1) ...
Setting up libquadmath0:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Setting up libatomic1:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Setting up libasan4:amd64 (7.4.0-1ubuntu1-18.04.1) ...
Setting up libcilkrts5:amd64 (7.4.0-1ubuntu1-18.04.1) ...
Setting up libubsan0:amd64 (7.4.0-1ubuntu1-18.04.1) ...
Setting up libtsan0:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Setting up linux-libc-dev:amd64 (4.15.0-74.84) ...
Setting up libsan0:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Setting up libmpx2:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Setting up libc-dev-bin (2.27-3ubuntu1) ...
Setting up manpages-dev (4.15-1) ...
Setting up libc-dev:amd64 (2.27-3ubuntu1) ...
Setting up libitm1:amd64 (8.3.0-6ubuntu1-18.04.1) ...
Setting up libgcc-7-dev:amd64 (7.4.0-1ubuntu1-18.04.1) ...
Setting up gcc-7 (7.4.0-1ubuntu1-18.04.1) ...
Setting up gcc (4:7.4.0-1ubuntu2.3) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
pinyu@sdnlab:~$
pinyu@sdnlab:~$ gcc -v
Using built-in specs.
COLLECT_LTO_WRAPPER=/usr/lib/gcc/x86_64-linux-gnu/7/lto-wrapper
OFFLOAD_TARGET_NAMES=nvptx-none
OFFLOAD_TARGET_DEFAULT=1
Target: x86_64-linux-gnu
Configured with: ../src/configure -v --with-pkgversion='Ubuntu 7.4.0-1ubuntu1-18.04.1' --with-bugurl=file:///usr/share/doc/gcc-7/README.Bugs --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --prefix=/usr --with-gcc-major-version-only --program-suffix=-7 --program-prefix=x86_64-linux-gnu- --enable-shared --enable-linker-build-id --libexecdir=/usr/lib --without-included-gettext --enable-threads=posix --libdir=/usr/lib --enable-nls --with-sysroot=/ --enable-clocale=gnu --enable-libstdcxx-debug --enable-libstdcxx-time=yes --with-default-libstdcxx-abi=new --enable-gnu-unique-object --disable-vtable-verify --enable-libmpx --enable-plugin --enable-default-pie --with-system-zlib --with-target-system-zlib --enable-objc-gc=auto --enable-multitarget --disable-werror --with-arch=32=i686 --with-abi=m64 --with-multilib-list=m32,m64,mx32 --enable-multilib --with-tune=generic --enable-offload-targets=nvptx-none --without-cuda-driver --enable-checking=release --build=x86_64-linux-gnu --host=x86_64-linux-gnu --target=x86_64-linux-gnu
Thread model: posix
gcc version 7.4.0 (Ubuntu 7.4.0-1ubuntu1-18.04.1)
pinyu@sdnlab:~$
```

Error:

<https://askubuntu.com/questions/219545/dpkg-error-dpkg-status-database-is-locked-by-another-process>

```
pinyu@sdnlab:~$ sudo apt install libssl-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  libssl-doc
The following NEW packages will be installed:
  libssl-dev
0 upgraded, 1 newly installed, 0 to remove and 126 not upgraded.
Need to get 1566 kB of archives.
After this operation, 7846 kB of additional disk space will be used.
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libssl-dev amd64 1.1.1-1ubuntu2.1~18.04.5 [1566 kB]
Fetched 1566 kB in 1s (1647 kB/s)
Selecting previously unselected package libssl-dev:amd64.
(Reading database ... 166194 files and directories currently installed.)
Preparing to unpack .../libssl-dev_1.1.1-1ubuntu2.1~18.04.5_amd64.deb ...
Unpacking libssl-dev:amd64 (1.1.1-1ubuntu2.1~18.04.5) ...
Setting up libssl-dev:amd64 (1.1.1-1ubuntu2.1~18.04.5) ...
pinyu@sdnlab:~$ sudo apt install openssl
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssl is already the newest version (1.1.1-1ubuntu2.1~18.04.5).
openssl set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 126 not upgraded.
```

```
pinyu@sdnlab:~$ sudo apt-get install libcapi-ng-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  libcapi-ng-dev
0 upgraded, 1 newly installed, 0 to remove and 126 not upgraded.
Need to get 21.7 kB of archives.
After this operation, 74.8 kB of additional disk space will be used.
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libcapi-ng-dev amd64 0.7.7-3.1 [21.7 kB]
Fetched 21.7 kB in 0s (75.3 kB/s)
Selecting previously unselected package libcapi-ng-dev.
(Reading database ... 166311 files and directories currently installed.)
Preparing to unpack .../libcapi-ng-dev_0.7.7-3.1_amd64.deb ...
Unpacking libcapi-ng-dev (0.7.7-3.1) ...
Setting up libcapi-ng-dev (0.7.7-3.1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
```

```

p1nyu@sdnlab:~$ sudo apt install python
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpython-stdlib libpython2.7-minimal libpython2.7-stdlib python-minimal python2.7 python2.7-minimal
Suggested packages:
  python-doc python-tk python2.7-doc binfmt-support
The following NEW packages will be installed:
  libpython-stdlib python python-minimal python2.7 python2.7-minimal
The following packages will be upgraded:
  libpython2.7 libpython2.7-minimal libpython2.7-stdlib
3 upgraded, 5 newly installed, 0 to remove and 123 not upgraded.
Need to get 5021 kB of archives.
After this operation, 5001 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython2.7 amd64 2.7.17-1-18.04 [1053 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython2.7-stdlib amd64 2.7.17-1-18.04 [1915 kB]
Get:3 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython2.7-minimal amd64 2.7.17-1-18.04 [335 kB]
Get:4 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python2.7-minimal amd64 2.7.17-1-18.04 [1294 kB]
Get:5 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-minimal amd64 2.7.15-rc1-1 [28.1 kB]
Get:6 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python2.7 amd64 2.7.17-1-18.04 [248 kB]
Get:7 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libpython-stdlib amd64 2.7.15-rc1-1 [7620 B]
Get:8 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python amd64 2.7.15-rc1-1 [140 kB]
Fetched 5021 kB in 2s (2141 kB/s)
(Reading database ... 166339 files and directories currently installed.)
Preparing to unpack .../0-libpython2.7_2.7.17-1-18.04_amd64.deb ...
Unpacking libpython2.7:amd64 (2.7.17-1-18.04) over (2.7.15-4ubuntu4-18.04.2) ...
Preparing to unpack .../1-libpython2.7-stdlib_2.7.17-1-18.04_amd64.deb ...
Unpacking libpython2.7-stdlib:amd64 (2.7.17-1-18.04) over (2.7.15-4ubuntu4-18.04.2) ...
Preparing to unpack .../2-libpython2.7-minimal_2.7.17-1-18.04_amd64.deb ...
Unpacking libpython2.7-minimal:amd64 (2.7.17-1-18.04) over (2.7.15-4ubuntu4-18.04.2) ...
Selecting previously unselected package python2.7-minimal.
Preparing to unpack .../3-python2.7-minimal_2.7.17-1-18.04_amd64.deb ...
Unpacking python2.7-minimal (2.7.17-1-18.04) ...
Selecting previously unselected package python-minimal.
Preparing to unpack .../4-python-minimal_2.7.15-rc1-1_amd64.deb ...
Unpacking python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python2.7.
Preparing to unpack .../5-python2.7_2.7.17-1-18.04_amd64.deb ...
Unpacking python2.7 (2.7.17-1-18.04) ...
Selecting previously unselected package libpython-stdlib:amd64.
Preparing to unpack .../6-libpython-stdlib_2.7.15-rc1-1_amd64.deb ...
Unpacking libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up libpython2.7-minimal:amd64 (2.7.17-1-18.04) ...

```

```

p1nyu@sdnlab:~$ sudo apt-get install python-pip
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  build-essential dpkg-dev fakeroot g++ g++-7 libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libdpkg-perl libexpat1-dev
  libfakeroot libpython-all-dev libpython-dev libpython2.7-dev libstdc++7-dev make python-all python-all-dev python-asciicrypto python-cffi-backend
  python-crypto python-cryptography python-dbus python-enum34 python-gi python-idna python-ipaddress python-keyring python-keyrings.alt
  python-pkg-whl python-pkg-resources python-secretstorage python-setuptools python-six python-wheel python-xdg python2.7-dev
Suggested packages:
  debian-keyring g++-multilib g++-7-multilib gcc-7-doc libstdc++6-7-dbg git bzr libstdc++7-doc make-doc python-crypto-doc python-cryptography-doc
  python-cryptography-vectors python-dbus-dbg python-dbus-doc python-enum34-doc python-gi-cairo libkf5wallet-bin gir1.2-gnomekeyring-1.0 python-fs
  python-gdata python-keyczar python-secretstorage-doc python-setuptools-doc
The following NEW packages will be installed:
  build-essential dpkg-dev fakeroot g++ g++-7 libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libexpat1-dev libfakeroot
  libpython-all-dev libpython-dev libpython2.7-dev libstdc++7-dev make python-all python-all-dev python-asciicrypto python-cffi-backend python-crypto
  python-cryptography python-dbus python-enum34 python-gi python-idna python-ipaddress python-keyring python-keyrings.alt python-pip
  python-pkg-whl python-pkg-resources python-secretstorage python-setuptools python-six python-wheel python-xdg python2.7-dev
The following packages will be upgraded:
  libdpkg-perl
1 upgraded, 38 newly installed, 0 to remove and 122 not upgraded.
Need to get 42.2 MB of archives.
After this operation, 97.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libstdc++7-dev amd64 7.4.0-1ubuntu1-18.04.1 [1468 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 g++-7 amd64 7.4.0-1ubuntu1-18.04.1 [7574 kB]
Get:3 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 g++ amd64 4:7.4.0-1ubuntu2.3 [1568 B]
Get:4 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 make amd64 4.1-9.1ubuntu1 [154 kB]
Get:5 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libdpkg-perl all 1.19.0-5ubuntu2.3 [211 kB]
Get:6 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 dpkg-dev all 1.19.0-5ubuntu2.3 [607 kB]
Get:7 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 build-essential amd64 12.4ubuntu1 [4758 B]
Get:8 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libfakeroot amd64 1.22-2ubuntu1 [25.9 kB]
Get:9 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 fakeroot amd64 1.22-2ubuntu1 [62.3 kB]
Get:10 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libalgorithm-diff-perl all 1.19.0-3.1 [47.6 kB]
Get:11 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libalgorithm-diff-xs-perl amd64 0.04-5 [11.1 kB]
Get:12 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libalgorithm-merge-perl all 0.08-3 [12.0 kB]
Get:13 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libexpat1-dev amd64 2.2.5-3ubuntu0.2 [122 kB]
Get:14 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython2.7-dev amd64 2.7.17-1-18.04 [28.3 MB]
Get:15 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libpython-dev amd64 2.7.15-rc1-1 [7684 B]
Get:16 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libpython-all-dev amd64 2.7.15-rc1-1 [1092 B]
Get:17 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-all amd64 2.7.15-rc1-1 [1076 B]
Get:18 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python2.7-dev amd64 2.7.17-1-18.04 [277 kB]
Get:19 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-dev amd64 2.7.15-rc1-1 [1256 B]
Get:20 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-all-dev amd64 2.7.15-rc1-1 [1100 B]
Get:21 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-asciicrypto all 0.24.0-1 [72.7 kB]
Get:22 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 python-cffi-backend amd64 1.11.5-1 [52.1 kB]
p1nyu@sdnlab:~$ sudo pip install six
The directory '/home/p1nyu/.cache/pip/http' or its parent directory is not owned by the current user and the cache has been disabled. Please check the
permissions and owner of that directory. If executing pip with sudo, you may want sudo's -H flag.
The directory '/home/p1nyu/.cache/pip' or its parent directory is not owned by the current user and caching wheels has been disabled. Check the permissi
ons and owner of that directory. If executing pip with sudo, you may want sudo's -H flag.
Requirement already satisfied: six in /usr/lib/python2.7/dist-packages

```

```

pinyu@sdnlab:~$ sudo apt-get install libtool
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  autotools-dev libltdl-dev
Suggested packages:
  libtool-doc autoconf automaken gfortran | fortran95-compiler gcj-jdk
The following NEW packages will be installed:
  autotools-dev libltdl-dev libtool
0 upgraded, 3 newly installed, 0 to remove and 122 not upgraded.
Need to get 395 kB of archives.
After this operation, 2361 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 autotools-dev all 20180224.1 [39.6 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libltdl-dev amd64 2.4.6-2 [162 kB]
Get:3 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libtool all 2.4.6-2 [194 kB]
Fetched 395 kB in 0s (862 kB/s)
Selecting previously unselected package autotools-dev.
(Reading database ... 168567 files and directories currently installed.)
Preparing to unpack .../autotools-dev_20180224.1_all.deb ...
Unpacking autotools-dev (20180224.1) ...
Selecting previously unselected package libltdl-dev:amd64.
Preparing to unpack .../libltdl-dev_2.4.6-2_amd64.deb ...
Unpacking libltdl-dev:amd64 (2.4.6-2) ...
Selecting previously unselected package libtool.
Preparing to unpack .../libtool_2.4.6-2_all.deb ...
Unpacking libtool (2.4.6-2) ...
Setting up libltdl-dev:amd64 (2.4.6-2) ...
Setting up autotools-dev (20180224.1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Setting up libtool (2.4.6-2) ...

```

```

pinyu@sdnlab:~$ sudo apt-get install autoconf
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  automake libsigsegv2 m4
Suggested packages:
  autoconf-archive gnu-standards autoconf-doc m4-doc
The following NEW packages will be installed:
  autoconf automake libsigsegv2 m4
0 upgraded, 4 newly installed, 0 to remove and 122 not upgraded.
Need to get 1043 kB of archives.
After this operation, 3833 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 libsigsegv2 amd64 2.12-1 [14.7 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 m4 amd64 1.4.18-1 [197 kB]
Get:3 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 autoconf all 2.69-11 [322 kB]
Get:4 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 automake all 1:1.15.1-3ubuntu2 [509 kB]
Fetched 1043 kB in 1s (1230 kB/s)
Selecting previously unselected package libsigsegv2:amd64.
(Reading database ... 168655 files and directories currently installed.)
Preparing to unpack .../libsigsegv2_2.12-1_amd64.deb ...
Unpacking libsigsegv2:amd64 (2.12-1) ...
Selecting previously unselected package m4.
Preparing to unpack .../archives/m4_1.4.18-1_amd64.deb ...
Unpacking m4 (1.4.18-1) ...
Selecting previously unselected package autoconf.
Preparing to unpack .../autoconf_2.69-11_all.deb ...
Unpacking autoconf (2.69-11) ...
Selecting previously unselected package automake.
Preparing to unpack .../automake_1%3a1.15.1-3ubuntu2_all.deb ...
Unpacking automake (1:1.15.1-3ubuntu2) ...
Setting up libsigsegv2:amd64 (2.12-1) ...
Processing triggers for install-info (6.5.0.dfsg.1-2) ...
Setting up m4 (1.4.18-1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Setting up autoconf (2.69-11) ...
Setting up automake (1:1.15.1-3ubuntu2) ...
update-alternatives: using /usr/bin/automake-1.15 to provide /usr/bin/automake (automake) in auto mode

```

```

pinyu@sdnlab:~$ sudo apt-get install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 122 not upgraded.
Need to get 4738 kB of archives.
After this operation, 33.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://tw.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all 0.17025-1 [22.8 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man all 1:2.17.1-1ubuntu0.5 [803 kB]
Get:3 http://tw.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git amd64 1:2.17.1-1ubuntu0.5 [3912 kB]
Fetched 4738 kB in 2s (1966 kB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 168926 files and directories currently installed.)
Preparing to unpack .../liberror-perl_0.17025-1_all.deb ...
Unpacking liberror-perl (0.17025-1) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1%3a2.17.1-1ubuntu0.5_all.deb ...
Unpacking git-man (1:2.17.1-1ubuntu0.5) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1%3a2.17.1-1ubuntu0.5_amd64.deb ...
Unpacking git (1:2.17.1-1ubuntu0.5) ...
Setting up git-man (1:2.17.1-1ubuntu0.5) ...
Setting up liberror-perl (0.17025-1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Setting up git (1:2.17.1-1ubuntu0.5) ...

```

```

pinyu@sdnlab:~$ git clone https://github.com/openvswitch/ovs.git
Cloning into 'ovs'...
remote: Enumerating objects: 116, done.
remote: Counting objects: 100% (116/116), done.
remote: Compressing objects: 100% (43/43), done.
remote: Total 149128 (delta 81), reused 97 (delta 73), pack-reused 149012
Receiving objects: 100% (149128/149128), 93.49 MiB | 3.64 MiB/s, done.
Resolving deltas: 100% (118263/118263), done.

```

```

pinyu@sdnlab:~$ ls
Desktop  Documents  Downloads  examples.desktop  Music  ovs  Pictures  Public  Templates  Videos

```

```

pinyu@sdnlab:~$ git checkout v2.7.0
fatal: not a git repository (or any of the parent directories): .git
pinyu@sdnlab:~$ cd ovs
pinyu@sdnlab:~/ovs$ git checkout v2.7.0
Note: checking out 'v2.7.0'.

```

You are in 'detached HEAD' state. You can look around, make experimental changes and commit them, and you can discard any commits you make in this state without impacting any branches by performing another checkout.

If you want to create a new branch to retain commits you create, you may do so (now or later) by using `-b` with the checkout command again. Example:

```
git checkout -b <new-branch-name>
```

HEAD is now at c298ef781 Set release date for 2.7.0.

```

pinyu@sdnlab:~/ovs$ ls
acinclude.m4  build-aux      datapath      include      Makefile.am  ofproto      README.rst   third-party  Vagrantfile-FreeBSD  xenserver
appveyor.yml  configure.ac   datapath-windows  lib          manpages.mk  ovs         rhel         tutorial      vswitchd
AUTHORS.rst   CONTRIBUTING.rst  debian        m4           NEWS         ovsdb       selinux     utilities    vtep
boot.sh       COPYING        Documentation    MAINTAINERS.rst  NOTICE      python      tests       Vagrantfile  windows
pinyu@sdnlab:~/ovs$ ./boot.sh
libtoolize: putting auxiliary files in AC_CONFIG_AUX_DIR, 'build-aux'.
libtoolize: copying file 'build-aux/ltmain.sh'
libtoolize: putting macros in AC_CONFIG_MACRO_DIRS, 'm4'.
libtoolize: copying file 'm4/libtool.m4'
libtoolize: copying file 'm4/ltoptions.m4'
libtoolize: copying file 'm4/ltosugar.m4'
libtoolize: copying file 'm4/ltversion.m4'
libtoolize: copying file 'm4/lt-obsolete.m4'
configure.ac:24: installing 'build-aux/compile'
configure.ac:43: installing 'build-aux/config.guess'
configure.ac:43: installing 'build-aux/config.sub'
configure.ac:22: installing 'build-aux/install-sh'
configure.ac:22: installing 'build-aux/missing'
Makefile.am: installing 'build-aux/depcomp'

```


- 安裝 Linux kernel module 的參數給定方式

```
pinyu@sdnlab:~/ovs$ ./configure --with-linux=/lib/modules/$(uname -r)/build
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... no
checking for mawk... mawk
checking whether make sets $(MAKE)... yes
checking whether make supports nested variables... yes
checking how to create a pax tar archive... gnutar
checking for style of include used by make... GNU
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether gcc understands -c and -o together... yes
checking dependency style of gcc... gcc3
checking for gcc option to accept ISO C99... none needed
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /bin/grep
checking for fgrep... /bin/grep -F
checking for egrep... /bin/grep -E
checking for perl... /usr/bin/perl
checking for ANSI C header files... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for memory.h... yes
checking for strings.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for unistd.h... yes
checking minix/config.h usability... no
checking minix/config.h presence... no
checking for minix/config.h... no
checking whether it is safe to define __EXTENSIONS__... yes
checking whether byte ordering is bigendian... no
checking for special C compiler options needed for large files... no
checking for _FILE_OFFSET_BITS value needed for large files... no
checking build system type... x86_64-pc-linux-gnu
```

```
configure: error: Linux kernel in /lib/modules/5.0.0-37-generic/build is version 5.0.21, but version newer than 4.9.x is not supported (please refer to the FAQ for advice)
```

Alternative:

不知怎麼設參數 ...

```
pinyu@sdnlab:~/ovs$ ./configure
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... no
checking for mawk... mawk
checking whether make sets $(MAKE)... yes
checking whether make supports nested variables... yes
checking how to create a pax tar archive... gnutar
checking for style of include used by make... GNU
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether gcc understands -c and -o together... yes
checking dependency style of gcc... gcc3
checking for gcc option to accept ISO C99... none needed
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /bin/grep
checking for fgrep... /bin/grep -F
checking for egrep... /bin/grep -E
checking for perl... /usr/bin/perl
checking for ANSI C header files... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for memory.h... yes
checking for strings.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for unistd.h... yes
checking minix/config.h usability... no
checking minix/config.h presence... no
checking for minix/config.h... no
checking whether it is safe to define __EXTENSIONS__... yes
checking whether byte ordering is bigendian... no
checking for special C compiler options needed for large files... no
checking for FILE OFFSET BITS value needed for large files... no
```

```
Activities Terminal 五 14:34 pinyu@sdnlab: ~/ovs
File Edit View Search Terminal Help
lo lib/dhparams.c 88\
mv -f sdebase.Tpo sdebase.Plo
libtool: compile: gcc -DHAVE_CONFIG_H -I. -I ./include -I ./include -I ./lib -I ./lib -I /usr/include -Wstrict-prototypes -Wall -Wextra -Wno-sign-compare -Wpointer-arith -Wformat -Wformat-security -Wswitch-enum -Wunused-parameter -Wbad-function-cast -Wcast-align -Wstrict-prototypes -Wold-style-definition -Wmissing-prototypes -Wmissing-field-initializers -fno-strict-aliasing -Wswitch-bool -Wlogical-not-parentheses -Wsizeof-array-argument -Wbool-compare -Wshift-negative-value -Wduplicated-cond -g -O2 -MT lib/dhparams.lo -MD -MP -MF lib/.deps/dhparams.Tpo -c lib/dhparams.c -o lib/dhparams.o
lib/dhparams.c:2:12: error: static declaration of 'get_dh1024' follows non-static declaration
static DH *get_dh1024(void)
           ^
In file included from lib/dhparams.c:1:0:
./lib/dhparams.h:22:5: note: previous declaration of 'get_dh1024' was here
DH *get_dh1024(void);
lib/dhparams.c:38:12: error: static declaration of 'get_dh2048' follows non-static declaration
static DH *get_dh2048(void)
           ^
In file included from lib/dhparams.c:1:0:
./lib/dhparams.h:23:5: note: previous declaration of 'get_dh2048' was here
DH *get_dh2048(void);
lib/dhparams.c:87:12: error: static declaration of 'get_dh4096' follows non-static declaration
static DH *get_dh4096(void)
           ^
In file included from lib/dhparams.c:1:0:
./lib/dhparams.h:24:5: note: previous declaration of 'get_dh4096' was here
DH *get_dh4096(void);
lib/dhparams.c:87:12: warning: 'get_dh4096' defined but not used [-Wunused-function]
static DH *get_dh4096(void)
           ^
lib/dhparams.c:38:12: warning: 'get_dh2048' defined but not used [-Wunused-function]
static DH *get_dh2048(void)
           ^
lib/dhparams.c:2:12: warning: 'get_dh1024' defined but not used [-Wunused-function]
static DH *get_dh1024(void)
           ^
Makefile:4424: recipe for target 'lib/dhparams.lo' failed
make[2]: *** [lib/dhparams.lo] Error 1
make[2]: Leaving directory '/home/pinyu/ovs'
Makefile:5111: recipe for target 'all-recursive' failed
make[1]: *** [all-recursive] Error 1
make[1]: Leaving directory '/home/pinyu/ovs'
Makefile:2953: recipe for target 'all' failed
make: *** [all] Error 2
pinyu@sdnlab:~/ovs$
```

2020/1/17

嘗試官網的 ()+

https://sites.google.com/a/cnsrl.cycu.edu.tw/da-shu-bi-ji/openvswitch/install_ovs

(安裝 OVS 大叔筆記)+

https://blog.csdn.net/zhongbeida_xue/article/details/78115668?fbclid=IwAR0SJY0LeIbnH

[DKH2ktClrDQZzCQSdk-O5rJ8HRyZ987mqDX4i7ExZqTyzs](#) (openvswitch 2.7 安

装过程记录 总结)


```
Activities Terminal 五 14:54
pinyu@sdnlab: ~/ovs

fedora.spec: rm openvswitch-fedora.spec.tmp; else mv openvswitch-fedora.spec.tmp rhel/openvswitch-fedora.spec; fi
(printnr 1043 Generated automatically -- do not modify! -- buffer-read-only: t --\n' && sed -e 's,[@]VERSION[@],2.12.90,g') \
< ./xenserver/openvswitch-xen.spec.in > openvswitch-xen.spec.tmp || exit 1; \
if cmp -s openvswitch-xen.spec.tmp xenserver/openvswitch-xen.spec; then touch xenserver/openvswitch-xen.spec; rm openvswitch-xen.spec.tmp; else mv open
vswitch-xen.spec.tmp xenserver/openvswitch-xen.spec; fi
make[3]: Entering directory '/home/pinyu/ovs/datapath'
make[3]: Leaving directory '/home/pinyu/ovs/datapath'
touch -c manpage-check
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/intel-ext.h && \
touch include/openflow/intel-ext.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/netronome-ext.h && \
touch include/openflow/netronome-ext.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/nicira-ext.h && \
touch include/openflow/nicira-ext.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.0.h && \
touch include/openflow/openflow-1.0.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.1.h && \
touch include/openflow/openflow-1.1.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.2.h && \
touch include/openflow/openflow-1.2.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.3.h && \
touch include/openflow/openflow-1.3.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.4.h && \
touch include/openflow/openflow-1.4.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-1.5.h && \
touch include/openflow/openflow-1.5.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow-common.h
&& \
touch include/openflow/openflow-common.hstamp
PYTHONPATH=.:/python:"$PYTHONPATH PYTHONDONTWRITEBYTECODE=yes /usr/bin/python3 ./build-aux/check-structs -I./include include/openflow/openflow.h && \
touch include/openflow/openflow.hstamp
touch cxx-check
./build-aux/cksum-schema-check vswitchd/vswitch.ovsschema vswitchd/vswitch.ovsschema.stamp
./build-aux/cksum-schema-check ovsdb/ server.ovsschema ovsdb/ server.ovsschema.stamp
./build-aux/cksum-schema-check vtep/vtep.ovsschema vtep/vtep.ovsschema.stamp
make[2]: Leaving directory '/home/pinyu/ovs'
make[1]: Leaving directory '/home/pinyu/ovs'
pinyu@sdnlab:~/ovs$
```

安裝 OVS

首先先下載 OVS

編譯 OVS

The screenshot shows a web browser window displaying the GitHub repository for Open vSwitch (OVS). The page title is "compiling OVS outside". The content includes a "Note" section stating "CFLAGS are not applied to the EXTRA_CFLAGS variable" and a "To build the Linux kernel module" section. A terminal window is overlaid on the page, showing the following commands:

```
cd ovs/
./boot.sh
./configure --with-linux=/lib/modules/$(uname -r)/build
sudo make
sudo make install
sudo make modules_install
```

模組載入

```
sudo modprobe gre
sudo modprobe openvswitch
sudo modprobe libcrc32c
```

設定 → 啟動：

Starting

On Unix-alike systems, such as BSDs and Linux, starting the Open vSwitch suite of daemons is a simple process. Open vSwitch includes a shell script, and helpers, called ovs-ctl which automates much of the tasks for starting and stopping ovssdb-server, and ovs-vswitchd. After installation, the daemons can be started by using the ovs-ctl utility. This will take care to setup initial conditions, and start the daemons in the correct order. The ovs-ctl utility is located in '\$(pkgdatadir)/scripts', and defaults to '/usr/local/share/openvswitch/scripts'. An example after install might be:

```
$ export PATH=$PATH:/usr/local/share/openvswitch/scripts
$ ovs-ctl start
```

```
root@sdnlab:/home/pinyu/ovs# export PATH=$PATH:/usr/local/share/openvswitch/scripts
root@sdnlab:/home/pinyu/ovs# ovs-ctl start
* /usr/local/etc/openvswitch/conf.db does not exist
* Creating empty database /usr/local/etc/openvswitch/conf.db
* Starting ovssdb-server
* system ID not configured, please use --system-id
* Configuring Open vSwitch system IDs
* Starting ovs-vswitchd
* Enabling remote OVSDb managers
```

驗證：

```
root@sdnlab:/home/pinyu/ovs# sudo ovs-vsctl add-br br0
root@sdnlab:/home/pinyu/ovs# ovs-vsctl show
6abe975b-72dd-4c11-bae7-d155570bf010
    Bridge br0
        Port br0
            Interface br0
                type: internal
    ovs_version: "2.12.90"
```