

# do\_homework

April 26, 2023

## 1 Getting the code

```
[13]: PROJECTROOT=$(pwd)
      # check current system release code name
      lsb_release -c
```

Codename: jammy

```
[14]: PROGRAM=cmatrix
      pull-lp-source $PROGRAM jammy
```

```
Traceback (most recent call last):
  File "/usr/bin/pull-lp-source", line 11, in <module>
    PullPkg.main(distro='ubuntu', pull='source')
  File "/usr/lib/python3/dist-packages/ubuntutools/pullpkg.py", line 107, in
main
    cls(*args, **kwargs).pull()
  File "/usr/lib/python3/dist-packages/ubuntutools/pullpkg.py", line 400, in
pull
    params = self._get_params(options)
  File "/usr/lib/python3/dist-packages/ubuntutools/pullpkg.py", line 318, in
_get_params
    (r, v, p) = self.parse_release_and_version(distro, options['release'],
  File "/usr/lib/python3/dist-packages/ubuntutools/pullpkg.py", line 267, in
parse_release_and_version
    (release, pocket) = self.parse_release(distro, release)
  File "/usr/lib/python3/dist-packages/ubuntutools/pullpkg.py", line 254, in
parse_release
    d = Distribution(distro)
  File "/usr/lib/python3/dist-packages/ubuntutools/lp/lpapicache.py", line 137,
in __new__
    if isinstance(data, str) and data.startswith(str(Launchpad._root_uri)):
  File "/usr/lib/python3/dist-packages/ubuntutools/lp/lpapicache.py", line 108,
in __getattr__
    self.login_anonymously()
  File "/usr/lib/python3/dist-packages/ubuntutools/lp/lpapicache.py", line 89,
in login_anonymously
    self.__lp = LP.login_anonymously('ubuntu-dev-tools', service,
```

```

File "/usr/lib/python3/dist-packages/launchpadlib/launchpad.py", line 494, in
login_anonymously
    return cls(
File "/usr/lib/python3/dist-packages/launchpadlib/launchpad.py", line 230, in
__init__
    super(Launchpad, self).__init__(
File "/usr/lib/python3/dist-packages/lazr/restfulclient/resource.py", line
477, in __init__
    self._browser.get(root_resource, 'application/json')
File "/usr/lib/python3/dist-packages/lazr/restfulclient/_browser.py", line
439, in get
    response, content = self._request(url, extra_headers=headers)
File "/usr/lib/python3/dist-packages/lazr/restfulclient/_browser.py", line
389, in _request
    response, content = self._request_and_retry(
File "/usr/lib/python3/dist-packages/lazr/restfulclient/_browser.py", line
359, in _request_and_retry
    response, content = self._connection.request(
File "/usr/lib/python3/dist-packages/httplib2/__init__.py", line 1725, in
request
    (response, content) = self._request(
File "/usr/lib/python3/dist-packages/launchpadlib/launchpad.py", line 144, in
_request
    response, content = super(Launchpad0AuthAwareHttp, self)._request(
File "/usr/lib/python3/dist-packages/lazr/restfulclient/_browser.py", line
184, in _request
    return super(RestfulHttp, self)._request(
File "/usr/lib/python3/dist-packages/httplib2/__init__.py", line 1441, in
_request
    (response, content) = self._conn_request(conn, request_uri, method, body,
headers)
File "/usr/lib/python3/dist-packages/httplib2/__init__.py", line 1363, in
_conn_request
    conn.connect()
File "/usr/lib/python3/dist-packages/httplib2/__init__.py", line 1155, in
connect
    self.sock = self._context.wrap_socket(sock, server_hostname=self.host)
File "/usr/lib/python3.10/ssl.py", line 513, in wrap_socket
    return self.sslsocket_class._create(
File "/usr/lib/python3.10/ssl.py", line 1071, in _create
    self.do_handshake()
File "/usr/lib/python3.10/ssl.py", line 1342, in do_handshake
    self._sslobj.do_handshake()
ssl.SSLZeroReturnError: TLS/SSL connection has been closed (EOF) (_ssl.c:997)

```

There's a network issue. Try to use `apt source <package>`

```
[27]: apt source $PROGRAM | tail # suppress some output
```

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

```
Get:1 http://ftp.sjtu.edu.cn/ubuntu jammy/universe cmatrix 2.0-3 (dsc) [1,901 B]
Get:2 http://ftp.sjtu.edu.cn/ubuntu jammy/universe cmatrix 2.0-3 (tar) [206 kB]
Get:3 http://ftp.sjtu.edu.cn/ubuntu jammy/universe cmatrix 2.0-3 (diff) [4,436 B]
dpkg-source: info: extracting cmatrix in cmatrix-2.0
dpkg-source: info: unpacking cmatrix_2.0.orig.tar.gz
dpkg-source: info: unpacking cmatrix_2.0-3.debian.tar.xz
dpkg-source: info: using patch list from debian/patches/series
dpkg-source: info: applying 0001-cmatrix.1-Improvement-on-man-
page.patch
dpkg-source: info: applying 0002-Fix-78.patch
Fetched 212 kB in 1s (291 kB/s)
```

```
[28]: ls
```

```
cmatrix-2.0                cmatrix_2.0-3.dsc
do_homework.ipynb
cmatrix_2.0-3.debian.tar.xz cmatrix_2.0.orig.tar.gz
```

## 2 Create a new patch through quilt

Add the follow file into quilt patch: - CMakeLists.txt - Makefile.am - debian/cmatrix.postinst - testing.sh

Those are the files that will be modified/added

```
[29]: cd cmatrix-2.0
      quilt new "0003-take-home-test.patch"
      quilt add "CMakeLists.txt" "Makefile.am" "debian/cmatrix.postinst" "testing.sh"
      ↪ # add
      quilt files # check
      cd $PROJECTDIR
```

```
Patch 0003-take-home-test.patch is now on top
File CMakeLists.txt added to patch 0003-take-home-test.patch
File Makefile.am added to patch 0003-take-home-test.patch
File debian/cmatrix.postinst added to patch 0003-take-home-test.patch
File testing.sh added to patch 0003-take-home-test.patch
CMakeLists.txt
Makefile.am
debian/cmatrix.postinst
testing.sh
```

### 3 Adding testing.sh to source code

```
[30]: MY_SCRIPT="cmatrix-2.0/testing.sh"

cat > "$MY_SCRIPT" <<"EOF"
#!/bin/bash -

MESSAGE="this is a test from Clymber Loong"

if [ "$1" == "stdout" ] ; then
    echo "$MESSAGE" >&1
else
    echo "$MESSAGE" >&2
fi

exit $?
EOF

chmod +x "$MY_SCRIPT"
```

```
[31]: /bin/bash $MY_SCRIPT      # echo to stderr
/bin/bash $MY_SCRIPT stdout  # echo to stdout
```

```
this is a test from Clymber Loong
this is a test from Clymber Loong
```

### 4 Adding testing.sh to building and installation procedure

```
[32]: CMAKE_LISTS='cmatrix-2.0/CMakeLists.txt' # used by cmake
AUTOTOOLCFG='cmatrix-2.0/Makefile.am' # used by autoreconf

echo 'install(PROGRAMS testing.sh DESTINATION bin)' >> "$CMAKE_LISTS"
echo 'bin_SCRIPTS = testing.sh' >> "$AUTOTOOLCFG"
```

### 5 Add package maintainer scripts

```
[33]: POSTINST='cmatrix-2.0/debian/cmatrix.postinst'

cat > "$POSTINST" <<"EOF"
#!/bin/bash -
set -e

if [ "$1" == "configure" ]; then
    testing.sh stdout
fi
```

```
#DEBHELPER#
EOF

chmod +x "$POSTINST"
```

## 6 Save changes into quilt patch

```
[34]: cd cmatrix-2.0
      quilt diff
```

```
--- a/CMakeLists.txt
+++ b/CMakeLists.txt
@@ -71,3 +71,4 @@ if      (UNIX)
     endforeach ()
 endif ()

+install(PROGRAMS testing.sh DESTINATION bin)
--- a/Makefile.am
+++ b/Makefile.am
@@ -48,3 +48,4 @@ install-data-local:
     echo "Not installing matrix fonts"; \
    fi

+bin_SCRIPTS = testing.sh
--- /dev/null
+++ b/debian/cmatrix.postinst
@@ -0,0 +1,8 @@
+#!/bin/bash -
+set -e
+
+if [ "$1" == "configure" ]; then
+    testing.sh stdout
+fi
+
+#DEBHELPER#
--- /dev/null
+++ b/testing.sh
@@ -0,0 +1,11 @@
+#!/bin/bash -
+
+MESSAGE="this is a test from Clymber Loong"
+
+if [ "$1" == "stdout" ] ; then
+    echo "$MESSAGE" >&1
+else
```

```
+     echo "$MESSAGE" >&2
+fi
+
+exit $?
```

```
[35]: quilt refresh
```

```
Refreshed patch 0003-take-home-test.patch
```

```
[ ]: quilt header --dep3 -e
```

## 7 Documenting the testing feature

```
[ ]: dch -i
```

```
[36]: head debian/changelog
```

```
cmatrix (2.0-3ubuntu1) jammy; urgency=medium

* testing.sh: echo a testing message to stderr
* debian/cmatrix.postinst: echo a testing message to stdout
* CMakeLists.txt Makefile.am: handle install testing.sh procedure

-- Clymber Loong <clymberloong@icloud.com> Tue, 25 Apr 2023 16:17:23 +0800

cmatrix (2.0-3) unstable; urgency=medium
```

## 8 Testing the feature

Firstly build from the source to get a “xxx.dsc” file

```
[37]: debuild -S -d -us -uc
```

```
dpkg-buildpackage -us -uc -ui -S -d
dpkg-buildpackage: info: source package cmatrix
dpkg-buildpackage: info: source version 2.0-3ubuntu1
dpkg-buildpackage: info: source distribution jammy
dpkg-buildpackage: info: source changed by Clymber Loong
<clymberloong@icloud.com>
dpkg-source --before-build .
debian/rules clean
dh clean
dh_clean
dpkg-source -b .
dpkg-source: warning: Version number suggests Ubuntu changes, but Maintainer:
does not have Ubuntu address
```

```

dpkg-source: warning: Version number suggests Ubuntu changes, but there is no
XSBC-Original-Maintainer field
dpkg-source: info: using source format '3.0 (quilt)'
dpkg-source: info: building cmatrix using existing ./cmatrix_2.0.orig.tar.gz
dpkg-source: info: using patch list from debian/patches/series
patching file CMakeLists.txt
patching file Makefile.am
The next patch would create the file debian/cmatrix.postinst,
which already exists! Skipping patch.
1 out of 1 hunk ignored
patching file testing.sh
dpkg-source: info: the patch has fuzz which is not allowed, or is malformed
dpkg-source: info: if patch '0003-take-home-test.patch' is correctly applied by
quilt, use 'quilt refresh' to update it
dpkg-source: info: if the file is present in the unpacked source, make sure it
is also present in the orig tarball
dpkg-source: error: LC_ALL=C patch -t -F 0 -N -p1 -u -V never -E -b -B
.pc/0003-take-home-test.patch/ --reject-file=- <
cmatrix-2.0.orig.NvKBG8/debian/patches/0003-take-home-test.patch subprocess
returned exit status 1
dpkg-buildpackage: error: dpkg-source -b . subprocess returned exit status 2
debbuild: fatal error at line 1182:
dpkg-buildpackage -us -uc -ui -S -d failed

```

## 8.1 Fix the build issue

```

dpkg-source: info: the patch has fuzz which is not allowed, or is malformed
dpkg-source: error: LC_ALL=C patch -t -F 0 -N -p1 -u -V never -E -b -B .pc/0003-take-home-
test.patch/ --reject-file=- < cmatrix-2.0.orig.NvKBG8/debian/patches/0003-take-home-test.patch
subprocess returned exit status 1

```

I got stuck for a long time by the issue above. I was misled to dive into `quilt` usage. And then I was trying to figure out how to add the `postinst` into the `debian/*` directory. Finally figured out that the real problem is not `quilt` system, it's about the rules of `debian/*` in debian package.

According to dibian policy, <https://www.debian.org/doc/debian-policy/>, I should not add quilt patches over `/debian/` files. The patches are for the code only.

So, my solution is to remove the file `debian/cmatrix.postinst` from the quilt patch '0003-take-home-test.patch'.

```

[39]: # remove the file in quilt patch
quilt remove "debian/cmatrix.postinst"
quilt refresh
# The following command executing on a interactive termial, because jupyter_
↪notebook shell can't duel with it.
# quilt --dep3 -e

```

```
# git restore debian/cmatrix.postinst
```

File debian/cmatrix.postinst removed from patch 0003-take-home-test.patch

```
[48]: # rebuild the source
```

```
debuild -S -d -us -uc | tail -n 20
```

```
dpkg-buildpackage: info: source version 2.0-3ubuntu1
dpkg-buildpackage: info: source distribution jammy
dpkg-buildpackage: info: source changed by Clymber Loong
<clymberloong@icloud.com>
dpkg-source --before-build .
dpkg-source --before-build .
dpkg-source --before-build .
dh clean
dh_clean
dpkg-source -b .
dpkg-source: warning: Version number suggests Ubuntu changes, but Maintainer:
does not have Ubuntu address
dpkg-source: warning: Version number suggests Ubuntu changes, but there is no
XSBC-Original-Maintainer field
dpkg-source: info: using source format '3.0 (quilt)'
dpkg-source: info: building cmatrix using existing ./cmatrix_2.0.orig.tar.gz
dpkg-source: info: using patch list from debian/patches/series
dpkg-source: info: building cmatrix in cmatrix_2.0-3ubuntu1.debian.tar.xz
dpkg-source: info: building cmatrix in cmatrix_2.0-3ubuntu1.dsc
dpkg-genbuildinfo --build=source -O../cmatrix_2.0-3ubuntu1_source.buildinfo
dpkg-genchanges --build=source -O../cmatrix_2.0-3ubuntu1_source.changes
dpkg-genchanges: info: not including original source code in upload
dpkg-source --after-build .
dpkg-buildpackage: info: source-only, diff-only upload (original source NOT
included)
```

```
[44]: # check result
```

```
ls -l ../cmatrix_2.0-3ubuntu1*
```

```
../cmatrix_2.0-3ubuntu1.debian.tar.xz
../cmatrix_2.0-3ubuntu1.dsc
../cmatrix_2.0-3ubuntu1_source.build
../cmatrix_2.0-3ubuntu1_source.buildinfo
../cmatrix_2.0-3ubuntu1_source.changes
```

Bingo! Finally I figured it out. The lesson I learn is that I should learn more about the tools beforehand. A craftsman should master and take care of his tools. Specifically, there's more I need to learn about debian packaging.



## 8.2 Build .deb package

```
[53]: pbuilder-dist jammy build ../cmatrix_2.0-3ubuntu1.dsc | tail -n 20
```

```
Distribution data outdated. Please check for an update for distro-info-data. See
/usr/share/doc/distro-info-data/README.Debian for details.
W: /home/clymber/.pbuilderrc does not exist
ln: failed to create hard link '/home/clymber/pbuilder/aptcache/ubuntu/libmagic-
mgc_1%3a5.41-3_amd64.deb' =>
'/var/cache/pbuilder/build/51514/var/cache/apt/archives/libmagic-
mgc_1%3a5.41-3_amd64.deb': Invalid cross-device link
I: new cache content 'bsdextrautils_2.37.2-4ubuntu3_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/bsdextrautils_2.37.2-4ubuntu3_amd64.deb'
=> '/var/cache/pbuilder/build/51514/var/cache/apt/archives/bsdextrautils_2.37.2-
4ubuntu3_amd64.deb': Invalid cross-device link
I: new cache content 'autoconf_2.71-2_all.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/autoconf_2.71-2_all.deb' => '/var/cache/
pbuilder/build/51514/var/cache/apt/archives/autoconf_2.71-2_all.deb': Invalid
cross-device link
I: new cache content 'autotools-dev_20220109.1_all.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/autotools-dev_20220109.1_all.deb' =>
'/var/cache/pbuilder/build/51514/var/cache/apt/archives/autotools-
dev_20220109.1_all.deb': Invalid cross-device link
I: new cache content 'libdw1_0.186-1build1_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/libdw1_0.186-1build1_amd64.deb' => '/var
/cache/pbuilder/build/51514/var/cache/apt/archives/libdw1_0.186-
1build1_amd64.deb': Invalid cross-device link
I: new cache content 'libpipeline1_1.5.5-1_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/libpipeline1_1.5.5-1_amd64.deb' => '/var
/cache/pbuilder/build/51514/var/cache/apt/archives/libpipeline1_1.5.5-
1_amd64.deb': Invalid cross-device link
I: unmounting dev/ptmx filesystem
I: unmounting dev/pts filesystem
I: unmounting dev/shm filesystem
I: unmounting proc filesystem
I: unmounting sys filesystem
I: cleaning the build env
I: removing directory /var/cache/pbuilder/build/51514 and its
subdirectories
I: Current time: Tue Apr 25 17:30:07 HKT 2023
I: pbuilder-time-stamp: 1682415007
```

```
[54]: ls -l ~/pbuilder/jammy_result/cmatrix*.deb
```

```
/home/clymber/pbuilder/jammy_result/cmatrix_2.0-3ubuntu1_amd64.deb
/home/clymber/pbuilder/jammy_result/cmatrix-xfont_2.0-3ubuntu1_all.deb
```

### 8.3 Install the package

```
[55]: sudo dpkg -i /home/clymber/pbuilder/jammy_result/cmatrix_2.0-3ubuntu1_amd64.deb
```

```
dpkg: warning: downgrading cmatrix from 2.0-3ubuntu3 to 2.0-3ubuntu1
(Reading database ... 226814 files and directories currently installed.)
Preparing to unpack .../cmatrix_2.0-3ubuntu1_amd64.deb ...
Unpacking cmatrix (2.0-3ubuntu1) over (2.0-3ubuntu3) ...
Setting up cmatrix (2.0-3ubuntu1) ...
this is a test from Clymber Loong
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
Processing triggers for man-db (2.10.2-1) ...
```

```
[56]: testing.sh
```

```
this is a test from Clymber Loong
```

```
[2]: dpkg -S testing.sh; testing.sh
```

```
cmatrix: /usr/bin/testing.sh
this is a test from Clymber Loong
```

### 8.4 Rebuild package with sign

```
[57]: debuild -S -d
```

```
dpkg-buildpackage -us -uc -ui -S -d
dpkg-buildpackage: info: source package cmatrix
dpkg-buildpackage: info: source version 2.0-3ubuntu1
dpkg-buildpackage: info: source distribution jammy
dpkg-buildpackage: info: source changed by Clymber Loong
<clymberloong@icloud.com>
dpkg-source --before-build .
debian/rules clean
dh clean
dh_clean
dpkg-source -b .
```

```

dpkg-source: warning: Version number suggests Ubuntu changes, but Maintainer:
does not have Ubuntu address
dpkg-source: warning: Version number suggests Ubuntu changes, but there is no
XSBC-Original-Maintainer field
dpkg-source: info: using source format '3.0 (quilt)'
dpkg-source: info: building cmatrix using existing ./cmatrix_2.0.orig.tar.gz
dpkg-source: info: using patch list from debian/patches/series
dpkg-source: info: building cmatrix in cmatrix_2.0-3ubuntu1.debian.tar.xz
dpkg-source: info: building cmatrix in cmatrix_2.0-3ubuntu1.dsc
dpkg-genbuildinfo --build=source -O../cmatrix_2.0-3ubuntu1_source.buildinfo
dpkg-genchanges --build=source -O../cmatrix_2.0-3ubuntu1_source.changes
dpkg-genchanges: info: not including original source code in upload
dpkg-source --after-build .
dpkg-buildpackage: info: source-only, diff-only upload (original source NOT
included)
Now signing changes and any dsc files...
signfile dsc cmatrix_2.0-3ubuntu1.dsc Clymber Loong <clymberloong@icloud.com>

fixup_buildinfo cmatrix_2.0-3ubuntu1.dsc cmatrix_2.0-3ubuntu1_source.buildinfo
signfile buildinfo cmatrix_2.0-3ubuntu1_source.buildinfo Clymber Loong
<clymberloong@icloud.com>

fixup_changes dsc cmatrix_2.0-3ubuntu1.dsc cmatrix_2.0-3ubuntu1_source.changes
fixup_changes buildinfo cmatrix_2.0-3ubuntu1_source.buildinfo
cmatrix_2.0-3ubuntu1_source.changes
signfile changes cmatrix_2.0-3ubuntu1_source.changes Clymber Loong
<clymberloong@icloud.com>

Successfully signed dsc, buildinfo, changes files

```

```
[58]: pbuilder-dist jammy build ../cmatrix_2.0-3ubuntu1.dsc | tail -n 20
```

```

Distribution data outdated. Please check for an update for distro-info-data. See
/usr/share/doc/distro-info-data/README.Debian for details.
W: /home/clymber/.pbuildererrc does not exist
ln: failed to create hard link '/home/clymber/pbuilder/aptcache/ubuntu/libmagic-
mgc_1%3a5.41-3_amd64.deb' =>
'/var/cache/pbuilder/build/55220/var/cache/apt/archives/libmagic-
mgc_1%3a5.41-3_amd64.deb': Invalid cross-device link
I: new cache content 'bsdextrautils_2.37.2-4ubuntu3_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/bsdextrautils_2.37.2-4ubuntu3_amd64.deb'
=> '/var/cache/pbuilder/build/55220/var/cache/apt/archives/bsdextrautils_2.37.2-
4ubuntu3_amd64.deb': Invalid cross-device link
I: new cache content 'autoconf_2.71-2_all.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/autoconf_2.71-2_all.deb' => '/var/cache/
pbuilder/build/55220/var/cache/apt/archives/autoconf_2.71-2_all.deb': Invalid

```

```

cross-device link
I: new cache content 'autotools-dev_20220109.1_all.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/autotools-dev_20220109.1_all.deb' =>
'/var/cache/pbuilder/build/55220/var/cache/apt/archives/autotools-
dev_20220109.1_all.deb': Invalid cross-device link
I: new cache content 'libdw1_0.186-1build1_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/libdw1_0.186-1build1_amd64.deb' => '/var
/cache/pbuilder/build/55220/var/cache/apt/archives/libdw1_0.186-
1build1_amd64.deb': Invalid cross-device link
I: new cache content 'libpipeline1_1.5.5-1_amd64.deb' added
ln: failed to create hard link
'/home/clymber/pbuilder/aptcache/ubuntu/libpipeline1_1.5.5-1_amd64.deb' => '/var
/cache/pbuilder/build/55220/var/cache/apt/archives/libpipeline1_1.5.5-
1_amd64.deb': Invalid cross-device link
I: unmounting dev/ptmx filesystem
I: unmounting dev/pts filesystem
I: unmounting dev/shm filesystem
I: unmounting proc filesystem
I: unmounting sys filesystem
I: cleaning the build env
I: removing directory /var/cache/pbuilder/build/55220 and its
subdirectories
I: Current time: Tue Apr 25 17:39:03 HKT 2023
I: pbuilder-time-stamp: 1682415543

```

## 9 Generate a “debdiff” file

```
[59]: debdiff ../cmatrix_2.0-3.dsc ../cmatrix_2.0-3ubuntu1.dsc > ../1-2.0-3ubuntu1.
↪debdiff
```

```

gpgv: Signature made Wednesday, January 13, 2021 PM01:19:46 HKT
gpgv:          using RSA key 7E7729476D87D6F11D91ACCBC293E7B461825ACE
gpgv: Can't check signature: No public key
dpkg-source: warning: cannot verify signature
/home/clymber/GitHub/take-home-work/temp/cmatrix_2.0-3.dsc
gpgv: Signature made Tuesday, April 25, 2023 PM05:34:16 HKT
gpgv:          using RSA key 5E4D8A8E9BD95993E5B291939E0EB9D9B1BB3628
gpgv:          issuer "clymberloong@icloud.com"
gpgv: Can't check signature: No public key
dpkg-source: warning: cannot verify signature
/home/clymber/GitHub/take-home-work/temp/cmatrix_2.0-3ubuntu1.dsc

```

```
[60]: gpg --keyserver keyserver.ubuntu.com --recv-keys 61825ACE
```

```
gpg: key C293E7B461825ACE: public key "Boyuan Yang (Debian Project)
<byang@debian.org>" imported
gpg: Total number processed: 1
gpg:             imported: 1
```

```
[61]: gpg --no-default-keyring -a --export 61825ACE | gpg --no-default-keyring
↳--keyring ~/.gnupg/trustedkeys.gpg --import -
```

```
gpg: keybox '/home/clymber/.gnupg/trustedkeys.gpg' created
gpg: key C293E7B461825ACE: public key "Boyuan Yang (Debian Project)
<byang@debian.org>" imported
gpg: Total number processed: 1
gpg:             imported: 1
```

```
[63]: gpg --no-default-keyring -a --export B1BB3628 | gpg --no-default-keyring
↳--keyring ~/.gnupg/trustedkeys.gpg --import -
```

```
gpg: key 4518FD6F6008D599: public key "Clymber Loong <clymberloong@icloud.com>"
imported
gpg: Total number processed: 1
gpg:             imported: 1
gpg: marginals needed: 3  completes needed: 1  trust model: pgp
gpg: depth: 0  valid:   1  signed:    0  trust: 0-, 0q, 0n, 0m, 0f, 1u
```

```
[68]: debdiff ../cmatrix_2.0-3.dsc ../cmatrix_2.0-3ubuntu1.dsc > ../1-2.0-3ubuntu1.
↳debdiff
```

