

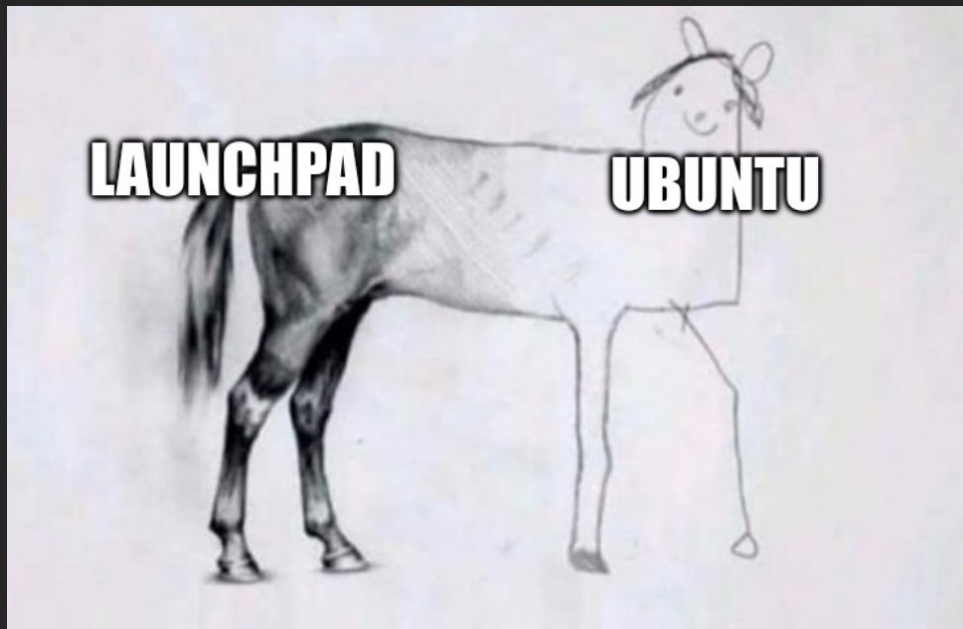


The journey of an Ubuntu package to an archive

Guruprasad
16 Nov 2025
UbuCon India 2025



Beware of what I (don't) know



I am not an Ubuntu/Debian developer ⚠



Source package

.dsc

Debian source control
file

.orig.tar.gz

Unmodified upstream
tarball

.debian.tar.gz

Debian packaging and
tweaks added by a
maintainer



Source package - .dsc file

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA512

Format: 3.0 (quilt)
Source: hello
Binary: hello
Architecture: any
Version: 2.10-5
Maintainer: Santiago Vila <sanvila@debian.org>
Homepage: https://www.gnu.org/software/hello/
Standards-Version: 4.7.2
Vcs-Browser: https://salsa.debian.org/sanvila/hello
Vcs-Git: https://salsa.debian.org/sanvila/hello.git
Testsuite: autopkgtest
Testsuite-Triggers: make
Build-Depends: debhelper-compat (= 13), texinfo
Package-List:
 hello deb devel optional arch=any
Checksums-Sha1:
 f7beb6f9c62a2295e889f66e05ce9bfaed9ace3 725946 hello_2.10.orig.tar.gz
 9dc7a584db576910856ac7aa5cfffbaeefe9cf427 819 hello_2.10.orig.tar.gz.asc
 f82ee0bbb31eef165b6801016313da5f39e537a7 13112 hello_2.10-5.debian.tar.xz
Checksums-Sha256:
 31e066137a962676e89f69d1b65382de95a7ef7d914b8cb956f41ea72e0f516b 725946 hello_2.10.orig.tar.gz
 4ea69de913428a4034d30dcdcb34ab84f5c4a76acf9040f3091f0d3fac411b60 819 hello_2.10.orig.tar.gz.asc
 56a65f83d1bb6b4811e6f61355de5e9f1e3c8c8accbe5acb9721d43f6e7a272a 13112 hello_2.10-5.debian.tar.xz
Files:
 6cd0ffea3884a4e79330338dcc2987d6 725946 hello_2.10.orig.tar.gz
 e6074bb23a0f184e00fdb5c546b3bc2 819 hello_2.10.orig.tar.gz.asc
 e63dd0810a8fb37a4990ebbe54daa567 13112 hello_2.10-5.debian.tar.xz

-----BEGIN PGP SIGNATURE-----

i0EzBAECgAdFiEE1Uw7+v+wQt44LaXXQc5/C58bizIFAmf/g+YACgkQ0c5/C58b
izKTyQf8CzcYgI9CbrPYg+VtoFjrSygCvhr8SIfIRsEdxyix2lgfqxUSN8JbQref
0VsLmt4ZbeYdlyaf4/oxVtrEsqvn3PwX0UF2GUmEwsfq0S8vKouHSzCg5TdNTtTt
5Bi0UKt8gq72U0e/Py30h/FFqIA0AakzvGvA7qLip09h0SRBd4hHQ+7kxtnkHri
l+w4KzKz/QgbtvdFQNBSCHeT6u/uqCgfX4lKvhFR/v4JSklT35UV4ZqtF7/LkgG
HD4kvVKhNmAsJACQTWldlUnyiZxe7fqAeBw6xzN/5ne5Atym6QKU7kKAYRSzNEWT
d8+N8Dt4XGfX+zKf1l/U289Sv+aJIQ==
=koqd
-----END PGP SIGNATURE-----
```



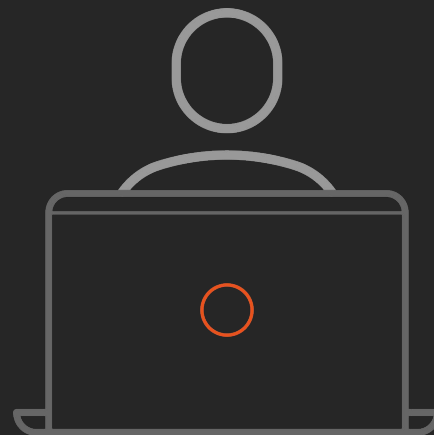
Source package - debian packaging

```
debian
├── changelog
├── clean
├── control
├── copyright
├── patches
│   ├── reproducible.patch
│   └── series
├── rules
├── salsa-ci.yml
├── source
│   └── format
├── tests
│   ├── control
│   └── upstream
├── upstream
│   ├── metadata
│   └── signing-key.asc
└── watch
```



Upload

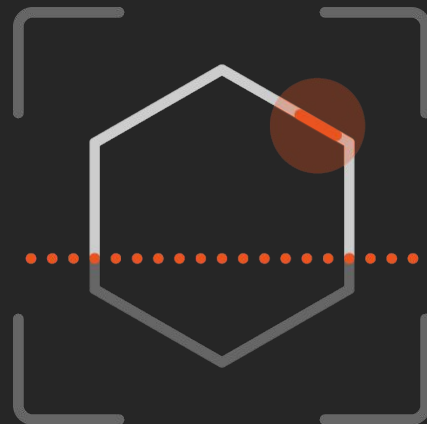
- Build the and sign the source package
- Upload the **.changes** file
 - upload.ubuntu.com / ppa.launchpad.net
 - Anonymous FTP / Authenticated SFTP





Upload processing

- Validation
 - Uploaded files' contents
 - Signature verification
 - ACL checks for the target archive
 - Consistency checks
- Email notifications
- Queueing
- Pending source package publication records creation
- Binary package builds scheduling





FAQ

“ Upload appeared to work but I did not get any email about it.

- Wrong signing key
- Keyserver synchronization delays
- Upload processor issues

Need help? Ask us in [#launchpad:ubuntu.com](https://matrix.to/#/#launchpad:ubuntu.com) on Matrix or <https://answers.launchpad.net/launchpad>





FAQ

“ I uploaded a “bad” version of a package and want to replace it with the “good” one

- Once published, a given package name and version can never be used again in an archive.
- Even if you delete the bad version.
- You need to increment the version number to publish the good version.

Need help? Ask us in [#launchpad:ubuntu.com](https://matrix.to/#/#launchpad:ubuntu.com) on Matrix or

<https://answers.launchpad.net/launchpad>





Queue approvals

- Approval policy
 - Automatic approvals
 - PPA uploads
 - Devel series (non-frozen) uploads to the release and proposed pockets
 - Everything else requires intervention by a queue admin
 - SRUs
 - Uploads during a freeze



Publishing

- What is publishing?
 - Place the pending package files (source and binary) on disk
 - Regenerate and sign index and metadata files
 - Supersede older versions
 - Trigger external archive sync (ftpmaster)
- Instances
 - ftpmaster publisher → Ubuntu (1-4 hours)
 - PPA publisher → PPAs (~30 minutes or so)



Source publication

The uploaded source package is published at this point



Binary package builds

- Binary packages built on Launchpad build farm
- Build output → Upload processing → Saved in Launchpad librarian
- Pending publication records created



Binary package publication

- The binary packages for the uploaded source are published
- Architectures with successful builds are published without waiting for the rest



Profit!

Now the package is available on the archive for clients 🎉



Extras - Ubuntu archive






Index of /ubuntu

<u>Name</u>	<u>Last modified</u>	<u>Size</u>
 Parent Directory		-
 dists/	2025-10-09 16:00	-
 indices/	2025-11-15 13:30	-
 ls-lR.gz	2025-11-15 13:32	34M
 pool/	2010-02-27 06:30	-
 project/	2024-11-24 21:31	-
 ubuntu/	2025-11-15 13:41	-

Apache/2.4.52 (Ubuntu) Server at archive.ubuntu.com Port 443



Extras - dists/, suite, series, and pocket

 <u>questing-backports/</u>	2025-11-15 09:37	-
 <u>questing-proposed/</u>	2025-11-15 13:18	-
 <u>questing-security/</u>	2025-11-15 09:36	-
 <u>questing-updates/</u>	2025-11-15 11:41	-
 <u>questing/</u>	2025-10-09 09:26	-



Extras - inside a suite

Index of /ubuntu/dists/questing

<u>Name</u>	<u>Last modified</u>	<u>Size</u>
 Parent Directory		-
 Contents-amd64.gz	2025-10-08 22:21	52M
 Contents-amd64v3.gz	2025-10-08 22:38	52M
 Contents-i386.gz	2025-10-08 23:17	42M
 InRelease	2025-10-09 09:26	268K
 Release	2025-10-09 09:26	267K
 Release.gpg	2025-10-09 09:26	833
 by-hash/	2025-04-22 14:37	-
 main/	2025-09-30 02:10	-
 multiverse/	2025-09-30 02:10	-
 restricted/	2025-09-30 02:10	-
 universe/	2025-09-30 02:10	-



Extras - InRelease file

-----BEGIN PGP SIGNED MESSAGE-----

Hash: SHA512

Origin: Ubuntu

Label: Ubuntu

Suite: questing

Version: 25.10

Codename: questing

Date: Thu, 09 Oct 2025 9:25:38 UTC

Architectures: amd64 amd64v3 arm64 armhf i386 ppc64el riscv64 s390x

Components: main restricted universe multiverse

Description: Ubuntu Questing 25.10

MD5Sum:

f7b0e751c94b90a65cc70a78987e4a70	869353136	Contents-amd64
84313db42e8b5cfe3dc73199f694f31f	54227566	Contents-amd64.gz
7e1f4634828e7fd11e1207af458d84aa	869299080	Contents-amd64v3
0f904eb0d59e4baf04bafdc540a1c550	54217025	Contents-amd64v3.gz
51aebab104b1346f93b5791b8d577070	876996022	Contents-arm64
eae610fd70a715f0aa8d997d9c4e9693	54620150	Contents-arm64.gz
6ea598e2c27230573039b8db9f1c5b3e	808747201	Contents-armhf
5488d3db8176f27739878838cb117e5f	50804497	Contents-armhf.gz
3553a793622a2fafc218fb7a4f965b77	722111790	Contents-i386
427b80a26e6fe8e8212185e5d120f8c0	43554615	Contents-i386.gz
cb23149b650d1cd5e9063cbca2c4039e	845898225	Contents-ppc64el
e85c2ce6fdc18dba259d4e38639dcd0c	52634063	Contents-ppc64el.gz
11656ec0eba4f7787ed8616929c66bef	818506604	Contents-riscv64
f2138c54d82006528184e5c4a360617a	51439884	Contents-riscv64.gz
bb717dd159686cdc960d83cf30258d14	824079961	Contents-s390x
3837eef5338f30b12c0dd130df622cff	51587833	Contents-s390x.gz
373ecbd9c81f9739a7c2f43f55f76622	7433649	main/binary-amd64/Packages
b5ee183fb9aee4f1f6749bae67591c55	1859810	main/binary-amd64/Packages.gz
842c0eb385562033f1e305ead4d7d071	1443084	main/binary-amd64/Packages.xz
81900f35114853d0302a8e5c5cfc1d64	98	main/binary-amd64/Release
80556737c30c56305b82401c2ebc17c0	7488580	main/binary-amd64v3/Packages



Extras - Packages.gz

Index of /ubuntu/dists/questing/main/binary-amd64

<u>Name</u>	<u>Last modified</u>	<u>Size</u>
 Parent Directory		-
 Packages.gz	2025-10-09 09:26	1.8M
 Packages.xz	2025-10-09 09:26	1.4M
 Release	2025-10-09 09:26	98
 by-hash/	2025-04-22 14:37	-

Apache/2.4.52 (Ubuntu) Server at archive.ubuntu.com Port 443



Extras - Packages.gz

```
Package: hello
Architecture: amd64
Version: 2.10-5
Priority: optional
Section: devel
Origin: Ubuntu
Maintainer: Ubuntu Developers <ubuntu-devel-discuss@lists.ubuntu.com>
Original-Maintainer: Santiago Vila <sanvila@debian.org>
Bugs: https://bugs.launchpad.net/ubuntu/+filebug
Installed-Size: 104
Depends: libc6 (>= 2.38)
Conflicts: hello-traditional
Breaks: hello-debhelper (< 2.9)
Replaces: hello-debhelper (< 2.9), hello-traditional
Filename: pool/main/h/hello/hello_2.10-5_amd64.deb
Size: 26350
MD5sum: 5bf01eed8913d7c1dad84d176d8e55c4
SHA1: a45fcbcd501b0b25bcea351a796409e116aea2c4
SHA256: ea22dc08e2ede68ea77383c32a0bcfec328dae60df348aeb8fc9953d79ebce7a
SHA512: 403a5c0265636a237ea098d686c48b42bd9ca43613736a89e129957bf4b2eb03231be47fecf2303866587ac26b9d5e8a6208a2a4217191109ee7b19c53df0874
Homepage: https://www.gnu.org/software/hello/
Description: example package based on GNU hello
Description-md5: c4a4aec43084cfb4a44c959b27e3a6d6
```



Extras - Sources.gz

Index of /ubuntu/dists/questing/main/source

<u>Name</u>	<u>Last modified</u>	<u>Size</u>
 Parent Directory		-
 Release	2025-10-09 09:26	99
 Sources.gz	2025-10-09 09:26	1.7M
 Sources.xz	2025-10-09 09:26	1.3M
 by-hash/	2025-04-22 14:37	-

Apache/2.4.52 (Ubuntu) Server at archive.ubuntu.com Port 443



Extras - Sources.gz

```
Package: hello
Format: 3.0 (quilt)
Binary: hello
Architecture: any
Version: 2.10-5
Priority: optional
Section: devel
Maintainer: Santiago Vila <sanvila@debian.org>
Standards-Version: 4.7.2
Build-Depends: debhelper-compat (= 13), texinfo
Testsuite: autopkgtest
Testsuite-Triggers: make
Homepage: https://www.gnu.org/software/hello/
Vcs-Browser: https://salsa.debian.org/sanvila/hello
Vcs-Git: https://salsa.debian.org/sanvila/hello.git
Directory: pool/main/h/hello
Package-List:
  hello deb devel optional arch=any
Files:
  899cb9c89e975276f580c445a11db016 1736 hello_2.10-5.dsc
  6cd0ffea3884a4e79330338dcc2987d6 725946 hello_2.10.orig.tar.gz
  e6074bb23a0f184e00fd5c546b3bc2 819 hello_2.10.orig.tar.gz.asc
  e63dd0810a8fb37a4990ebbe54daa567 13112 hello_2.10-5.debian.tar.xz
Checksums-Sha1:
  1dc1cd740d995e4aa1cdeec908749ba271eccd8e 1736 hello_2.10-5.dsc
  f7beb6f9c62a2295e889f66e05ce9bfaed9ace3 725946 hello_2.10.orig.tar.gz
  9dc7a584db576910856ac7aa5cfffbaeefe9cf427 819 hello_2.10.orig.tar.gz.asc
  f82ee0bbb31eef165b6801016313da5f39e537a7 13112 hello_2.10-5.debian.tar.xz
Checksums-Sha256:
  319f8c377eb48597798b699f72ab853f3439a991583ddd51bf94b415373ffdfde 1736 hello_2.10-5.dsc
  31e066137a962676e89f69d1b65382de95a7ef7d914b8cb956f41ea72e0f516b 725946 hello_2.10.orig.tar.gz
  4ea69de913428a4034d30dcdbc34ab84f5c4a76acf9040f3091f0d3fac411b60 819 hello_2.10.orig.tar.gz.asc
  56a65f83d1bbeb4811e6f61355de5e9f1e3c8c8accbe5acb9721d43f6e7a272a 13112 hello_2.10-5.debian.tar.xz
Checksums-Sha512:
  7e86e5d4a081e20308051708640e0d82162f0d7de1873e88249b8a3433c99ecf7d43368eb4f335788f783d5e53f2ada0618ae6f2127c790925f47483c5e10a4f 1736 hello_2.10-5.dsc
  e301d785135c52575a8b4c35994c0316f8d366451f604eb5e74c1f907077502aebd5a1a32cd1e26cd7ca32c22f4de5623a335f8ae7e735ac977420df664f01de 725946 hello_2.10.orig.tar.gz
  9584e91bc471c69a1e0ecb90fc69649170c0b43c966a3b932cf9c87c12c8b33f142af06520f61039189691a3e16b826f4e79dba17b7174c17f6bd6c77472c18c 819 hello_2.10.orig.tar.gz.asc
  e4140a764dfa33c1ea8b21b007c017eb1d0356efb465e673239538c03cef98600f95b0f9b45c0562812c7c7f67b611f23384e81dac83cbd35c08691cfe749c81 13112 hello_2.10-5.debian.tar.xz
```



Questions?

Thank you!