

Lintian in Debian: Judging your packages!

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What is Lintian?

- Package checker – automated checks to determine package compliance with the Debian Policy.
- Static Analyzer written in perl to check source and binary packages for common packaging errors.
- Standard tool in Debian to be run before uploading packages.
- Recommendations for using packaging best practices (for instance using `debhelper`).



What is Lintian?

```
[nilesh:/tmp/hello]$ lintian -Iiv hello_2.10-5_source.changes
N:
I: hello source: older-debian-watch-file-standard 4 [debian/watch]
N:
N: The version= line in the debian/watch file in this package declares an older version. Please upgrade when you have a
N: chance.
N:
N: Please refer to the uscan(1) manual page for details.
N:
N: Visibility: info
N: Show-Always: no
N: Check: debian/watch/standard
N:
I: hello source: patch-not-forwarded-upstream [debian/patches/reproducible.patch]
N:
N: According to the DEP-3 headers, this patch has not been forwarded upstream.
N:
N: Please forward the patch and try to have it included in upstream's version control system. If the patch is not suitable
N: for that, please mention not-needed in the Forwarded field of the patch header.
N:
N: If the patch was actually taken from upstream, please prefix the Origin field information with upstream or backport, as
N: documented in the DEP-3. For example:
N:
N:     Origin: upstream, https://github.com/zim-desktop-wiki/zim-desktop-wiki/commit/d33286c75b623cfb249c627b0c348be62e6377c9
N:     .patch
N:
N: Please refer to social contract item 2, Coordination with upstream developers (Section 3.1.4) in the Debian Developer's
N: Reference, Changes to the upstream sources (Section 4.3) in the Debian Policy Manual, Bug#755153, and
N: https://dep-team.pages.debian.net/deps/dep3/ for details.
N:
N: Visibility: info
N: Show-Always: no
N: Check: debian/patches/dep3
N: Renamed from: send-patch
N:
```

Why Lintian?

- Bridge the gap between Debian policy and practical packaging.
- Re-think about certain aspects of our policy.
- Show us where to concentrate our efforts to make Debian a better distribution on package QA.
- Avoid repeating packaging mistakes.
- Archive-wide runs to check packages for QA.



Lintian.debian.org: static site to browse for all tags

LINTIAN
Tags User Manual About

debian

Lintian tags explanation

Lintian is a tool to run checks on Debian packages, and each of these checks are identified by a tag. This website displays the explanations of all the tags that Lintian can produce, as of version 2.131.0. See [Lintian User's Manual](#) for more information.

All tags

- [absolute-symbolic-link-target-in-source](#)
- [absolute-symlink-in-top-level-folder](#)
- [acute-accent-in-manual-page](#)
- [add-component-copyright](#)
- [adduser-with-home-var-run](#)
- [adopted-extended-field](#)
- [aliased-location](#)
- [alien-tag](#)
- [alternates-not-allowed](#)
- [alternatively-build-depends-on-python-sphinx-and-python3-sphinx](#)
- [ambiguous-paragraph-in-dep5-copyright](#)
- [ancient-libtool](#)
- [ancient-python-version-field](#)
- [ansi-escape](#)
- [anticipated-repack-count](#)
- [apache2-configuration-files-need-conf-suffix](#)



UDD runs for archive wide package runs with lintian tags

UDD Ultimate Database Bugs Search Maintainer Dashboard Lintian Lintian tags Patches Bugs Usertags Salsa Duck Reproducibility Smells Sponsoring

debian / lintian tag: adopted-extended-field

Lintian tag: adopted-extended-field

Type: information

Description (from lintian-explain-tags)

A field in debian/control has an extension prefix but is also known without it.

Extension prefixes like XS-* or XC-* allow experimental fields to propagate to the right place when packages are built with dpkg. In this case, however, the field is also known without the prefix. In all likelihood the field was permanently adopted, and dpkg learned how to deal with it.

Please consider removing the extension prefix for the field name.

Visibility: info
 Show-Always: no
 Check: debian/control/field/adopted
 Renamed from: xc-package-type-in-debian-control
 xs-testsuite-field-in-debian-control xs-vcs-field-in-debian-control

Affected packages

Search

source	version	binary	level	tag	count	information
batalert	0.4.0-2		information	adopted-extended-field	1	(in section for batalert) XB-Ruby-Versions [debian/control:23]
binutils	2.46-3		information	adopted-extended-field	1	(in section for source) XS-Testsuite [debian/control:33]
binutils	2.46.50.20260216-1		information	adopted-extended-field	1	(in section for source) XS-Testsuite [debian/control:33]
binutils-gold	2.44-3		information	adopted-extended-field	1	(in section for source) XS-Testsuite [debian/control:17]
bio-vcf	0.9.5-4		information	adopted-extended-field	1	(in section for bio-vcf) XB-Ruby-Versions [debian/control:19]
bonnie++	2.00a+nmu3		information	adopted-extended-field	1	(in section for source) XS-Testsuite [debian/control:7]

High level overview of Checks

- Extracts information from `.changes` file and runs checks on individual binary `.deb`.

```
[niles@...ed/binaries-from-other-arch]$ lintian binaries-from-other-arch_1.0_amd64.changes master
E: binaries-from-other-arch: binary-from-other-architecture [usr/bin/elfobject]
E: binaries-from-other-arch: statically-linked-binary [usr/bin/elfobject]
E: binaries-from-other-arch: statically-linked-binary [usr/lib/foo/binaries-from-other-arch/guile/2.2/fake-guile-object.go]
W: binaries-from-other-arch source: debian-rules-sets-DEB_BUILD_OPTIONS [debian/rules:3]
W: binaries-from-other-arch: elf-error In ELF header: Reading 1080 bytes extends past end of file for section headers [usr/bin/elfobject]
W: binaries-from-other-arch: elf-error In ELF header: Reading 1080 bytes extends past end of file for section headers [usr/lib/foo/binaries-from-other-arch/guile/2.2/fake-guile-object.go]
W: binaries-from-other-arch: elf-error In ELF header: Section headers are not available! [usr/bin/elfobject]
W: binaries-from-other-arch: elf-error ... use "--tag-display-limit 0" to see all (or pipe to a file/program)
W: binaries-from-other-arch: no-manual-page [usr/bin/elfobject]
```

High level overview of Checks

- Checks the source package files inside debian/ directory for compliance violations.

```
[nilesh:...debhelper-deb-build-options]$ lintian -Iiv debhelper-deb-build-options_1.0_amd64.changes master
N:
W: debhelper-deb-build-options source: debian-rules-sets-DEB_BUILD_OPTIONS [debian/rules:3]
N:
N:   The debian/rules file sets the DEB_BUILD_OPTIONS variable, which will override any user-specified build profile.
N:
N:   Please replace with DEB_BUILD_MAINT_OPTIONS.
N:
N:   Please refer to the dpkg-buildflags(1) manual page for details.
N:
N:   Visibility: warning
N:   Show-Always: no
N:   Check: debian/rules
N:
W: debhelper-deb-build-options: empty-binary-package
N:
N:   This binary package appears to be empty, and its description does not say that it's a metapackage or a transitional
N:   package. This is often due to problems with updating debhelper *.install files during package renames or similar problems
N:   where installation rules don't put files in the correct place.
N:
N:   If the package is deliberately empty, please mention in the package long description one of the phrases "metapackage",
N:   "dummy", "dependency package", or "empty package".
N:
N:   Previously, Lintian also accepted the use of "virtual package". This was removed to avoid overloading the term. If you
N:   have been relying on the phrase "virtual package" to avoid this warning, please replace it with one of the others.
N:
N:   Visibility: warning
N:   Show-Always: no
N:   Check: files/empty-package
N:
```



High level overview of Checks

- Reports issues of various severity “tags” – Error, Warning, Info, Notes, Experimental, Pedantic, Classification.
- Parses source package for violations of the Debian policy in `debian/` directory.
- Parses `.deb` for violations of the Debian policy in the binary package for instance in the elf binary or in the installation path etc.



Impact: trends.debian.net



Debian Trends

- Introduction
- DH compat
- Build systems
- Source formats
- Patch systems
- VCS
- VCS hosting
- Copyright
- Co-maintenance
- Rules-Requires-Root
- build-arch / build-indep
- Test suite
- Salsa CI
- git-buildpackage
- debian/watch
- dgit and tag2upload

Introduction

Debian packaging practices evolved over time. This page provides some historical perspective about *how* those practices evolved. This data was generated with [lintian](#), a [rather basic script](#), data from [snapshot.debian.org](#) starting in 2005, and computational power from [Grid'5000](#). This is a static page, last refreshed in March 2026. If it is not fresh enough, nag the author!

All graphs are for Debian *testing* (main only, not contrib/non-free), because there is a number of unmaintained or abandoned packages in Debian *unstable* that we do not want to report about. Alternate graphs with Debian *unstable* are also provided. Each graph provides the number of packages in each case over time. Vertical lines indicate release dates.

How you can help

- Make the necessary changes to lintian so that it can report information about the above stuff, and help include the lintian modifications into standard lintian.
- Hack on the data collection itself (there are development instructions in README.md)
- Provide ideas for additional graphs (ideally, with the relevant Lintian tags)

Contact: Lucas Nussbaum <lucas@debian.org>

Debhelper compatibility level



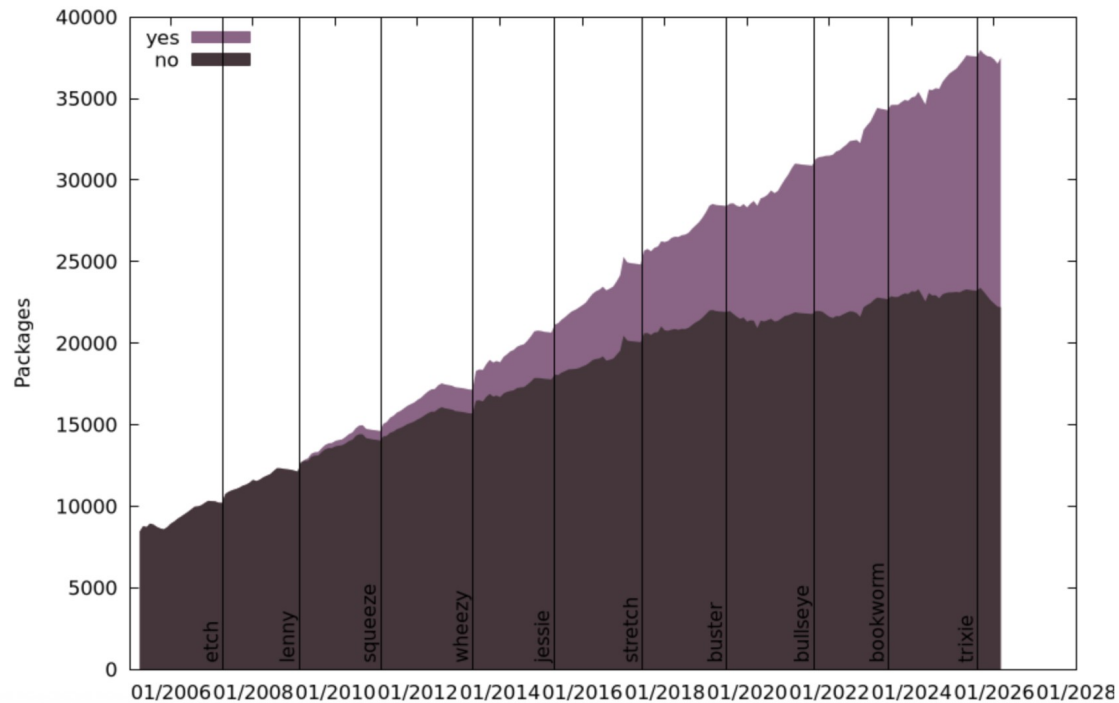


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- Smells

git-buildpackage

This tracks packages that use git-buildpackage by checking for presence of `debian/gbp.conf`. It misses packages that use git-buildpackage but do not include a `debian/gbp.conf` file.



01/2006 01/2008 01/2010 01/2012 01/2014 01/2016 01/2018 01/2020 01/2022 01/2024 01/2026 01/2028



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Smells

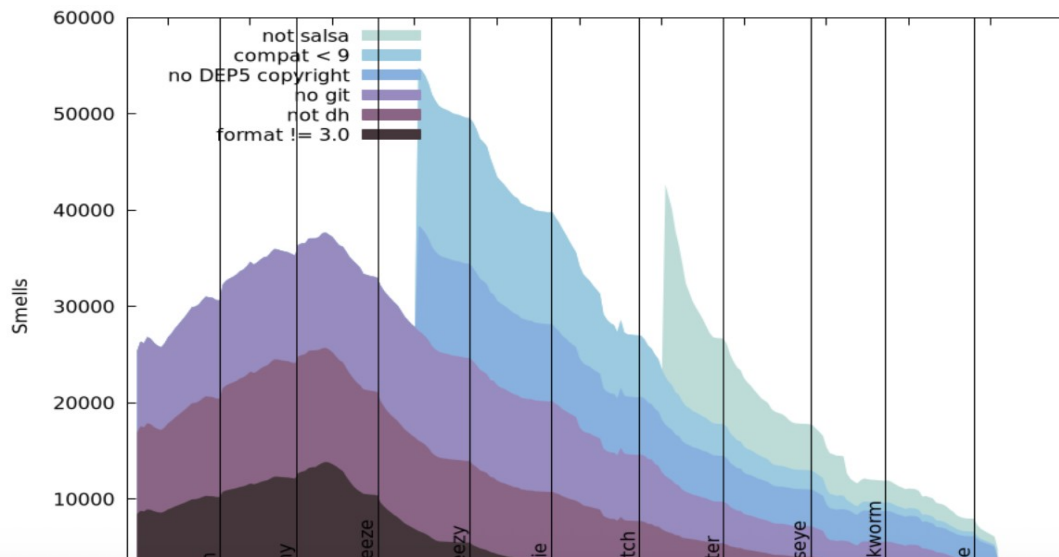
Inspired by [code smells](#) (any characteristic in the source code of a program that possibly indicates a deeper problem), this page also provides a list of packages that should be refreshed to newer standards.

This is subjective (and feel free to criticize, but I might feel free to ignore critics :-). Here is the logic:

- **Debhelper compatibility level:** on 2024-08-01, 97.9% of packages in testing have a debhelper compatibility level of 9 or higher (9: 3%; 10: 6%; 11: 4%; 12: 12%; 13: 69%; 14: 0%). Therefore, using a debhelper compatibility level lower than 9 is a *smell*.
- **Build system:** on 2024-08-01, 93.5% of packages in testing use dh (others: cdb: 4%; debhelper: 2%; other: 0%; : 0%). So, not using dh is a *smell*.
- **Source format and patch system:** on 2024-08-01, 99.4% of packages in testing use 3.0 (*quilt*) (97.4%) or 3.0 (*native*) (2.0%). Therefore, not using 3.0 is a *smell*.
- **VCS:** On 2024-08-01, 93.8% of packages use Git, 6.0% use no VCS at all, and 0.2% use another VCS. 88.4% use Git on Salsa, and 2.8% use Git on Alioth (and will likely move to Salsa). Therefore, not using Git and Salsa is a *smell* (except if the package is using dgit).
- **Overall,** 86.1% of packages use a debhelper compatibility level ≥ 9 , dh, 3.0 (*native*) or 3.0 (*quilt*), Git, and either Salsa or Alioth.

List of packages with smells:

- [Sorted by maintainer/uploader](#)
- [All smells \(CSV\)](#)



Issues/Limitations

- Can only run static checks and never actually run the code.
- False positives for very complicated packages.
- Needs regularly updated checks due to changes in other core packages (dpkg, debhelper).
- Hard to backport due to difference in policy and tooling changes between stable and testing/unstable.



How can you help?

- Lintian currently has 510 (!) open bugs.

Outstanding bugs -- Important bugs; Confirmed (1 bug)

- [#1031878](#) [il |] [lintian] [--fail-on warnings fails overrides even though --fail-on overrides is not specified](#)

Outstanding bugs -- Important bugs; Unclassified (18 bugs)

- [#996270](#) [il |] [lintian] [false positive custom-library-search-path](#)
- [#997911](#) [il |] [lintian] [lintian: bash-term-in-posix-shell false positive for '<<<' in quoted strings](#)
- [#1000449](#) [il | =*] [binutils] [Missing ELF interpreter for debug files causes 'readelf' error](#)
- [#1003456](#) [il | *] [lintian] [Excessive memory use with large binaries](#)
- [#1013414](#) [il |] [lintian] [lintian: spurious unknown-field Autobuild](#)
- [#1013416](#) [ilSI |] [lintian] [lintian: broken embedded-library](#)
- [#1013873](#) [il |] [lintian] [lintian: "Cannot open" warnings on symlinks to files in other packages from same source](#)
- [#1017064](#) [il |] [lintian] [lintian: incorrectly complains about adopted-extended-field XB-Ruby-Versions](#)
- [#1017094](#) [il |] [lintian] [false positive source-is-missing for gtk-doc generated html documentation](#)
- [#1025452](#) [il |] [lintian] [spurious warnings emitted when parsing broken ELF files](#)
- [#1029470](#) [ilHI |] [lintian] [lintian: Needs to distinguish between valid field names for .dsc files and for debian/control files \(with vs without "XS-" prefix\)](#)
- [#1030586](#) [il | A |] [lintian] [lintian: Testsuite failure on some systems: 1h time offset in test ancient-source](#)
- [#1031171](#) [il |] [lintian] [Check/ContinuousIntegration/Salsa.pm crashes on invalid yaml](#)
- [#1040138](#) [il |] [lintian] [changelog-file-missing-explicit-entry needs exception for bookworm](#)
- [#1042943](#) [il |] [lintian] [lintian should not complain about /usr/libo32](#)
- [#1067653](#) [il | ⊕] [lintian] [lintian: debhelper-but-no-misc-depends and other relationship substvar hints are no longer universally applicable](#)
- [#1126458](#) [il |] [lintian] [lintian: continuous-integration/salsa fails on cmor 3.13.2-2.dsc: YAML::XS::Load Error: The problem: did not find expected <document start>](#)
- [#1126502](#) [il | =*] [dpkg] [dpkg does not accept non-ascii chars in email address](#)

Outstanding bugs -- Important bugs; More information needed (1 bug)

- [#1017530](#) [ilMI |] [lintian] [lintian: dwz generated file false positive](#)

How can you help?

- Add in new checks and new tags.
- Improve the test-suite.
- Analysis of current severity levels and updating them as needed.
- Improve performance on large binary packages and possible re-writes (in the core) to optimise checks.



Contributor → Maintainer: How I became a Lintian Maintainer?

- Beginnings: Fasttrack being unrecognized in lintian runs.

[[\[pirate\]praveen](#)

> I suppose I can ignore "E: singularity-container changes: bad-distribution-in-changes-file bookworm-fasttrack" at this point.

yes, if anyone wants to send patches to lintian, that would be nice though 😊

[[\[pirate\]praveen](#)

yes, if anyone wants to send patches to lintian, that would be nice though 😊

I've a change locally that fixes it for fto. But I'm not sure if lintian maintainers would want changes/code for validating the version etc as well.

[[\[pirate\]praveen](#)

[gargantua_kerr](#), just propose it, at max, they will reject if they don't find it suitable 😊

accepted!



Contributor → Maintainer: How I became a Lintian Maintainer?

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gargantua_kerr

👤 [pirate]praveen

looks good now

that patch was merged. I opened another MR for another change to get this working (#468) which is also merged now. So lintian should now work with fasttrack (with the next release), you might want to change your scripts to pull in lintian from unstable or otherwise backport it.

👤 [pirate]praveen

You can mention it in <https://wiki.debian.org/FastTrack>

I have added Singularity container at that link.




[pirate]praveen

 **gargantua_kerr**, thanks for both (though I usually skip lintian for backports and fasttrack)



gargantua_kerr

 **@_ofc_[pirate]praveen:matrix.org** > though I usually skip lintian for backports and fast-track The whole point of this exercise was to make you (and others) change that 😊

😊 1



Contributor → Maintainer: How I became a Lintian Maintainer?


- More contributions followed through the years.

Add new pedantic warning "redundant-rules-requires-root-no-field" and remove "silent-on-rules-requiring-root" as R³ is set to "no" by default !618 · created 5 months ago by Nilesh Patra	Merged ✓ Approved Resolved 1	updated 5 months ago
Add fields in source-fields that are added by tag2upload !616 · created 5 months ago by Nilesh Patra waiting for review	Merged » 1	updated 5 months ago
Remove recommended-field check for "Priority:" field (Closes: #1111513) !612 · created 6 months ago by Nilesh Patra	Merged ✓ Approved Resolved	updated 4 months ago
Update oldstable epoch after trixie release !611 · created 6 months ago by Nilesh Patra waiting for review	Merged » 1	updated 5 months ago
Remove debian-watch-file-in-native-package tag (Closes: #1114873) !609 · created 6 months ago by Nilesh Patra	Merged » Approved 1	updated 6 months ago
Update nusoap.php embedded package from libnusoap-php -> php-econea-nusoap (Closes: #1111302) !599 · created 6 months ago by Nilesh Patra	Merged » 😊 1	updated 6 months ago
Remove strict check for comma in "Origin" field in DEP3 header !499 · created 20 Apr 2024 by Nilesh Patra	Merged » Approved 0 of 1	updated 6 May 2024
Obsolete package python3-pdm-pep517 replaced by python3-pdm-backend !494 · created 19 Feb 2024 by Nilesh Patra	Merged ✓	updated 20 Feb 2024

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Contributor → Maintainer: How I became a Lintian Maintainer?

Lintian / lintian / Commits / f0ffbd83

Verified Commit f0ffbd83 authored 1 month ago by  Louis-Philippe Véronneau

d/control: Add Nilesh Patra as maintainer. (Closes: #1012289)

parent 4d61aa47

Branches > Branches containing commit

Tags > Tags containing commit

No related merge requests found

Changes 1

Showing 1 changed file with 2 additions and 1 deletion

```
diff --git a/debian/control b/debian/control
index 6d61aa4..f0ffbd8 100644
--- a/debian/control
+++ b/debian/control
@@ -6,7 +6,8 @@ Uploaders:
 6 6   Axel Beckert <abe@debian.org>,
 7 7   Bastien Roucariès <rouca@debian.org>,
 8 8   Louis-Philippe Véronneau <pollo@debian.org>,
 9 9   - Maytham ALSudany <maytham@debian.org>
10 10  + Maytham ALSudany <maytham@debian.org>,
11 11  + Nilesh Patra <nilesh@debian.org>
12 12  Build-Depends:
13 13  appstream <!nocheck>,
14 14  aspell <!nocheck>,
```

P pollo ricardo (working on cutting a lintian release) 08:58

K KGB KGB bot, #kgb-devel 09:22
lintian master f0ffbd8 Louis-Philippe Véronneau **debian/control** * d/control: Add Nilesh Patra as maintainer. (Closes: #1012289) * <https://salsa.debian.org/lintian/lintian/-/commit/f0ffbd8>

lintian master 094f2c1 Louis-Philippe Véronneau **debian/control** * Standards-Version bump to 4.7.3. Remove redundant 'Priority: optional' field. * <https://salsa.debian.org/lintian/lintian/-/commit/094f2c1> 09:22

lintian master 5479cc8 Louis-Philippe Véronneau **debian/changelog** * releasing package lintian version 2.129.0 * <https://salsa.debian.org/lintian/lintian/-/commit/5479cc8> 09:22

lintian master 08f1811 Louis-Philippe Véronneau **debian/changelog** * bootstrap new release * <https://salsa.debian.org/lintian/lintian/-/commit/08f1811> 09:22

[zwiebelbot] Debian#1012289: RFH: lintian -- Debian package checker - <https://bugs.debian.org/1012289> 09:22

P pollo ricardo gargantua_kerr: congrats :P 09:22

[BTS] lintian 2.129.0 uploaded by Louis-Philippe Véronneau (pollo) (Closes: #1012289, #1123542, #1125489, #1126459) <https://tracker.debian.org/lintian> 09:34



Thank you!

Questions?

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