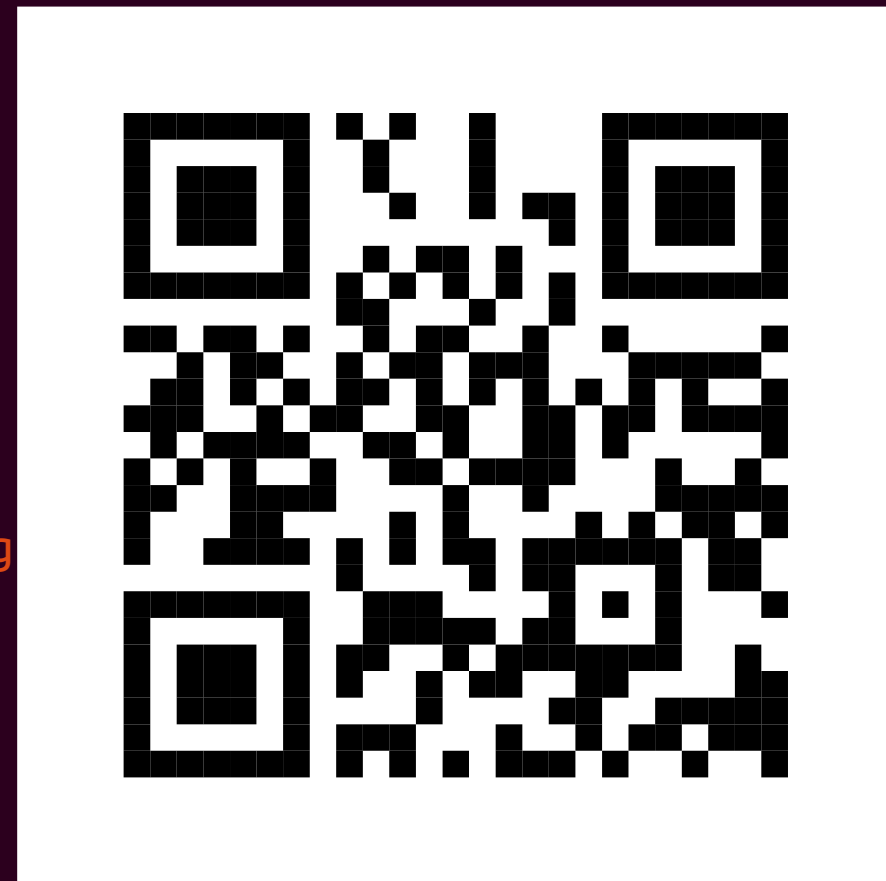




Ubuntu Development Primer

How to stop monkey patching and start committing



Dave Chiluk – chiluk@ubuntu.com

ubuntu[®]



Topics

- Getting support
- Launchpad
- Modifying Sources
- Building
- Submitting changes
- The Kernel



chiluk.

- Dave Chiluk
- Canonical Employee for 4 years supporting Users through Ubuntu Advantage
- Ubuntu Contributing Developer
- Working toward Master of the Universe, and eventually Core Developer status.
- Long time linux evangelist
- <https://wiki.ubuntu.com/chiluk>



Why you should care?

- You have self-maintained packages.
- You want to give back, but don't know where to start.
- You had to fix something for yourself, and don't want to have to re-fix it every time you upgrade.
- Mentorship beats reading wiki pages
(but there will still be plenty of pages)
- Outdated documentation



Where do you go for support?



Where do you go for support?

- google.com
- askubuntu.com
- ubuntuforums.org
- Ubuntu Advantage – Paid support through Canonical
- IRC – Freenode
 - #ubuntu – General User support
 - #ubuntu-devel – If you have a fix and need sponsorship
 - #ubuntu-bugs –
- Launchpad
 - This is not a forum. Keep all conversations technical and on topic.
 - i.e. Size of your hard drive doesn't matter.

Launchpad.net

- So you found your bug on launchpad?
- Click this affects me too

Ubuntu network-manager package

Overview Code **Bugs** Blueprints Translations Answers

DNS resolution stops working after some time

Bug #1522057 reported by Akash Rawal on 2015-12-02

This bug affects 5 people. Does this bug affect you? 34

Affects	Status	Important	Assigned to	Milestone
dnsmasq (Ubuntu)	Confirmed	Critical	Unassigned	Target to milestone
network-manager (Ubuntu)	Confirmed	Critical	Unassigned	Target to milestone

Also affects project Also affects distribution/package Nominate for series

Bug Description

DNS resolution stops working after sometime (usually 10-20 minutes) in Ubuntu 15.10

The problem can be temporarily corrected after restarting network-manager

Dave Chiluk (chiluk) • Log Out

Report a bug

This report contains **Public** information

Everyone can see this information.

Mark as duplicate

Convert to a question

Link a related branch

Link to CVE

You have subscriptions that may cause you to receive notifications, but you are not directly subscribed to this bug's notifications.

Launchpad.net

- Subscribe yourself

The screenshot shows a bug report on Launchpad.net for the Ubuntu network-manager package. The bug title is "DNS resolution stops working after some time" and it was reported by Akash Rawal on 2015-12-02. The bug affects 5 people and has 34 votes. The bug is confirmed and critical. The affected packages are dnsmasq (Ubuntu) and network-manager (Ubuntu), both of which are unassigned and targeted for a milestone. The bug description states that DNS resolution stops working after some time (usually 10-20 minutes) in Ubuntu 15.10 and that the problem can be temporarily corrected after restarting network-manager.

Ubuntu
network-manager package

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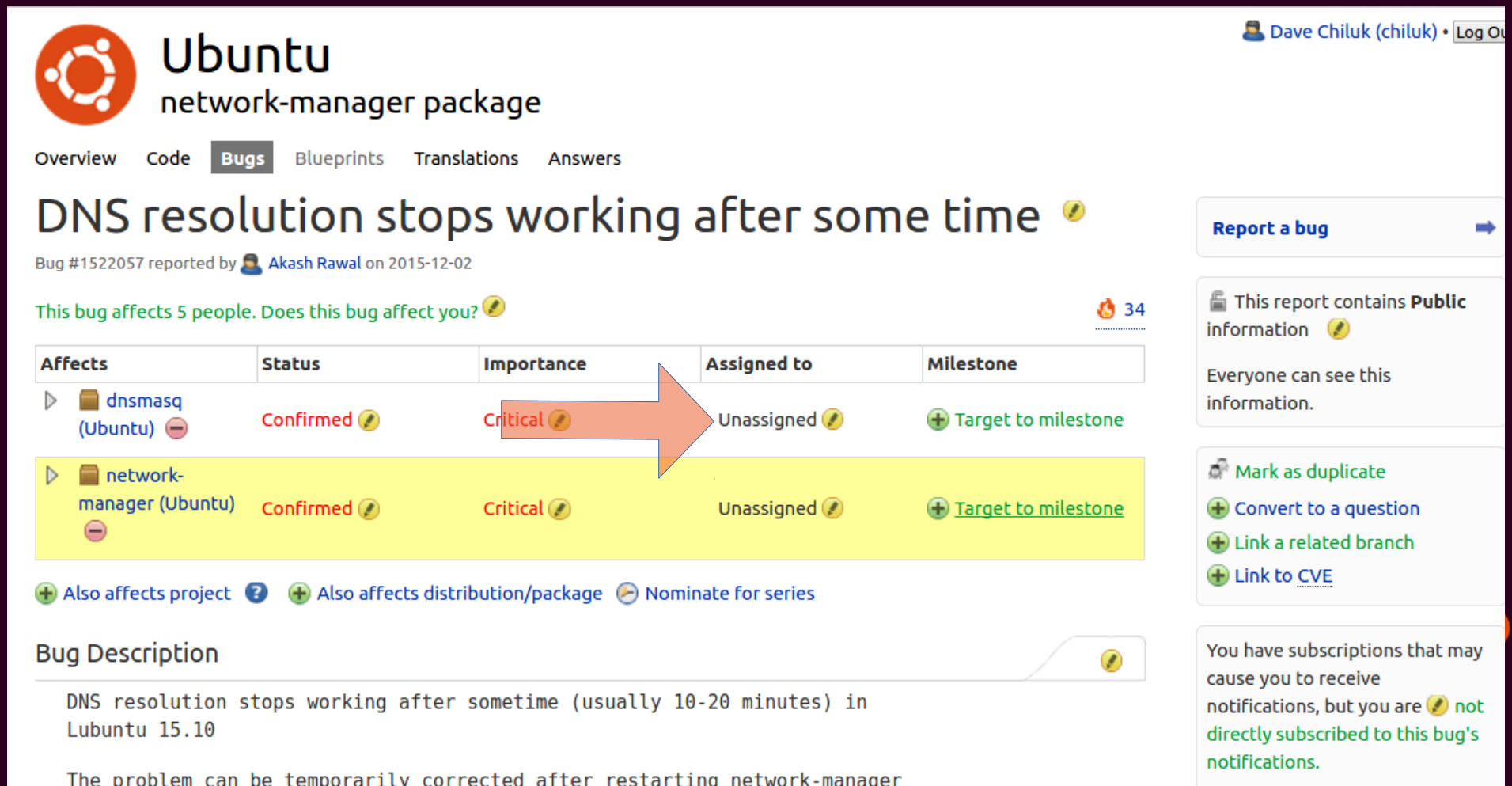
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You have subscriptions that may cause you to receive notifications, but you are not directly subscribed to this bug's notifications.

Launchpad.net

- Assign yourself if you have a fix or are pretty sure you'll get one. Unassign yourself If you give up.



The screenshot shows the Ubuntu Launchpad interface for a bug report. The bug title is "DNS resolution stops working after some time" (Bug #1522057). The bug is reported by Akash Rawal on 2015-12-02. It affects 5 people and has 34 votes. The bug is confirmed and critical. The table below shows the affected packages and their status.

Affects	Status	Importance	Assigned to	Milestone
dnsmasq (Ubuntu)	Confirmed	Critical	Unassigned	Target to milestone
network-manager (Ubuntu)	Confirmed	Critical	Unassigned	Target to milestone

The bug description states: "DNS resolution stops working after sometime (usually 10-20 minutes) in Lubuntu 15.10. The problem can be temporarily corrected after restarting network-manager".

On the right side, there are options to "Report a bug", "Mark as duplicate", "Convert to a question", "Link a related branch", and "Link to CVE".



Launchpad.net

- All of these result in Karma.

Dave Chiluk

Overview Code Bugs Blueprints Translations Answers

Related packages Related projects Authorized applications Manage commercial subscriptions

User information

Launchpad Id: chiluk

Email:
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chiluk@gmail.com
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[Change email settings](#)
[Manage mailing list subscriptions](#)

IRC: chiluk on irc.freenode.net

OpenPGP keys: 32973756

SSH keys: chiluk@colt, chiluk@rotom

Languages: English

Karma: 1098

An orange arrow points from the 'Languages' section to the 'Karma' value.



Karma
It's A Bitch

ubuntu



New bugs

- Have you included related logs?
- Have you included debug output from the command being run (`--verbose` or `--debug` flags)
- Did you include a dump?
- Is your package up to date?
- Have you tested the development release?
 - Bisect/backport if it's fixed there.



Fix it

- Check upstream?
 - If fixed - Backport the change
 - If not – Fix it and upstream the patch



What if there's no related bug?

- Create one using ubuntu-bug
 - This will package up a number of logs, and create a bug for you



Getting sources

- Get the tools
 - `$ sudo apt install sbuild debhelper ubuntu-dev-tools devscripts build-essential fakeroot kernel-wedge kernel-package dpatch quilt`
- `rmadison <source package name>`
 - Shows the version of the package in every supported version of Ubuntu
- `mkdir bash`
- `pull-lp-source bash xenial`



The debian directory

- changelog
- rules
- control – package definition, including depends, build-depends, recommends, and replaces.
- patches/
 - Patches because Ubuntu is a delta merged with debian, and this helps when new versions need to be brought into Ubuntu
 - This could be improved
- patches/series
- \$ what-patch
- <https://wiki.debian.org/Packaging>



Package the patch

- Make changes
- `dch -i #` Modify the changelog
- `dpkg-source --commit`
 - will create the patch for you
 - will bring up an interface to request that you fill out a dep3 formatted template for the change
 - Fill out the appropriate fields and information.
 - This will allow your patch to be more readily acceptable to debian.



Package the patch - quilt

- quilt status
 - What is the current patch we are at
- quilt push -a
 - applies all patches
- quilt new
 - Create a new quilt patch
- quilt add <filename>
 - Tell quilt to start monitoring a file for changes
- patch -p1 < patch
 - patches the files
- quilt refresh
- quilt header -e –dep3
- quilt pop -a
 - removes all patches



Edit the Changelog

- `dch -i`
 - adds a changelog entry
 - Include description and LP#
 - Follow format of other changes in the changelog
- Double check that patch is listed in `debian/patches/series`



Build the source package

- `debuild -S`



Build the binary package

- `sbuild -A -d xenial-amd64 <new.dsc>`
 - <https://wiki.ubuntu.com/SimpleSbuild>
- `debdiff <orig.dsc> <new.dsc> >`
`lp#.<series>.debdiff`



Test the Package

- YES YOU!





Submit the change

- Attach the debdiff to the launchpad bug
- Is the patch for a released series?
 - Fill out the SRU Template



Stable Release Updates (SRU)

- <https://wiki.ubuntu.com/StableReleaseUpdates>
- Copy the SRU Template to the top of the bug description and fill it out.
- Helps reviewers understand what's going on without having to wade through the entirety of the bug text



The archives

- Get Sponsorship – Core dev
 - Wait, eventually someone will come along from ubuntu-sponsors
 - Ask on #ubuntu-devel
- Get SRU Sponsorship – SRU Team member
- Package is built by launchpad and added to the -proposed archive



Test it again!

- In addition to integration and build testing
- The original submitter is expected to test the package as it exists in -proposed.
- Then add verification-done tag on launchpad
- Wait 2-6 weeks for promotion to -updates



Submit to Debian

- There's a tool for that too!
 - `submittodebian`
- Why?
 - Because we want to be good members of the Debian community,
 - We don't want to have to maintain an Ubuntu the delta indefinitely.





The Kernel

- `git clone git://kernel.ubuntu.com/ubuntu/ubuntu-xenial.git`
- <http://kernel.ubuntu.com/>
- Git Branches
 - master
 - master-next – kernel in -proposed being tested.



Building the kernel

- make
 - make oldconfig ; make
 - for quick iteration
 - Not recommended
- alias fdr='fakeroot debian/rules' to ~/.bashrc
- \$ fdr prepare-generic
 - creates config
- \$ fdr binary-generic
 - when you want to build full debs



For New fixes

- Submit to Upstream Kernel
- Documentation/SubmittingPatches
- Then submit to linux-stable
- Rare occurrence



Cherrypicks of Upstream patches

- Test Upstream
 - <https://wiki.ubuntu.com/Kernel/MainlineBuilds>
 - <http://kernel.ubuntu.com/~kernel-ppa/mainline/>
- git bisect to find correct upstream commit.
- git cherry-pick -sex <upstream commit>
- Submit the cherry-picks to linux-stable
 - Documentation/stable_kernel_rules.txt
- This will eventually get included into Ubuntu via linux-stable patch streams
- Consider running an linux-image-generic-lts- kernel.



Other fixes

- Sometimes patches are not accepted by stable, but are still needed in Ubuntu
- Submit to kernel-team@lists.ubuntu.com
- Follow patch submission guidelines
 - <https://wiki.ubuntu.com/Kernel/Dev/KernelBugFixing>
- Buy a kernel team member some beer.



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Questions please

Thank you

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