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Free and Open Source Software Development
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Project Study

Due Monday the 24th of May

K3b

<http://k3b.org>



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Introduction

Short for “*KDE Burn Baby Burn*”,¹ K3b² is the name of a graphical optical burning program. It is written in C++ and utilises the Qt graphical library³. It is a part of the KDE Software Compilation (KDE SC),⁴ a suite of free libraries, applications and workspaces.



K3b – main interface

Web presence

The project has several main websites, which can make it confusing when looking for up-to-date information. The primary domain is simply, <http://k3b.org>, however according to the Internet Archive, this site came about in 2003,⁵ long after the project was well founded. Indeed on 14 October 2003, we find an announcement from project founder Sebastian Trüg regarding version 0.10 (which added DVD burning support), in which he refers to this “new K3b Homepage”.⁶

In 2004 a second website mirroring the aforementioned site exactly, was constructed at <http://k3b.plainblack.com>. PlainBlack is a software development company which, “provides web applications to the Federal government, businesses, and higher education institutions around the world”.⁷ PlainBlack donated server space and bandwidth to host the project,⁸ but the purpose of this new site is not known. Perhaps there was some arrangement between Sebastian Trüg and PlainBlack's Tavis Parker regarding the hosting or services. Indeed a Google search for K3b reveals this newer site as the top hit!⁹

As a part of KDE, K3b also has a website hosted on its parent project's domain.¹⁰ Not updated since around 2007, this is a more primitive website, providing only basic information about the application and actually references <http://k3b.org> as the project's main page.

1 <http://dot.kde.org/2006/04/17/k3b-fundraiser-2006-complete-success>

2 <http://k3b.org>

3 <http://qt.nokia.com/>

4 <http://kde.org/community/whatiskde/softwarecompilation.php>

5 http://web.archive.org/web/*/http://k3b.org

6 <http://dot.kde.org/2003/10/13/k3b-010-dvd-burning-kde>

7 <http://plainblack.com/pr>

8 <http://k3b.plainblack.com/donations>

9 <http://www.google.com.au/search?q=k3b>

10 <http://extragear.kde.org/apps/k3b/>

Free software indexing project freshmeat.net also tracks K3b, where the project also has an information page.¹¹ Sourceforge's software metrics site Ohloh.net also tracks K3b¹² and provides statistical information on the project including code and contributors. K3b also has an online presence with various Linux distributions, such as Debian's packages page which lists basic information about the project.¹³ Naturally there is also an entry on Wikipedia.¹⁴

From the very beginning however, K3b continues to maintain its home at <http://k3b.sourceforge.net/> - the place where today, most information is kept up-to-date. It was last updated on the 12th March 2010, in reference to the second release candidate for upcoming version 2.0. Only here do we find such information. Finally, a great source of up-to-date information is available from new core developer Michał Małek's blog.¹⁵ Małek's first post in November 2009 reveals that his motivation for the blog is to provide up-to-date information on the development status of K3b, saying:¹⁶

"This blog will provide you with information about K3b development. There weren't a lot info about it in the last months so, according to Aaron, you could assume the project is dead. That's not the case."

This was a direct response to Aaron Siego's criticism of KDE projects,¹⁷ which in his opinion are not providing enough communication with the Free Software world.

While K3b certainly has a reasonable amount of web coverage, the lack of consistency between sites is a concern. Users are likely to receive outdated and conflicting information, depending on the site they visit.

History

K3b began like many free software projects, as a single developer scratching an itch. In this instance, the time was 1999 and itch to be scratched was the lack of a decent optical burning application for Linux.¹⁸ Founder Sebastian Trüg (Trueg) thought he might as well just write his own and so began working on his new project.

Sebastian Trüg (Maintainer)

I started the K3b project in 1999 because I was not happy at all with the audio writing capabilities of the existing burning applications. So I thought: "why not write your own?". Like always after finishing the audio burning feature I just kept going.

Since then I have put a lot of effort into K3b (much more than was good for my studies of computer science ;). A lot of good feedback stimulated me to enhance K3b to fit all my users needs. The main goal of K3b was always to have a very intuitive to use interface without the usual lack of features that come with most easy applications. I wanted (and still want) an application that someone who is going to burn his or her first CD can handle easily and on the other hand one should be able to influence most settings if wanted.

Source: K3b Website¹⁹

Releases

The K3b project page on Sourceforge shows the oldest release as version 0.8.1, from 3 March 2003. The Internet Archive on the other hand, shows that the oldest version of K3b released on Sourceforge is actually version 0.3, from 6th May 2001.²⁰ It is likely that this was close to the first public release, although Trueg had started the project two years earlier.

11 <http://freshmeat.net/projects/k3b/>

12 <http://www.ohloh.net/p/k3b>

13 <http://packages.debian.org/sid/k3b>

14 <http://en.wikipedia.org/wiki/K3b>

15 <http://michalm.wordpress.com/>

16 <http://michalm.wordpress.com/2009/11/28/k3b-1-69-2-0-alpha4/>

17 <http://aseigo.blogspot.com/2009/09/continuous-communication.html>

18 <http://k3b.plainblack.com/team>

19 <http://k3b.org/team>

20 http://web.archive.org/web/20010630014400/sourceforge.net/project/showfiles.php?group_id=26138

The latest stable release (version 1.0.5) was made on 27th May 2008, which still ships with some Linux distributions. This release was the last to be written in Qt3, after which time development focus switched to creating a port for the newly released Qt4, which the then upcoming KDE 4.0 release would be using. Since then, there have been six non-stable releases, starting with version 1.66.0alpha2 exactly a year after 1.0.5. The port to Qt4 is now complete, however the project is yet to release the stable 2.0 version (the latest release as of May 2010 is version 1.91.0rc2) as it finalises a few remaining bugs. As such, most modern distributions such as Ubuntu are shipping a beta or release candidate version of K3b, rather than the older Qt3 based stable version.²¹

All in all, there have been a total of 22 stable releases since version 0.3 on the 6th May 2001, but only eight of these are major version releases. The total number of releases (including minor and non-stable) is 30, with an average number of just over 3 releases each calendar year. Below is a table showing the release history, date, version size and number of downloads.

Date	Version	Size (MB)	Downloads
2001-05-06	0.3	1.8	970
2001-05-07	0.3.1	1.99	994
2001-06-08	0.4.1	0.41	3083
2001-10-17	0.4.2	0.48	899
2001-10-22	0.4.3	0.49	2136
2001-12-04	0.5.0	0.72	1792
2001-12-09	0.5.1	0.72	6533
2002-03-27	0.6pre1	1	1391
2002-04-01	0.6pre2	1	4586
2002-05-26	0.7	2	7777
2002-09-21	0.7.1	2.2	2794
2002-10-16	0.7.2	2.3	395
2002-10-17	0.7.3	2.3	3765
2002-11-07	0.7.4	2.3	4193
2002-11-22	0.7.5	2.5	13837
2003-02-08	0.8	2.8	12475
2003-02-27	0.8.1	2.8	64939
2005-05-13	0.11.24	3.2	26442
2006-08-23	0.12.17	4	40446
2007-04-19	1.0.1	5.1	20882
2007-06-23	1.0.2	5.1	8038
2007-07-23	1.0.3	5.1	38489
2007-11-02	1.0.4	5.1	53926
2008-05-27	1.0.5	5.1	127589
2009-05-27	1.66.0	3.9	16446
2009-10-14	1.68.0	3.9	7240
2009-11-26	1.69.0	3.9	11133
2010-01-30	1.70.0	8.6	5451
2010-03-05	1.90.0	12.6	8477

Source - Sourceforge²² and Internet Archive²³

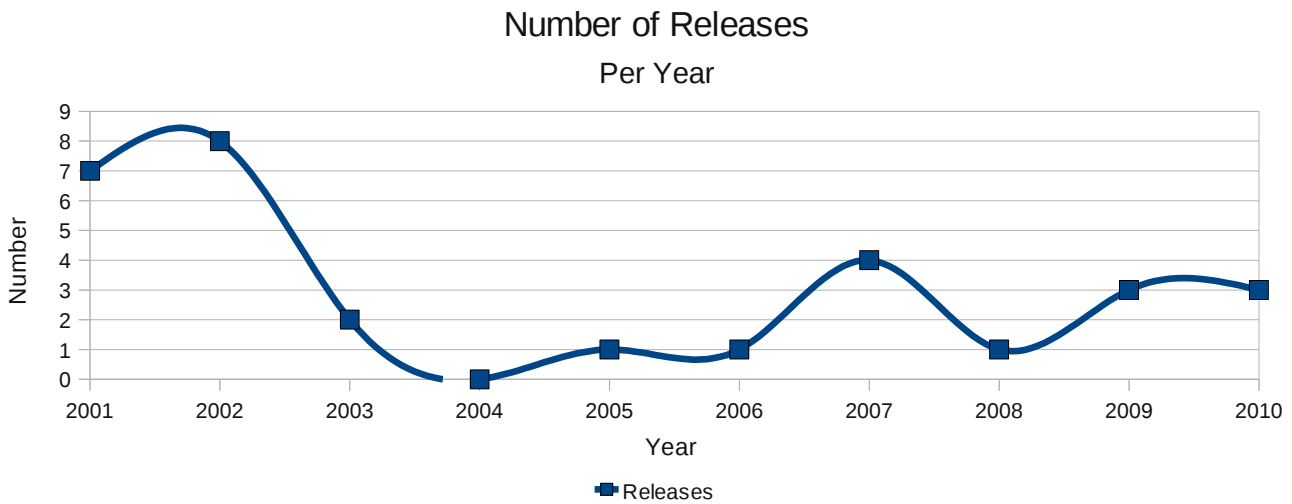
The early days of K3b showed a large number of releases per year, with the highest number being in 2001 and 2002 which saw 7 and 8 releases respectively. For the next number of years the number of releases was greatly reduced, even reaching zero in 2004. The next biggest jump occurred in 2007 which saw the first version 1.x release with a total of 4 releases. In 2008 there was only a single release – the current stable 1.0.5.

21 <http://packages.ubuntu.com/lucid/k3b>

22 <http://sourceforge.net/projects/k3b/files/>

23 http://web.archive.org/web/20030424154631/sourceforge.net/project/showfiles.php?group_id=26138

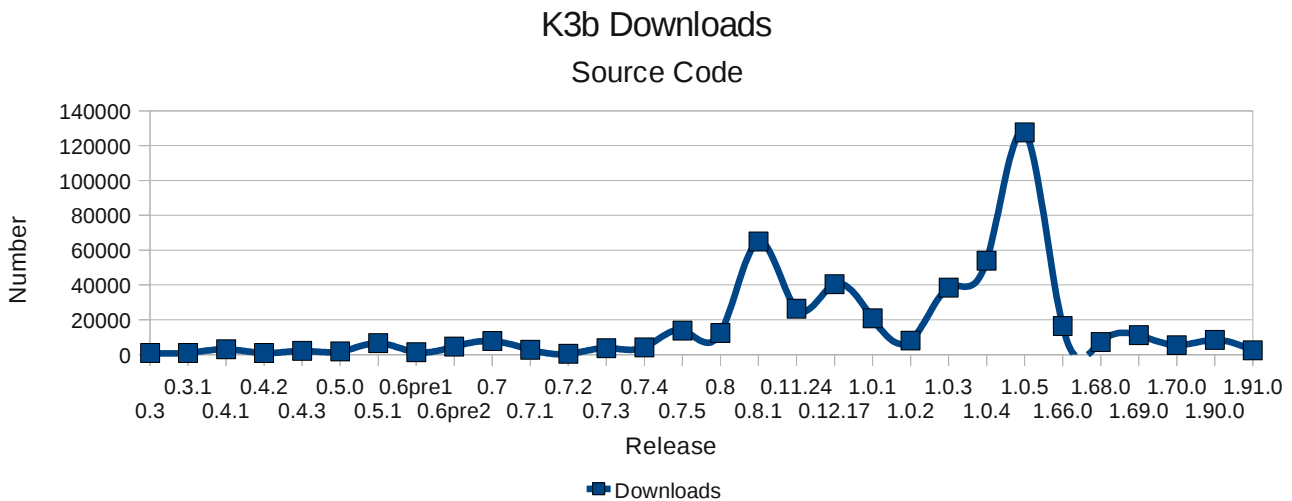
The following chart provides a graphical representation of this information.



Source - Sourceforge²⁴ and Internet Archive²⁵

K3b only officially offers the source code for download (via specific releases as tarballs, or via version control system), although from time to time in the earlier release there were some binaries provided for SuSE and Red Hat.²⁶ Because K3b is primarily packaged by distributions, the number of downloads on the Sourceforge project page mostly likely does not accurately reflect the total number of distributions of K3b (aside from the fact that it is also downloadable from other sites such as Softpedia²⁷).

Most users will have installed K3b via their distribution's package management system, and as such a single download could represent tens of thousands of binary installs from a distribution. Nevertheless, it is interesting to see how the number of downloads has changed over time. Certainly the version with the greatest number is 1.0.5, the current stable release for the past two years. The following chart provides a graphical representation of this.



Source - Sourceforge²⁸ and Internet Archive²⁹

Over time the size of the source code has generally grown steadily with each release. The first release, 0.3, was 1.8MB, but with version 0.4.1 this dropped back to a mere 0.4MB. The first Qt4 port, version 1.66.0alpha2, was

24 <http://sourceforge.net/projects/k3b/files/>

25 http://web.archive.org/web/20030424154631/sourceforge.net/project/showfiles.php?group_id=26138

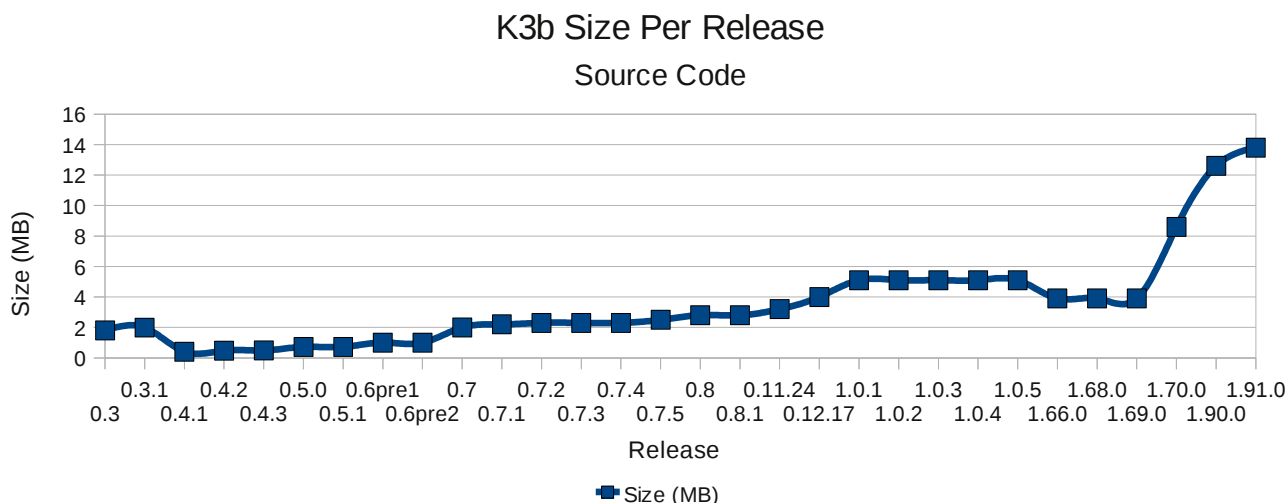
26 http://web.archive.org/web/20030424154631/sourceforge.net/project/showfiles.php?group_id=26138

27 <http://linux.softpedia.com/get/Utilities/K3b-2027.shtml>

28 <http://sourceforge.net/projects/k3b/files/>

29 http://web.archive.org/web/20030424154631/sourceforge.net/project/showfiles.php?group_id=26138

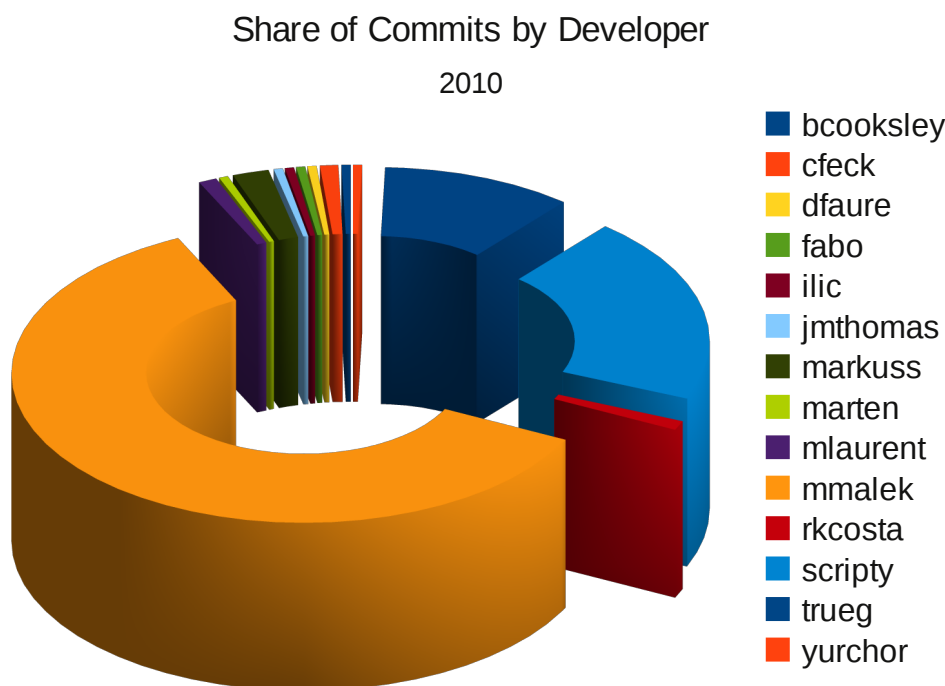
3.9MB whereas the latest version has jumped to 13.8MB! It appears that the newer versions are gaining lots more code – hopefully new functionality! The following chart provides a graphical representation of this data.



Source - Sourceforge³⁰ and Internet Archive³¹

Who develops K3b?

There is currently a small core team which continues to contribute to the further development of K3b. Although the K3b website lists just 3 developers,³² analysis of the source code shows that so far in 2010, 15 developers have committed changes. However the majority of commits are indeed performed by just 3 developers (trueg, scripty and mmalek), with other developers committing just 1 or 2 changes to the source code (except for markuss with 4). The following chart shows the commit share of these 15 developers in 2010.



Source – SVN log

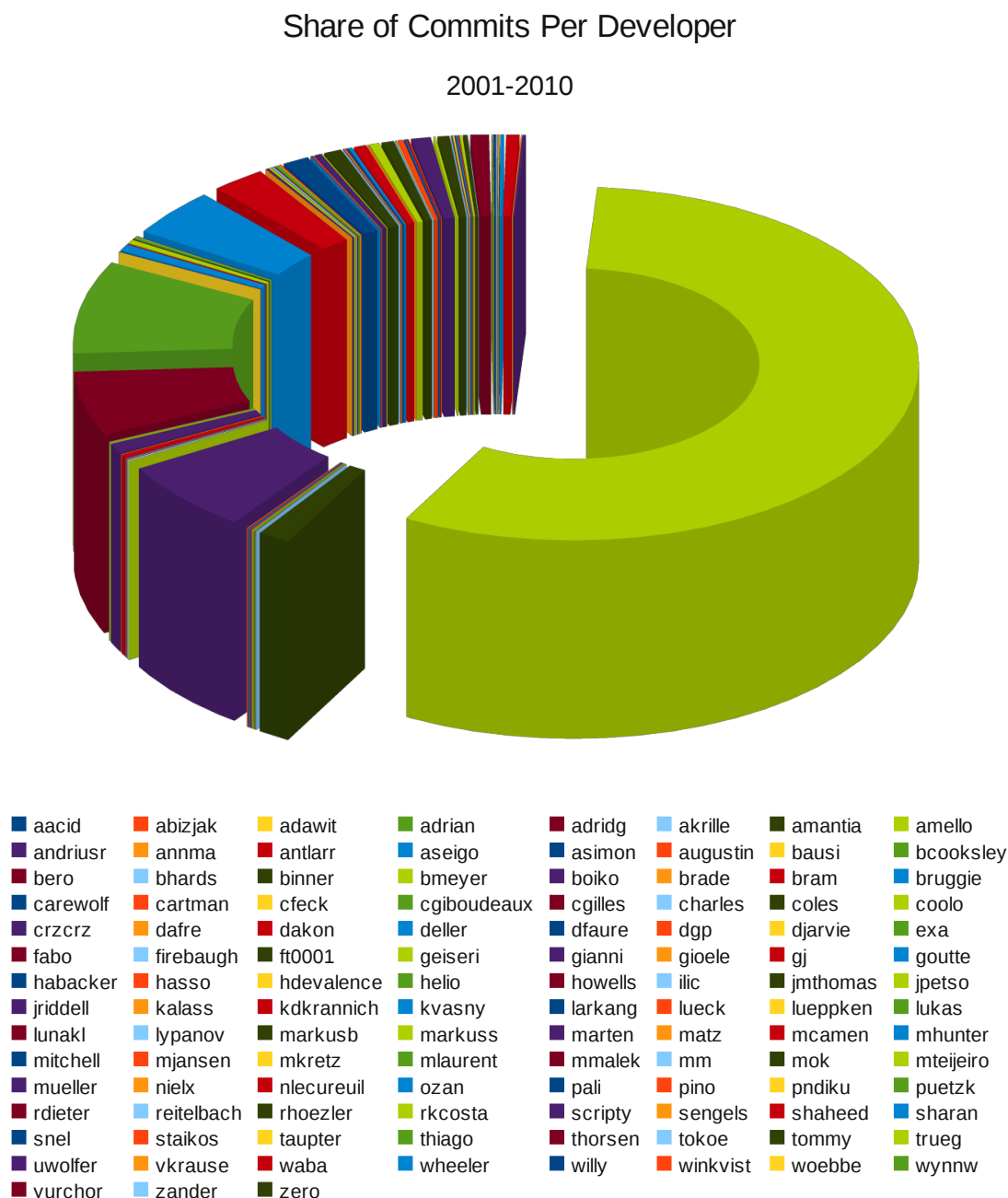
³⁰ <http://sourceforge.net/projects/k3b/files/>

³¹ http://web.archive.org/web/20030424154631/sourceforge.net/project/showfiles.php?group_id=26138

³² <http://k3b.plainblack.com/team>

Over the life of the project however, analysis of the source code shows commits from a total of 115 developers. It should be noted however, that this does not take into account developers using multiple aliases, nor contributions from external developers who have no commit access. Basic analysis of the source code (by running a *grep -i thanks* on SVN log) suggests around 35 commits were made for patches written by others without access to the source control system.

The following chart created from the SVN log shows the total share of commits for each developer, over the life of the project. Trueg is clearly out in front with more than half the total commits. As we can see above, this is a very different story when looking at current state of development, however it provides a good overall perspective.



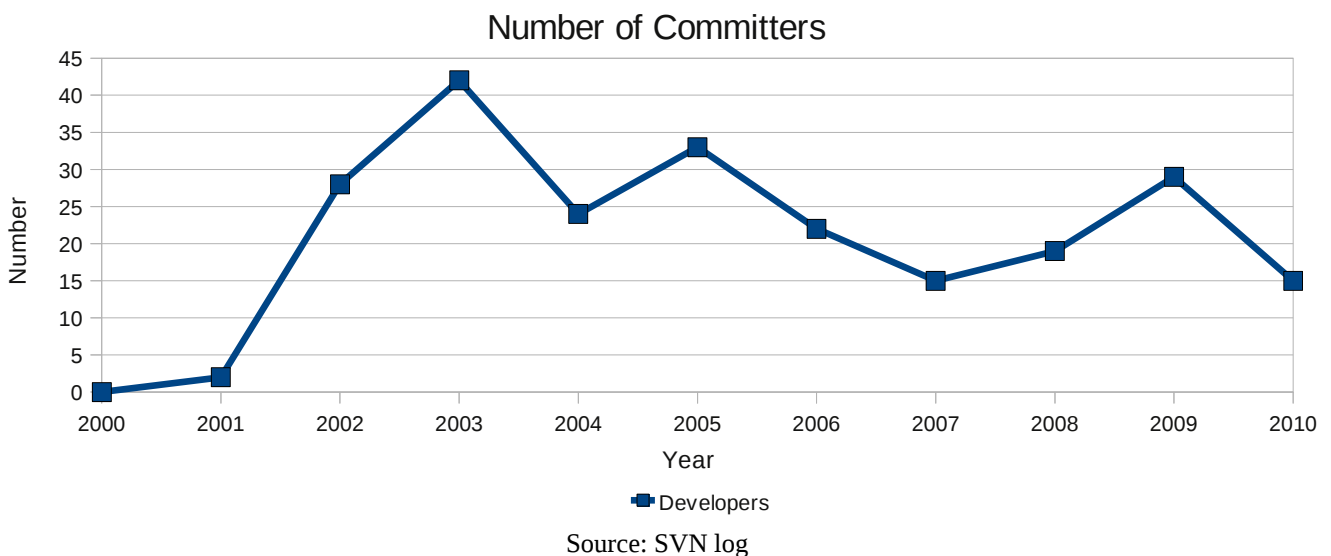
Source: SVN log

What this clearly shows, is the large number of developers over the life of the project. Of all these developers, 35% made only 2 commits and 72% made less than 10 commits. There are however, several other developers who have contributed a great deal (>100 commits) and deserve egoboo, namely:

- **mllaurent** with 1313 commits

- **scripty** with 1022 commits
- **kvasny** with 674 commits
- **kdkrannich** with 392 commits
- **tommy** with 236 commits
- **habacker** with 194 commits
- **mueller** with 146 commits
- **boiko** with 143 commits
- **adridg** with 134 commits
- **ft0001** with 128 commits

Although the total number of developers who have contributed to K3b is 115, the number of developers working on K3b (making commits) within any given year has changed over the life of the project. As the following chart shows (created from SVN statistics), the average number of developers is 23 per calendar year, while the project reached its peak in 2003 with 42 developers making commits. With just 15 active developers in 2010, this year the project is a little more light on than average.



Finally, Małek confirmed via email³³ that *any KDE developer* has commit access to K3b's source code. This is because the project uses KDE's sole SVN based repository. This means it is very easy for existing KDE developers to contribute.

Location

Many of the developers appear to be located in Europe, which is consistent with a large number of KDE based projects³⁴ (with KDE originating in Germany). Unfortunately, statistic gathering site Freshmeat does not provide much more information about K3b.³⁵ While not an accurate reflection of the all past and present developers, Ohloh does provide a map showing the locations of 8 developers³⁶ (those who have signed up and provided their location within their profile).

33 <http://mail.kde.org/pipermail/k3b/2010-May/000086.html>

34 <http://worldwide.kde.org/map/>

35 <http://freshmeat.net/projects/k3b>

36 <https://www.ohloh.net/p/k3b/map>



Source: Ohloh³⁷

Lead developers

We can see from the SVN logs that project founder Trueg has far and away the greatest number of commits. This makes sense in a general sense as he is most likely to be motivated to work on the code. He has also been working on the project for the longest period of time.

We also know that Trueg now considers Małek to be the core developer, thanks primarily to his work on the port to Qt4. As such, let's take a closer look at the contributions of these two developers.

Sebastian Trueg

Trueg remains the project leader, however he has been busy working on other KDE based projects since 2007 (in particular Nepomuk)³⁸ and has not contributed a large number of changes to K3b this past year (well not as large as in previous years). Indeed, on the main K3b website, Trueg now considers recent contributor Michał Małek as the project's core developer, saying:³⁹

"Michał Małek - I think today we should call him the new K3b core developer - did amazing work on K3b 2.0 which was never this close to a final release."

While Trueg has slowed his own commits to K3b, he has nevertheless continued to contribute. Over the life of the project, Trueg has made a total of 8807 commits. The two most "productive" years (assuming commits equals productivity!) were 2003 and 2006, in which he made 1982 and 1928 commits respectively.

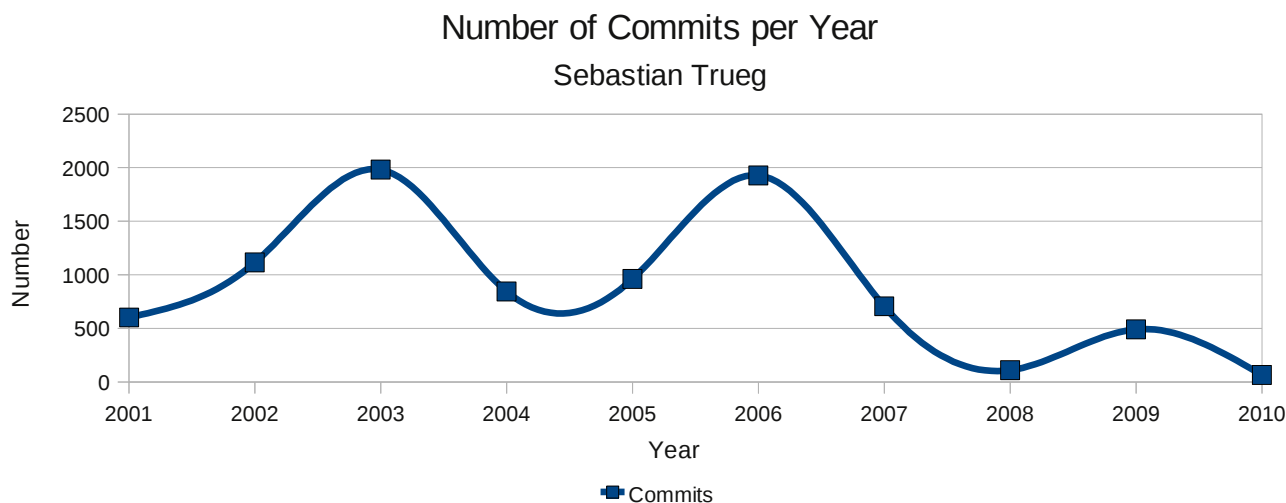
The following chart, created from the SVN log show how this has moved over time. Due to Trueg's enormous

37 <https://www.ohloh.net/p/k3b/map>

38 <http://dot.kde.org/2007/04/25/sebastian-tr%C3%BCg-k3b-10-and-more>

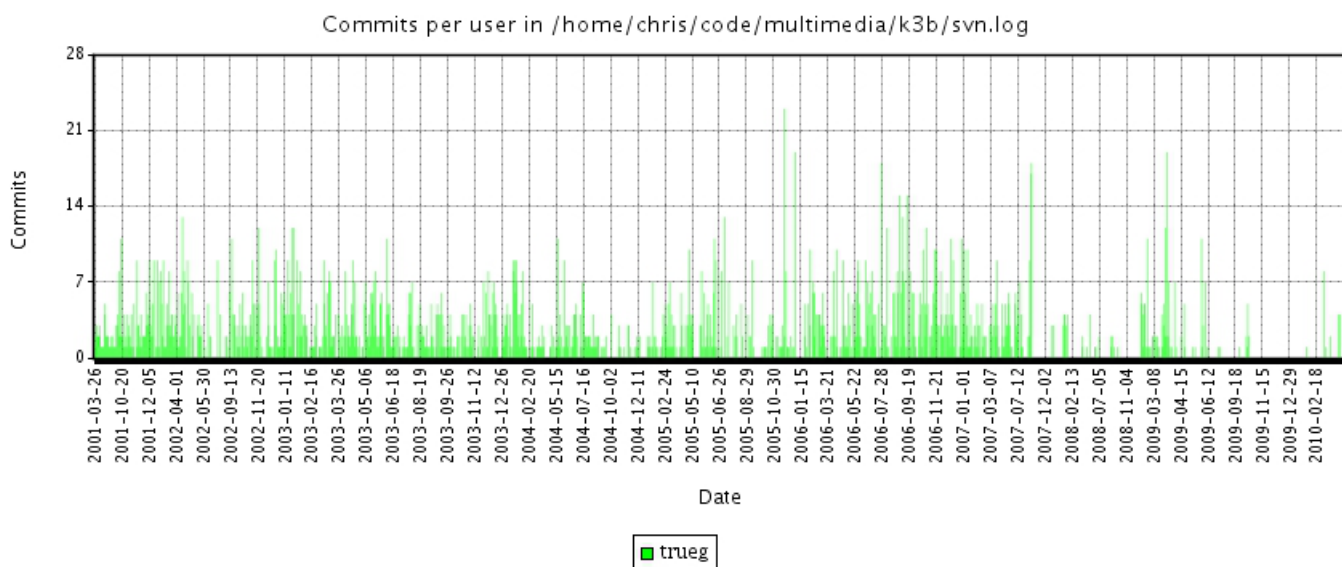
39 <http://k3b.plainblack.com/k3b-news>

number of commits in 2003 and 2006, his contributions in 2008 and 2010 look non-existent. That is not the case however, where he as in fact contributed 110 and 65 commits respectively.



Source: SVN log

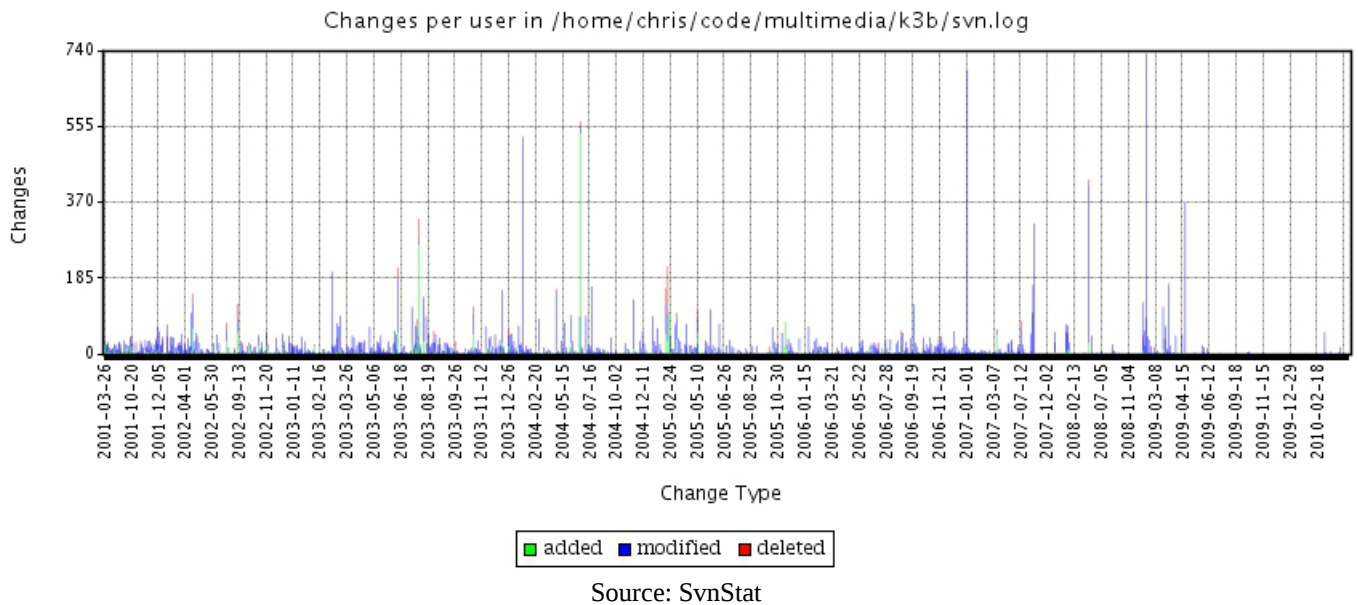
The following chart, generated by SvnStat⁴⁰ shows Trueg's commits over time. Naturally the most consistent block of work appears to be at the beginning of the project, with much higher and slightly more sporadic contributions coming into play around 2004 and 2005. We can also see that towards the end of 2007 and into 2008, the frequency of his contributions dropped down considerably. There was another spike for initial work in 2009, which then waned off again. Finally, there are a smaller number of contributions representing this year.



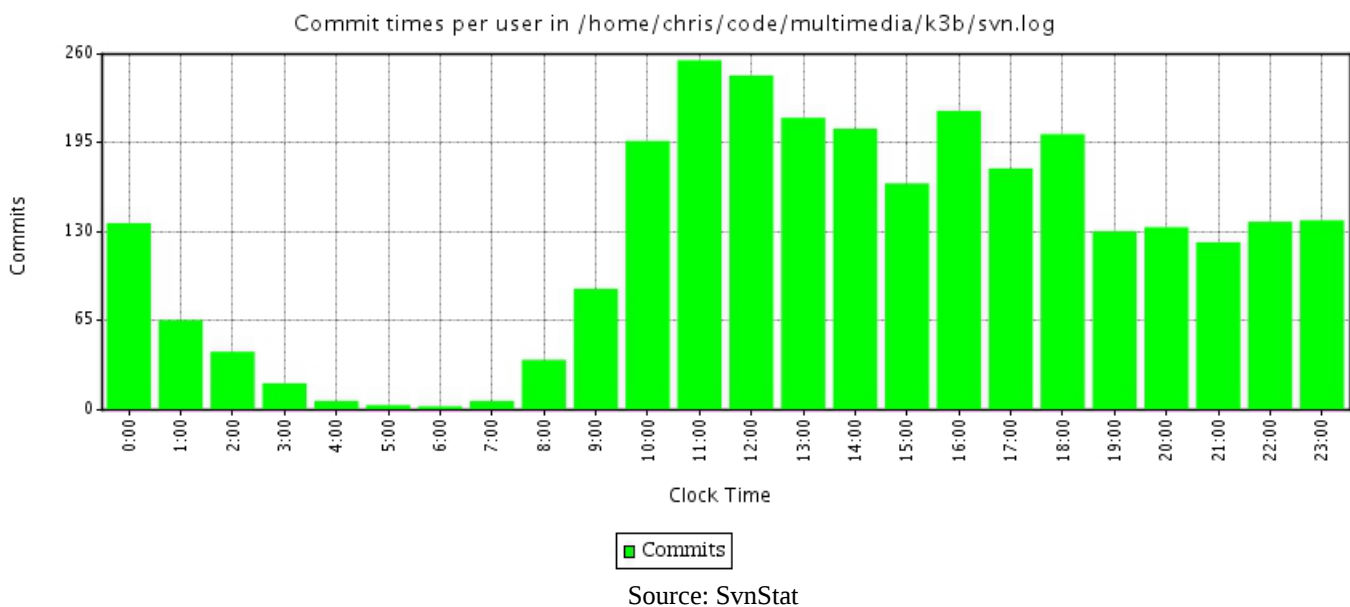
Source: SvnStat

So there have been lots of commits by Trueg over the life of the project, but what kinds of commits have they been? Have they been mostly the deleting and creating of files, or modification of existing files? The following chart provides the answer. Overwhelmingly, these have been modifications to existing files, although there are also a large number of new files added. This is perhaps natural to expect given that Trueg was the founder and original developer of the project.

⁴⁰ <http://sourceforge.net/projects/svnstat/>



Finally, this interesting little graph shows the number of commits for each hour of the day. Trueg is perhaps most productive between 11am and 6pm, although his commits also continue well up to midnight and beyond. It looks like he gets around 3 hours sleep a night!



Overall, Trueg has remained a consistent contributor to K3b over the entire life of the project. Although recently his contributions have been somewhat smaller in number, he is still very much active and involved in the progress of his project.

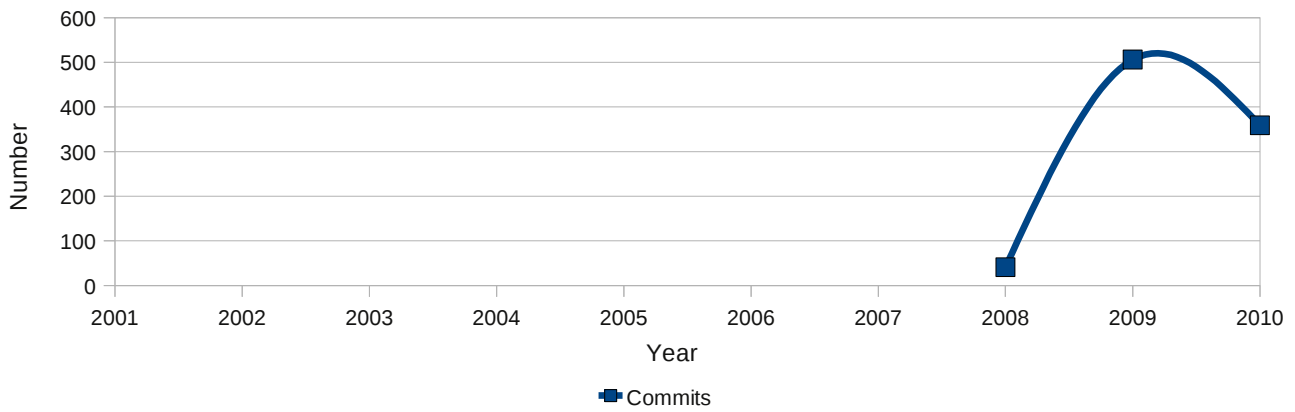
Michał Małek

Małek started working on K3b in 2008. He has been greatly responsible for porting the application from Qt3 to Qt4, while Trueg was busy working on other KDE projects.

He has so far made 908 commits to the source code, with the majority of these occurring in 2009. Should his current commit rate continue, he is on track to better this number in 2010 however. Of course, the chart below does not reflect his contribution accurately, as only half of 2010 has passed!

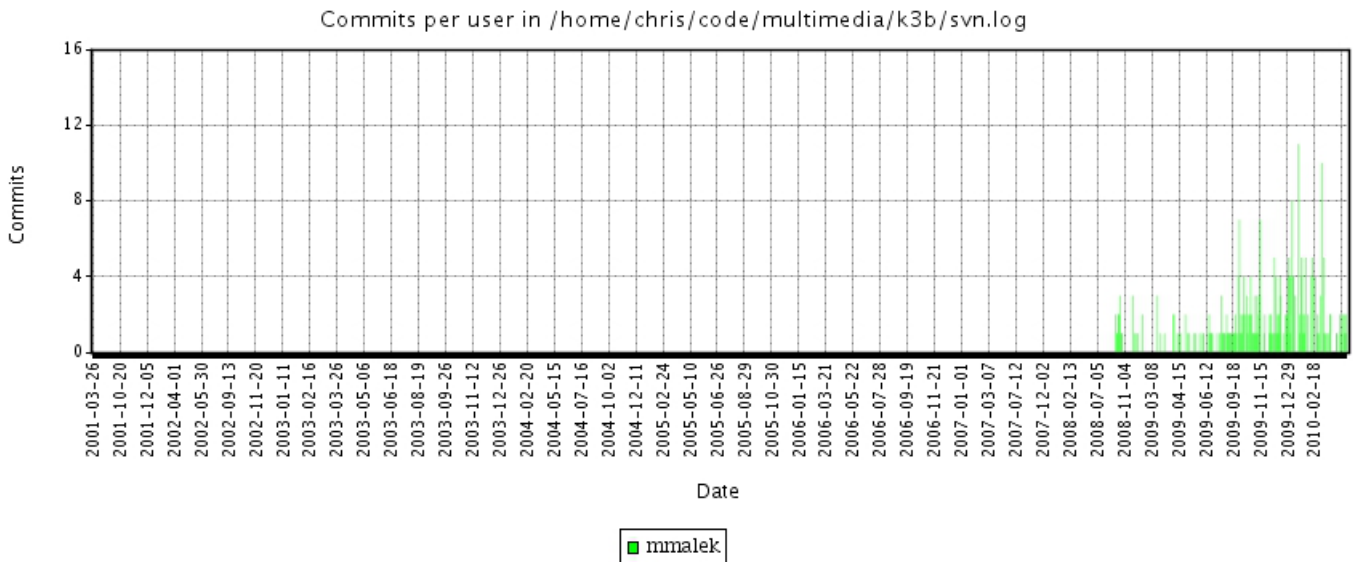
Number of Commits per Year

Michał Małek



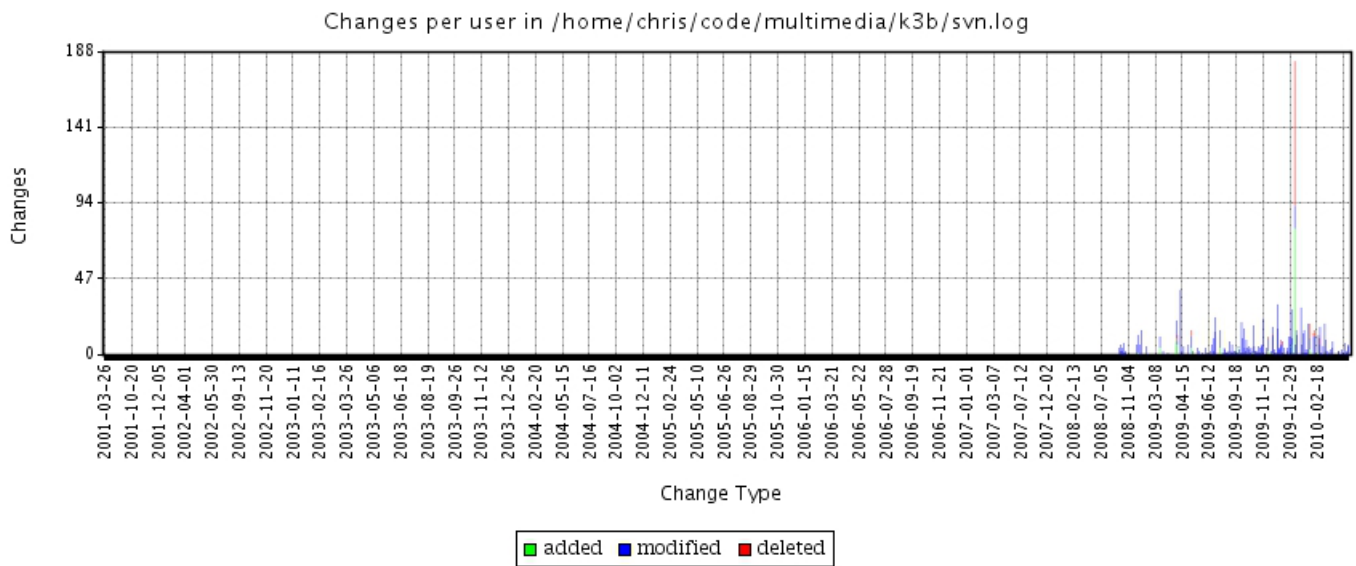
Source: SVN log

The following chart from SvnStat perhaps better shows Małek's contributions over the life of the project. It shows that Małek was a solid contributor right from the time he began in late 2008, with 41 commits. Things really kicked up a gear towards the end of 2009 with 506 commits for the year, while 2010 is looking like another big year with 359 contributions in less than 6 months.

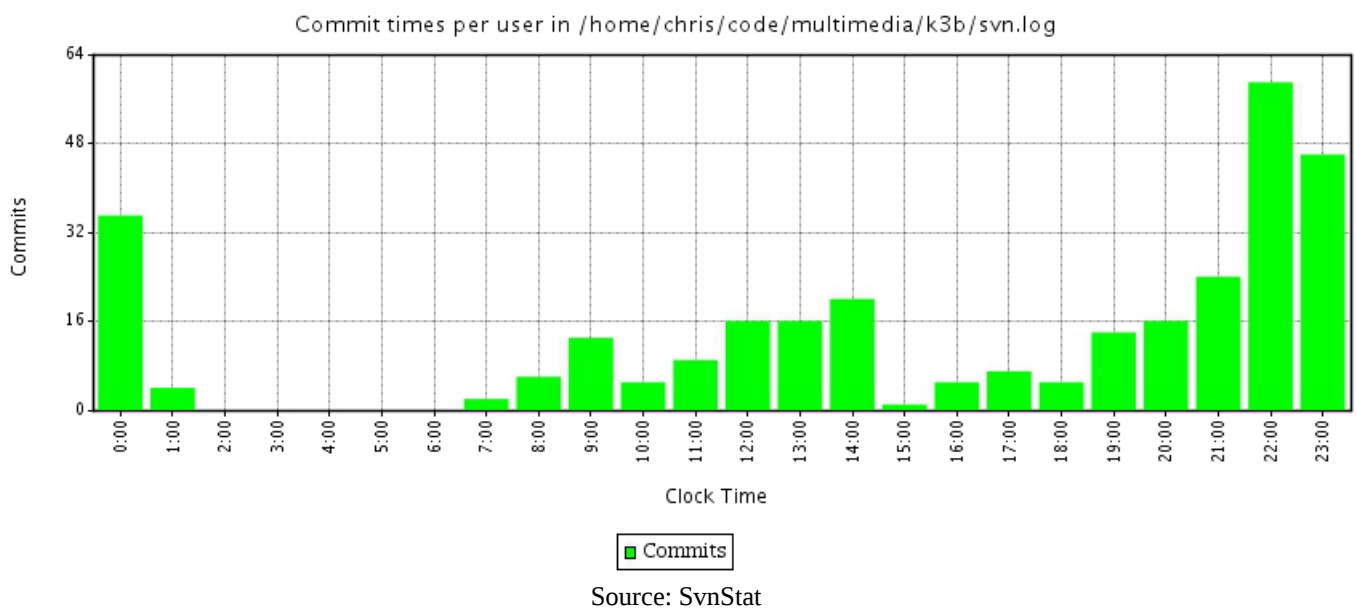


Source: SvnStat

The following chart shows the types of commits that Małek has made. Interestingly, in 2009 there was a large spike in the number of new files – this was most likely due to the work he did on the port to Qt4. Similarly, many existing files were also deleted at this time. Overall however, the majority of commits are for changes made to files, which is to be expected.



Finally, Małek is perhaps a bit more of a night owl than Trueg, as the majority of his commits happen late at night. This difference is most likely due to the fact that in the past Trueg has been fortunate enough to be paid to work on K3b, whereas Małek is contributing his spare time. Of course, this could also simply come down to work patterns and whether developers like to commit as they go, or all at once at the end.



Małek took over as core developer at a very crucial time, when the need for a port to Qt4 was high. Many Linux distributions were moving to the new KDE 4.x, however the older K3b meant Qt3 libraries were still needed. As Trueg admits, he has done a great job in bringing K3b up to speed and the final Qt4 based release has never been so close.

Motivations

Sebastian Trueg started the project from humble beginnings. After completing various features, he “just kept going” and was soon avoiding work on his Computer Science studies at University. On the K3b website, he says: “a lot of good feedback stimulated me to enhance K3b to fit all my users needs”, so clearly this motivated him to continue his work on the project. Trueg also writes:

“The main goal of K3b was always to have a very intuitive to use interface without the usual lack of features that come with most easy applications. I wanted (and still want) an application that someone who is going to burn his or her first CD can handle easily and on the other hand one should be able to influence most settings

if wanted.”

This provides the project with a clear, simple goal, one that has remained true for the past decade. K3b has a unique, simple interface which fronts an extremely powerful back-end. It is without a doubt the greatest optical disc authoring application in the Free Software world and definitely rivals other proprietary products.

There was little information freely available on the Internet explaining what motivates Michał Małek to work on K3b, however he was willing and able to reply to some direct questions via email. Małek provided four main points as to what motivates him to work on K3b. These were:

1. *I've been using K3b and saw that there's not much work on it and I needed it on KDE SC 4.x.*
2. *I've been using KDE software for a couple of years and wanted to contribute back to it.*
3. *Friendly community is an added bonus and a low entry barrier definitely helps to start hacking on KDE. It's very easy to get KDE SVN account.*
4. *In the end I just like programming and like spending my free time doing something useful.*

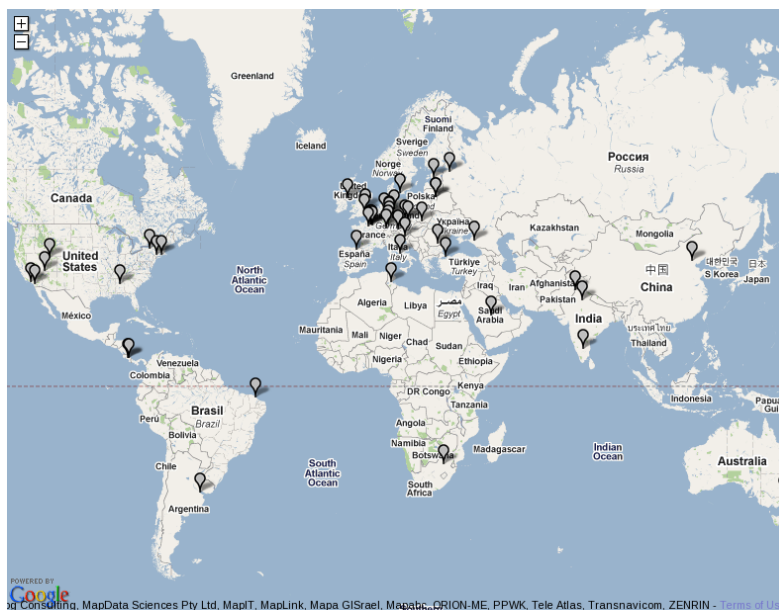
These reasons no-doubt resonate with many Free Software developers.

Who uses K3b?

It is simply impossible to know how many people use K3b (as is common with FOSS projects). We have download statistics for the source code, however as most users will install K3b via their Linux distribution's binary package management system this are not particularly helpful. As previously mentioned, a single download of a source tarball from Sourceforge might represent tens or a hundreds of thousands of users.

K3b is included in every major (and probably also minor) distribution, particularly those which are KDE based. Our best bet at guessing might be to find out how many distributions distribute K3b, how many users run that operating system and then how many run a KDE based desktop. This however is mere fantasy as distributions themselves don't even know how many users they have! Best guesses put a world-wide usage of desktop Linux at 1% of all computers, but it's impossible to extrapolate further from this statistic.

Users subscribed to Ohloh can announce their use of K3b, however this does not provide any real indication to the total number of users (indeed only 442 users on Ohloh have nominated it). Nevertheless, the following map shows that the majority of Ohloh users live in Europe, which is consistent with the location of developers (of course this might just mean more Europeans use Ohloh on average, or that they are more likely to vote for their favourite applications). Still, it makes a pretty map.



Source: Ohloh⁴¹

41 <https://www.ohloh.net/p/k3b/map>

We can safely say that there are more than one and less than \$WORLD_POPULATION individual users.

Governance

Project Team

It is a standard free software project which has a small project team. As we have seen previously, there are dozens of developers who have contributed, however there are several formal positions of responsibility within the project.

According to the project's website,⁴² these are:

Maintainer and Lead Developer: Sebastian Trueg

Developer: Michał Małek

IRC and forum support: Kim Højgaard-Hansen

Website designer: Tomasz Dudzik

Website maintainer: Michał Dutkiewicz

Formerly held official positions include:

Developer: Thomas Froescher (retired)

Developer: Christian Kvasny (retired)

Developer: Klaus-Dieter Krannich (retired)

Package Manager: Gianluca Varisco (retired)

Development is very much a bazaar style over the older cathedral methodology. While it started out as a hobby project, it has grown to a much more important project. Nevertheless, it has maintained its small team and project feel. It is also a meritocracy, as shown by Trueg's endorsement of Małek as the new core developer. Decisions are made by individual developers responsible for specific code, however currently Małek appears to be making many decisions for the wider project. This includes when to release the upcoming version 2.0 (although he also asks Trueg for his approval, see “Releases” below). For this reason Małek created his blog, so as to be able to more directly communicate the decisions he makes and report on the status of the project.

Copyright

K3b does not require users to sign over their copyright to the project. Indeed, copyright remains the property of the author, as seen by files in the source tree, such as *k3b.cpp* which says:

Copyright (C) 1998-2009 Sebastian Trueg <trueg@k3b.org>

(C) 2009-2010 Michal Malek <michalm@jabster.pl>

This file is part of the K3b project.

Copyright (C) 1998-2009 Sebastian Trueg <trueg@k3b.org>

Running a `grep` through the source code reveals dozens of other copyright notices by the author. How the project would manage a migration to a newer license such as the GPLv3 is unknown, as it has never changed.

Legal

In and of itself, K3b has no formal legal structure. Being a C++ Qt application however, it has been adopted by KDE and is a component of their Extragear module. This means that K3b falls under the umbrella of KDE e.V.,⁴³ which is a not-for-profit organisation registered in Germany. It is the legal entity which represents the wider KDE SC Project in all legal and financial matters.

KDE e.V has a Statute which declares the structure of the not-for-profit, as well as its intentions and definitions.⁴⁴ It has also set out rules and policies which govern it.⁴⁵ There is a board consisting of five persons⁴⁶

⁴² <http://k3b.sourceforge.net/?q=about>

⁴³ <http://ev.kde.org/>

⁴⁴ <http://ev.kde.org/corporate/statutes.php>

⁴⁵ <http://ev.kde.org/rules/>

⁴⁶ <http://ev.kde.org/corporate/board.php>

and hundreds of members.⁴⁷ KDE e.V is also associated with the Free Software Foundation Europe.⁴⁸ As such, it has very strong ties into the Free Software community.

Information on an legal issues over the years has not been available, specifically whether there have been any copyright violations, or issues over DVD ripping and multimedia encoding.

Finances

KDE e.V receives financial support via a scheme called “Supporting Members”.⁴⁹ This consists of both “Patrons” and “Supporters”, depending on the amount of annual fee paid and whether the member is an individual or corporation. Officially, finances for the K3b project should be handled through KDE e.V.,⁵⁰ however direct donations to developers are encouraged.⁵¹ The project also suggests grateful users could purchase a gift from the developers' Amazon wish lists. In 2006, Trueg ran a highly successful fundraiser to purchase some new equipment for testing and further development.⁵²

The project has received a reasonable amount of financial support,⁵³ both from corporations and hundreds of individuals. Sponsorship includes monetary donations, hosting, hardware (particularly optical burners from manufacturers) and even a three month internship from SuSE when Trueg first started out on the project. Currently Mandriva is sponsoring the Qt4 port of K3b.⁵⁴

Licensing

According to the *COPYING* license file in the project's source code tree,⁵⁵ the main program is licensed under the GNU General Public License v2⁵⁶. Several other files are licensed under the LGPL, however a copy of this license is not included in the source code.

The license K3b has chosen means that it meets the definition of a Free and Open Source Software project, as defined by both the Open Source Initiative⁵⁷ and of course the Free Software Foundation, whose licenses the project has adopted. Indeed, revision history from the project's version control system shows that the GPLv2 has *always* been the license,⁵⁸ right from the very beginning over 9 years ago.

Culture

Although K3b is a high profile application and a very important project to the Linux desktop, it remains very quiet and modest. This is perhaps part and parcel to having a small development team. The forums, mailing list and IRC channel are all very, very low traffic. Conversations sampled appear to show a reasonably relaxed and positive culture and as previously mentioned, K3b appears to be heavily meritocracy based.

The other aspect that contributes heavily to the culture is that K3b is a highly functional and complete program. Most of the existing features have been there for a long time and not a lot of further innovation or programming of outstanding components is required (although support for USB drives instead of just optical media is planned⁵⁹). The Qt4 port is perhaps the most exciting thing recently, which has caused lots of coding to be done. Having said that, K3b has been building in new features such as support for Blu-ray Disc, but in general the optical storage arena is fairly static now.

47 <http://ev.kde.org/members.php>

48 <http://ev.kde.org/affiliates.php>

49 <http://ev.kde.org/supporting-members.php>

50 <http://mail.kde.org/pipermail/k3b/2010-May/000069.html>

51 <http://k3b.plainblack.com/donations>

52 <http://dot.kde.org/2006/03/08/k3b-fundraiser-started>

53 <http://k3b.plainblack.com/donations>

54 <http://blog.mandriva.com/2009/03/19/mandriva-helps-porting-k3b-in-qt4/>

55 <http://websvn.kde.org/trunk/extragear/multimedia/k3b/COPYING?view=markup>

56 <http://www.gnu.org/licenses/gpl-2.0.txt>

57 <http://www.opensource.org/licenses/gpl-2.0.php>

58 <http://websvn.kde.org/trunk/extragear/multimedia/k3b/COPYING?revision=88752&view=markup>

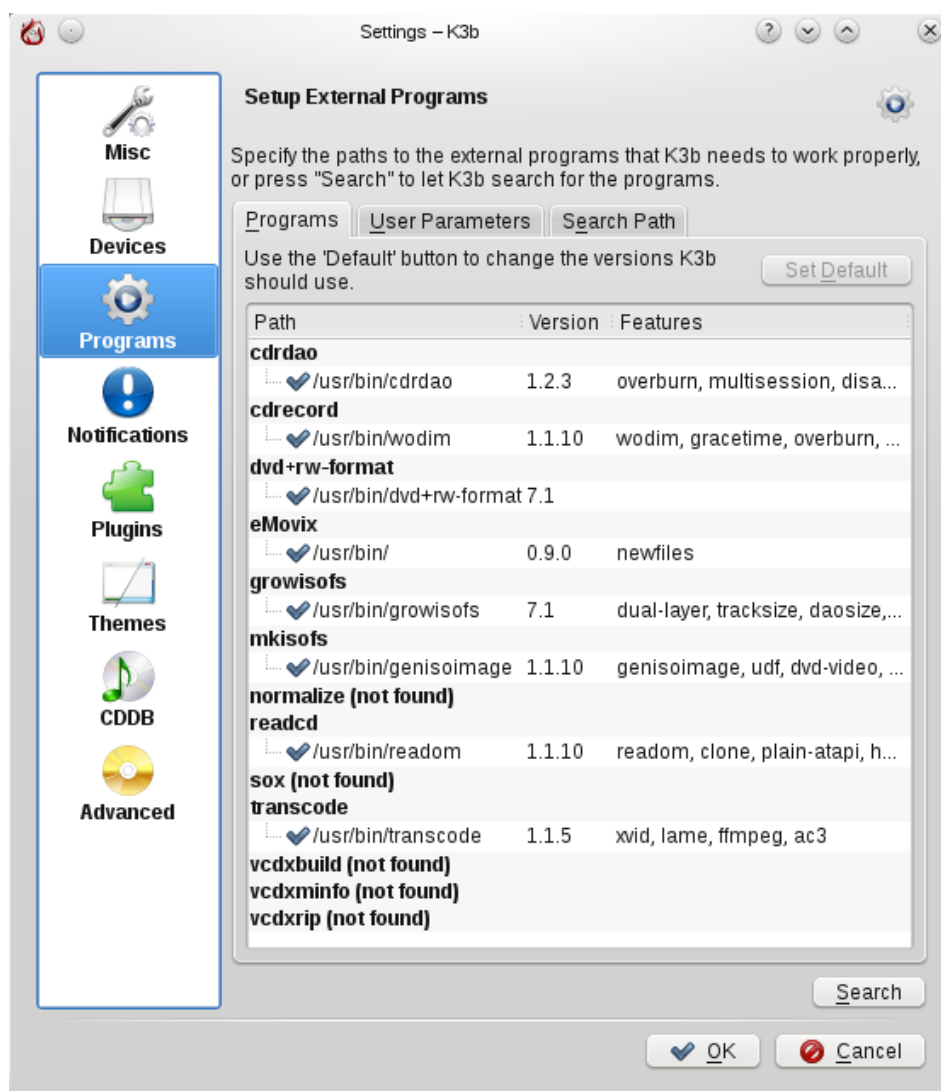
59 <http://lists.kde.org/?l=k3b&m=127282468516959&w=2>

When it comes to communication, K3b has not done a great job in the past. With lack of updates as to the status of the project lead some to believe that the project was dead. Not so, said Małek when he took it upon himself to create his blog with the purpose of providing more up-to-date feedback. The port to Qt4 is all but complete now, however we have not yet heard when this will be finalised. Those on the mailing list know that there are a few remaining bugs, however the public has been expecting the release over two months ago on 21st March (as of last update on Małek's blog⁶⁰). Having said that, it is great to see some open and (by comparison) frequent updates about the project. Hopefully this will continue! As mentioned in the beginning, there is still an issue of inconsistent information across the number of websites which include information about K3b. Hopefully this can also be rectified in the future.

There do not appear to have been any forks of K3b over the years, which is perhaps testament to the quality and completeness of the application and responsiveness of the development team to issues and ideas. Trueg did however, fork some Qt libraries⁶¹ in order to make them suit K3b's design better.

Relationships with other projects

In many ways, K3b is a front-end to many individual Free Software projects. For example, the project uses *mkisofs* to create ISO images and then burns them to CD with *cdrecord* (wodim). As such, it has a strong dependency on other projects, but in true free software style is not trying to re-invent the wheel. This is a good thing! The program will automatically scan for all required applications and warn the user if some are not found. The configuration section provides a way for users to re-configure this, as seen below.



60 <http://michalm.wordpress.com/2010/03/12/the-second-candidate/>

61 <http://trueg.wordpress.com/2009/03/23/intermission-why-i-needed-to-fork-qprocess-for-k3b/>

Previously K3b also depended on other libraries to provide additional functionality for tasks such as ripping audio to FLAC or Ogg Vorbis. This is now handled internally via their own plugin system.

Naturally, K3b also has a strong relationship with most Linux distributions and of course KDE SC itself. Perhaps one day it will be moved out of *extragear* and into the main tree!

Source code management

Originally, the project was held under the Concurrent Versions System (CVS), hosted on Sourceforge.⁶² In 2001 the project moved from Sourceforge and CVS over to KDE's SVN server. The history of the SVN server shows an initial import by Trueg with the comment “*new project started*“ on 26th March 2001.⁶³ In 2010, the KDE plans to move to Git,⁶⁴ at which point K3b would most likely follow suit.

So currently, K3b source code is managed only in the SVN repository of KDE Software Compilation (KDE SC) and is no-longer available via Sourceforge's version control systems. It is a part of the *Extragear* module which is for applications supported by KDE SC, but not official components of the distribution.⁶⁵ KDE provides WebSVN access is available for convenient browsing.⁶⁶

The stable branch of the project sits in the `/[KDE]/trunk/extragear/multimedia/k3b` module. There have been only four branches created⁶⁷ (because SVN is centralised these are discoverable) namely, *0.11*, *0.12*, *dvd_rw_branch*, and *libk3b-redesign*.

Currently the source repository consists of 1034 files of various types. According to Ohloh 96% of these contain C++ source code, the main programming language of the project. Ohloh provides the following breakdown of languages used in the repository.

Lines of Code By Language

Language	Code Lines	Comment Lines	Comment Ratio	Blank Lines	Total Lines
C++	98,972	24,116	19.6%	28,170	151,258
XML	2,779	0	0.0%	5	2,784
C	758	244	24.4%	196	1,198
shell script	97	42	30.2%	29	168
XML Schema	89	56	38.6%	30	175
HTML	10	0	0.0%	2	12

Source: Ohloh⁶⁸

The source consists of over 155,000 lines of code, although 18% of these are blank, with a further 18% as comments. This graph from Ohloh provides a graphical representation of the ratio between code, comments and blank lines.

62 http://web.archive.org/web/20020312184011/sourceforge.net/cvs/?group_id=26138

63 <http://websvn.kde.org/trunk/extragear/multimedia/k3b/COPYING?revision=88752&view=markup>

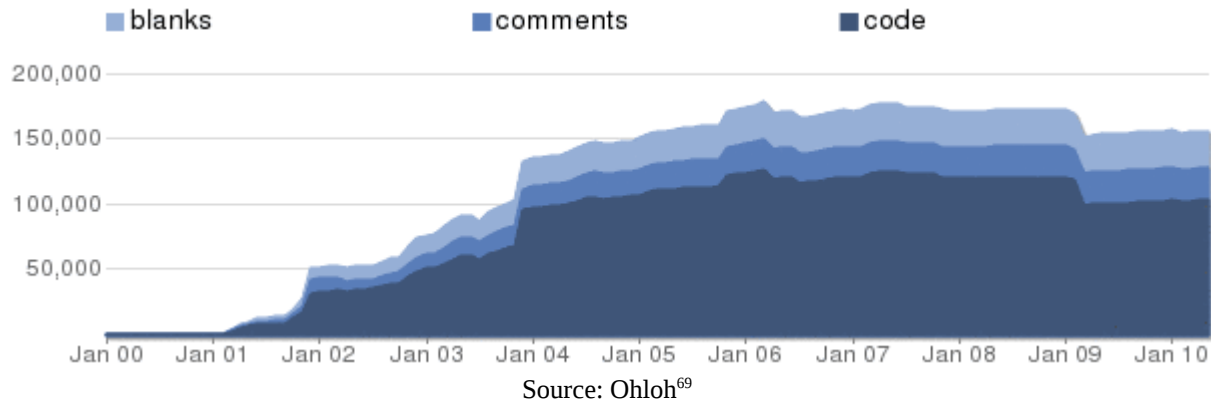
64 <http://techbase.kde.org/Projects/MovetoGit>

65 <http://extragear.kde.org/home/about.php>

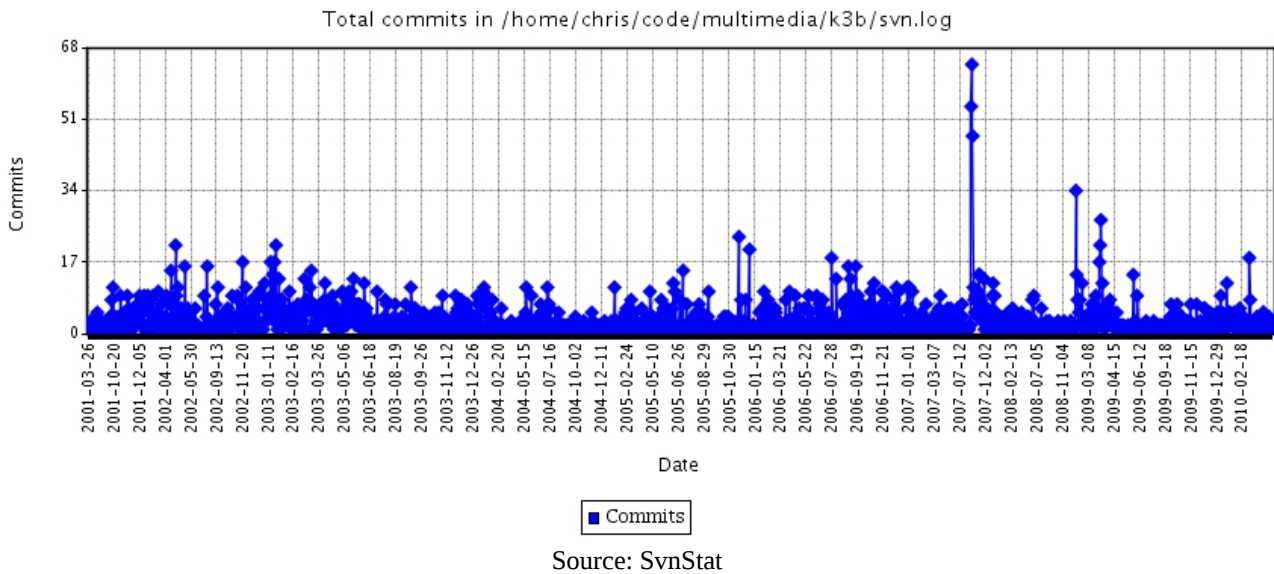
66 <http://websvn.kde.org/trunk/extragear/multimedia/k3b/>

67 <http://websvn.kde.org/branches/k3b/>

68 <http://www.ohloh.net/p/k3b/analyses/latest>



Analysis of the source code management system shows the total number of commits to be 5199 since 26th March 2001. The chart below shows a reasonably consistent commit history over the project's life.



The development of K3b seems very fluid with a decent work flow. Unfortunately, the centralised nature of SVN makes it harder for outside developers to contribute, as they cannot perform all the usual source code management functions (such as committing and branching) without write access to the server.

The move to Git should address this, which would mean outside developers could hack away to their heart's content and put their repository online for an existing developer to pull from. In the mean time they could use the SVN plugin for Git, use all of Git's functionality and submit a patch the "old fashioned way" to the mailing list.

Documentation

Being a KDE application, K3b has a built in user manual which is accessible through the *Help* → *Handbook* menu. The source code for this manual is included in the KDE multimedia section of their SVN server under the extragear module,⁷⁰ along with other applications like Amarok. Unfortunately this manual was last updated on 21st June 2005, which means it does not accurately reflect the current status of the program.

69 <http://www.ohloh.net/p/k3b/analyses/latest>

70 <http://websvn.kde.org/trunk/extragear/multimedia/doc/k3b/>



The K3b Handbook

Carsten Niehaus

Jakob Petsovits

Revision 0.03.00 (2005-06-21)

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[Legal Notice](#)

K3b is a CD and DVD burning application for KDE with a comfortable user interface.

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When approaching the mailing list about the state of the Handbook,⁷¹ it was mentioned that the preferred method for accessing and updating documentation is the online wiki instead of the Handbook. The wiki entry⁷² has slightly more up-to-date information, but is still not yet updated in preparation for the upcoming 2.0 release. The parallels between available documentation and website information is striking. Both exist in multiple formats and locations, and neither are completely up-to-date.

Bug tracking and support

K3b is supported on the project level via four main platforms, namely a single mailing list, bug tracker, online forums and IRC channel. All of these are extremely low traffic. The project utilises KDE SC's infrastructure for both their forums, bug tracker, and mailing list. Previously, the mailing list was used on Sourceforge. As seen by a post on Mašek's blog,⁷³ these services are relatively new (set up in February 2010) and as such there is not a lot of historical information available.

The original k3b.org website still only lists the KDE bug tracker and no-longer used Sourceforge mailing list as available methods of support,⁷⁴ although there is now a forum, IRC channel and new mailing list. The new website does correctly list all four support channels, however,⁷⁵ and specifies the forums as the preferred primary method of support. Nevertheless, support is also available via online wiki, built in hand book and of course, man pages.

Support

As K3b is mostly shipped with Linux distributions, often the first point of call will be the distribution's support

⁷¹ <http://lists.kde.org/?l=k3b&m=127079788829929&w=2>

⁷² <http://userbase.kde.org/K3b>

⁷³ http://k3b.sourceforge.net/?q=news/new_k3b_forum_and_mailing_list

⁷⁴ <http://k3b.org/support>

⁷⁵ <http://k3b.sourceforge.net/?q=support>

services. For example, Ubuntu has 250 hits when searching for K3b,⁷⁶ while a *very broad* keyword search the Debian mailing list shows 7555 results⁷⁷ (although this includes many types of post and not just about support). Because it is a front-end to many other Free Software programs, bugs may not necessarily be K3b related.

IRC

The the IRC channel is hosted on *Freenode.net#k3b*. It is extremely low traffic as evidenced by the connection message:

“[K3b - The CD/DVD/BD Kreator for KDE - K3b 2.0 will be released soonish - <http://www.k3b.org> - low traffic channel, have patience when you ask (usually ½ a day)]”

It can go for a week at a time without a single posted message. There are usually less than 10 users sitting on the channel, with the lead developers popping in from time to time. The channel is not logged elsewhere.

Bug Tracker

The bug tracker is certainly the most heavily used support mechanism and also has the longest history. It houses a total of 3356 bugs,⁷⁸ with only 324 of these currently “open”⁷⁹ (that's 9.65%) and just one new bug.⁸⁰ At the time of writing, the most recent bug was added on 20th May 2010,⁸¹ with the oldest dating back to 1st June 2002.⁸² The screenshot below shows the default interface.

Bug #	Dupe Count	Change in last 7 day(s)	Component	Severity	Op Sys	Target Milestone	Summary
190775	28	0	general	crash	Linux	---	Does not burn cue/bin or other in itself, works) (K3b::BinImageWrit K3b::BinImageWritingJob::start)
204614	27	0	general	crash	Linux	---	K3b crash when create a desktop XIOError, Device::from4Byte, Device::Device::getSupportedWri

Source: K3b Bug Tracker

The bug tracker is also used for tracking feature requests, to which end there are 57 entries.⁸³ The earliest is

76 <http://ubuntuforums.org/search.php?searchid=73190033>

77 <http://lists.debian.org/cgi-bin/search?>

query=k3b&DEFAULTOP=and&author=&sort=relevance&HITSPPERPAGE=10&language=en

78 https://bugs.kde.org/buglist.cgi?query_format=specific&order=relevance+desc&bug_status=__all__&product=k3b

79 https://bugs.kde.org/buglist.cgi?query_format=specific&order=relevance+desc&bug_status=__open__&product=k3b

80 <https://bugs.kde.org/buglist.cgi?>

bug_status=NEW&bug_status=ASSIGNED&bug_status=REOPENED&bug_status=UNCONFIRMED&bugidtype=include&chfield=[Bug+creation]&chfieldfrom=1d&chfieldto=Now&bug_file_loc=&cmdtype=doit&product=k3b

81 https://bugs.kde.org/show_bug.cgi?id=238327

82 https://bugs.kde.org/show_bug.cgi?id=43351

83 <https://bugs.kde.org/buglist.cgi?>

bug_status=UNCONFIRMED&bug_status=NEW&bug_status=ASSIGNED&bug_status=REOPENED&bug_severity=wishlist&votes=21&order=bugs.votes&product=k3b

from 23rd June 2003, with the latest being added on 31st August 2009. Users may vote for their favourite feature, the top one scoring 740 votes (although there is no mention about how many votes guarantee it gets implemented!).

Due to its heavy relationship with other programs such as cdrecord⁸⁴ or HAL⁸⁵, some bugs are caused by the way K3b interacts with these programs. These are addressed in K3b and the users do not appear to be shipped off elsewhere to get an answer for their problems.

Forums

While the forums are listed as the primary source of support, it has been active since 2008 and has only 22 threads.⁸⁶ The oldest post is from 23rd October 2008, with the most recent from 14th May 2010, so the forums are still being utilised and have not completely dried up. This small amount of use does not necessarily mean the forums are not being fully utilised. Indeed, K3b is very mature and just might not have many outstanding bugs! Of course, just because it's the preferred method of support, doesn't mean that all users will prefer to use it thus.

The screenshot shows the KDE Community Forums interface. At the top is the KDE logo and 'KDE Community Forums' header. Below this is a navigation bar with links to KDE.org, KDE.news, Planet KDE, and a 'More' dropdown. There are also links for Feed, Search, FAQ, Policy, and Members. A user control panel shows '0 new messages' and a 'Logout [csmart]' button. The main content area is for the 'K3b' forum, with a search bar and a 'NEW TOPIC' button. Below this is a table of forum topics:

Topics	Author	Replies	Views	Last post
Blu-ray woes	wayland	9	478	Fri May 14, 2010 9:20 pm wayland

Source: K3b Forums⁸⁷

Unfortunately, because the K3b forum is just a sub-part of the greater KDE forum, there is no way to know how many users have signed up just for K3b, or are regular KDE users. Similarly, any KDE moderator has access to the K3b forum and be able to administer the posts.

Mailing List

A new mailing list utilising KDE SC's framework was created in early 2010, primarily for developers and contributors (users are directed to the forums). The older user mailing list on Sourceforge⁸⁸ was closed and is no-longer accessible. Unfortunately, it does not appear to have been captured by the Internet Archive.⁸⁹ Below is a screenshot showing the sign-up page for the K3b mailing list.

⁸⁴ https://bugs.kde.org/show_bug.cgi?id=236814

⁸⁵ https://bugs.kde.org/show_bug.cgi?id=220511

⁸⁶ <http://forum.kde.org/viewforum.php?f=153>

⁸⁷ <http://forum.kde.org/viewforum.php?f=153>

⁸⁸ <https://lists.sourceforge.net/lists/listinfo/k3b-user>

⁸⁹ https://sourceforge.net/mailarchive/forum.php?forum_name=k3b-user

k3b -- for developers and other contributors interested in K3B

About k3b

English (USA)

If you want to discuss K3B development this is a place for you.
If you are a K3B user [KDE forums](#) are probably more appropriate.

To see the collection of prior postings to the list, visit the [k3b Archives](#).

Using k3b

To post a message to all the list members, send email to k3b@kde.org.

You can subscribe to the list, or change your existing subscription, in the sections below.

Subscribing to k3b

Subscribe to k3b by filling out the following form. You will be sent email requesting confirmation, to prevent others from gratuitously subscribing you. This is a private list, which means that the list of members is not available to non-members.

Your email address:

Your name (optional):

You may enter a privacy password below. This provides only mild security, but should prevent others from messing with your subscription. **Do not use a valuable password** as it will occasionally be emailed back to you in cleartext.

Source: K3b Mailing List⁹⁰

As K3b is an Extragear component of KDE SC, the extragear mailing list⁹¹ can also be used to discuss issues with K3b, as can the general KDE⁹² and KDE Multimedia⁹³ mailing lists (not to mention the KDE development,⁹⁴ documentation⁹⁵, translation lists, and many more!⁹⁶). All of this somewhat adds to the complexity of contributing to the project, but does allow for a great range of ways to seek assistance and contribute – if you know where to contribute to.

How are releases managed

K3b only releases tarballs of source code and not pre-built binaries. All of these are available via the Sourceforge File manager, while the source itself is tagged in the repository.⁹⁷ In the early history of K3b, there were some binary packages also released for Red Hat and SuSE, however this is now the responsibility of distributions themselves.

⁹⁰ <https://mail.kde.org/mailman/listinfo/k3b>

⁹¹ <https://mail.kde.org/mailman/listinfo/kde-extra-gear>

⁹² <https://mail.kde.org/mailman/listinfo/kde>

⁹³ <https://mail.kde.org/mailman/listinfo/kde-multimedia>

⁹⁴ <https://mail.kde.org/mailman/listinfo/kde-devel>

⁹⁵ <https://mail.kde.org/mailman/listinfo/kde-doc-english>

⁹⁶ <https://mail.kde.org/mailman/listinfo>

⁹⁷ <http://websvn.kde.org/tags/k3b/>

Trueg has been responsible for tagging releases since the beginning, however interestingly this only goes back to 2007. Małek has been responsible for this task as core developer since version 1.69.0, released in the beginning of 2010. The following snapshot of the WebSVN server shows the existing tags for K3b.

The KDE Source Repository

KDE Homepage / KDE Source Repository Homepage

Full Width Sitemap Contact Us

/ [KDE] / tags / k3b

Index of /tags/k3b

Files shown: 0
 Directory revision: 1103315 (of 1129034)
 Sticky Revision:

File	Rev.	Age	Author
Parent Directory			
1.0/	644079	3 years	trueg
1.0beta1/	606720	3 years	trueg
1.0pre1/	571313	3 years	trueg
1.0pre2/	581489	3 years	trueg
1.65.0/	957499	12 months	trueg
1.68.0/	1035333	7 months	trueg
1.69.0/	1055323	5 months	mmalek
1.70.0/	1082524	3 months	mmalek
1.90.0/	1103315	2 months	mmalek
1.91.0/	1103314	2 months	mmalek

Source: K3b WebSVN⁹⁸

Version 1.92 (2.0rc3) is about to be released. The prompting for this occurred on the IRC channel, where a discussion arose for the need for a new release, as there have been some fixes for remaining bugs – particularly to do with Blu-ray Disc support. Małek agreed that a new release was important and asked Trueg for his opinion, to which he agreed. The other reason for the new release is that distributions which are shipping the latest release candidate (version 1.91) are finding a lot of new bugs appearing in their bug trackers.

```
[21/05/10 22:34] <kimrhh> mmalek: people are still reporting blu-ray issues, but i don't catch all of them, they often go for releases, will you make a _rc3 with the latest blu-ray fixes soon?
[21/05/10 22:34] <kimrhh> mmalek: and can i persuade you to announce it on the mailing list when you do so i'll notice? ;)
[21/05/10 22:37] <mmalek> yes, rc3 needs to be released soon, but I also wanted to fix some stuff during the sprint
[21/05/10 22:37] <mmalek> what do you think, Sebastian, should we released RC3 today?
[21/05/10 22:38] <mmalek> there was an ubuntu release lately with 2.0-rc2 and it's visible in bugzilla
[21/05/10 22:38] <mmalek> there's a lot of new bugs
[21/05/10 22:41] <trueg> sure, rc3 seems like a good idea
```

Source: Freenode#k3b IRC channel, 21/05/2010

In preparation for this release, Małek posted a message to the mailing list, informing that he had uploaded a new tarball to the Sourceforge server, asking others to confirm that it compiled without error and that translations were working. He also noted that there are some 40 bugs currently outstanding in the bug tracker, however 10 of these were later marked for a future release (set as 2.1 target). Below is a snapshot of the email sent by Małek to the mailing list.

⁹⁸ <http://websvn.kde.org/tags/k3b/>

★ Michał Małek to k3b [show details](#) 2:57 AM (8 hours ago) [Reply](#)

Hi all,
I've just uploaded a 1.92.0 tarball to the server.
Please check if it compiles fine and translations got in. I'm not yet sure if it we need more RC releases. There are about 40 bugs in bugzilla, I will go through them and see what definitely should be fixed for 2.0. Nevertheless we need to decide at some point to release this as there always will be new bugs. What do you think, which bugs are blocking us now?

Changelog:

- * In some cases medium doesn't get accepted for multisession burning (230742)
- * Data files in VCD ripping view are not listed
- * Show "Modify Permissions" button in System Problem Dialog only when it makes sense (230706)
- * Crash after "Cancel" was clicked while adding audio files to AudioCD project (231348)
- * Error window at the start when a place on the left pane is not accessible (230194)
- * Incorrect minimum size of welcome widget (231939)
- * Hangs while ripping AudioCD with data tracks (231174)
- * Crash when auto-removing non-existing files from a project before the burning (236005)
- * Empty Blu-ray medium not detected properly (236069)
- * eMovix project cannot be burned (236823)
- * M3U playlist not read properly (237654)
- * K3b overwrites iso ignoring user choice on dvd copy with option "only create image" checked (185251)
- * Compilation fails with FFmpeg version SVN-r23001 (236036)
- * Crash when waiting for reload the medium

--
Greetings from Randa,
Michał

[Reply](#) [Reply to all](#) [Forward](#)

Source: K3b mailing list 21/05/2010⁹⁹

The source code tarballs which are released on the project's Sourceforge page are created by Małek. We also know that he has been tagging the releases in the source, so this confirms his role as the core developer. It is interesting to note that he still ran the idea for a new release past Trueg. Perhaps this was done out of respect, because Małek values Trueg's opinion, or because Trueg still somewhat controls the project (or other!).

Future development

K3b has a very long history and is well supported, however there are a number of new features planned for 2.1. The Techbase Roadmap¹⁰⁰ lists the removal of KDE3Support classes, porting DCOP interfaces to D-BUS, replacing K3b's own progress bar with KDE Plasma's global progress bar, writing Flash Drive images, spanning data projects over more than one disk and DVD subtitle grabbing. Looks like there is a lot more to look forward to!

Summary

K3b is a brilliant free software product, which has a great FOSS community around it. The development methodology suits this style of project nicely and it has retained its "small project" feel (even though it's a high-profile application). After all this time it remains the number one choice for optical authoring on the KDE platform, if not the wider free software desktop. Thank you, K3b!

⁹⁹ <http://mail.kde.org/pipermail/k3b/2010-May/000082.html>

¹⁰⁰ <http://techbase.kde.org/K3b#Roadmap>