

Some technical information about #rosa-devel

No 4

ROSA Planet

Just Open!

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INTRODUCTION

Welcome to the New Year issue of “ROSA Planet”! Another year is coming to its end. Usually this is a time to summarize achievements. What has been done during the last year by our team? The results are more than just interesting:

- We have set up our own development infrastructure based on ABF – git repositories, build environment for packages and distribution ISO images. Hard to imagine, but a year ago we didn't have our own build environment! And ABF is constantly evolving, its developers continue to introduce more and more features. Launch of ABF allowed to significantly speed up development of our distributions.
- The whole code base was migrated from Kenobi to ABF. It wasn't an easy task, but the results are worth it.
- We have set up our own wiki. Initially bilingual, now it is available in three languages.
- A new ROSA forum has appeared – forum.rosalab.ru – where one can ask a question to company's representatives and even to developers (and yes, the forum is multilingual now, though initially it supported two languages only).
- ROSA distribution user groups appeared in other countries – Ukraine, USA, Brazil, Italy, Romania, Germany;
- During the last year we have prepared three releases – two desktops and one server. All of them were met with great enthusiasm by international community and were observed in different reviews not only in Russia, but all over the world.

Happy Holidays to everyone, enjoy them! Surely, it would be desirable to spend them far from computers, but this is unlikely feasible for most of us ;).

*Truly yours,
ROSA Planet team!*

ROSA: questions and answers

In the las issue we asked you about questions you have about our company. Thanks to everyone who have sent us the questions. And here are the answers.

What periodicity of releases is planned for future?

We are going to release new versions of ROSA Fresh yearly. Enterprise and certified versions can have longer development cycles, but they will get regular updates, as well.

You have released a server distribution based on Red Hat. Are you going to use Fedora as a basis for future ROSA Desktop releases?

No, we are not. For Desktop, we will use our own code base on the basis of upstream components and our own developments. We are also going to become the key participants of the new OpenMandriva community project and develop (by ROSA engineers efforts) some components there that will be later merged back in ROSA Desktop code base.

Are you going to sell ROSA boxes? Will such editions include proprietary software?

Currently only box editions of certified ROSA version are available. There is a chance that we will have a box version of ROSA Enterprise Desktop in the future.

There will be no ROSA Desktop.Fresh boxes, this version is only for free of charge distribution in the community.

How does one patch KDE2 under FreeBSD?

Thanks for this eternal question. But the answer is simple. Take FreeBSD and install it. Then download KDE sources, develop a patch, apply it and build KDE. KDE for FreeBSD is by no means maintained by ROSA, so you'll get all the honor.

What desktop environments will be used by default in your distributions? Will you support something besides KDE?

Besides KDE, we already have ROSA Desktop versions using LXDE and GNOME 3. If you are ready to spend some time and build something else, we will only encourage your enthusiasm. We are ready to help with instructions, documentation and advice.

Nowadays everyone is interested in having a version of distribution for the ARM platform. Do you have such plans?

We have ROSA Embedded repository for the ARM platform which is used to build customized solutions for our OEM partners (from minimalistic configurations used inside industrial controllers to full-functional LXDE desktop for netbooks). However, this product is distributed only inside particular partnership projects and is not intended to be accessed publicly.

I want to become a ROSA maintainer. What should I do?

If you want to become a ROSA maintainer, please go [here](#). Remember that you should have basic skills in English, since real Linux development always includes communication with international upstream.

How do you develop your distributions? What tools do you use?

The most important tool for ROSA development in our own build environment - [ABF](#). We also have some specialized tools that allow to automate a lot of processes (see more details [here](#)).

It was mentioned in the ABF news that this platform will support building of packages for other distributions. That's wonderful! When will I be able to build packages for something other than ROSA and RHEL?

This feature is already implemented and available in test versions of ABF that will be released to public in the near future. Stay with us.

Why are you not Ubuntu?

Don't know. Likely because we are ROSA. This is our life, and we like it! Seriously, we would like to underline that we use our own package base, we have independent full development cycle for our products, we develop brand-name tools and applications (TimeFrame, SimpleWelcome, StackFolder, RocketBar, Klook, ROMP, etc.). Though in general we work inside a huge world FLOSS ecosystem where all participants share their results. Some ROSA parts can be already observed in other distribution, in particular, in Ubuntu repositories :).

What do you have in common with Mandriva now?

Nothing common at the moment. ROSA package base has being developed completely independent from Mandriva since summer, 2011. For the time being, a new community-driven OpenMandriva project is being formed which won't depend on any commercial company (in particular, it won't depend on Mandriva SA based in France). ROSA workers are among project founders and we are going to become key developers there. And different components from that project will be likely merged into ROSA Desktop package base in the future.

What do you think about Mageia project? Aren't you jealous?

We have nothing against Mageia and ready for collaboration and communication.

Do you read negative feedback? Or you prefer laudatory comments?

We try to read everything that concerns our company and its products. We are especially interested in constructive criticism and feedback (ideally they should be represented as bug reports in our [Bugzilla](#)). Surely, feature requests are welcome. We keep these requests in our minds and try to implement those that seem to be reasonable. And of course, we like to be praised :).

And how many people are working on these beautiful things?

ROSA company numbers more than 100 engineers. However, not all of them work on ROSA Desktop, because our company develops other products, works on different customized solutions and carries out different Research & Development (R&D) in the area of system programming and next generation User Interfaces.

You have declared 5 years of support for Marathon. Where does such a confidence in the future come from?

We have promised – this means that we will provide support. The more so, December, 21st has passed, so users have nothing to be afraid of :).

DESKTOP

Fresh in numbers

On December, 19th we released our new distribution for desktops - ROSA Desktop.Fresh. To take a look at it, you can visit our [site](#). And here we present some numbers characterizing our work:

- 7 months of development;
- 5 versions of the product (Alpha, Alpha2, Beta, Release Candidate, Release);
- more than 50 developers;
- more than 70 testers;
- 15 cities / 7 countries / 3 continents;
- more than 700 issues fixed;
- testers have downloaded about 2 TB of data;
- more than 700 ISO images built;
- 8500 e-mail messages;
- 1 000 000 lines of code investigated;
- 21 700 packages in repositories;
- 7 300 cups of tea and coffee;
- pleasure of working - immeasurable!

DEVELOPMENT TOOLS

How do they do it?

When developing any software product, we often get a question "What was particularly done by you here?". Especially if this is such a vague product like a Linux distribution. It's always interesting for the whole community if you just replaced wallpapers or rewrote half of the system from scratch.

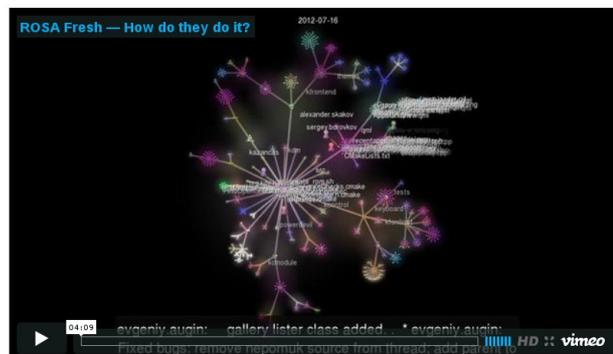
On the one hand, source code of almost all of our products is opened and everything can be analyzed and measured. On the other hand, this is rather dull. "Dummy numbers, dummy SLOC metrics".

One of the alternatives is to visualize the working process. By means of the ShowTeamWork tool we have tried to visualize the work on several git repositories. In general, this tool was used by its author to visualize the team work performed under different contracts ("a demo for customer - what and how was changed in short"). But that was the case of a solid SCRUM team. In our situation, we have a code base of the whole distribution huge as a Galaxy and different people working in completely different areas.

So we decided to analyze the code from the repositories where development of our own tools is performed and visualize the work on it.

kcm_license
KDM
KLook
plasma-applet-systray-rosa
RocketBar
SimpleWelcome
drakx
ldetect
drakx-kbd-mouse-x11
build2012.1-gnome
StackFolder

This is what we've got:



<http://vimeo.com/55764790>

Meanwhile, if somebody has an idea about a soundtrack that would fit best this visualization - please let us know, Currently the sound is randomly picked up from <http://jamendo.com>

FBA: New look, new sections and improved in reports

During the last months we have added a lot of reports to our site <http://fba.rosalinux.ru> which is used to monitor ROSA repositories. It became very simple to get confused among all that reports, so we reorganized the main menu:

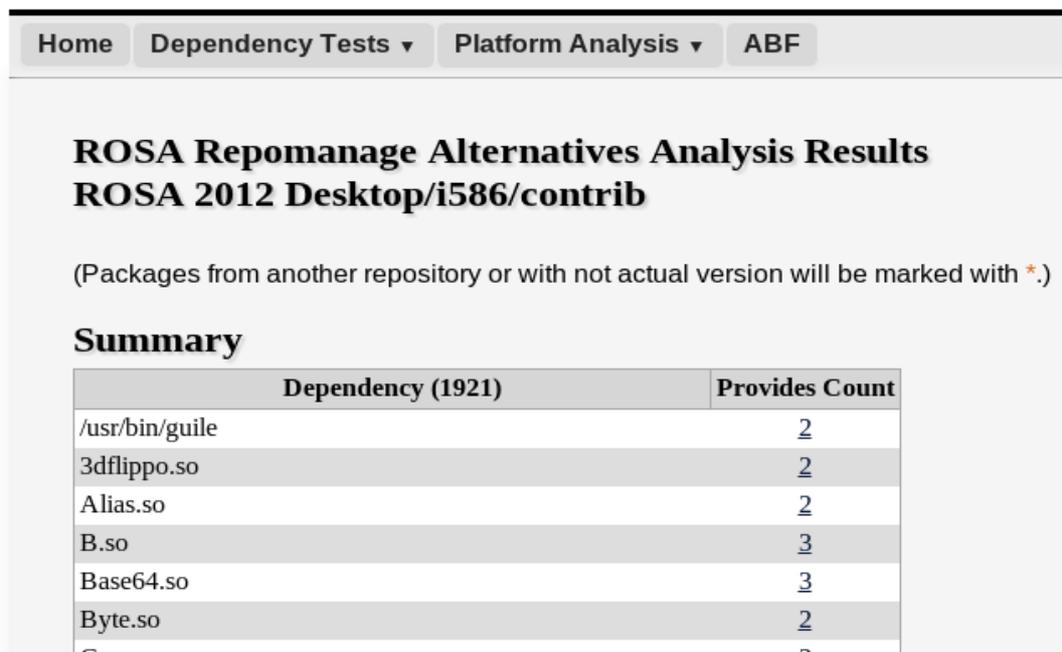
FBA



The screenshot shows the FBA website's main menu. At the top, there are navigation tabs: Home, Dependency Tests, Platform Analysis, and ABF. Below these, a dropdown menu is open for 'ROSA 2012 Desktop/i586/contrib'. The dropdown menu has several sections: 'Repoclosure', 'Superseded Packages', 'Obsoleted Packages', and 'Alternatives'. The 'Alternatives' section is expanded, showing a table with columns: Repository, Repoclosure, Repomanage, ELF Closure, and Alternatives. The table has one row with values: main, 28, 144, 53, and 0. To the right of the table, there is a text snippet: ', that is needed to maintain package base.'

We are constantly working on adding new sections, and in the future we are planning to add Rpmlint reports, reports about file conflicts and cyclic dependencies. You will be able to see beta versions of such statistics in FBA in the nearest future. And now let us present one more new report kind: statistics about "alternatives" (dependencies that can be satisfied by several packages at the same time). There are different reasons for ROSA repositories to have a lot of packages with the same Provides records. Some of such cases are valid, but sometimes such alternatives are excessive and just confuse users who receive a number of questions about packages they would like to install to satisfy one or another dependency. Unfortunately, in the past we didn't pay much attention to a great amount of alternatives. As a result, not all packages with identical Provides records are really alternatives from functional point of view. Sometimes this comes from historical roots, sometimes it is a result of incorrect work of dependencies generator, and sometimes such cases appear due to maintainers mistakes made through lack of attention when forming set of dependencies. As a result, in case of wrong choice of alternative, installed applications don't work and lead to the errors like this - http://bugs.rosalinux.ru/show_bug.cgi?id=1236.

FBA



The screenshot shows the 'ROSA Repomanage Alternatives Analysis Results' for ROSA 2012 Desktop/i586/contrib. The page has a navigation bar with Home, Dependency Tests, Platform Analysis, and ABF. The main heading is 'ROSA Repomanage Alternatives Analysis Results ROSA 2012 Desktop/i586/contrib'. Below the heading, there is a note: '(Packages from another repository or with not actual version will be marked with *.)'. The 'Summary' section contains a table with two columns: 'Dependency (1921)' and 'Provides Count'. The table lists several dependencies and their corresponding provides counts.

Dependency (1921)	Provides Count
/usr/bin/guile	2
3dflippo.so	2
Alias.so	2
B.so	3
Base64.so	3
Byte.so	2
C.so	2

So far dubious and incorrect alternatives were detected and corrected occasionally - when maintainers faced conflicts personally or when we received corresponding requests from users. But now we have added necessary analytical means to FBA (thanks to urpm-repograph which already provides all required functionality), so now ROSA repositories are subjected to constant monitoring of packages with identical Provides.

Results of monitoring can be observed there - http://fba.rosalinux.ru/test/repomanage_alternatives/.

If you think that some alternatives should be removed - feel free to send your suggestions to our developers :) Of course, some duplications are legitimate. In the future we will separate such cases to not treat them as errors.

Packages providing Alias.so()(64bit) (2)

Package
perl-Alias-2.320.0-4
perl-Data-Alias-1.160.0-1

[↶ Top](#)

Packages providing B.so()(64bit) (3)

Package
frei0r-1.3-2
frei0r-plugins-1.3-2
perl-5.14.2-8

[↶ Top](#)

Packages providing Base64.so()(64bit) (3)

Package
apache-mod_perl-2.0.7-1
perl-5.14.2-8
perl-MIME-Base64-3.130.0-2

[↶ Top](#)

Besides of adding new reports, we are working on improving the existing ones. Now at various pages you can get not only the name of the package which contains errors, but also get a list of packages that depend on the broken one. It is really vital for repository closure analysis: if some package cannot be installed because of unsatisfied dependencies, then dependent packages also cannot be installed. That's why it is important to estimate the number of packages that will be "lost" for user as a result of dependency breakage. For example, in repoclosure reports you can jump to the "Broken Packages" table. For every broken package, it provides the number of packages that depend on it. Click on that number to get a list of such packages. A "question" mark instead of a number designates that there is a newer version of this package in repository. So no package depends on this particular version.

Finally, there is one more useful improvement: now the names of SRPM packages in repoclosure reports are links to the appropriate projects in ABF. So you can go from the report page straight to

the page of the project in ABF (moreover, necessary Git-repository branch will be chosen automatically).

Console fonts in ROSA

In spite of the fact that ROSA's main features are various graphic stuff and beautiful full-functional GUI applications, there is also a console in our distribution. This application has its own audience: for example developers who deal with system stuff or users who have rich experience in Linux and who use console utilities from time to time.

We think that the console should be beautiful, convenient and easy-to-use, like everything in ROSA. One of the main criteria of usability is a font used in console. The choice of font is generally the matter of taste and, as it was found out, «native» KDE fonts don't fit to everyone.

In particular, many users think that the font which was used in a wide range of distributions (for example, openSUSE 10.x) for KDE3 console was the most suitable one. The fonts were changed with migration to KDE4, but still there are people who like the old one. If you are among them, we have a good news for you — now this font is available in our distributions. All you need is to install fonts-bitmap-misc-console package, and then the new **Console** font will be available in Konsole settings (with the only fixed size 12).

Another popular font is Source Code Pro font, developed by Adobe engineers (<http://blogs.adobe.com/typblography/2012/09/source-code-pro.html>). This font is also available in our repositories (SourceCodePro package). Though this font doesn't support Cyrillic alphabet and many other national sets of symbols, programmers who work a lot with source code of various applications may like it.

Switching Bytecode Interpreter in KDE4 Font Settings

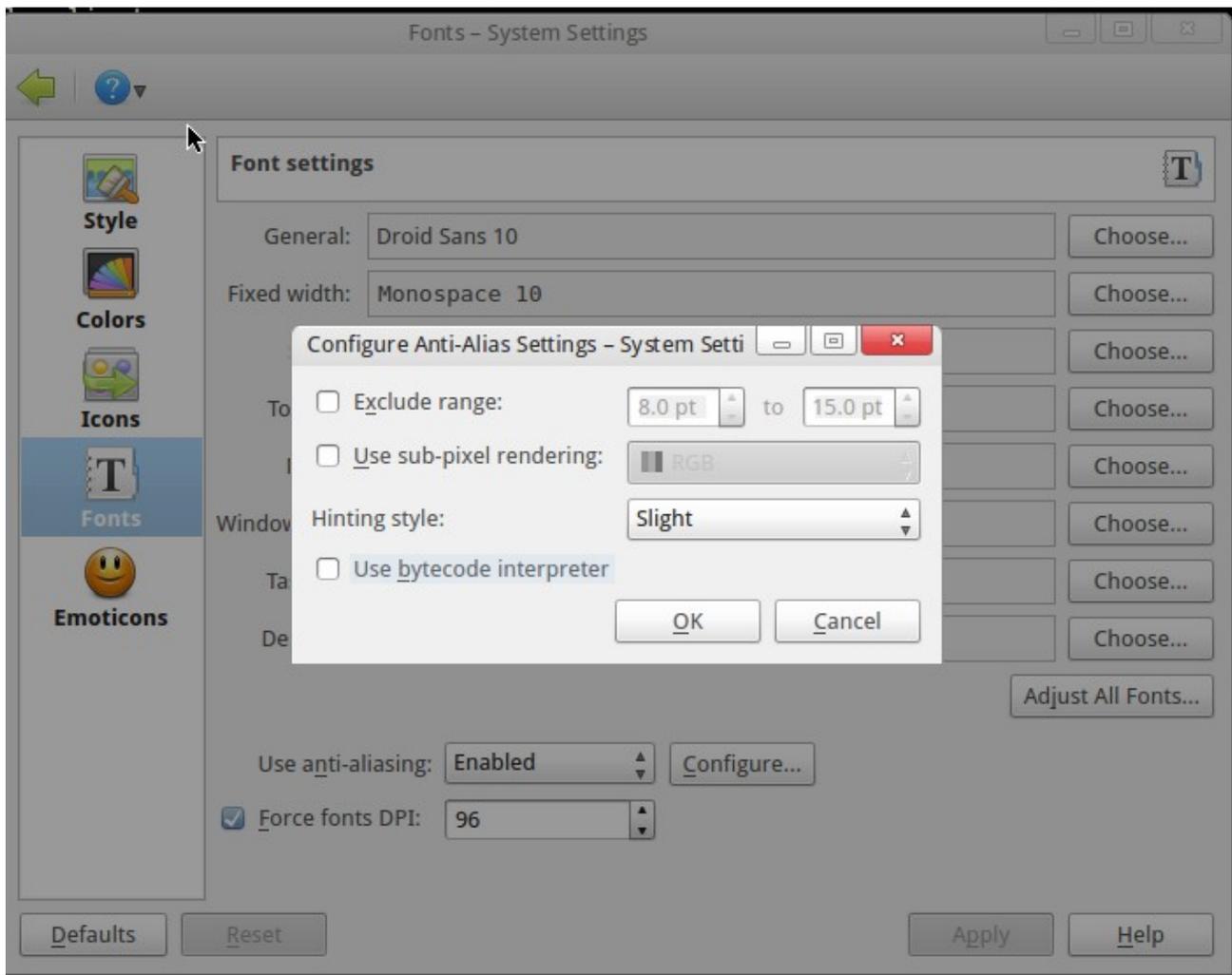
As many of you likely know, the compliant patent term of validity came to an end in 2010 and bytecode interpreter is now included into freetype library by default (since 2.4.0 version). That allowed to improve the appearance of fonts with sub-pixel rendering. But if sub-pixel rendering is not used (some users switch it off as they don't like letters to be iridescent), the bytecode interpreter rather worsen the appearance of fonts than improve it. Yet, it depends on the particular font and, of course, user's taste.

The image below shows the Liberation Sans font with BCI off (on the left) and on (on the right). The sub-pixel rendering is off, the hinting style is «slight». As you can see while using BCI "P" merged with "y", and "t" looks too thin.



To allow user to turn BCI on and off easily, a checkbox was added in the KDE4 Anti-alias settings window.

To allow user to turn BCI on and off easily, a checkbox was added in the KDE4 Anti-alias settings window.



Thanks to our foreign colleagues, localization for the new settings string is already available in the following languages:

- de
- en
- es
- fr
- it
- nl
- pt_br
- ro
- ru

P.S. There was a similar feature request in Mageia about a year and a half ago, but this is still not implemented there: https://bugs.mageia.org/show_bug.cgi?id=1240

ROSA ABF

ABF API: changes, new calls and plans

ABF API is evolving, and here are the recent modifications.

First, we have added a new field with URL to project Git repository in the **project** block in all API calls where the **project** block exist:

```
"git_url": "path to project git"
```

You can use it if you need. This is a backward compatible change which should not affect any existing tools that work with API.

Next, we have added some new API calls:

- Search API - <http://abf-doc.rosalinux.ru/v1/search/>
- Get build lists for a project - <http://abf-doc.rosalinux.ru/v1/buildlists/#list-build-lists-for-a-project>

... and currently we are working on Maintainers API (API to work with Maintainers DB) which will be available in the near future - <http://abf-doc.rosalinux.ru/v1/maintainers/>

Finally, we have added information about specific conditions for a number of calls and implemented informative error messages for the following cases:

- build cancellation (<http://abf-doc.rosalinux.ru/v1/buildlists/#cancel-build-list>)
- build publishing (<http://abf-doc.rosalinux.ru/v1/buildlists/#publish-build-list>)
- publishing rejection (<http://abf-doc.rosalinux.ru/v1/buildlists/#reject-publish-build-list>)

Please check these links and correct your software, if need.

Stay with us!

Updates_builder - automatically detect and build package updates in ABF

In December, we have introduced an alpha version of a new tool which we hope many of you will find useful - updates_builder.

In short, the tool performs the following actions: 1) Checks for available upstream updates 2) If update is found, the tool downloads appropriate tarball, pushes it to ABF file store, updates spec and .abf.yml in the appropriate project of the import group and initiates a build for rosa2012.1.

(So using a single one-line command you can check if there is an update for some package and try to build it in ABF, if any).

Don't worry, all changes are performed in a separate branch - 'auto_update'. The build is performed for 'import_personal' repository.

More info and example: http://wiki.rosalab.ru/en/index.php/Updates_builder

The tool is currently available in akirilenko_personal repository:

http://abf.rosalinux.ru/downloads/akirilenko_personal/repository/

To get information about available updates, the tool uses upstream-tracker.org service

(<http://upstream-tracker.org/updates/rosa/2012/>):

ROSA 2012 Updates Tracker

This report for ROSA 2012 [main](#), [contrib](#), [non-free](#) and [restricted](#) repositories has been generated on 2012-12-05.

Leader Up-to-date Section: all Package: i.e. "aspell", "php", etc.
 Outdated Obsolete Status: all Group: i.e. "video", "devel", etc.

a [b](#) [c](#) [d](#) [e](#) [f](#) [g](#) [h](#) [i](#) [j](#) [k](#) [l](#) [m](#) [n](#) [o](#) [p](#) [q](#) [r](#) [s](#) [t](#) [u](#) [v](#) [w](#) [x](#) [y](#) [z](#) [0-9](#) [all](#)

Source Package ²⁸⁹	Available in Upstream (export this list)	Current in ROSA 2012	Current in ROSA LTS	Current in Mandriva	Current in Mageia	Section	Group	Home Page
a-a-p	1.091	1.091	1.091	1.091		contrib	Development/Other	a-a-p.org
a2ps	4.14	4.14	4.14	4.14	4.14	main	Publishing	gnu.org
a52dec	0.7.4	0.7.4	0.7.4	0.7.4	0.7.4	main	Video	liba52.sourceforge.net
aalib	1.4rc5	1.4.0	1.4.0	1.4.0	1.4.0	main	System/Libraries	aa-project.sourceforge.net
abattis-cantarell-fonts	0.0.11	0.0.8	0.0.8	0.0.9	0.0.11	main	System/Fonts/True type	abattis.org
abe		1.1	1.1	1.1	1.1	contrib	Games/Arcade	abe.sourceforge.net
abrt	2.0.19	2.0.10	1.1.14	2.0.10	2.0.7	main	System/Base	fedorahosted.org
ac3jack	2.0.3	2.0.3	2.0.3	2.0.3		contrib	Sound	esje.net
acfax		981011	981011	981011		contrib	Networking/Other	linux.maruhn.com
ack	2.00a01	1.960.0	1.940.0	1.960.0	1.960.0	contrib	Text tools	
acl	2.2.51	2.2.51	2.2.51	2.2.51	2.2.51	main	System/Kernel and hardware	savannah.nongnu.org
acon	1.0.5	1.0.5	1.0.5	1.0.5		main	System/Internationalization	members.tripod.com
acpi	1.6	1.6	1.6	1.6	1.6	main	System/Servers	sourceforge.net
acpid	2.0.16	2.0.17	2.0.10	2.0.16	2.0.17	main	System/Servers	tedfelix.com
acr38u		1.7.10	1.7.10	1.7.10	1.7.10	main	System/Kernel and hardware	acs.com.hk
adaptx		0.9.13	0.9.13	0.9.13	0.9.13	main	Development/Java	castor.codehaus.org
adjtimex	1.29	1.29	1.29	1.29	1.29	main	System/Kernel and hardware	ftp.debian.org
adns	1.4	1.4	1.4	1.4		main	Networking/Other	chiark.greenend.org.uk
afbackup			3.5.3	3.5.3	3.5.3	contrib	Archiving/Backup	afbackup.sf.net
affinity-search			0.1	0.1		contrib	Graphical desktop/GNOME	code.google.com
afio	2.5	2.5.1	2.5	2.5.1	2.5.1	contrib	Archiving/Backup	
afpfs-ng	0.8.1	0.8.1	0.8.1	0.8.1	0.8.1	contrib	Networking/File transfer	sites.google.com
afuse	0.2	0.2	0.2	0.2		contrib	Networking/Other	sourceforge.net
agrsm		2.1.80	2.1.80	2.1.80		non-free	System/Kernel and hardware	lsi.com

We believe that the tool is going to be very useful - at least it allows to almost automatically check how much efforts it will take to update to a newer version of some package.

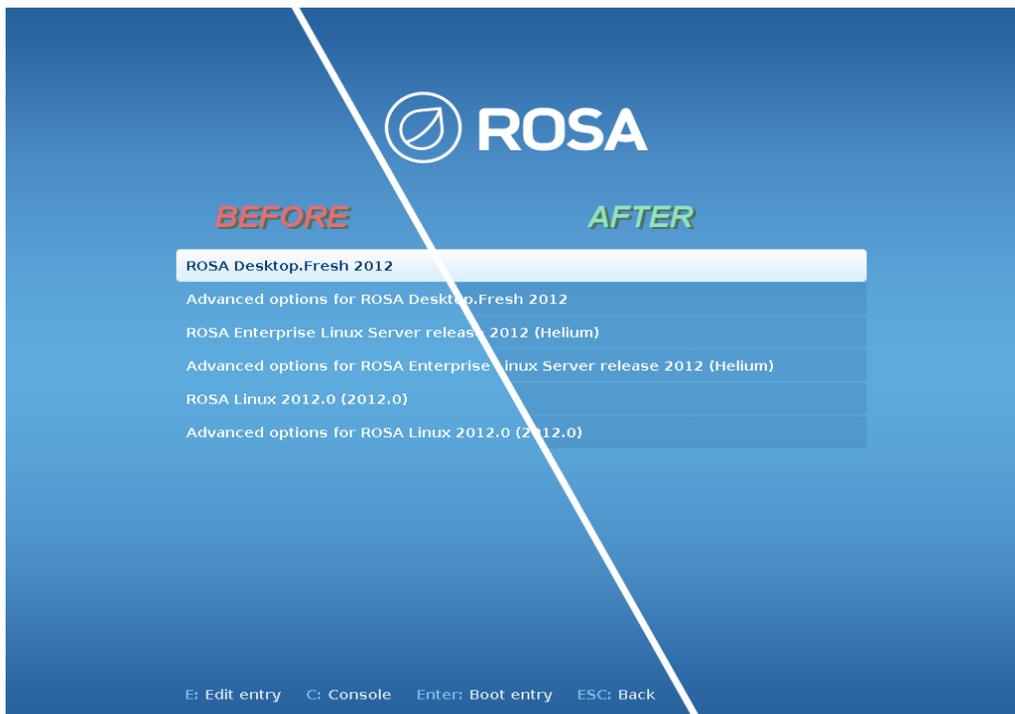
Surely, some technical aspects can be a topic for discussion, but after several experiments we can say that the tool works quite well - we've already updated some packages in ROSA 2012 Desktop using it.

And using such a tool, we can implement many nice features in the future - e.g., setup automated tracking/building of newer package versions somewhere on our servers. So you will only have to say 'hey, I wanna monitor that package' and after that you will receive not only notifications about new upstream releases, but also results of first attempt to build that new releases in ABF.

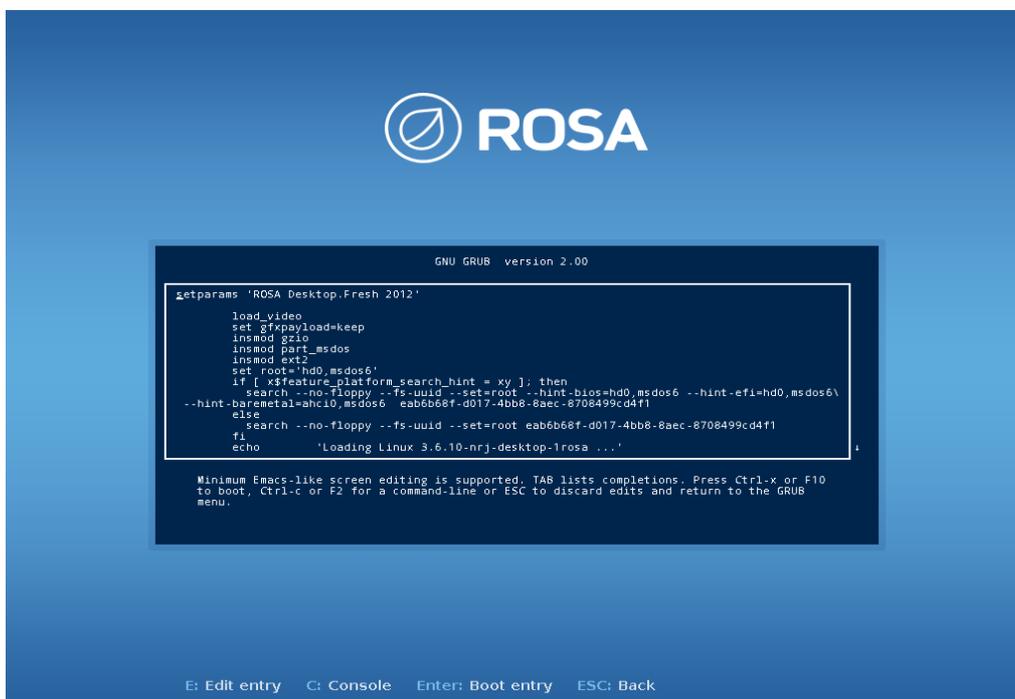
UPSTREAM

Grub2

Implementing the concept developed by our designer we have included new functionality for Grub2 visual theme. Now it is possible to decorate inactive entries of the boot menu (particularly, `item_pixmap_style`). As a result, they now have dark semitransparent background with rounded corners. These changes open new opportunities for designing bootloader themes.



Moreover, we have fixed a bug in the grub-mkfont tool which converts fonts into format used by the bootloader. It was impossible to specify one of the font metrics (ascent), therefore trying to display some specific symbols from local language (e.g., Cyrillic) in the console, all symbols were displayed incorrectly. After fixing this issue, we managed to solve problems with "artifacts", increased line spacing and incompletely drawn symbols.



Both updates were sent to the upstream and accepted.

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All your questions, comments, recalls and wishes about interesting themes,

please, send to the rosa-point@rosalab.ru.