

Some technical
information about
#rosa-devel

No 6

ROSA Planet

Just Open!

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INTRODUCTION

ROSA Planet team is glad to present you the April Fool's number of our bulletin. It is targeted on readers who appreciate a good joke. Even if looks it absolutely serious. We hope that you will be able to distinguish truth from fiction and tell which news are just jokes. Send you answers at rosa-point@rosalab.ru. The first 50 authors of the right answers will receive our branded t-shirt. Meantime, let's look through our current news.

*Truly yours,
ROSA Planet team!*

DEVELOPMENT TOOLS

rosa-devel@ mailing list is opened for all

As many of our users know, rosa-devel@ is the main mailing list for ROSA developers. This channel was opened for all, but history of the channel was accessible only for subscribers, and subscriptions were pre-moderated. Some time ago this was necessary, but now we want to interest more developers to develop ROSA or for/on ROSA.

Thus, today we opened rosa-devel@ for all users. You can read [the history of the channel](#) and subscribe to it without pre-moderation.

If you want to develop ROSA, or create an application for ROSA, or create any distro on the base of ROSA platform, you probably will be interested in the subscription to this mailing list.

Please, read the our [mailing lists policy](#) before subscription.

ROSA Marathon is included in the Linux Application Checker knowledge base

The Linux Foundation consortium has announced an updated version (4.1.8) of the Linux Application Checker (AppChecker) - a tool aimed to analyze compatibility of applications with different Linux distributions and check their compliance with Linux Standard Base (LSB). Currently AppChecker database for the x86 platform contains data about 84 distributions, now with ROSA 2012 Marathon among them. We are going to continue our collaboration with Linux Foundation engineers and provide them with necessary information about ROSA releases.

AppChecker analyzes compatibility of application with particular distribution by comparing a set of shared libraries and binary symbols required by application with sets of libraries and symbols provided by the system. Compliance with such requirements is a necessary condition of successful application launching in the operating system - if some library or symbol is absent, then application cannot be launched in the distribution. The list of libraries and binary symbols required for the application is obtained by analyzing application binary executables (in ELF format) and shared libraries. To be sure, only those requirements are taken into account that are not satisfied by libraries of the application itself. AppChecker actually emulates work of the system loader during

application launch; if some required libraries or symbols are missing in the system, the application will simply fail to start (or will silently fail during its work, if lazy binding is used).

One should note that AppChecker contains data only about limited set of widespread libraries, not about all those that exist in distribution repositories. More precisely, it is guaranteed that the information is correct for libraries from the 'approved' list

(<http://linuxbase.org/navigator/browse/rawlib.php?cmd=display-approved>) which currently contains almost 1,500 entries, while repositories of most distributions (in particular, ROSA) contains several thousands of libraries. If application requires library not included in the approved list, AppChecker will honestly report that it can't say if this library is present in certain distributions or not.

As an example usage, one can see that the Firefox build downloaded from <http://mozilla.org> (of the version 19.0.2 at the moment of writing this article) cannot be used in old systems such as Fedora 10 or Ubuntu 9.04.

Analysis Results for [firefox-19.0.2.tar.bz2](#) on [x86-64](#)

Some compatibility problems detected

- There are **30 of 74** distributions that provide all the required libraries and interfaces.
- The Application uses **4 external libraries incompatible with LSB 4.1**.
- The Application uses **1 external library without using interfaces** from this library. The Application would be more portable if it is fixed to not use unneeded libraries.

Distribution Compatibility | **App Components** | **External Libraries** | **External Interfaces** | **LSB Certification**

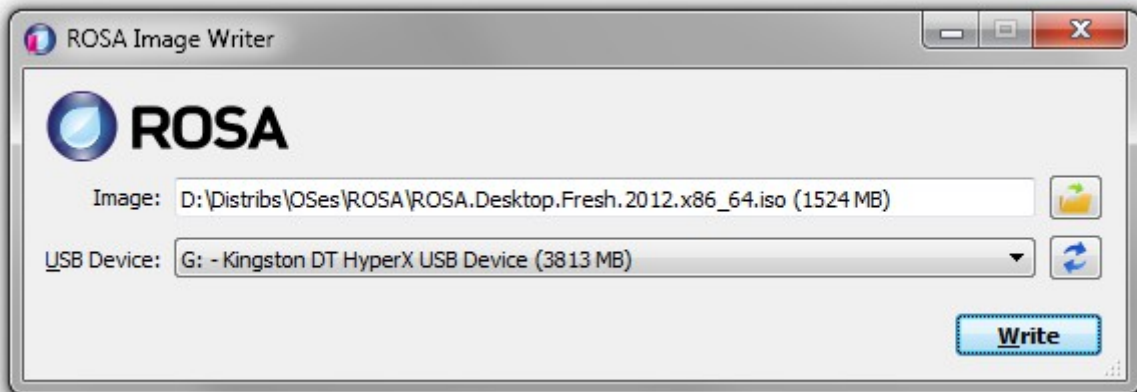
The table below shows the compatibility status of your application with the distributions analyzed by the Linux Foundation. Your Application will run on the "green" distributions without loader problems. Compatibility with the "yellow" distributions can be easily achieved by excluding unneeded libraries from the dependencies of your application. Making the Application compatible with the "red" distributions may require more effort to avoid using missing libraries/interfaces or by supplying them as a part of your application package. Please note that functional correctness is not guaranteed by this analysis.

Summary		Missing Libraries		Missing Interfaces		Comments
Distribution	Status	Common	Unknown	Common	Unknown	
CentOS 6.0	OK	none	none	none	none	
Debian 6.0.3	OK	none	none	none	none	
Fedora 17	OK	none	none	none	none	
Fedora 18	OK	none	none	none	none	
Mandriva 2011	OK	none	none	none	none	
openSUSE 12.2	OK	none	none	none	none	
Oracle Linux 6	OK	none	none	none	none	
RHEL 6	OK	none	none	none	none	
RHEL 6.2	OK	none	none	none	none	
ROSA 2012 Marathon	OK	none	none	none	none	
Ubuntu 12.04	OK	none	none	none	none	
Ubuntu 12.10	OK	none	none	none	none	
Fedora 11	INCOMPATIBLE	none	none	12 (list...)	none	
Mandriva 2009.1	INCOMPATIBLE	none	none	12 (list...)	none	
Ubuntu 9.04	INCOMPATIBLE	none	none	12 (list...)	none	
Fedora 10	INCOMPATIBLE	none	none	17 (list...)	none	
Mandriva Corporate Server 5	INCOMPATIBLE	none	none	17 (list...)	none	

ROSA Image Writer

Optical drives are rapidly disappearing from our computers of all kinds, and consequently installing

operating systems from USB flash disks is becoming increasingly popular. ISO images of the ROSA distribution were originally intended for burning to DVD disks, but they can as well be written to flash disks which would allow you to boot from them and launch the Live system or start installation. There is no standard tool for writing images to flash disks, everybody uses what he or she likes. In ROSA the command line tool `dd` was traditionally recommended for performing this kind of job. However, it can hardly be called user-friendly, and most users would feel at least some discomfort, if not terror, using it. For Windows users the situation is even worse. Granted, there is a `dd` port for Windows, but it happened to have serious bugs which prevent the resultant flash disks from working properly. All this led to the solution of developing our own tool, ROSA Image Writer.



The first version was based on the Windows version of SUSE Studio Image Writer, but its C# language (and, naturally, requirement for .NET Framework), usage of two completely unrelated projects in two different frameworks for Windows and Linux versions, and some other drawbacks made us write the new tool from scratch. Now ROSA Image Writer is developed in C++ with Qt5 framework and supports both Windows and Linux from the same codebase. The list of main functions is:

- Selecting the image file via either usual Open File dialog, or by drag&dropping the file on the application window.
- The list of USB devices shows for each device its user-friendly name, size, and logical disks that originate from the device.
- When user inserts or removes a USB device, the list is refreshed automatically.
- When writing is in progress, the progressbar is displayed which is also translated onto the taskbar button in Windows 7/8.
- The application supports localization and includes the Russian translation.

The project's source code is published under the GPLv3 license and is available at ABF: <https://abf.rosalinux.ru/captainflint/rosa-image-writer>

You may also use the binary packages:

- [Windows](#) (3,5 Mb)
- [Linux 32-bit](#) (9,7 Mb)
- [Linux 64-bit](#) (9,6 Mb)

SERVER

Next RELS to be based on OpenBSD

After long discussions, ROSA Company has decided to change development direction of its server-oriented operating system. The reasons for this are like the following:

- unclear situation about Microsoft patents concerning the Linux kernel. Existence of such patents has already forced several huge and famous hardware and software vendors that use Linux in their products to pay not-so-small license fees to Microsoft;
- frequent patent claims from large proprietary vendors to different components and technologies used in the Linux kernel;
- frequently discovered "zero-day" vulnerabilities, with nobody knowing how to fix them;
- too frequent releases of many programs that don't preserve backward compatibility with previous versions.

All the problems forced us to decide to base the next version of our server distribution (previously known as RELS, ROSA Enterprise Linux Server) on the OpenBSD operating system. All brand-name developments of the company, such as ROSA Directory Server, will be ported to OpenBSD in the nearest future.

We see the following advantages of such approach:

- High security. OpenBSD is known for its throughout control of the source code and strong rules allowing to reach high security of all system components.
- Integrity. OpenBSD is not a Linux distribution composed of a ton of independent components, but a holistic system with a single and polished system base, as well as a package system highly integrated with it. This will allow to significantly simplify development process and increase its speed by eliminating the need for regular rebuild of packages and recheck of their integrity and consistency.
- Simplicity. OpenBSD is quite easy to use and develop. Its package system is easier than RPM spec-files. The recently introduced system configuration tools, such as NSH, allow to significantly enlarge audience of ROSA brand-name products and teach even users who have never seen OpenBSD before.
- BSD license. This license conforms to the current Russian Federation laws and allows to avoid a lot of legal issues. This is important to our partners and customers. One more advantage of the license is that there is no need to "clone" our products if you want to have something similar.

All these advantages is a good help for developers allowing to decrease costs on certification for the Russian Federal Security Service and other organizations of the same kind. This is very important for products targeted on our country.

We have already started talks with Theo de Raadt and it is possible that he will join us as an external consultant. The name of the renewed distribution is under discussion at the moment and will be announced later.

ADMIN

MagOS Linux based on ROSA Marathon

It is nice to have ROSA on your own machine, but sometimes many of us meet the situation when it is necessary to work on other's computers where you can't change the operating system. In many cases livecd will help, and ROSA provides possibility to boot into Live mode from flash or CD/DVD. However, though been very useful in many aspects, the Live mode suffers at least from the following issues:

- you can save results of your work on a hard drive of computer, but it is not easy to save them of the flash drive from which you have booted;
- there is no possibility to change system settings, save them and use during the next boot;
- finally, to burn ISO image on flash and boot into the Live mode, you should preliminary move all files from the flash to somewhere. Even if you have a flash with dozens of Gb of free space and ROSA iso image only needs 1.5 Gb.

All these disadvantages are absent in [MagOS Linux](#). Traditionally, MagOS was based on Mandriva, and some time ago ROSA-based variation was introduced.

Distribution builds are available here: <http://magos.sibsau.ru/repository/dist/>. The build based on ROSA Marathon has 2012lts suffix (at the moment of writing this paper, the latest build was `MagOS_2012lts_20130228.tar.gz`).

The build is actually a tarball with three folders - boot, MagOS, MagOS-Data. To install MagOS on your flash drive, you should unpack the tarball and place these three folders in the root of your flash. There is no need to remove existing data from flash, but remember that the system needs about 2Gb of space.

Note that it is necessary to mount flash without 'noexec' option to be able to launch scripts directly from it (this is required to make a flash with MagOS bootable). ROSA uses 'noexec' option by default, so you will have to mount your flash stick manually from the command line.

In order to do this, launch console with root privileges (e.g., in KDE press Alt-F2 and "kdesu konsole") and execute the following command:

```
mount -o remount,exec /dev/sdx /mount_point
```

(here /dev/sdbx is a device file corresponding to your flash drive, /mount_point is a directory where the flash is mounted).

Or just remount you flash stick:

```
mount -o remount,exec /dev/sdb1 /mount_point
```

Now copy boot, MagOS, MagOS-Data and folders to /mount_point, go to /mount_point/boot/syslinux folder and launch install.lin.

You will be asked if you are sure to make the device bootable. To agree, press enter.

Now leave the /mount_point folder and unmount the flash by 'umount /mount_point' command.

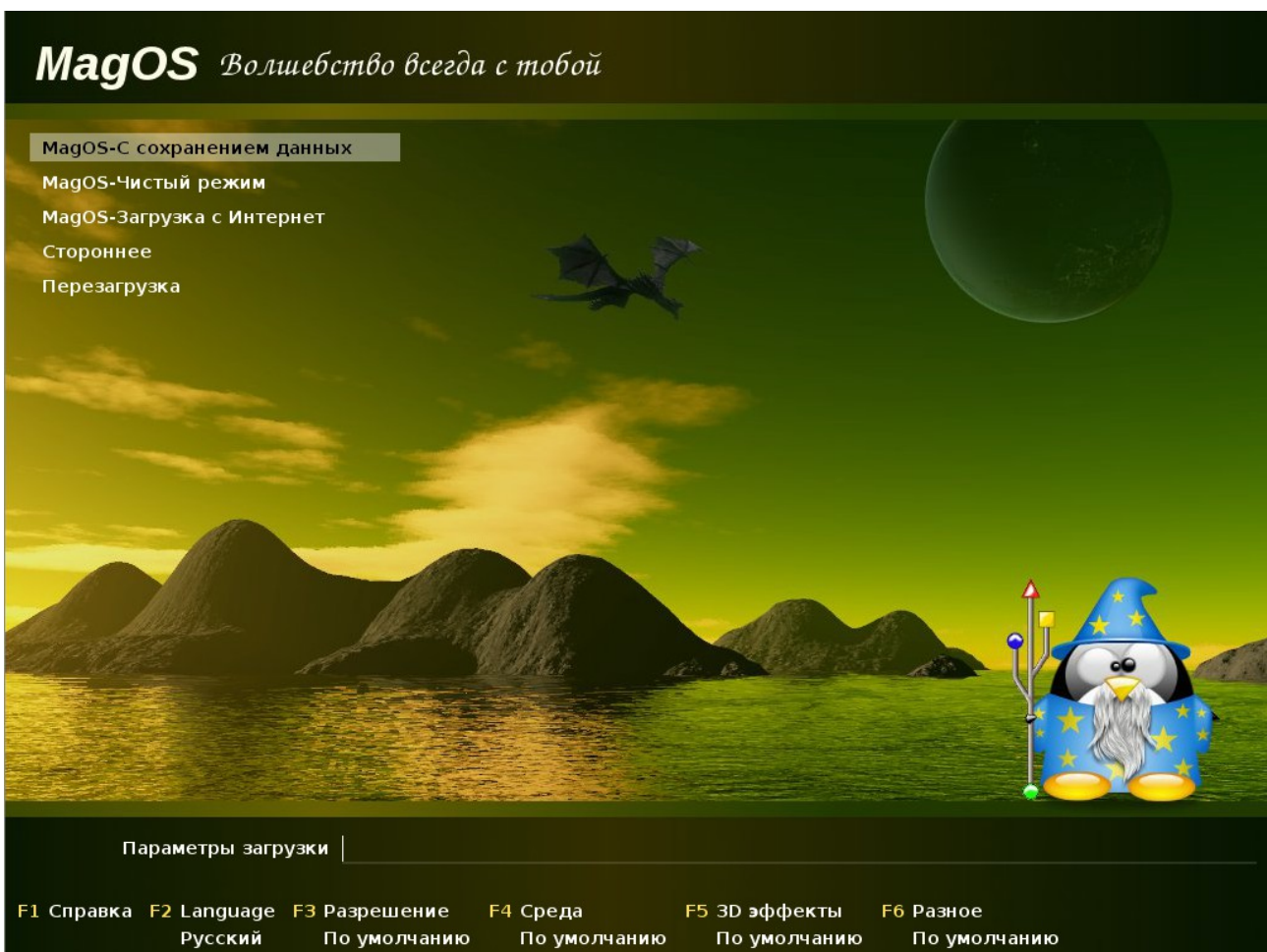
Now reboot your machine and boot from flash. You should see MagOS boot selection menu with several boot options.

The system is based on ROSA, but by default a standard KDE is used, without SimpleWelcome and RocketBar. Besides KDE, one can load Gnome or LXDE; to do this, logout and choose appropriate

session type in the menu at the bottom of the screen. Remember that default user/password are user/magos.

MagOS Linux can be installed on flash not only in Linux, but in Windows, as well. It is also possible to install the system on a usual machine - either as a standalone system or inside existing Windows partition.

More details can be found at MagOS wiki (<http://www.magos-linux.ru/dwiki/doku.php>), but unfortunately for our foreign users, all documentation is in Russian. However, MagOS Linux is very easy to use, in most cases you won't need any additional documentation at all. And for getting started, the documentation on wiki should be enough - though the text is in Russian, the commands to be executed should be clear for any user. Also note that the thing you would likely want to do after the boot first is to change locale of the system, which is set to Russian by default. To do this, just go to KDE CC, find locale settings and choose English (this option is available by default; to choose other languages, you will have to install appropriate localization packages - at least kde-l10n-ones).



DESKTOP

Fresh to an army

As some of you likely know, Russia is still a country with mandatory military service, and this

directly concerns some of our developers (in particular, the major part of UXTeam) for whom the time has come to spend a year in the army. In Spring, 7 of our developers will leave us for some time. Due to this, ROSA team decided to switch to the LXDE as a more lightweight solution. We will maintain it at upsteam level until our guys come back from army. Some of our current employees promise that they will maintain packages directly right from barracks. Especially for them, we will create a special git tag named «barracks». Commits with such tag will not require any additional code review - we believe that the army discipline will teach our developers to double check their code modifications.

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