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Free Software in Russia

Hi. My name is Paul, I represent the Russian company ALT Linux and want to tell you about the Free and Open Source Software in Russia, the National Software Platform and our role in that.

Presentation layout

- Overview of the **Free and Open Source Software** in Russia
- The **National Software Platform** project
- The **ALT Linux Team** and its projects



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First, I'll give a short overview of the FOSS in Russia, communities, firms and related events. Looking ahead, let me point out the most important event – the declaration of the „National Software Platform” which I'll discuss in detail later. The last part of my report is about the ALT Linux Team of hackers, its relationship with NSP and other projects.

Overview of the FOSS in Russia

People

- LUGs for all of the major distributions
- Localization teams
- Hacker teams
- Freelancers
- Public heroes

Firms

- Shops
- Consulting and services
- Integrators
- Embedded solutions
- Localizations
- Adaptations
- Vendors



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Apparently, in every country in the world there are a number of Linux User Groups nowadays. Russia is not an exception. We have such public user groups for all of the major distributions, including Gentoo, Ubuntu, Debian and Fedora. The so-called „installfests” are arranged in major cities.

The next direction of activity is localization. There are a number of localization teams for major projects and distributions.

With Free Software, curious users turn into hackers by a natural transformation. So there are hacker teams too. Some of the individuals are hired and became freelancers.

Most of the mentioned people are computer hobbyists. But there are other persons who deserve the special attention in our discussion. I call them „public heroes”. Those who faced serious problems with the use of proprietary software and become a Free Software Activists (see [Ponosov's case](#)). And those who just try to use Free Software at work where it isn't permitted by the administration.

The activity of the FOSS users are complimented by a number of commercial organizations. Most of them have some direct sales in public sector, but most of the profit came from contracting private companies and participating in various government programs.

Particular attention should be given to the OS vendors who implement the whole development cycle specific to FOSS. There is only one such company nowadays – ALT Linux, Ltd, which I modestly represent.

Fruits of 2010-2011...

- Government directive for preference to FOSS in state institutions
- ODF as a statewide standard (GOST)
- Declaration of the “National Software Platform” program
- Linux-based solutions successfully introduced in some of the schools



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Fortunately, the last years are very fruitful and favorable to the Free Software in Russia. The ministers took a serious look at the problems of IT industry and market. The presented achievements are resulting from a hard work of FOSS companies and public heroes. However, we are faced to many other things to be done. Among the other, the most important is the adaptation of the GPL and CC licenses.

As was mentioned in the beginning, the declaration of the NSP should be considered the most important event. Shortly, the NSP is the government initiative to refactor the IT industry with the help of FOSS. Before consider its declared structure and goals let us discuss its background factors.

External factors behind NSP

- US software industry world domination
- Proprietary software problems
 - Monopoly
 - Low interoperability
 - Untrustable security
 - Low scalability and dividability
- Money leave the country
- Talents leave the country



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Among the many reasons to develop the national software industry the most important is to stop the export of people and money. The security issues also very important, especially for the government.

Internal factors behind NSP

- Big country. Many regions use different software solutions for the same tasks (mostly DBs)
- Different information systems can't interconnect



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Despite the relatively small IT industry in Russia there were enough private companies to generate chaos. Same problems of administration in the transport, education, medical and juridical fields have different software solutions in different regions of our big country. That wasn't a problem for the moment, but now, following internal and external trends, we are moving towards the integration of separate information systems. And that movement reveals the problems.

What is NSP?

- **The NSP Council**

Among other things, people and knowledge are the most important.

- **The Algorithm Fund**

The NSP's software repository, building subsystem, VCS for sources and verification subsystem.

- **Competition Centers**

The top-level consulting and services for NSP-based solutions.

- **Science and Education**

Research and development in the field of CS. National software in the education.



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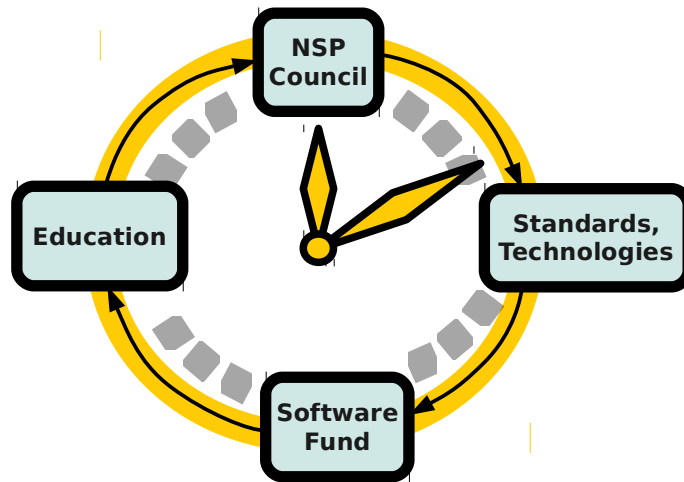
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Let us discuss what is NSP. Generally, it is the foundation. First of all, the foundation of knowledge that is either distributed among the people and documents or implemented in software. In both cases the information could be donated in a free and open manner. At the moment, every company is invited to join the project just signing its manifest.

The Algorithm Fund deserves the special attention. Deriving its name from the original Soviet project in the past it is going to be equipped with modern hardware and bleeding-edge software building and maintaining technologies, I hope, which I will discuss in the ALT Linux Team part of the report.

Of course, this plan requires science and education to be involved and, in fact, the NSP can be seen as an information cycle.

The NSP Cycle



The world and national experience, represented as a set of standards and technologies by the Council, is implemented in software that is used by the people in their education and research projects, giving new information in the outcome. That formula is rather philosophical and not quite new. Actually, that process is happened in the background of every modern society. However, the role of NSP is to make that process conscious.

The goals of NSP

- Development of the national software industry
- Internal interoperability and accessibility with nation-wide solutions
- External interoperability
- Security
- Minimum import of software
- Increased export of software



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The main goals of the NSP project is to overcome the problems of IT industry and market mentioned above. In addition we hope to increase the export of software and technologies. Either as products and services, or as donations to Free and Open Source projects. The latter is probably more interesting than the former. So, where will we commit?

NSP research and development priorities

or **Where will we commit?**

- FOSS infrastructure technologies
- Software building technologies
- Software maintenance technologies
- Clusters and clouds
- Energy efficient computation
- Embedded software for networking



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The NSP is an official statewide project and as one it should declare some plans and directions of its development. Considering it is based primarily on FOSS that means commits. Here are the declared directions.

Some of the technologies mentioned above are in an active development of the ALT Linux Team. Let us see what it is.

The ALT Linux Team

What is ALT Linux Team?

- A recursive acronym
- Since 2001
- More than 12 000 packages maintained in *Sisyphus*
- More than 100 hackers from Russia, Belorussia, Ukraine, Kazakhstan, Romania and Brazil



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The history of the hacker team starts in year 2001. Now, there are more than 100 members from different countries and more than 12 000 packages maintained and various OS distributions are released regularly. Not less the role of the people the result probably could not be achieved without the use of the special software some aspects of which are believed to be unique.

Sisyphus and its technologies nowadays

- Package base of more than 12 000 packages
- Reproducible package building in isolated environments
- Automatic dependency calculation
- Various formal testing of the packages performed automatically
- Distributed package rebuilding
- Regular rebuilds of the whole package base
- Some of the packages are maintained by robots



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I don't know the real origin of the name „Sisyphus” for shame. However, it is probably were given for two reasons. First, is the iterative character of the work that is done by the maintainers updating the software again and again. From the other hand, the whole repository is continuously rebuilding – all packages are rebuilt from their sources again and again on all of the architectures. That process is a very efficient instrument to reveal various bugs. With the automatic dependency calculation and formal testing the resulting repository state is very consistent: no incompatible software could be installed and all of the depending components are always met. The packages are building on a distributed network, in isolated and reproducible manner, directly from sources on the version control system (git). In the cases where the upstream provides enough information, the packages are maintained by robots. Currently it is done for JPackage and CPAN.

We believe, that many of that technologies will become a part of NSP.

Future Sisyphus

- Better than present
- Backports are maintained by robots
- More upstream packages are maintained by robots
- Packages and technologies are exported to other distros and teams



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In the end I want to present some trends and goals of the Sisyphus and ALT Linux Team that are currently in the active discussion on the mailing lists and conferences. One of the interesting topic is the problem of the increasing software complexity and the number of software packages. Some team members see the increasing employment of robots as the possible solution to that problem.



Useful resources

Official site:

<http://altlinux.ru/>

FOSS in Russian schools:

<http://freeschool.altlinux.ru/>

ALT Linux distant learning:

<http://moodle.altlinux.ru/>

The «Sisyphus» repository:

<http://sisyphus.ru/>

<http://packages.altlinux.org/>

Knowledge base:

<http://altlinux.org/>

Bugtracker:

<http://bugs.altlinux.org/>

FTP-server:

<ftp://ftp.altlinux.org/>

<http://ftp.altlinux.org/>

BitTorrent tracker:

<http://torrents.altlinux.org/>

Thank you for your attention!

Here are the useful resources of the ALT Linux, Ltd. and the ALT Linux Team, Thank you for your attention! Questions?