

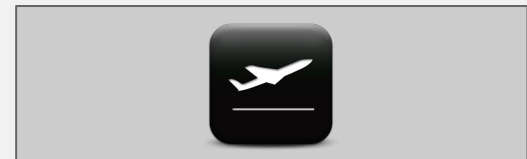
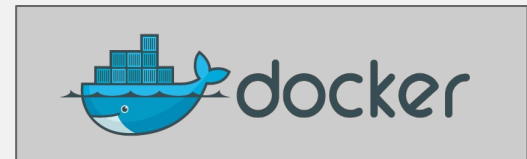
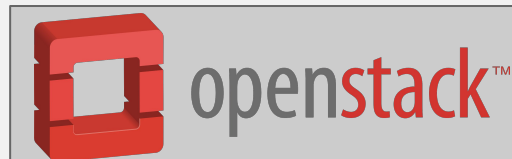


redhat.

Getting Packages to Fedora and How to Keep Them Sane

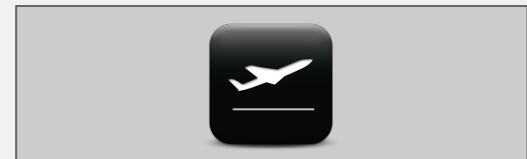
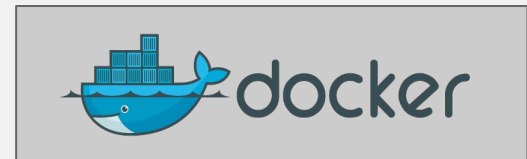
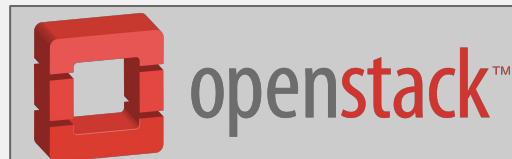
Zuzana Svetlikova
Honza Horak
5th April 2017

Why to have something like distribution?

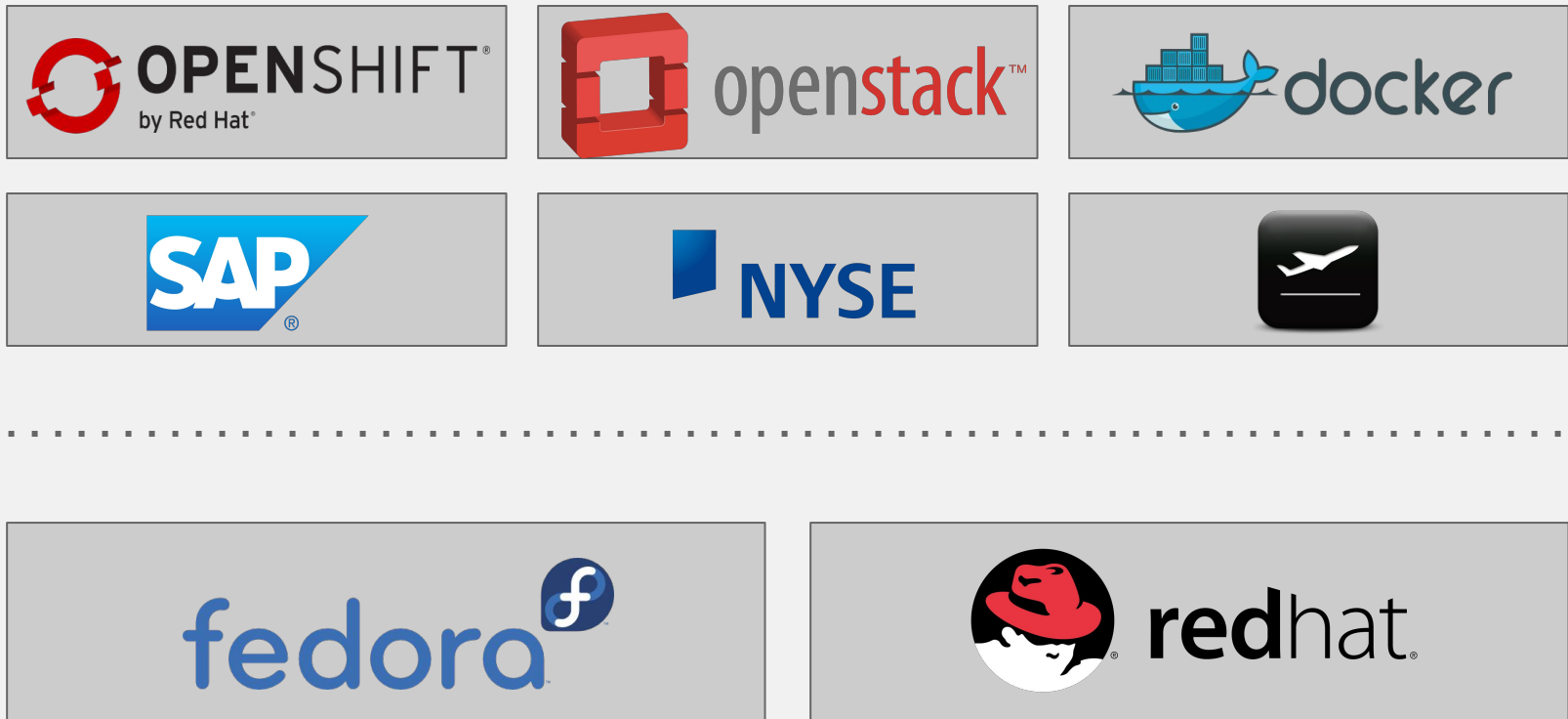


Why to have something like distribution?

Because platform matters



Relation between Fedora and RHEL



How to install some software on your Fedora workstation?

Source code available on upstream web

Wait, what is upstream?

- Original author(s) and other contributors
- Web page
- Documentation
- Code repository
- Issue tracker
- Communication channels
 - Mailing lists
 - IRC channel, Slack, Telegram, ...

Source code available on upstream web

Github became default option for hosting open-source

The screenshot shows the GitHub interface for the repository `openshift/origin`. At the top, there's a navigation bar with the GitHub logo, a search bar, and links for Pull requests, Issues, and Gist. The repository name `openshift / origin` is displayed, along with statistics: 302 Unwatch, 2,602 Stars, and 1,736 Forks. Below this, there are tabs for Code, Issues (975), Pull requests (194), Projects (0), Pulse, and Graphs. The main content area features the repository description "Enterprise Kubernetes for Developers" with a link to `http://www.openshift.org`. A series of tags are listed: `openshift`, `kubernetes`, `openshift-origin`, `paas`, `caas`, `ci-cd`, `devops`, `containers`, `go`, `continuous-delivery`, `continuous-deployment`, and `continuous-integration`. A summary bar shows 17,781 commits, 7 branches, 70 releases, 228 contributors, and Apache-2.0 license. Below this, there are buttons for "Branch: master", "New pull request", "Create new file", "Upload files", "Find file", and "Clone or download". The commit history shows a recent commit by `openshift-bot` on GitHub, with a list of recent changes: `.github` (update issue template from oadm, 4 months ago), `.tito` (Removed unnecessary variables for common and PEP8 validations, 4 days ago), `Godeps` (Merge pull request #13178 from smarterclayton/move_dockerbuild, 10 hours ago), and `api` (Merge pull request #12953 from jim-minter/template_service_broker, 4 hours ago).

Source code available on upstream web

<http://valgrind.org/downloads/current.html>

Valgrind 3.12.0

[valgrind 3.12.0 \(tar.bz2\)](#) [12MB] - 20 October 2016.

For {x86,amd64,arm32,arm64,ppc32,ppc64le,ppc64be,s390x,mips32,mips64}-linux, {arm32,arm64,x86,mips32}-android, {x86,amd64}-solaris, {x86,amd64}-darwin (Mac OS X 10.10, with limited support for 10.11 and 10.12) and preliminary support for tilegx-linux.

md5: 6eb03c0c10ea917013a7622e483d61bb

3.12.0 is a feature release with many improvements and the usual collection of bug fixes. This release adds support for POWER ISA 3.0, improves instruction set support on ARM32, ARM64 and MIPS, and provides support for the latest common components (kernel, gcc, glibc). There are many smaller refinements and new features. See the [release notes](#) for details.

Valkyrie 2.0.0

[valkyrie 2.0.0 \(tar.bz2\)](#) [260Kb] - 21 October 2010.

md5: a411dfb803f548dae5f988de0160aeb5

[Valkyrie](#) is a Qt4-based GUI for the Valgrind 3.6.x and 3.7.x series, that works for the Memcheck and Helgrind tools. It also has an XML merging tool for Memcheck outputs (vk_logmerge). This tarball is known to build and work with valgrind-3.6.0 and valgrind-3.7.0.

This version of Valkyrie does not support any version of Valgrind prior to 3.6.0. If you want to use Valkyrie with an older Valgrind version, we recommend you instead upgrade your Valgrind to 3.6.0 and use this version of Valkyrie.

RPMs / Binaries

[We do not distribute binaries or RPMs.](#) The releases available on this website contain the source code and have to be compiled in order to be installed on your system. Many Linux distributions come with valgrind these days, so if

Let's compile it!

It can't be so hard..

```
$> tar -xvf valgrind-3.12.0.tar.bz2
$> cd valgrind-3.12.0/
$> ./configure
$> make_
```

Let's compile it!

It can't be so hard..

```
$> tar -xvf valgrind-3.12.0.tar.bz2
$> cd valgrind-3.12.0/
$> ./configure
$> make
...
Makefile:829: recipe for target 'all-recursive' failed
make[1]: *** [all-recursive] Error 1
make[1]: Leaving directory '/home/hhorak/valgrind-3.12.0'
Makefile:698: recipe for target 'all' failed
make: *** [all] Error 2
```

What all might go wrong

```
$> ./configure && make && make install
```

- Missing dependencies (libraries, tools)
- Compilation toolchain needed
- Integration with the rest of the system
- What to do if I want to remove it?
- How to distribute the software to other users?

What all might go wrong

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$> ./configure && make && make install
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- Missing dependencies (libraries, tools)
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RPM solves all those issues

RPM solves many issues

```
$> sudo dnf install valgrind
```

```
Dependencies resolved.
```

```
=====
```

Package	Arch	Version	Repository	Size
Installing:				
perl	x86_64	4:5.24.1-385.fc25	updates	6.0 M
perl-Errno	x86_64	1.25-385.fc25	updates	67 k
perl-threads-shared	x86_64	1.55-1.fc25	updates	44 k
valgrind	x86_64	1:3.12.0-1.fc25	fedora	6.5 M

```
=====
```

```
Transaction Summary
```

```
=====
```

```
Install 15 Packages
```



```
Total download size: 13 M
```

```
Installed size: 40 M
```

```
Is this ok [y/N]: Y_
```

RPM solves many issues

Installing RPMs from Fedora repositories solves:

- **Dependencies**
- Separation of **building** and **running** environment
- **Integration** with the rest of the system
- Allows to **remove** RPMs cleanly
- **Signing** allows to verify content

What is RPM?

RPM is created based on a SPEC

```
Name: eject
Version: 2.1.5
Release: 1%{?dist}
Summary: A program that ejects removable media using software control

License: GPLv2+
URL: http://www.pobox.com/~tranter
Source0: http://www.ibiblio.org/pub/Linux/utils/disk-management/%{name}-%{version}.tar.gz

BuildRequires: gettext
BuildRequires: libtool

%description
The eject program allows the user to eject removable media (typically
CD-ROMs, floppy disks or Iomega Jaz or Zip disks) using software
control. Eject can also control some multi-disk CD changers and even
some devices' auto-eject features.

Install eject if you'd like to eject removable media using software
control.
```


RPM is created based on a SPEC

```
%build
%configure
make %{?_smp_mflags}

%check
make check

%install
rm -rf $RPM_BUILD_ROOT
make install DESTDIR=$RPM_BUILD_ROOT

install -m 755 -d $RPM_BUILD_ROOT/%{_sbindir}
ln -s ../bin/eject $RPM_BUILD_ROOT/%{_sbindir}

%find_lang %{name}

%files -f %{name}.lang
%doc README TODO COPYING ChangeLog
%{_bindir}/*
%{_sbindir}/*
%{_mandir}/man1/*

%changelog
* Wed Oct 20 2011 John Doe <jdoe@example.com> 0.8.18.1-0.1
- Initial RPM release
```

How to build an RPM?

Building RPM is easy

1. Prepare build environment

```
$> mkdir -p ~/rpmbuild/{BUILD,RPMS,SOURCES,SPECS,SRPMS}
$> vim ~/rpmbuild/SPECS/eject.spec
$> cp eject-2.1.5.tar.gz ~/rpmbuild/SOURCES/
```

2. Build RPM using rpmbuild (local environment)

```
$> rpmbuild -ba ~/rpmbuild/SPECS/eject.spec
```

3. Build RPM using mock (clean environment)

```
$> mock -r fedora-25-x86_64 ~/rpmbuild/SRPMS/eject-2.1.5-1.fc25.src.rpm
```

Come to the talk “Create a Fedora package from your Rust project” by Martin Sehnoutka at 15:40 to learn more.

What it takes to get a package to Fedora?

How to Get a Package to Fedora

Upstream

RPM prepared
COPR

RPM in Fedora
repositories

Package review

What it means to maintain a package in Fedora?

Maintainer talks to reporter

Red Hat Bugzilla - Bug 1301093 failed in UME with error 12 (Cannot allocate memory) Last modified: 2016-01-28 13:23:17 EST

Home | New | Search | Front Page | My Bugs | Search [?] | Reports | My Requests | Preferences | Administration | Help | Log out hhorak@redhat.com

Bug List: (93 of 378) [First](#) [Last](#) [Prev](#) [Next](#) [Show last search results](#) [Format For Printing](#) - [XML](#) - [Clone This Bug](#) - [Last Comment](#)

Bug 1301093 - failed in UME with error 12 (Cannot allocate memory) ([edit](#)) [Save Changes](#)

Status: CLOSED ERRATA ([edit](#))

Aliases: None ([edit](#))

Product: Fedora

Component: valgrind
[Click to list all components \(Show other bugs\)](#)

Version: rawhide

Hardware: Unspecified Unspecified

Priority: unspecified **Severity:** unspecified

Target Milestone: ---
Target Release: ---

Assigned To: Mark Wielaard ([edit](#)) ([take](#))

QA Contact: Fedora Extras Quality Assurance ([edit](#)) ([take](#))

Docs Contact: ([edit](#)) ([take](#))

URL:

Whiteboard:

Keywords:

Tags:

Depends On:

Blocks: TRACKER-bugas-affecting-libauestfs ([edit](#))

Reported: 2016-01-22 09:59 EST by Richard W.M. Jones

Modified: 2016-01-28 13:23 EST ([History](#))

CC List: Add me to CC list
4 users ([edit](#))

See Also: ([add](#))

Fixed In Version:

Customer Escalation: ---

Internal Whiteboard:

Devel Whiteboard:

QA Whiteboard:

Doc Type: Bug Fix

Doc Text: Cause:
Consequence:
Fix:

PM Score: 0

Build ID:

Partner: None ([edit](#))

Verified: None ([edit](#))

Maintainer talks to upstream

Click to add subtitle

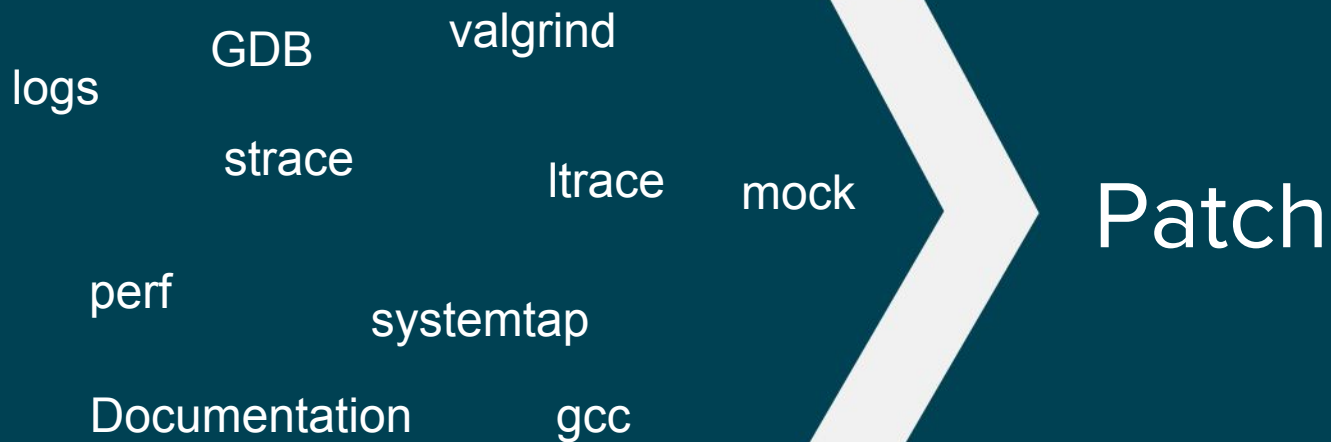
Bug in Fedora package
Reproducing
Fix preparation

Upstream

“UPSTREAM FIRST” RULE

Maintainer debugs and fixes the issue

Click to add subtitle



Come and try your skills



Bughunting contest simulates a work day of a package maintainer.

Come to test your skills and compete with others!

Subscribe for either short or long run on the wall of Plutonium room.

Maintainer updates the package

Upstream Release Monitoring 2016-04-03 20:30:23 EDT **Description** Private [reply] [-]

Latest upstream release: 1.4.9
Current version/release in rawhide: 1.4.8-1.fc24
URL: <https://pypi.python.org/pypi/udiskie>

Please consult the package updates policy before you issue an update to a stable branch: https://fedoraproject.org/wiki/Updates_Policy

More information about the service that created this bug can be found at: https://fedoraproject.org/wiki/Upstream_release_monitoring

Please keep in mind that with any upstream change, there may also be packaging changes that need to be made. Specifically, please remember that it is your responsibility to review the new version to ensure that the licensing is still correct and that no non-free or legally problematic items have been added upstream.

Based on the information from anitya: <https://release-monitoring.org/project/7187/>

Tip: <https://github.com/rebase-helper/rebase-helper>

Limits of current Fedora packaging

- Only one version of particular package in one release
- Package review requires RPMs to be perfect
- Bundling of other software prohibited (exceptions exist)
- Becoming packager requires to demonstrate RPM understanding

What is COPR?

The screenshot displays the Fedora COPR web interface. At the top left is the Fedora COPR logo. On the right, the user 'hhorak' is logged in, with a search bar for projects. The main content area is titled 'Projects' and includes a 'New Project' button. A list of projects is shown, each with a title, a description, and supported Fedora versions. The right sidebar features a user profile for 'Hhorak' with a profile picture, statistics for 'My projects' (38) and 'My groups' (1), a 'Task Queue' section with counts for 'Importing' (0), 'Waiting' (0), and 'Running' (6), and a 'Recent Builds' section for the 'createrepo_c' project.

fedora copr hhorak | log out

Search projects by name, os or arch

Projects

[New Project](#)

- rpmsoftwaremanagement/rpm-gitoverlay-1490258840.156887**
Description not filled in by author. Very likely personal repository for testing purpose, which you should not use.
Fedora 25: x86_64
- rpmsoftwaremanagement/rpm-gitoverlay-1490258285.313551**
Description not filled in by author. Very likely personal repository for testing purpose, which you should not use.
Fedora 25: x86_64
- mmarusak/ABRT-for-cockpit-PR**
This repo contains newest ABRT, Libreport and Satyr, so PR for Cockpit can be easily tested.
Fedora 24: x86_64 Fedora 25: x86_64
- mkyral/plasma 5.9**
Unofficial builds of fresh plasma 5.9. Currently 5.9.3 - I didn't mean to stay with the copr that long, but... Until 5.9 gets imported in Fedora officially, I'll stick with this copr. Hence, I do apologize for the misleading name. But it's just the name anyways... What's in a name? That which we call a rose By any other name would smell as sweet.
Fedora 25: x86_64 Fedora 26: x86_64 Fedora rawhide: x86_64
- rpmsoftwaremanagement/rpm-gitoverlay-1490254739.754518**
Description not filled in by author. Very likely personal repository for testing purpose, which you should not use.
Fedora 25: x86_64

Hhorak

My projects **38**

My groups **1**

Task Queue

Importing **0**

Waiting **0**

Running **6**

Recent Builds - View All

createrepo_c
Project: rpmsoftwaremanagement/rpm-



Modularity

- Bringing new concepts to the SW building and distribution
- Focusing on delivering solutions, rather than packages
- Strong focus on containers (docker)
- **Say hello to Modularity folks in Platinum**
- **How to Docker presentation starts at 17:40 in Krypton**

NodeJS & SIG & SCL

What are Software Collections?

What are Software Collections?

- A set of dynamic programming languages, database servers, and various related packages (gcc, git..)
- Useful for development on operating systems like Centos and RHEL
- Provide access to latest software to developers using stable operating systems
- Multiple versions available
- Among other provide Python, Node.js, Ruby, Perl, PHP, MariaDB, MongoDB, PostgreSQL, Redis, git and gcc
- More on softwarecollections.org

How are Software Collections related to Fedora?

How are SCL related to Fedora?

- Newer or older packages
- More users - more bugs found
- More maintainers - more help with bugs and packaging
- SCL maintainers often package new collections in COPR so users can try it out sooner and find bugs before it is released

What is a SIG?

What is a SIG?

- **S**pecial **I**nterest **G**roup
- A group of maintainers with common interest in specific project
- SIGs are often given rights to the packages to help maintenance
- Lots of different SIGs (Perl, Rust, Node.js, Astronomy, Fedora Medical, Machine Learning, KDE, Cloud, etc..)



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End