



PHP in RPM distribution

Why things get better

Presented by
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Today's Topics

1. Presentation
2. PHP in Enterprise Linux
3. PHP in Fedora
4. Software Collections
5. Upstream / Downstream
6. Continuous integration
7. Questions

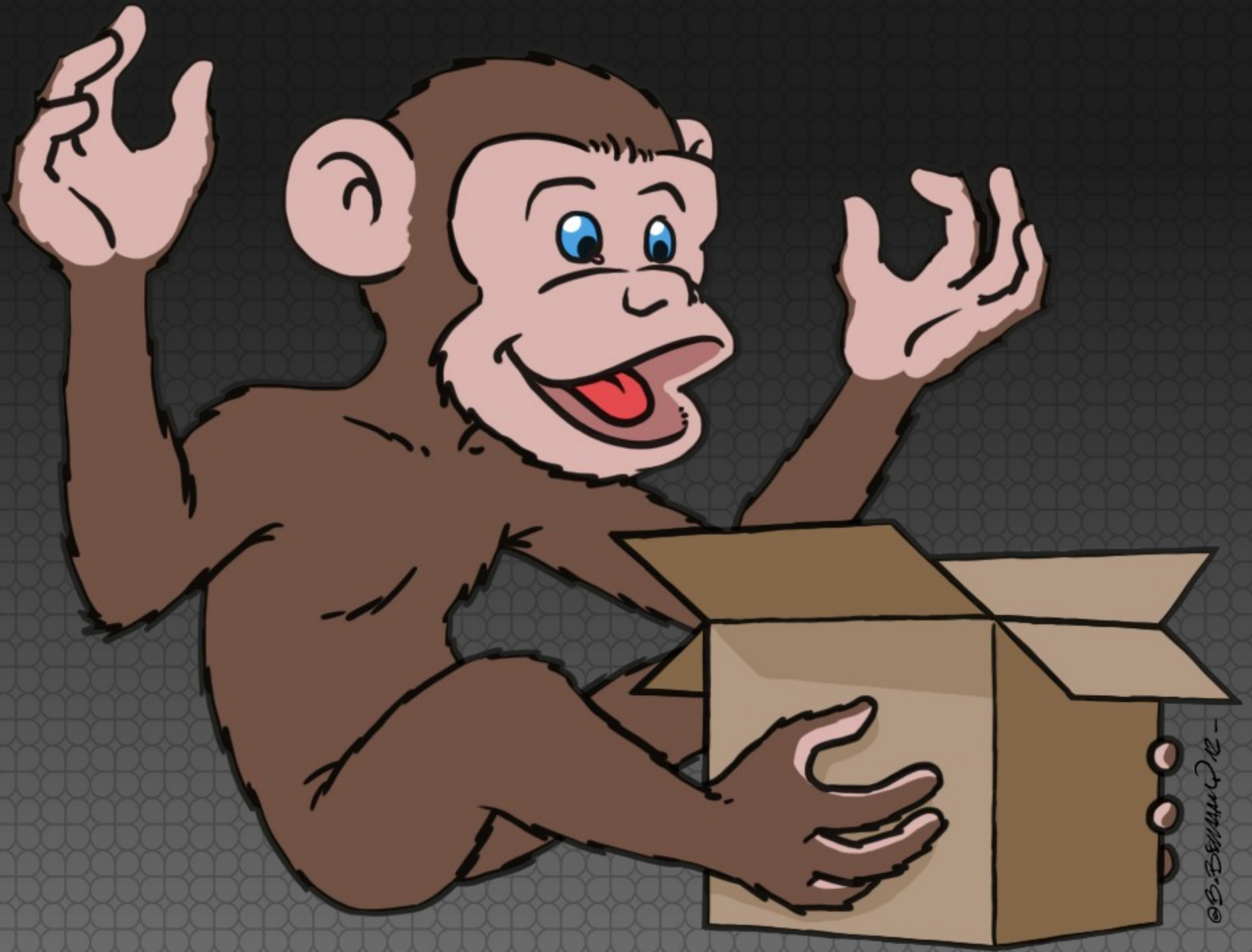
Presentation

Presentation

- 1998 : PHP 3.0 user
- 2005 : Remi's RPM repository
- 2006 : Fedora contributor
- 2007 : Fedora PHP co-maintainer
- 2011 : PECL developer
- 2012 : Fedora / Red Hat PHP maintainer
- 2012 : PHP developer

Work (in Fedora)

- 2010 : php-fpm
- 2011 : php-mysqlnd
- 2012 : PHP 5.4 in Fedora 17
- 2012 : extensions for ZTS
- 2013 : PHP 5.5 in Fedora 19
- 2014 : PHP 5.6 in Fedora 21
- 2014 : nginx integration (Fedora 21)



Enterprise Linux



Enterprise Linux

- Distributions
 - RHEL (Red Hat Enterprise Linux)
 - CentOS
 - Other clones (OEL, SL...)
- Goals
 - Stability
 - ABI stability
 - API stability
 - Long term support (>10 years)
 - Certifications

Enterprise Linux (PHP)

- RHEL 4 2005 – 2012 (2017)
 - PHP 4.3.9
- RHEL 5 2007 – 2017 (2020)
 - PHP 5.1.6
- RHEL 6 2010 – 2020 (2023)
 - PHP 5.3.3
- RHEL 7 2014 – 2024 (2027)
 - PHP 5.4.16

Enterprise Linux



- Backports
 - We use the term backporting to describe when we take a fix for a security flaw out of the most recent version of an upstream software package and apply that fix to an older version of the package we distribute.
 - 5.3.3-38 <> vanilla 5.3.3
 - 5.3.3-38 is secure (all CVE fixed)

http://www.redhat.com/advice/speaks_backport.html

Enterprise Linux



- Problem
 - PHP is too old for modern webapps
- Solutions
 - Upgrade to latest RHEL / CentOS :(
 - Manual build :(
 - Third party repository (#remirepo)
 - Docker
 - SCL :)

Fedora



Fedora



- Distributions (Version 21+)
 - Fedora Workstation
 - Fedora Server
 - Fedora Cloud
- Goals
 - Latest versions, Where things happen !
 - Stability (Updates policy)
 - Short life cycle (~1 year)
 - Upstream first
 - Upstream of RHEL

Fedora (PHP)

- **Fedora 17** – May 2012 – Jul 2013 - EOL
 - PHP 5.4.1 => 5.4.17
- **Fedora 18** – Jan 2013 – Jan 2014 - EOL
 - PHP 5.4.9 => 5.4.23
- **Fedora 19** – Jul 2013 – (Jan 2015 ?)
 - PHP 5.5.0 => 5.5.18
- **Fedora 20** – Dec 2013
 - PHP 5.5.6 => 5.5.18
- **Fedora 21** – Dec 2014 ?
 - PHP 5.6.2 ?

Fedora



- Problem
 - PHP is too recent for some webapps
- Solutions
 - Use another distro :(
 - Manual build :(
 - Docker
 - SCL :)



Software Collections (SCL)

SCL

- Software Collections give you the power to build and concurrently install **multiple versions** of the same components on your system, without affecting the system versions of the packages installed from your distribution.

<https://www.softwarecollections.org/>

SCL

- Set of packages (RPM)
- Separate tree
 - Installed in `/opt/<vendor>/<sclname>`
- Launcher to enable the collection

SCL

- PHP versions available for Enterprise Linux

	RHEL-6	RHEL-7
PHP 5.3	base	-
PHP 5.4	RHSCL 1.0 remi repo	base RHSCL 1.1 remi repo
PHP 5.5	RHSCL 1.1 remi repo	RHSCL 1.1 remi repo
PHP 5.6	remi repo	remi repo

RHSCL 1.0 Sep 2013, RHSCL 1.1 Jun 2014
Also available on softwarecollections.org

SCL

- PHP versions available for Fedora

	Fedora 19	Fedora 20	Fedora 21
PHP 5.3	-	-	-
PHP 5.4	remi repo	remi repo	remi repo
PHP 5.5	base	base	remi repo
PHP 5.6	remi repo	remi repo	base

Notice: not yet allowed in official repository

SCL



- Demo
 - Web: <http://localhost/info.php>
 - Command Line
 - Doctrine/instantiator test suite

SCL



- Virtual hosts configuration

```
<VirtualHost *:80>
    ServerName php56scl

    # Redirect to FPM server in php56 SCL
    <FilesMatch \.php$>
        SetHandler "proxy:fcgi://127.0.0.1:9006"
    </FilesMatch>
</VirtualHost>
```

SCL

- Links

- <https://fedorahosted.org/SoftwareCollections/>
- <http://blog.famillecollet.com/tag/SCL>
- <http://developerblog.redhat.com/>
- <http://www.softwarecollections.org/>



Upstream Downstream (about collaboration)

Upstream

- Downstream (and users) expectations from upstream projects
 - Stability
 - Semantic Versioning (semver.org) for library
 - Roadmap
 - Documentation
 - Changelog
 - Communication
 - Test suite

Downstream

- Upstream (and users) expectations from downstream
 - Recent versions
 - Stability
 - Documentation
 - Integration (system consistency)
 - QA
 - CI
 - Patches
- A packager hides distro users

Downstream

- What should be packaged ?
 - PHP main
 - building from sources
 - PECL and C extensions
 - pecl install ...
 - Libraries (pure PHP)
 - pear install ...
 - composer install ...
 - Web applications

Continuous Integration (PHP Stack)

Koschei

- KOJI = Fedora build system
- Koschei = KOJI Continuous Integration
- Launch scratch build every time a dependency is updated
- Allow to quickly detect
 - Bugs
 - FTBFS (Fail To Build From Sources)
 - Regressions
 - Behavior changes

Koschei

- PHP stack (~500 packages) is supervised

php

Packages from 1 to 100 from total 183 Page: 1 ▾

Name	State ▲	Task ID	Started
php-pecl-mongo	✓	7893906	2014-10-17 10:59:55
php-pecl-memcached	✓	7893902	2014-10-17 10:59:46
php	✓	7893886	2014-10-17 10:59:13
php-phpunit-phpcov	✓	7893486	2014-10-17 10:16:41
php-phpunit-PHPUnit-MockObject	✓	7893283	2014-10-17 09:53:39
php-pecl-selinux	✓	7893242	2014-10-17 09:41:11
php-pecl-xhprof	✓	7893240	2014-10-17 09:41:05
php-pecl-sphinx	✓	7893237	2014-10-17 09:40:59
php-pecl-raphf	✓	7893231	2014-10-17 09:40:53

<http://koschei.cloud.fedoraproject.org>

Koschei

- Bug detection (bartlett/php-compatinfo)

```
7754259 2014-10-03 10:00:36 php-common 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22 details
noarch L7754261 ( build.log | root.log ) php-cli 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-tidy 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-xml 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-mbstring 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-soap 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-process 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
php-pdo 5.6.1-0.2.RC1.fc22 > 5.6.1-1.fc22
kernel-headers 3.17.0-0.rc7.git1.1... > 3.17.0-0.rc7.git2.1...
```

Koschei



- Test failure

There was 1 failure:

```
1)
Bartlett\Tests\CompatInfo\Reference\Extension\SysvsemExtensionTest::testGetF
unctionsFromReference
```

```
Function 'sem_acquire', found in Reference (4.0.0,5.6.1RC1), exists.
```

```
Failed asserting that true is false.
```

```
/builddir/build/BUILD/php-compat-info-
4f9def9b616c3af1bb577c188b66f3039e8dd333/tests/Reference/GenericTest.php:226
```

```
FAILURES!
```

- Bug reported and fixed upstream

Summary

- Things get better :)
 - Enterprise Linux have recent PHP
 - Parallel installation
- RPM distributions are a good choice for PHP developers

Questions?



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Remi's RPM repository



- Upstream for Fedora
 - Upstream for RHEL, CentOS and clones
 - Upstream for all third party repositories
- Latest versions (5.4.34, 5.5.18, 5.6.2)
 - Fedora 17 to 21, EL 5 to 7
- Base packages (replacement)
 - 1 repository per version
(remi, remi-php55, remi-php56)
- SCL packages (parallel installation)
 - 1 SCL per version (php54, php55, php56)