

New Tools Used by the Scientific Linux Team

Troy Dawson

dawson@fnal.gov

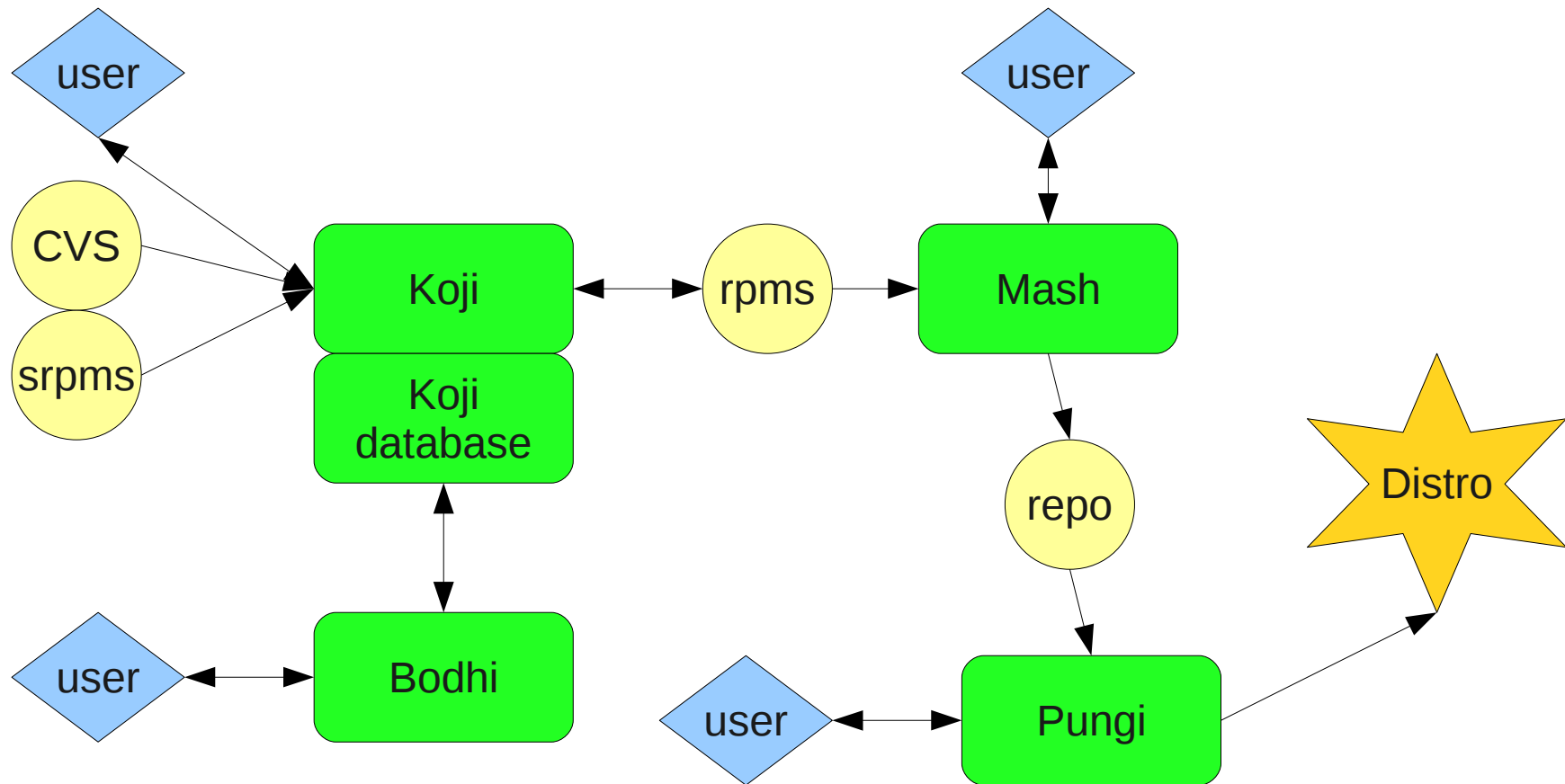
HEPIX Fall 2010

November 4, 2010

Overview

- Overview of the Fedora work flow from source code to distribution
- Step through the Fedora's work flow, and show how we are using, or might use, each tool.
- Other tools we are using.

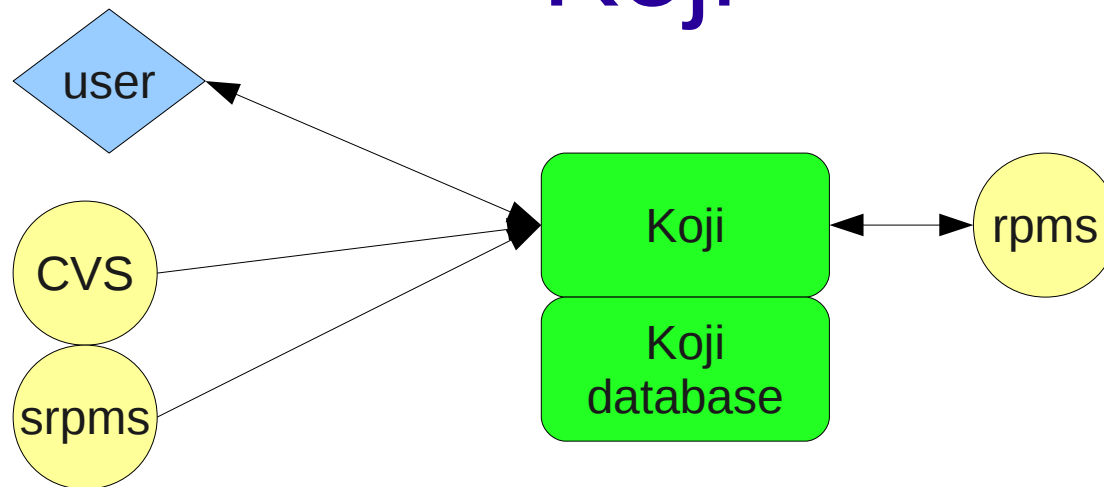
Fedora Work Flow



What is Koji?

- Koji is the software that builds RPMs for the Fedora Project and EPEL.
 - Uses Yum and Mock
 - New buildroot for each build
 - Active code base
 - Web interface with SSL and Kerberos authentication
 - Buildroot contents are tracked in the database

Koji



- User tells Koji where to get the source code or the source rpm
- Koji builds the rpm
- Koji rebuilds it's internal repository using the newly built rpm
- Koji keeps track of rpm tags.

Koji



Scientific Linux BUILDSYSTEM

[Summary](#)[Packages](#)[Builds](#)[Tasks](#)[Tags](#)[Build Targets](#)[Users](#)[Hosts](#)[Reports](#)[Search](#)

Welcome to Koji Web

Recent Builds

ID ▼	NVR	Built by
106	redhat-logos-60.0.11-2.sl6.9	dawson
105	rwho-0.17-34.el6	dawson
104	rusers-0.17-59.el6	dawson
103	ruby-qpid-0.7.946106-2.el6	dawson
102	rubygems-1.3.5-1.el6	dawson
101	rubygems-1.3.7-1.el6	dawson
100	rubycgem-rake-0.8.7-2.1.el6	dawson
99	rubycgem-flexmock-0.8.6-1.1.el6	dawson
98	ruby-1.8.7.299-3.el6	dawson
97	rtkit-0.5-1.el6	dawson

Koji

- The Scientific Linux Development Team were able to setup a Koji server and build most of the RHEL6 beta releases.
- We are able to use certificates to grant users privileges. This allows us to give non-Fermi users privileges, while still following Fermilabs security policies.
- We have started experimenting with setting tags on built packages, to simulate possible testing and update work flows.

Koji



Scientific Linux BUILDSYSTEM

[Summary](#)[Packages](#)[Builds](#)[Tasks](#)[Tags](#)[Build Targets](#)[Users](#)[Hosts](#)[Reports](#)[Search](#)

Tags

Tags 1 through 9 of 9

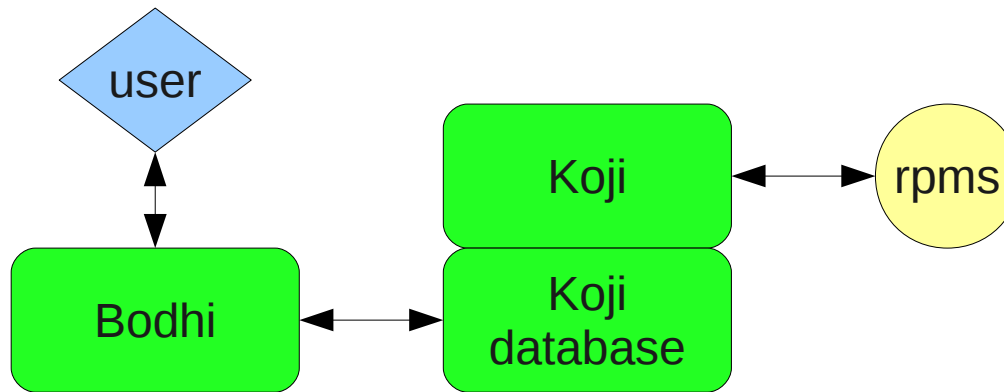
ID	Name ▲
1	dist-sl6
4	dist-sl6-build
2	dist-sl6-updates
3	dist-sl6-updates-candidate
7	rhel6-beta1
8	rhel6-beta2
9	rhel6-beta2.1
5	sl6-added
6	sl6-changed

Tags 1 through 9 of 9

Koji

- We have documented how to setup our Koji server, and scripted everything where possible.
- We were able to test out the documentation and scripts last week when we lost the system disk of our build system.

Bodhi



- Moves rpm's between tags
- Can be used to work an rpm through development, testing, and publishing.

Bodhi



Package | Bug # | CVE



- Login
- Home
- Fedora 14
 - Metrics
 - Pending (29)
 - Testing (265)
 - Stable (2432)
 - Security (83)
- Fedora 13
 - Metrics
 - Pending (55)
 - Testing (213)
 - Stable (5575)
 - Security (229)
- Fedora 12
 - Metrics
 - Pending (69)
 - Testing (162)
 - Stable (5813)
 - Security (328)
- Fedora EPEL 5
 - Metrics
 - Pending (29)
 - Testing (115)
 - Stable (1778)
 - Security (116)
- Fedora EPEL 4

Bodhi is now enforcing the [Package Update Acceptance Criteria](#) across all Fedora releases.

Welcome to bodhi v0.7.9



Latest Updates







Update	Release	Status	Type	Request	Karma	Submitter	Age
phpMyAdmin-3.3.8-1.fc12	Fedora 12	pending				robert	1 hour
phpMyAdmin-3.3.8-1.fc13	Fedora 13	pending				robert	1 hour
phpMyAdmin-3.3.8-1.fc14	Fedora 14	pending				robert	1 hour
varnish-2.1.4-3.fc13	Fedora 13	pending				ingvar	3 hours
varnish-2.1.4-3.fc14	Fedora 14	pending				ingvar	4 hours
rubygem-deltacloud-client-0.1.0-2.fc12	Fedora 12	testing				mfojtik	6 hours
rubygem-deltacloud-client-0.1.0-2.fc14	Fedora 14	testing				mfojtik	6 hours
rubygem-deltacloud-client-0.1.0-2.fc13	Fedora 13	testing				mfojtik	6 hours
perl-Proc-Daemon-0.05-1.fc14	Fedora 14	testing				remi	8 hours
rubygem-deltacloud-client-0.1.0-1.fc12	Fedora 12	testing				mfojtik	10 hours

Latest Comments [\[more\]](#)























Update	Comment	From	Karma
virt-what-1.3-3.fc13	filed bug 647862 - failed to detect kvm for me	ericb	
rubygem-deltacloud-client-0.1.0-2.fc14	See my comment https://bugzilla.redhat.com/show_bug.cgi?id=642995#c12	mtasaka	
nrpe-2.12-16.el4	This fixes the directory perms on /var/run/nagios (0775 instead of 0755).	ralston	
nrpe-2.12-16.el5	This fixes the directory perms on /var/run/nagios (0775 instead of 0755).	ralston	
cryptopp-5.6.1-2.fc13	This update has been unpushed	nucleo	

Bodhi

7 Pending Updates

Update	Release	Type
voms-1.9.18.1-3.el4	Fedora EPEL 4	 bugfix
erlang-eradius-0-0.6.20070627cv.s.el4	Fedora EPEL 4	 bugfix
erlang-erlsom-1.2.1-5.el4	Fedora EPEL 4	 enhancement
python-sippy-1.0.3-2.el4	Fedora EPEL 4	 bugfix
erlang-erlsom-1.2.1-3.el4	Fedora EPEL 4	 newpackage
python-sippy-1.0.1-1.el4	Fedora EPEL 4	 enhancement
erlang-eradius-0-0.4.20070627cv.s.el4	Fedora EPEL 4	 newpackage

Bodhi

grc-0.70-3.el5		 0	ausil
tft2pt1-3.4.4-8.el5		 0	ausil
tcl-ktreectrl-2.2.8-1.el5.1		 -1	ausil
perl-Verilog-CodeGen-0.9.4-1.el5		 0	ausil
perl-SystemC-Vregs-1.463-1.el5		 0	ausil
nssbackup-0.2-0.2.rc7.el5		 0	ausil
transifex-0.5.2-1.el5		 0	ausil
xavante-2.2.1-1.el5		 0	timn
erlang-mustache-0.1.0-2.el5		 0	peter
bcfg2-1.1.0-2.el5		 0	fab
389-adminutil-1.1.13-1.el5, 389-dsgw-1.1.6-1.el5, 389-admin-1.1.12-0.2.a2.el5, 389-ds-base-1.2.7-0.4.a3.el5		 0	rmeggins

Bodhi

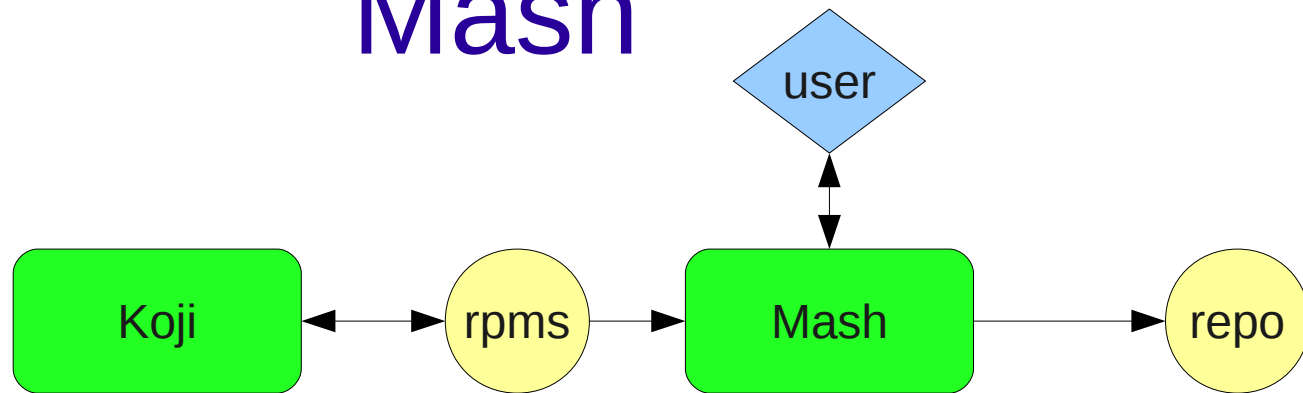
[ocsinventory-1.3.2-4.el5](#) bugfix update

Status:	testing 
Release:	Fedora EPEL 5
Update ID:	FEDORA-EPEL-2010-3578
Builds:	ocsinventory-1.3.2-4.el5 (logs)
Pushed:	True
Date Submitted:	2010-10-27 05:55:22
Date Released:	2010-10-27 18:26:12
Submitter:	remi
Karma:	 0
Stable karma:	3
Unstable karma:	-3

Bodhi

- We are currently investigating Bodhi.
- We are determining if it is easier to set it up, or to write our own scripts.

Mash

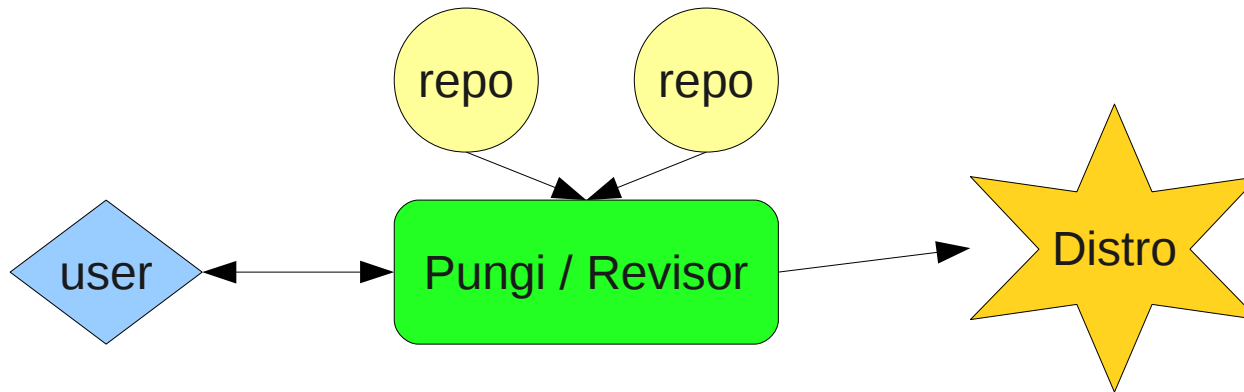


- Can be used to sign rpm's
- Can be used to gather all rpm's from a tag and create a new repository
- Can be used to update a repository as rpm updates are built

Mash

- We are just beginning to investigate Mash
- We believe the setup and learning curve of Mash are low enough that using it will save us a lot of time and effort.
- We are hoping that it is able to speed up the times it currently takes us to push out security errata.

Revisor



- Both Pungi and Revisor build distributions from one, or several repositories.
- Revisor is based off Pungi but with more customizable options
- It can make regular install DVD's and CD's
- It can make a network install tree structure.

Revisor


- The Fermi Linux team have been using revisor to create Fermi Linux STS. STS is a release based off Fedora.
- With just a couple patches, we were able to use Revisor to create the SL6 Pre-Alpha.
- Revisor has both a GUI and a Text mode.
- Both the text version and the gui version have their place. But both can bring several repositories together to create a distribution.

Revisor



Revisor

File Help



Configure Revisor


Revisor Configuration: Refresh

Configuration Section to Use:

Destination Directory:

Enable/Disable Repositories from Selection Configuration:

sl Scientific Linux 6 - x86_64



Data

Select a kickstart file to be used to populate options for your selected media.
If you did not select Live media creation, some options will be ignored.
This step is not required and options loaded from the kickstart may also be customized further.


Configuration File:

Advanced Options

- Use repositories configured in the kickstart file
- Use package manifest from kickstart data
 - Customize package manifest defined in kickstart data
- Customize/Review details about locale, users/passwords, security/authentication, networking and Xorg
- Include Kickstart file on Installation Media
 - Set installer to boot with kickstart by default

Revisor

File Help



Package Selection

Please select the software you want to be available on your media:

By Category List Search

- SL Addons
- Base System
- Servers
- Web Services
- Databases
- System Management


Misc Scientific Linux Packages

Optional Packages...

These are packages added to Scientific Linux and NOT installed in any group, they are here so that they can easily be selected

Information Quit Back Forward

Help



Ready to Compose Images

Revisor is now ready to compose your images. Please review your selection details below:

Package Details

Number of Packages: 0 packages

Maximum Package Payload Size: 0 B

Package Set Size (Live/Installed): 0 B

Advanced Options


Send to Build Server:

Build Unattended Install Media

Information Quit Back Forward

Revisor


File Help



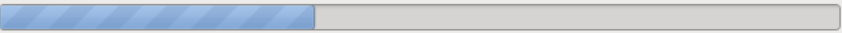
Building Your Media

Task List

- Resolve Dependencies - Done
- Populating Statistics - Done
- Downloading Packages - Done
- Linking in Binary Packages - Done
- Create Repository Information - Running...
- Build isolinux and Installer - Pending...
- Linking in Release Notes - Pending...
- Creating DVD ISO Images - Pending...

Task Progress: 

Creating Repository Information

Total Progress: 

Information Quit Back Forward

Results Location: /srv/revisor/sl6-x86_64 Open

Options

- Image to USB Device
- Send Compose to Server
- Image to Media
- Setup DHCPD Server
- Torrent
- Generate Kickstart for Install Clients
- gdo
- Setup PXE Server

Continue...

Congratulations, Compose Complete

Information Quit

Revisor

- Creating distributions in text mode can be just as simple
 - `revisor --cli --install-dvd --model=sl6-x86_64 --kickstart=/srv/sl-6.ks`
 - `revisor --cli --install-mode-full --install-tree --model=sl6-x86_64 --kickstart=/srv/sl-6.ks`

Other Tools - Spacewalk

- Spacewalk is the open source version of RHN and RedHat's Satellite Server
- We are planning on using it as an SL Errata Center

Other Tools - Spacewalk



All Errata ?

All Errata

Bugfix Errata

Enhancement Errata

Security Errata

Filter by Synopsis:

Go

Display

25



items per page

Type	Advisory	Synopsis
	SLEA-2010:0233	tog-pegasus enhancement update
	SLSA-2010:0088	Important: kvm security and bug fix update
	SLBA-2010:0052	util-linux bug fix update
	SLSA-2010:0681	Critical: firefox security update
	SLSA-2010:0682	Moderate: thunderbird security update
	SLBA-2009:1598	cman bug fix update
	SLSA-2010:0147	Important: kernel security and bug fix update
	SLSA-2010:0343	Important: krb5 security and bug fix update
	SLSA-2010:0129	Moderate: cups security update
	SLSA-2010:0528	Moderate: avahi security update

Other Tools - Spacewalk

- While developing scripts that pull down metadata from rhn, and push them back up to our spacewalk server, we have figured out how to automate errata emails, as well as verify errata packages that we have built.

Other Tools

- We are investigating punji, incase something happens that makes revisor stop working.
 - Pungi is a set of distribution build scripts. It is what Revisor was based off.
- We are investigating the Fedora Community.
 - Fedora Community is a nice front end to Koji, Bodhi, and a few other community tools.
 - Although it would be nice, we don't think the end result would justify the effort to set it up.

Other Tools - Community

Overview

Package Maintenance

People

Statistics

Search

Packages Builds **Updates**

Updates Overview: All Packages

UPDATES DASHBOARD

- 145 updates are currently waiting to be pushed. [More details >](#)
- 801 updates are currently in testing. [More details >](#)
- 14 updates were pushed to stable this week. [More details >](#)

UNPUSHED UPDATES

Release:

Package	Release(s)	Age
phpMyAdmin 3.3.8-1.fc12 3.3.8-1.fc13 3.3.8-1.fc14	Fedora 12 Fedora 13 Fedora 14	1 hour ago
varnish 2.1.4-3.fc13 2.1.4-3.fc14	Fedora 13 Fedora 14	3 hours ago
publican-redhat 2.5-0.fc14 2.5-0.fc12 2.5-0.fc13	Fedora 14 Fedora 12 Fedora 13	3 days ago
389-ds-base 1.2.7-0.3.a3.fc14	Fedora 14	4 days ago
spamassassin 3.3.2-0.2.svn1027144.fc14	Fedora 14	4 days ago

Viewing 1-5 of 145 pending updates

[View more pending updates >](#)

TESTING UPDATES

Release:

Package	Release(s)	Age	Status
rubygem-deltacloud-client 0.1.0-2.fc12 0.1.0-2.fc14 0.1.0-2.fc13	Fedora 12 Fedora 14 Fedora 13	1 hour ago	testing 😊 0 karma
perl-Proc-Daemon 0.05-1.fc14	Fedora 14	1 hour ago	testing 😊 0 karma

UPDATES

All Packages

Overview

[Unpushed Updates](#)

[Testing Updates](#)

[Stable Updates](#)

ALERTS

All Packages

This Week

- 901 builds succeeded
- 47 builds failed
- 11 stable updates pushed
- 361 testing updates pushed

Today

- 75 builds succeeded
- 7 builds failed
- 0 stable updates pushed
- 54 testing updates pushed

Other Tools - Community

Finished Builds: All Packages

Package	Build Time	Finished	Built By	
gnome-sharp 2.24.1-3.fc15	5 minutes	6 minutes ago 09:20 PM UTC	chkr	Push to updates >
libunicap 0.9.12-2.fc12	3 minutes	21 minutes ago 09:04 PM UTC	robert	Push to updates >
gnome-xcf-thumbnaier 1.0-4.fc15	1 minute	27 minutes ago 08:58 PM UTC	melmorability	Push to updates >
calibre 0.7.25-1.fc15	5 minutes	27 minutes ago 08:58 PM UTC	kevin	Push to updates >
pootle 2.1.2-1.fc15	2 minutes	40 minutes ago 08:46 PM UTC	dwayne	Push to updates >
libgnomekbd 2.91.1-2.fc15	3 minutes	56 minutes ago 08:29 PM UTC	notting	Push to updates >
phpMyAdmin 3.3.8-1.el6	2 minutes	1 hour ago 08:10 PM UTC	robert	Push to updates >
phpMyAdmin 3.3.8-1.fc12	2 minutes	1 hour ago 08:09 PM UTC	robert	Pending push to testing View update details >

References

- <http://fedoraproject.org/wiki/Koji>
- <http://koji.fedoraproject.org/koji/>
- <https://fedorahosted.org/bodhi/>
- <https://admin.fedoraproject.org/updates>
- <https://admin.fedoraproject.org/pkgdb/acls/name/mash>
- <http://revisor.fedoraunity.org/>
- <http://www.redhat.com/spacewalk/>
- <https://admin.fedoraproject.org/community/>