

ZYPP

common package and patch management for SUSE Linux

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Novell.



Agenda

ZYPP

- Package management
- How was it done before
- ZYPP
- ZYPP features
- What is new?
- The future



Package management

- Automatic resolving of dependencies
- Automatic fetching of packages
- Handling of different installation medias
- Update system with latest software available.

YaST pkg-manager, apt, smart...



Problems with old pkg-manager

- Only knew about packages
- Selections were handled by the YaST UI
- Patches were handled by YOU

Enterprise path:

- ZenWorks used libredcarpet

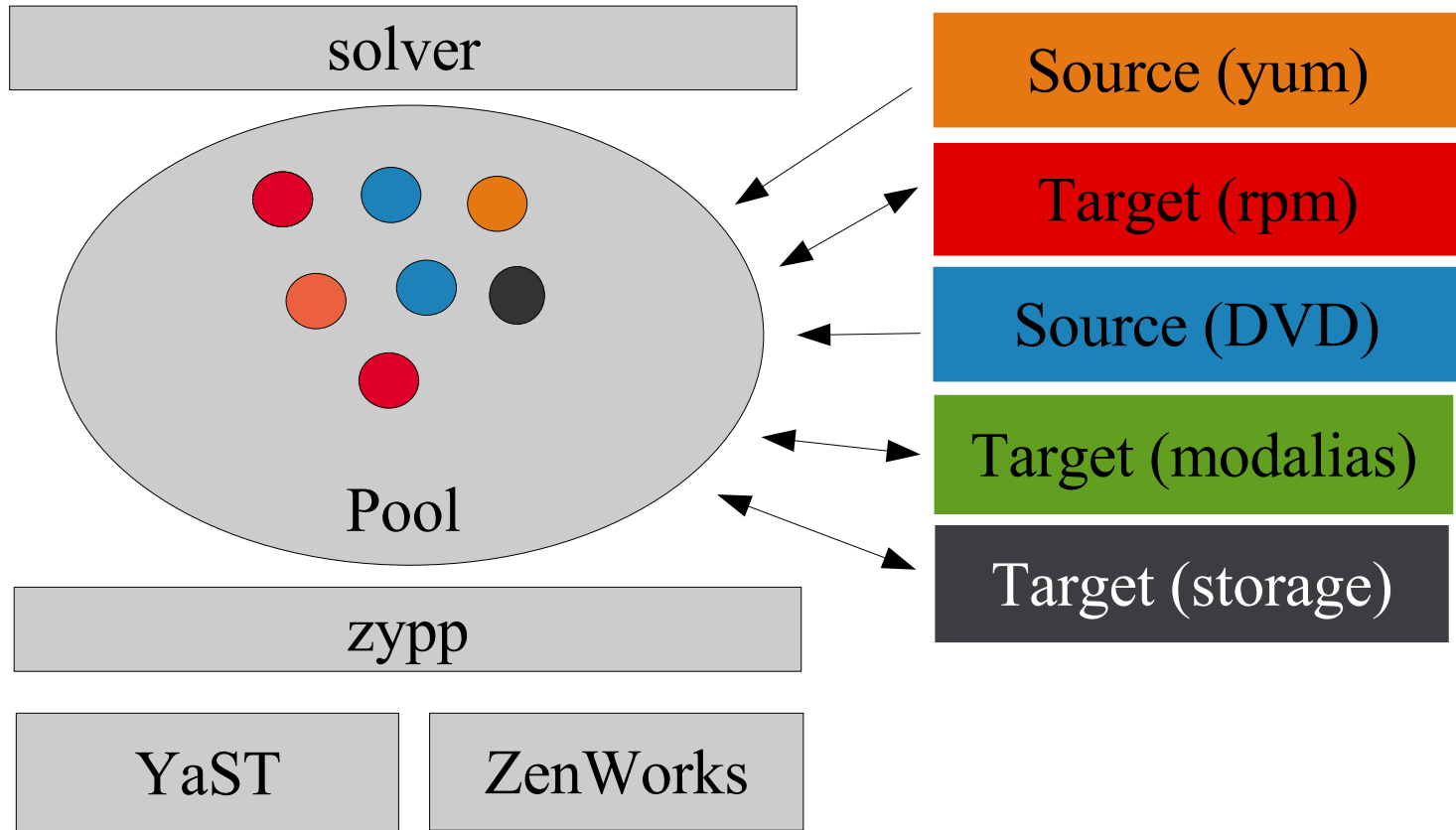
ZYPP: Overview



ZYPP

- Abstract resolvables:
 - packages, patches, messages, scripts, selections, patterns, languages, system, etc.
- Better solver
- Modern extensible design
 - new targets, source types, resolvable types, capabilities

ZYPP





Introducing Capabilities

- Grouped in:
 - requires, conflicts, suggests, freshens, supplements, prerequires, obsoletes, etc
- Are created from a resolvable kind, and a parseable string.
 - Most common case, a package, and a edition:
 - REQUIRES, package, “kdelibs > 3.2.1”
 - Crazy case: REQUIRES, system, “uptime:2 years”



Hardware capabilities

Provides capabilities based on the running system, like hardware.

system

PROVIDES:

modalias(pci:v0000104Cd0000840[01]sv*sd*bc*sc*i*) **(at runtime!)**

wlan-kmp-default-1_2.6.16.11_4-13.i586.rpm

SUPPLEMENTS:

modalias(kernel-default:pci:v0000104Cd0000840[01]sv*sd*bc*sc*i*)

modalias(kernel-default:pci:v0000104Cd00009066sv*sd*bc*sc*i*)

modalias(kernel-default:pci:v000010B7d00006000sv*sd*bc*sc*i*)



Patterns

- Can express any set of capabilities
- Can be satisfied in various ways.

Web server.

- Requires apache
- Recommends php and MySQL



Patterns: selections on steroids

- KDE, Gnome (visible)
 - KDE-kiosk, Gnome-kiosk (invisible)
 - Kiosk
-
- KDE-kiosk if KDE and kiosk are selected
 - KDE-kiosk supplements kiosk **IF** KDE is also selected



Patches

- Solution to a specific problem
- Specifies a set of rules
- Solver makes them possible:
 - satisfied: not installed but not needed
 - freshens: conditionals
 - atoms
- Atoms can be any kind of resolvable
 - Common case: packages, scripts and messages.

Software selector enhanced

YaST2@piscola

File Package Patch Extras Help

Filter: Patches

Patch	Category
<input type="checkbox"/> The Linux Kernel	security
<input checked="" type="checkbox"/> TESTING of Update the update stack.	recommended
<input type="checkbox"/> gcc	recommended
<input type="checkbox"/> Test update of a package with a license.	recommended
<input type="checkbox"/> Download Microsoft(r) TrueType Core Fonts	optional
<input type="checkbox"/> Simple script for testing a patch containing a script and a message	optional
<input type="checkbox"/> TEST patch for SL 10.1 - aaa_base	optional

0 B

Estimated Download Size: 0 B

Name	Disk Usage	Used	Free	Total
/	94%	14.2 GB	786.1 MB	15.0 GB
/space	13%	12.9 GB	82.8 GB	95.8 GB
/windows/C	0%	32.0 kB	111.8 GB	111.8 GB

Package	Summary
<input type="checkbox"/> kernel-bigsm	Kernel with M
<input type="checkbox"/> kernel-bigsm-debuginfo	Debug inform
<input type="checkbox"/> kernel-default	The Standard
<input type="checkbox"/> kernel-default-debuginfo	Debug inform
<input checked="" type="checkbox"/> kernel-smp	Kernel with M
<input type="checkbox"/> kernel-smp-debuginfo	Debug inform
<input checked="" type="checkbox"/> kernel-source	The Linux Ke
<input type="checkbox"/> kernel-source-debuginfo	Debug inform
<input checked="" type="checkbox"/> kernel-syms	Kernel Symb
<input checked="" type="checkbox"/> kernel-xen	The Xen Kerr
<input type="checkbox"/> kernel-xen-debuginfo	Debug inform

kernel-bigsm - Kernel with Multiprocessor Support and PAE

This kernel supports up to 64GB of main memory. It requires Physical Addressing Extensions (PAE).

Autocheck Cancel Accept



Language dependent packages

- Translations, fonts, or input methods

yast2-trans-de

provides: locale(yast2:de)

xmanja

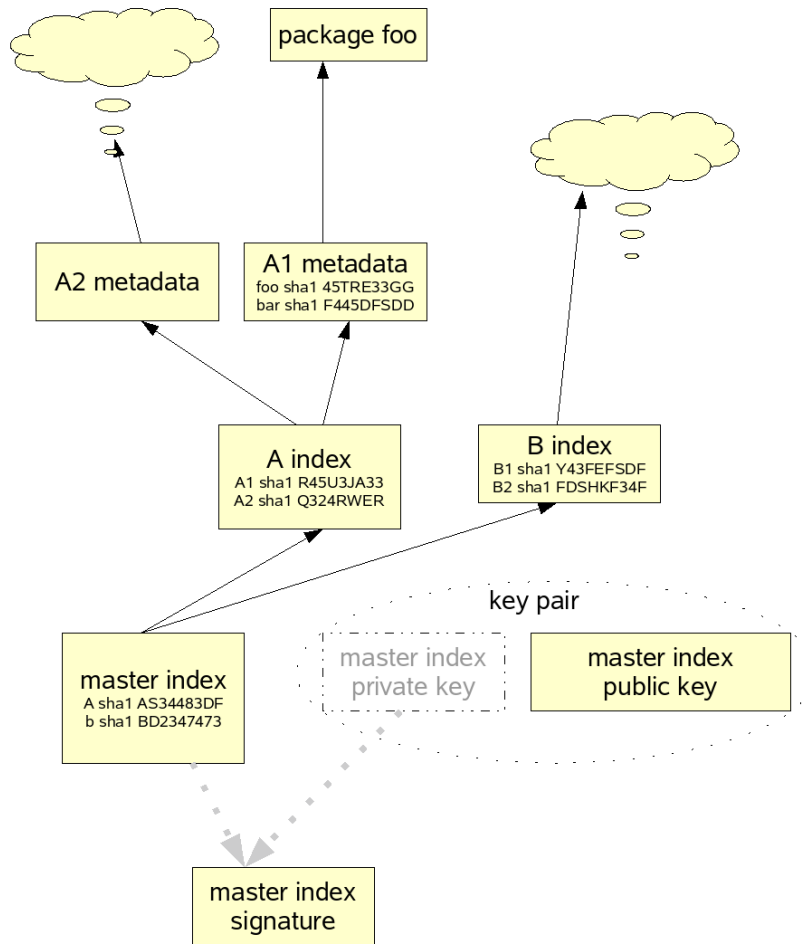
provides: locale(ja)

Language resolvables can be installed and they will match those capabilities.

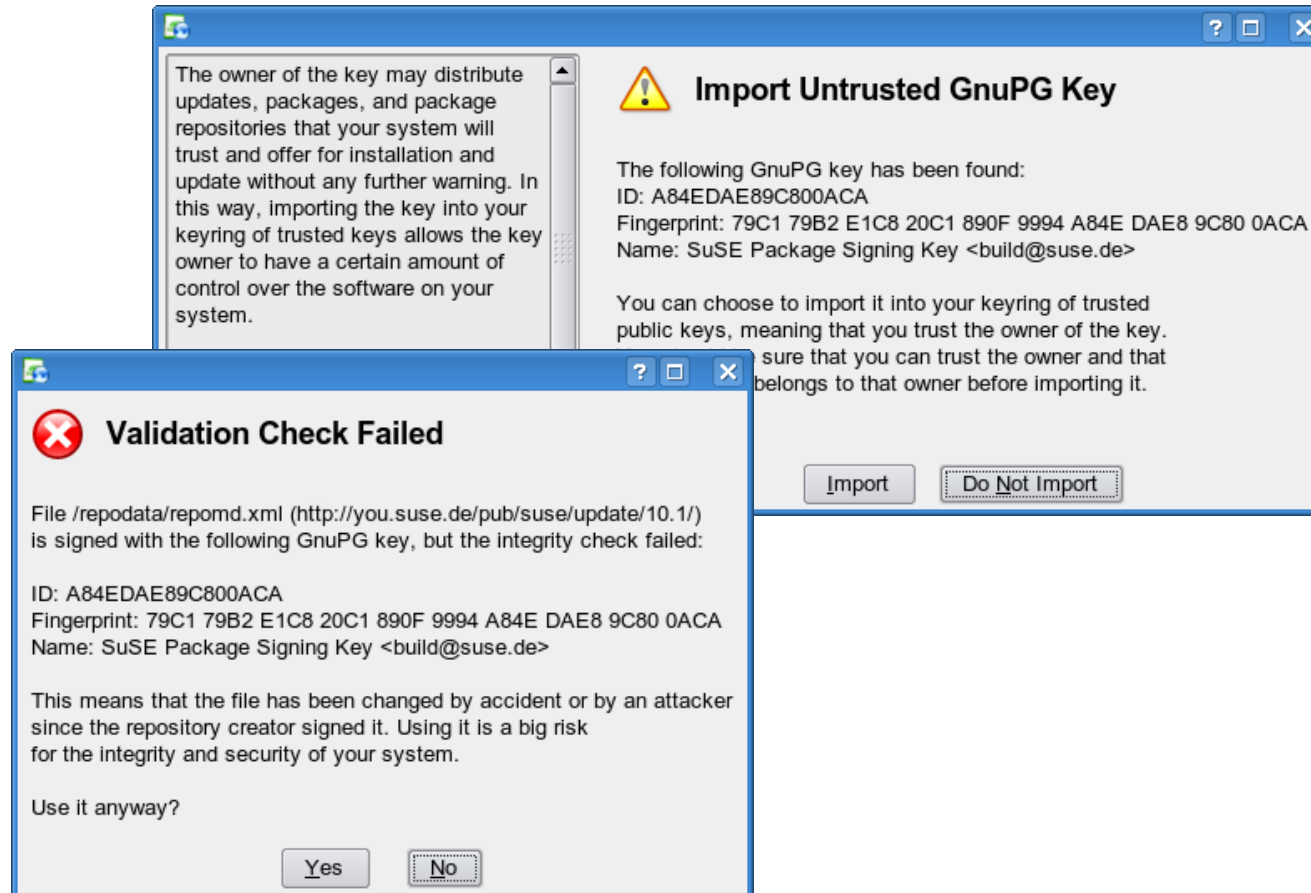


Trusted sources

- ZYPP introduces signed repositories and media (DVD/CD)
- Metadata containing checksums is signed
- Key handling is based on the trusted rpm database keyring



Signed sources





ZenWorks integration

- ZenWorks uses libzypp for dependency resolving
- ZYPP sources and ZenWorks services are kept in sync.

smooth path

YaST, YOU

ZenWorks, zmd, rug

single user

enterprise environment



What's new?

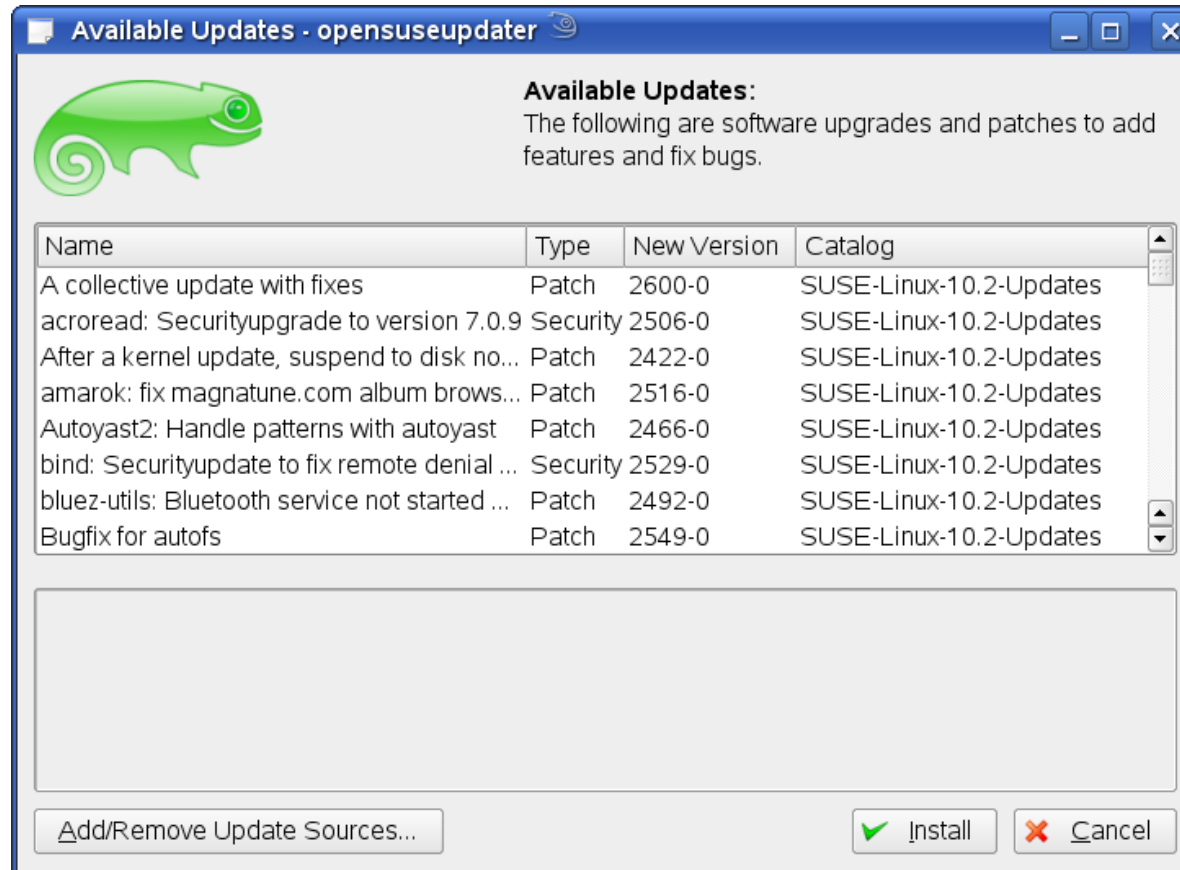


Regressions

- progress information
- performance
- command line tool
 - rug like syntax
 - shell (try zypper sh)



opensuse-updater

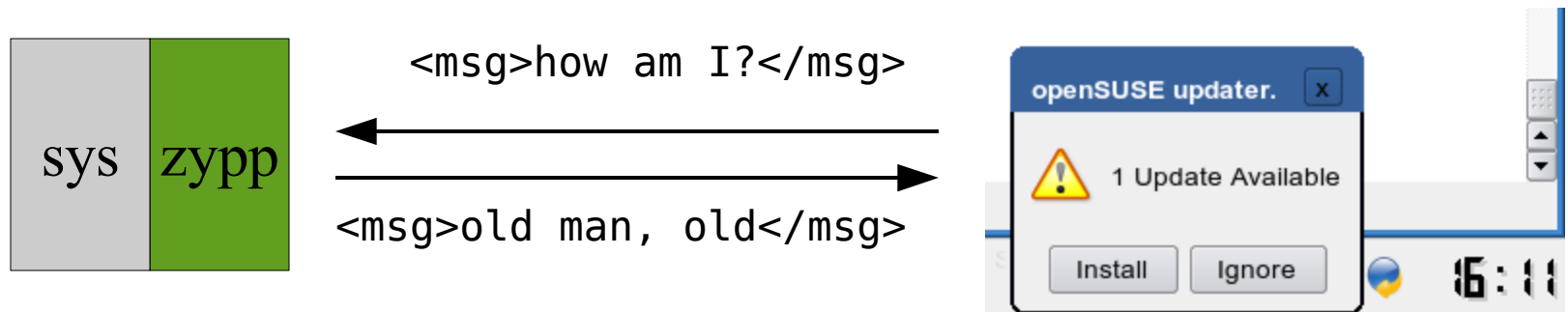




opensuse-updater

- KDE based applet
- Born as Google SOC 2006 project by Narayan Newton
- originally designed as a Zenworks client
- dummy applet.

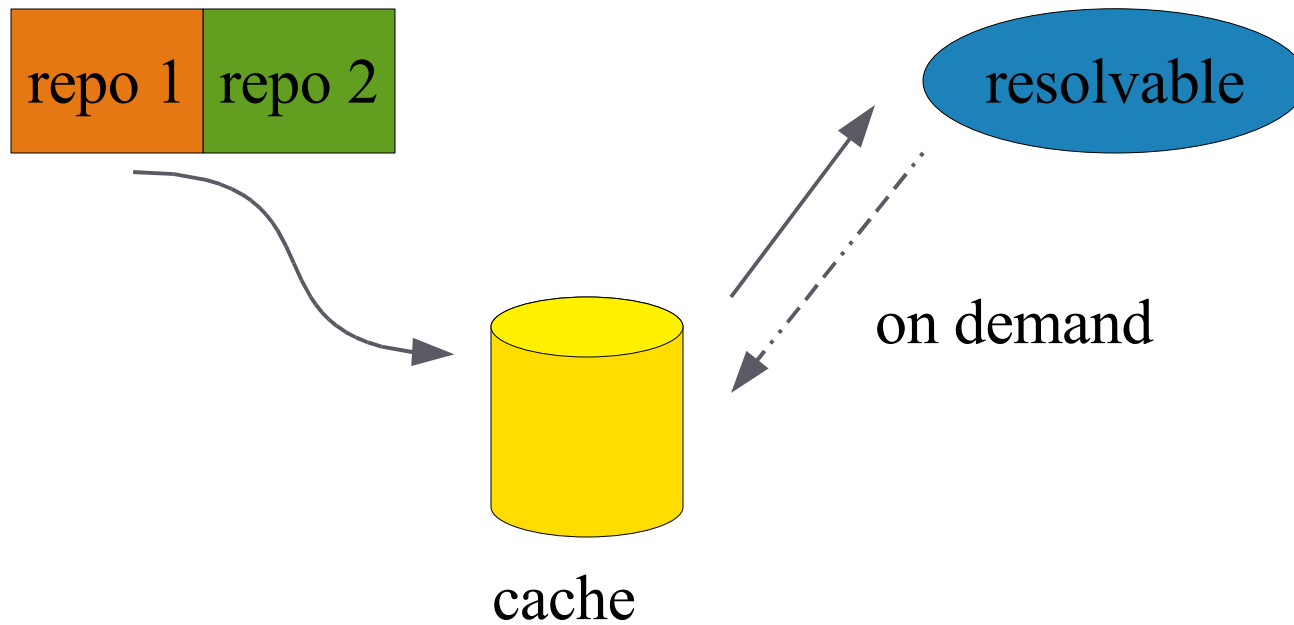
http://opensuse.org/Standards/Zypp_Updates_Status_Xml



Future, 10.3 and beyond



The future



In progress: scripting tools

```
require '../src/rzypp'

include ZYpp

init_target

resolvables("installed").each do |res|
  puts "#{res.class.to_s} : #{res.name} #{res.edition} #{res.arch}"
  puts "-----"
  puts "#{res.description}"
  puts "#{res.summary}"
  puts "-----"
end
```



Webpin - Konqueror

Location Edit View Go Bookmarks Tools Settings Window Help

Back Forward Up Download Manager

http://benjiweber.co.uk:8080/webpin-test/index.jsp?distro=10.2&searchTerm=amarok

openSUSE package search: amarok Search openSUSE 10.2 SUSE Linux 10.1

Packages matching search term:

Results from <http://download.opensuse.org/distribution/10.2/repo/oss/suse>

amarok-libvisual (1.4.4)	Install? Click here to install
amarok-xine (1.4.4)	Install? Click here to install
amarok-xmms (1.4.4)	Install? Click here to install
amarok (1.4.4)	Install? Click here to install

Results from <http://packman.iu-bremen.de/suse/10.2>

pacpl-amarok (3.2.5)	Install? Click here to install
----------------------	---

YaST2@lcars <2>

Installation Steps

- ✓ Catalogues
- ➔ Packages
- Installation Settings
- Perform Installation
- Results

Software Installation

Software to be installed

Select the software components you wish to install:

- amarok

Package Description:
No description available.

Help Back Abort Next

Packages containing items matching search term:

Results from <http://packman.iu-bremen.de/suse/10.2>

Arch	Install? Click here to install
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Questions?

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Corporate color palette and margins

These gray lines show the margins that need to be adhered too. If your slide content extends beyond the margins you may need to move to a full screen slide layout.

Most importantly keep the area under the logo clear

R 188
G 225
B 141

R 252
G 194
B 79

R 225
G 213
B 75

R 182
G 201
B 207

R 186
G 189
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R 237
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R 0
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R 232
G 128
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R 157
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R 201
G 86
B 22

R 115
G 126
B 31

R 77
G 68
B 102

R 46
G 52
B 54

R 204
G 0
B 0

SUSE Palette

Yellow Palette

Green Palette

Blue Palette

Gray Palette

Misc