



# Fedora 21

## New Features

Presented by

Igor Gnatenko and Peter Lemenkov

Senior Community Monkey  
Fedora Project

Senior Research Analyst  
Linux.org.ru

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# Today's Topics

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1. System Wide Changes
2. Self Contained Changes
3. Unofficial Changes
4. Feedback from people

# System Wide Changes

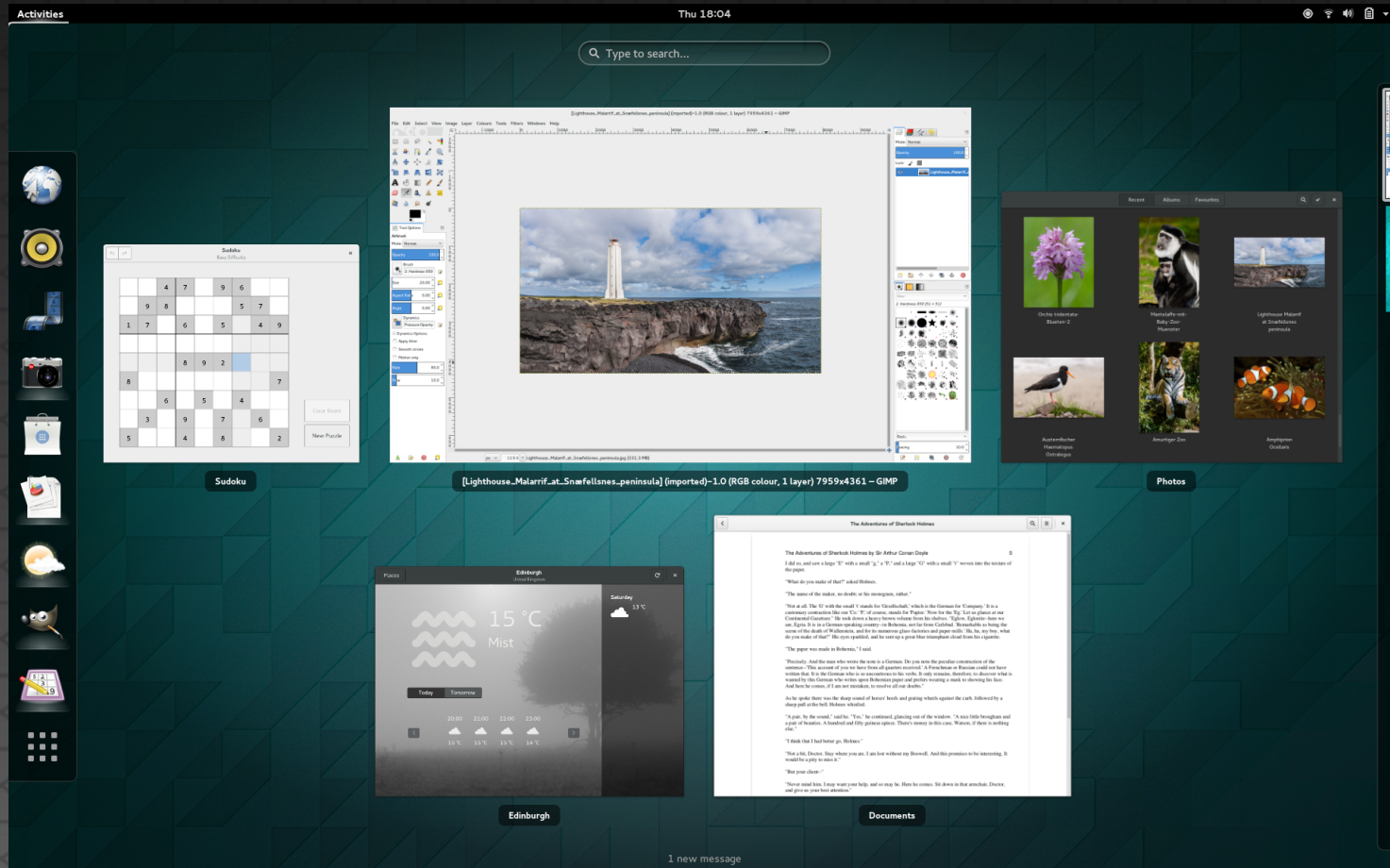


# GNOME 3.14

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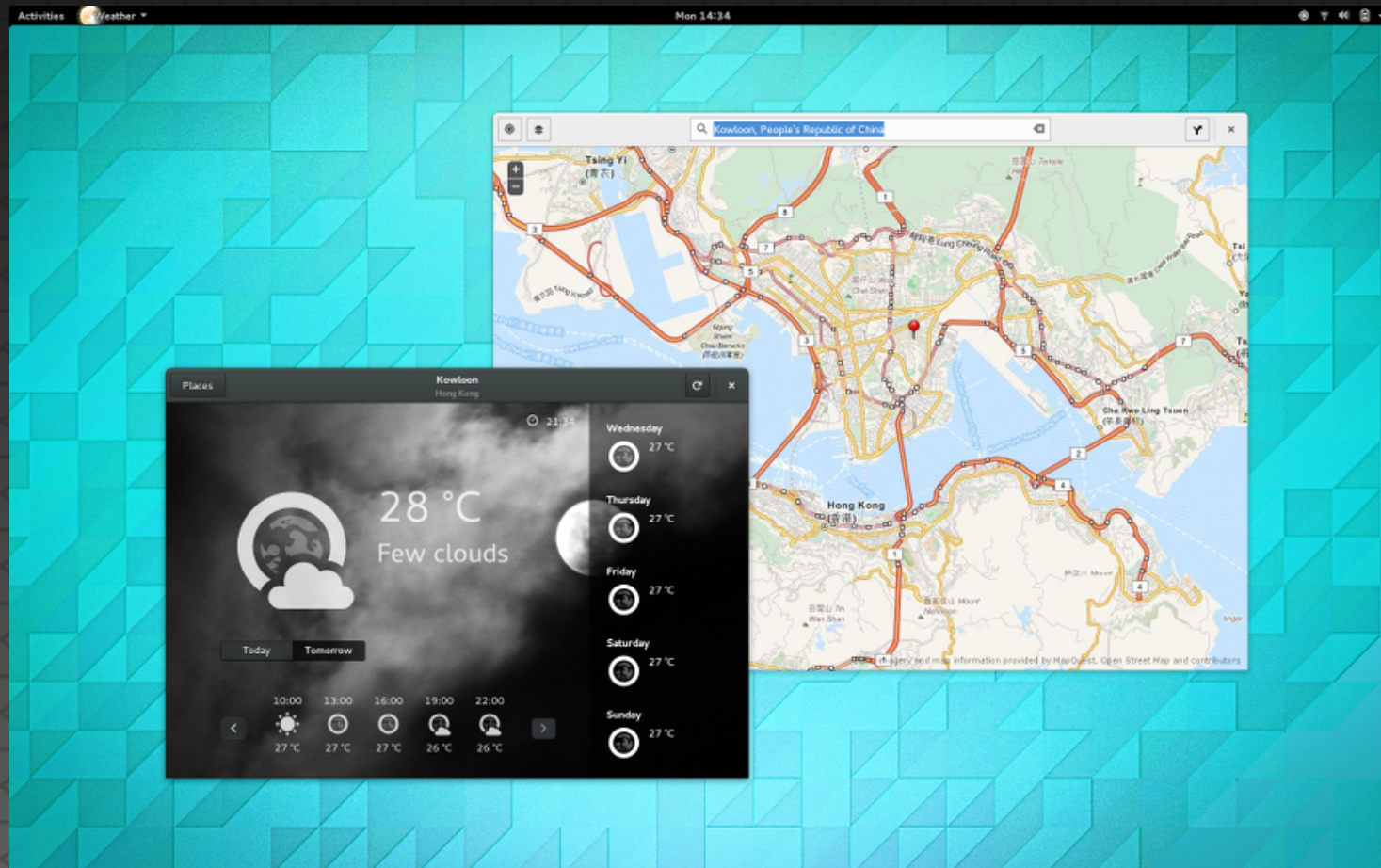
- The release contains 28859 changes by approximately 871 contributors. New features and improvements being introduced in GNOME 3.14 include:
  - Captive Portal Handling
  - Multitouch
  - Network-Based Sharing
  - And many other
- Please note that we skipped 3.12 release

# GNOME 3.14

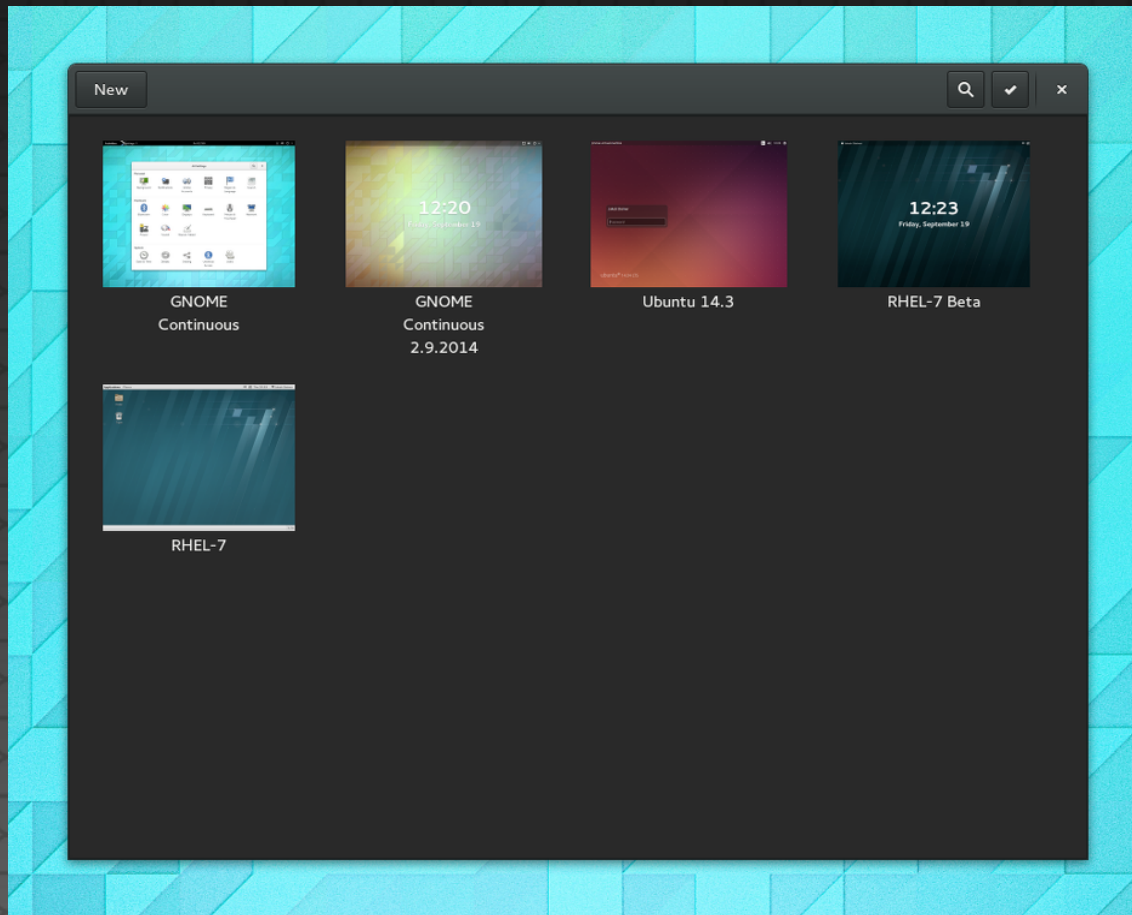




# GNOME 3.14



# GNOME 3.14





# Wayland

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- All GNOME Applications ported
- XWayland for others
- Just choose Wayland session in GDM



# Application Installer


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- GNOME Software will support installing system add-ons such as fonts and codecs
- It will show additional metadata for applications:
  - Screenshots
  - Ratings
  - Other details

# Application Installer

Xonotic

Install x

 Xonotic  
Multiplayer, deathmatch oriented first person shooter



**Description**

Xonotic is a free and fast-paced first person shooter which combines addictive, arena-style gameplay with rapid movement and a wide array of weapons.

Xonotic is easy to learn, but hard to master! Besides thrilling action for the casual player, the game also provides e-sport opportunities for those interested in its competitive aspects. From mapping contests and monthly quick cups

# Java 8

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- OpenJDK 8 is a significant update to Java. It brings in significant new features to the Java language, including:
  - Lambdas
  - New javascript engine
  - Lots of new library features



# Headless Java

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- OpenJDK has been split into headless subpackage which is not pull X system or sound subsystem

# Modular Kernel

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- Possibility to install Fedora with a smaller footprint
- Official Fedora cloud images will become smaller
- Possibility to avoid respinning images for security updates if issue is in a driver not included in kernel core

# u-boot syslinux

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- No need to know addresses
- No need to wrap images with mkimage
- Users will get a menu that allows them to choose which kernel to boot



# Cockpit

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- Cockpit is a server manager that makes it easy to administer your GNU/Linux servers via a web browser

# Cockpit



COCKPIT root

Sunflower Services Journal Networking **Storage** Containers Tools

Reading 4.0 KB/s

Writing 68.5 KB/s

Filesystems

Name	Mount Point	Size
/dev/server/root	/	5.0 / 13.6 GB
/dev/Dockers /Dockers	/var/lib/docker /devicemapper, /var/lib/docker	2.7 / 6.3 GB
/dev/vda1		524.3 MB
/dev/vdi		107.4 MB

Storage Journal

**November 25, 2014**

udisksd:	Acquired the name org.freedesktop.UDisks2 on the system message bus	16:53
udisksd:	udisks daemon version 2.1.3 starting	16:53
smartd:	Monitoring 0 ATA and 0 SCSI devices	16:47
smartd:	Try 'smartctl -s on /dev/sda' to turn on SMART features	16:47
smartd:	Device: /dev/sda, IE (SMART) not enabled, skip device	16:47
smartd:	Device: /dev/sda, [QEMU QEMU HARDDISK 2.1.], 107 MB	16:47
smartd:	Device: /dev/sda, opened	16:47
smartd:	Configuration file /etc/smartmontools/smartd.conf was parsed, found DEVICSCAN, scanning devices	16:47

Create RAID Device Create Volume Group

RAID Devices

RAIDTest (on fedora21.ad.baseos.qe)	2.0 GB
testraider	151.5 MB

Volume Groups

dockers	7.1 GB
Dockers	6.1 GB
server	14.6 GB

Drives

- QEMU QEMU HARDDISK  
102 MB Hard Disk R: 0 B/s W: 0 B/s
- VirtIO Disk  
15.0 GB Hard Disk R: 0 B/s W: 0 B/s
- VirtIO Disk  
2.0 GB Hard Disk R: 0 B/s W: 0 B/s
- VirtIO Disk  
2.0 GB Hard Disk R: 0 B/s W: 0 B/s
- LVM PV 1sn5He-h4W3-E30r-07bk-th30-btf5-mYQH8 on /dev/vdd  
4.0 GB Hard Disk

# Server role framework

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- Exposing available server roles, making it possible to deploy
- Configure and manage them
- D-Bus service
- Command-line utility
- Integration with cockpit



# Domain Controller role

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- Easy way to deploy a Domain Controller (FreeIPA)

# System crypto policy



- One system config to set:
  - Acceptable TLS/SSL (and DTLS) versions
  - Acceptable ciphersuites and the preferred order
  - Acceptable parameters in certificates and key exchange, i.e.:
    - Minimum acceptable size of parameters (DH,ECDH,RSA,DSA,ECDSA)
    - Acceptable elliptic curves (ECDH,ECDSA)
    - Acceptable signature hash functions
  - Other TLS options such as:
    - Safe renegotiation

# GCC 4.9

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- OpenMP 4.0 support
- Colored diagnostics output
- Google Go 1.2.1 language support
- Significant improvements to its link-time optimization
- Significant ARM improvements



# Format Security

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- Enable "-Werror=format-security" compilation flag for all packages
- Once this flag is enabled, GCC will refuse to compile code that could be vulnerable to a string format security flaw

# Make 4.0

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- Several new features
- New command line options
- New variables
- Bug fixes

# Boost 1.55

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- New library Boost.Predef
- Many bugfixes



# RPM 4.12

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- Weak dependencies
- Packaging files > 4GB
- New API
- Tool for converting rpm packages to tar files (“rpm2archive”)
- Many bug fixes

# Python 3.4

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- Standardized “enum” module
- New “statistics” module
- New “tracemalloc” module for tracing Python memory allocations
- New “asyncio” module, a new framework for asynchronous I/O
- Some more features

# PHP 5.6

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- TLS Peer Verification
- Argument Unpacking
- Power Operator
- PHP Debugger (“php-dbg” subpackage)



# Ruby 2.1

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- Major increases in speed
- Memory efficiency and reliability

# Ruby on Rails 4.1

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- Spring application preloader
- config/secrets.yml
- Action Pack variants
- Action Mailer previews

# TCL/TK 8.6

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- Object Oriented Programming are now part of Tcl itself
- Stackless Evaluation
- Enhanced Exceptions
- Thread-enabled Operations
- SQL Database Powered
- IPv6 Networking
- Built-in PNG Image Support



# Self Contained Changes

# KDE Frameworks 5

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- This is just many benefits of KDE technologies to Qt5

# SDDM instead of KDM

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- Clean codebase
- Wayland support



# MATE Desktop 1.8

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- Support for systemd-logind
- Support for upower-1.0
- Complete switch to pulseaudio
- New mate-user-guide
- Show date/time in screensaver

# CUPS Journal Logging

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- Central point for logging
- Having structure to the logs also makes it easier to retrieve log messages that concerned a particular job ("journalctl CUPS\_JOB\_ID=13")

# Allwinner sunxi

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- Official images for some ARM devices (e.g. cubietruck)
- Just download image and run script



# Jenkins

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- Jenkins provides continuous integration services for software development
- Just install “jenkins” and start it via systemd “systemctl start jenkins” and open in web browser “http://localhost:8888/jenkins” and use it!

# OpenCL

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- Framework for writing programs that execute across heterogeneous platforms consisting of CPUs, GPUs, DSPs, FPGAs and other processors
- Implementations available:
  - Mesa (AMD) – just install “mesa-libOpenCL”
  - Beignet (Intel) – just install “beignet”
  - POCL (CPU) – just install “pocl”
- Check if it works: install “clinfo” and run it!

# Web App Authentication

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- One and easy to integrate SSSD in web applications
- Apache SSSD module



# Review Board 2.0

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- Powerful tool for managing patch reviews
- Review Board 2.0 adds:
  - Ability to post committed changes from a branch directly from the web UI
  - Review of text file attachments
  - Greatly extends the capabilities of the public API and extension framework
  - Significant performance improvements, usability enhancements, and visual cleanups

# NFS Ganesha File Srv

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- User mode file server, which supports:
  - NFSv3
  - NFSv4
  - NFSv4.1
- Uses loadable filesystem driver modules to support its backend filesystems

# MariaDB 10.0

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- Better error messages
- “SHOW EXPLAIN” feature
- New InnoDB
- Other features from MySQL 5.6



# Better Erlang Support

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- Update Erlang/OTP to R17
- Improve Erlang integration with the rest of Fedora.

# Apache Products

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- Accumulo – scalable sorted, distributed key/value store
- Ambari – cluster management framework and UI for Hadoop
- HBase – distributed database built on top of Hadoop
- Hive – data warehouse built on top of Hadoop
- Mesos – cluster manager for sharing distributed application frameworks

# Apache Products

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- Oozie – workflow scheduler system to manage Hadoop jobs
- Pig – data analysis tool built on top of Hadoop
- Spark – fast and general engine for large-scale data processing



# Unofficial Changes

# Mesa

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- Always latest stable release
- All new features enabled
- 10.4.0 already in updates-testing with:
  - Direct3D9 state tracker
  - VA-API state tracker

# LLVM

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- Always latest stable release
- All new features enabled
- 3.5 already in updates-testing



Feedback from  
people

# Feedback

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“I've upgraded one machine with fedup and two with yum. All is well so far. If you don't like the changes to Totem, I recommend Parole. But I'm enjoying the newest GNOME and have had no problems. Great work, everyone!”

– Jon Ciesla, Linux Administrator

# Feedback

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“In one release we've gone from 22% to 46% coverage for software center metadata, with 400 application screenshots being added. This makes the software center a capable and beautiful application installer.”

– Richard Hughes, GNOME Software developer



# Feedback

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“I haven't used Fedora since 7 years, until 21 came out; it is a real pleasure to have a bleeding edge, yet stable and beautiful, developer-centric distribution that works out of the box.”

– Bartłomiej Piotrowski, Fedora user

# Questions?



Contact:

ignatenkobrain@fedoraproject.org

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