

{{Factory navbar}}{{Factory navbox}} {{Intro|On this page we collect the features coming in the next openSUSE release. Marketing takes things from here to write the release announcement and feature guide. If you are a packager in openSUSE and you made a major change, please add details and possible links here! Do not worry about pretty text; even a copy-paste from your changelog (with features, not the bugfixes etc) is helpful!}}

≡ System (under the hood) ≡ ≡ = Linux kernel 3.11 ≡ = openSUSE 13.1 ships with the latest patch in the 3.11 kernel series. The brisk development pace of the world's largest software engineering project has continued, with no less than four releases since the previous openSUSE version, bringing countless features to our users. We give you an overview of the most noticeable of those.

≡ ≡ Performance ≡ ≡ Several patches have gone into the various kernels between the current and previous openSUSE release, aiming to improve performance of stressed systems. For example, **page reclaim**, a kernel function cleaning up memory, used to go wild under certain situations often involving transfer of large amounts of data, like copying a movie to or from a USB stick. Due to [http://git.kernel.org/cgit/linux/kernel/git/torvalds/linux.git/commit/?id=75485363ce855269 some hard work] by SUSE developer Mel Gorman, these issues are far less likely to hit, although work is still ongoing in this area. Another memory-related change is the introduction of Zswap. When this [https://lwn.net/Articles/537422/ compressed swap cache] is enabled, it will attempt to compress memory instead of writing it to a disk. This reduces data transfer to slow disks, speeding up systems low on memory.

For heavy systems like multi-CPU servers, the improved NUMA policy redesign, timerless multitasking, rwlock, mutex and SYSV IPC message queue scalability improvements will make a sizeable difference in scalability of certain workloads. In general, the kernel has improved tracking of resources with the introduction of accounting of kernel memory in the memory resource controller and detailed tracking of which pages a program writes. This will enable better decisions on resource allocation and optimizations, both for developers and in-kernel algorithms.

≡ ≡ Changes in filesystems ≡ ≡ Btrfs introduced a format improvement that makes the tree dedicated to store extent information 30–35% smaller; there is also a new Btrfs feature that allows to quickly replace a disk in a btrfs-based RAID 5/6 array (note that while **almost** stable, this is not yet officially supported). This release also brings better defragmentation in filesystems aided by snapshots.

{{warning|1=btrfs has a low hardlink limit that you can raise; see section 4.2.1 of the related [https://www.suse.com/releasenotes/x86_64/SUSE-SLES/11-SP3/#mustread SLE release notes] for details. (Not turning on extended inode refs has caused installation problems of certain openSUSE packages already.)}}<!-- Other information in https://bugzilla.novell.com/show_bug.cgi?id=835695 -->

Ext4 introduces the embedding of very small files in the inode. This makes these tiny files essentially part of the table ext4 uses to look up files on the disk, meaning it will not actually have to look them up, saving thus significant time and even some disk space.

The XFS, the SUSE-recommended choice for large file data storage, gained support for metadata and journal checksums as well as self-describing metadata checksums, bringing greater reliability and error discovery to this filesystem.

New is the filesystem F2FS which is optimized for SSDs and contributed to Linux by Samsung. This filesystem is not tested as much as others, but it is promising for SSD owners looking for the best performance. Talking about performance and SSDs, this release also introduces bcache, which allows a fast device like a SSD to be used as a cache for other block devices like traditional spinning-rust drivers. Find some [<https://git.kernel.org/cgit/linux/kernel/git/torvalds/linux.git/tree/mapper/cache.txt?id=c6b4fcbad044e6ffcc75bba160e720eb8d67d17> documentation here]. Finally, for big-iron hardware, the experimental support for the Lustre distributed filesystem will certainly be appreciated.

≡ ≡ Networking ≡ ≡ This openSUSE release brings [<http://sniaesfblog.org/?p=245> preliminary client support for NFS 4.2], a new version of the NFS standard under development. In the performance area, this release delivers a neat optimization to users for short network transfers like Web transactions. The TCP Tail loss probe algorithm reduces the “tail latency” of such short transactions. In essence, this code speeds up recovery from transmission errors at the end of short transactions, saving the user the long wait for a timeout. New is also a low latency network polling mechanism, mostly relevant for servers.

≡ ≡ Other changes and improvements ≡ ≡ Security conscious users will appreciate the ability for their applications to use the new O_TMPFILE open(2) flag for the easy creation of secure temporary files, the expanded namespaces support (bringing filesystems into the fold and giving UTS, IPC, PIDs, and network stack namespaces for unprivileged users) and finally the “labeled NFS” ability which brings full support for SELinux on NFS, allowing more fine-grained security settings.

In the power management area, there is a new suspend power state for devices which can deal with extremely low power states (or have issues with the other suspend states) and, perhaps more relevant for laptop users, experimental dynamic power management for all Radeon GPUs since r600. While the experimental nature means AMD graphics card users will have to enable this by passing the “<tt>radeon.dpm=1</tt>” module parameter, this can lead to significant power savings.

For ARM, this release introduces support for huge pages improving memory performance and the ARM big.LITTLE architecture that mixes CPUs of different types. It also brings KVM/Xen to ARM64.

As always, there is a huge number of new and improved drivers. As

highlights, openSUSE 13.1 now features full support for Chrome OS laptops and the new Intel Haswell hardware.

'(thanks to [<http://kernelnewbies.org/> kernel newbies] and [<http://lwn.net> lwn.net

≡ = glibc 2.18 ≡ = The latest Glibc introduces improved C++11 support, performance related improvements like optimized string functions, new API functions, support for Intel TSX lock elision, and the usual slew of bug fixes.

≡ = systemd ≡ = systemd now takes care of labeling ethernet devices instead of udev.

≡ = still needs more details ≡ =

1 Due to the inclusion of cryptsetup 1.6, the default cipher mode for new LUKS volumes is now XTS (aes-xts-plain64). Old volumes using CBC-ESSIV (aes-cbc-essiv) are still supported.

2 BlueZ 5

3 hardlink and symlink protection[[https://bugzilla.novell.com/show](https://bugzilla.novell.com/show_bug.cgi?id=748442)

≡ = openSUSE technologies ≡ =

4 zypper changes

5 snapper changes

6 YaST port to Ruby, see [<https://news.opensuse.org/2013/10/10/coming-soon-opensuse-13-1-with-yast-in-ruby/> here]

≡ Free Desktops ≡ ≡ = KDE ≡ = KDE Plasma Desktop is the standard in openSUSE, and the 4.11 version of this Free Desktop is a long term supported release. This release brings speed improvements in Desktop Search, file- and window management, improved multi monitor handling, delayed mail sending feature and scam detection for KDE PIM and much more.

'Insert screenshot of battery applet showing multiple batteries or the mixer applet

≡ ≡ The Desktop ≡ ≡ Plasma's basic widgets have seen several improvements. The battery can handle keyboard brightness and multiple batteries, the menu shows recently installed applications and notifications can now easily be disabled per type. The mixer application introduces interface improvements and MPRIS2 support to control media players. Finally, window

management has improved edge detection and quick tiling, better performance and some new animations. The new monitor handling in System Settings has better defaults and remembers settings for monitors manually configured, sporting a visual drag-and-drop interface.

'Insert screenshot of send later feature or interesting events in KStars'
≡ ≡ The Applications ≡ ≡ In KDE PIM, the new Send Later feature in KDE's email client allows scheduling the sending of emails on a specific date and time, also allowing repeated sending according to a specified interval. New is also scam detection and the Blogilo blogging tool has a new HTML editor.

Advanced text editor Kate introduces extended language support for Python (2 and 3), JavaScript and JQuery, Django and XML with static and dynamic autocompletion, indenting, code snippets and more. KTouch now comes with Right-to-left support, Okular has undo/redo in forms and annotations, KStars shows interesting events coming up in your area and the math tools and games have gotten new graphics, levels and calculations.

≡ ≡ Other technologies ≡ ≡ openSUSE 13.1 also brings the following key technologies to its users:

- 7 Qt 5.1.1, including Python bindings through PyQt.
- 8 KWin Wayland backend (experimental)
- 9 QtWebkit 2.3.3
- 10 Lightdm KDE greeter The Light Display Manager (LightDM) is an alternative display manager. openSUSE 13.1 adds the relevant KDE support, allowing its use in place of KDM.
- 11 kdev-python kdev-python is a plugin adding Python support to the KDevelop IDE, offering code completion, on-the-fly syntax checking, interactive debugging and custom documentation of Python code.
- 12 phonon-backend-vlc With the inclusion of the Video Lan multimedia Client (VLC) in the standard openSUSE distribution, we were able to build also the phonon backend for it. This as a very strong alternative for the gstreamer backend. With openSUSE 13.2 this could become the new standard backend for Phonon.
- 13 libkfbapi
- 14 colord-kde
- 15 plasma-nm Plasma-nm is the upstream successor of the NetworkManager-kde4 package and will provide a better integration with Plasma and the new releases of NetworkManager and ModemManager. At this moment plasma-nm is still provided as an additional package with the target to fully replace NetworkManager-kde4 in openSUSE 13.2

≡ = GNOME ≡ = openSUSE 13.1 comes with the latest GNOME Shell 3.10.1 and its associated applications and tools. This release is very sig-

nificant for the GNOME community, bringing a unified system status area, geolocation features, high-resolution display support and a collection of new and improved applications including Maps, Notes, Music and Photos.

'Please Insert screenshot of Header Bars & the new status bar'

≡ ≡ Interface improvements ≡ ≡ GNOME Shell 3.10 introduces a new system status area, bringing the various menus of the status bar together into a single design. This brings easier mouse interaction but also features a new screen brightness slider and a better airplane mode.

Several GNOME applications have been updated to merge titlebars and toolbars into a single element. Named Header Bars, this feature allows applications to make better use of screen space.

The settings have been improved, with an Automatic Time Zone option (thanks to the Geolocation feature), the Display section is redesigned, Online Accounts now incorporates chat, flickr and works with Google two-step verification and you can pick a background for the lock screen - from flickr, if you so desire.

'Please insert a screenshot or two of GNOME applications mentioned'

≡ ≡ GNOME Applications ≡ ≡ The GNOME applications have seen significant work. Music is the brand new audio player for GNOME 3 and Technology Preview in 3.10. It provides a clean and focused interface for looking for and playing music. Support from online sources is planned for future versions.

The new Maps application shows your location based on OpenStreetMap data and lets you search for names of towns, cities and landmarks. Photos has matured, bringing Online Account integration with Flickr and other services coming. Clocks will detect your location thanks to GeoClue and Tweak Tool settings have been re-organized. Webbrowser Web gained integration with system search, allowing you to browse your history and now uses duckduckgo as default search engine. There have been many more improvements like owncloud integration in Documents and Notes, drag&drop of files between host and guest and an import feature for QEMU, VMWare, VirtualPC and LCL images in Boxes and DDjVu support, search sidebar and keyboard navigation support in Document viewer.

≡ = Xfce ≡ =

16 no significant jumps

≡ = Other Free Desktops ≡ = ≡ = Window Managers ≡ = ≡ = Display servers ≡ =

- 17 The Weston compositor has entered factory for your general enjoyment...
- 18 Xorg Server 1.14
- 19 Mesa 9.2.1 with radeonsi driver for AMD's Southern Island Chips (Radeon HD 7000 Series)

≡ New and updated applications ≡ ≡ General utilities ≡

- 20 lzip implements a LZMA-strength compression algorithm and a file format that is designed for long-term data archiving with 4-factor integrity checking, and recovery using lziprecover (something that xz does not have at this time). The multithreaded variant is called plzip. — <http://www.nongnu.org/>

≡ Browsers ≡

- 21 [[Firefox]] 22, [[Thunderbird]] 17 (nothing new though, since they get released to older openSUSEs as well on a regular basis)
- 22 [[Chromium]] 31 openSUSE 13.1 marks a new beginning of the Chromium package in openSUSE. As of 13.1, the Chromium package will follow closely the official Beta and Stable channels. With 13.1 one of the latest Beta builds (31.0.1650.11) is being provided and Maintenance released for the supported openSUSE versions will be based on releases in the Stable Channel. This should improve the overall stability of the Chromium browser.

≡ Graphics and multimedia ≡ ≡ Office suites and Personal information applications ≡

- 23 The latest '[<http://www.libreoffice.org> LibreOffice 4.1]’ release brings again a large number of additions and [<http://www.libreoffice.org/download/4-1-new-features-and-fixes/> improvements] such as:
- 24 ‘General:’ improved hyphenation in Calc and Draw; delete multiple styles at once; lots fixes and improvements in the right-to-left (RTL) support; new gallery images from IBM Symphony; embedding fonts in Writer, Calc, and Impress documents; numerous improvements in the OOOXML and RTF import/export filters; lots performance improvements
- 25 ‘Writer:’ gradient background in text frames; graphical numbering bullets in DOC, DOCX and RTF import/export; several improvements in comments handling; easy rotate images in 90 degree increments
- 26 ‘Calc:’ two new graph types; new functions NUMVALUE and SKEWP; import/export more than 45 functions that are new in Excel 2013; import large HTML documents with more than 64k table cells
- 27 ‘Impress:’ “Photo Album” allows to create slideshows from a series of pictures
- 28 ‘Experimental feature’: sidebar from AOO/IBM Symphony with resizeable layout from LO team

≡ = Systems Administration ≡ =

- 29 YaST 3.0 with Ruby-based codebase replacing YCP – <https://news.opensuse.org/2013/10/10/coming-soon-opensuse-13-1-with-yast-in-ruby/>
- 30 Zypper 1.9
- 31 bcache-tools has entered Factory to support creation of bcache block devices – <http://bcache.evilpiepirate.org/>
- 32 Renewed snapshot of btrfsprogs (v0.20-rc1-335) — <http://lists.opensuse.org/opensuse-factory/2013-07/msg00307.html>
- 32.1 Support for making use of the kernel side's RAID5 multivolume support.
- 33 etc-update with basic rpm support is now part of Factory - <http://michal.hrusecky.net/2013/04/fosdem-2013-and-etc-update/>

≡ Scientific ≡

34 GNU R 3.0

- 35 Two main opensource suites for electronic design automation are now available from OSS repository:

35.1 gEDA

35.2 Kicad (version with GOST support is also available)

≡ Other applications ≡ ≡ Financial ≡

≡ Others ≡

≡ MySQL ≡

Although not default, MySQL Community Server was updated to 5.6 branch which brings new improvements - <http://dev.mysql.com/doc/refman/5.6/en/mysql-nutshell.html>

≡ Web Stack ≡ ≡ Cloud ≡ This release comes with various cloud technologies including the latest Havana release from OpenStack, X, Y Z.

≡ = OpenStack Havana ≡ = OpenStack Havana is the eighth OpenStack release and the second this year. It brings almost 400 new features to its users. Some highlights include:

- 36 'Global clusters' support, expanding on the 'region' concept to support separate replication networks and configurable read- and write affinity. This makes it possible to now have a single Swift cluster spanning a wide geographic area
- 37 the 'Orchestration and Metering projects' have been integrated, bringing automated, policy-based VM Management and monitoring and statistics gathering (enabling billing) support to OpenStack.
- 38 'better disk performance' through the use of thread-pools for smoothing out latencies and other optimizations
- 39 'pooling memcache' connection support
- 40 'conf.d support' allows splitting up the configuration over several files in a folder

≡ = s3fs ≡ = s3fs is a FUSE filesystem that allows you to mount an Amazon S3 bucket as a local filesystem. It stores files natively and transparently in S3 (i.e., you can use other programs to access the same files). Maximum file size=64GB (limited by s3fs, not Amazon).

≡ Development tools, IDEs, toolchain ≡ ≡ = IDEs and compilers ≡ =

41 GCC 4.8

41.1 Better error reporting: Each diagnostic emitted now includes the original source line text and a caret ‘^’ indicating the column.

41.2 initial aarch64 support

41.3 for more changes see <http://gcc.gnu.org/gcc-4.8/changes.html>

42 LLVM 3.3

42.1 initial aarch64 support

43 automake 1.13.x — http://savannah.gnu.org/forum/forum.php?forum_id=4444

44 codelite 5.2 - C/C++ IDE, finally available in OSS repository.

45 [[mono]] 3.2.3 — [http://www.mono-project.com/Release_Notes_Mono_3.0/]/[http://www.mono-project.com/Release_Notes_Mono_3.2/]

45.1 complete C# 5.0 compiler with asynchronous programming support

45.2 sgen: a new faster garbage collector enabled by default

45.3 updated with the latest Microsoft Open Source Stacks

≡ = Languages and Libraries ≡ =

46 Perl 5.18

47 Ruby 2.0

48 GHC 7.6 (but still Haskell Platform 2012.4?!)

49 Go 1.1

50 SDL2

≡ Security ≡

- 51 The `kernel.kptr_restrict=1` feature was enabled, which avoids leaking address space information into userland. <http://lwn.net/Articles/420403/>
- 52 hardlink protection was enabled via `fs.protected_hardlinks=1`
- 53 symlink protection was enabled via `fs.protected_symlinks=1`

Category:Factory