CENTOS

CentOS is a Linux distribution that provides a free, community-supported computing platform functionally compatible with its upstream source, Red Hat Enterprise Linux. In January 2014, CentOS announced the official joining with Red Hat while staying independent from RHEL, under a new CentOS governing board.

The first CentOS release in May 2004, numbered as CentOS version 2, was forked from RHEL version 2.1AS.CentOS version 7.0 officially supports only the x86-64 architecture, while versions older than 7.0-1406 also support IA-32 with Physical Address Extension (PAE). As of December 2015, AltArch releases of CentOS 7 are available for the IA-32 architecture, Power ISA, and for the ARMv7hl and AArch64 variants of the ARM architecture. Building of CentOS 8 started at May 2019. CentOS 8 was released on 24 September 2019.

History

Prior to becoming known under its current name, CentOS originated as a build artifact of CAOS Linux, which was started by Gregory Kurtzer.

In June 2006, David Parsley, the primary developer of Tao Linux (another RHEL clone), announced the retirement of Tao Linux and its rolling into CentOS development. Tao users migrated to the CentOS release via yum update.

In July 2009, it was reported in an open letter on the CentOS project web site that CentOS's founder, Lance Davis, had disappeared in 2008. Davis had ceased contribution to the project, but continued to hold the registration for the CentOS domain and PayPal account. In August 2009, the CentOS team reportedly made contact with Davis and obtained the centos.info and centos.org domains.

In July 2010, CentOS overtook Debian to become the most popular Linux distribution for web servers, with almost 30% of all Linux web servers using it. Debian retook the lead in January 2012.

In January 2014, Red Hat announced that it would sponsor the CentOS project, "helping to establish a platform well-suited to the needs of open source developers that integrate technologies in and around the operating system". As a result of these changes, ownership of CentOS trademarks was transferred to Red Hat, which now employs most of the CentOS head developers; however, they work as part of Red Hat's Open Source and Standards team, which operates separately from the Red Hat Enterprise Linux team. A new CentOS governing board was also established.

CentOS releases

CentOS version numbers for releases older than 7.0 have two parts, a major version and a minor version, which correspond to the major version and update set of Red Hat Enterprise Linux (RHEL) used to build a particular CentOS release. For example, CentOS 6.5 is built from the source packages of RHEL 6 update 5 (also known as RHEL version 6.5), which is a so-called "point release" of RHEL 6.[28]

Starting with version 7.0, CentOS version numbers also include a third part that indicates the monthstamp of the source code the release is based on. For example, version number 7.0-1406 still maps this CentOS release to the zeroth update set of RHEL 7, while "1406" indicates that the source code this release is based on dates from June 2014.

FEDORA

Fedora or Fedora Linux is a Linux distribution developed by the community-supported Fedora Project which is sponsored primarily by Red Hat Inc. with minor support by other companies. Fedora contains software distributed under various free and open-source licenses and aims to be on the leading edge of free technologies. Fedora is the upstream source of the commercial Red Hat Enterprise Linux distribution.

Since the release of Fedora 30, five different editions are currently available: Workstation, focused on the personal computer, Server for servers, CoreOS, focused on cloud computing, Silverblue, focused on an immutable desktop specialized to container-based workflows and IoT, focused on IoT devices

As of February 2016, Fedora has an estimated 1.2 million users, including Linus Torvalds (as of 2015), creator of the Linux kernel.

Package management

Most Fedora editions use the RPM package management system, using DNF as a tool to manage the RPM packages. DNF uses libsolv, an external dependency resolver. Flatpak is also supported by default, and support for Ubuntu's snaps can also be added. Fedora uses Delta RPM when updating installed packages to provide Delta update. A Delta RPM contains the difference between an old and new version of a package. This means that only the changes between the installed package and the new one are downloaded reducing network traffic and bandwidth consumption.

The Fedora CoreOS and Silverblue editions use rpm-ostree, a hybrid transactional image/package system to manage the host. Traditional DNF (or other systems) should be used in containers.

Security

Fedora uses Security-Enhanced Linux by default, which implements a variety of security policies, including mandatory access controls, which Fedora adopted early on.[26] Fedora provides hardening wrapper, and does hardening for all of its packages by using compiler features such as position-independent executable (PIE).

Software

Fedora comes preinstalled with a wide range of software such as LibreOffice and Firefox. Additional software is available from the software repositories and can be installed using the DNF package manager or GNOME Software.

GNOME Software, Fedora's default package manager front-end

Additionally, extra repositories can be added to the system, so that software not available in Fedora can be installed easily. Software that is not available via official Fedora repositories, either because it doesn't meet Fedora's definition of free software or because its distribution may violate US law, can be installed using third-party repositories. Popular third-party repositories include RPM Fusion free and non-free repositories. Fedora also provides users with an easy-to-use build system for creating their own repositories called Copr.

Since the release of Fedora 25, the operating system defaults to the Wayland display server protocol, which replaced the X Window System.

RED HAT LINUX

Red Hat Linux, created by the company Red Hat, was a widely used Linux distribution until its discontinuation in 2004.

Early releases of Red Hat Linux were called Red Hat Commercial Linux. Red Hat published the first non-beta release in May 1995. It was the first Linux distribution to use the RPM Package Manager as its packaging format, and over time has served as the starting point for several other distributions, such as Mandriva Linux and Yellow Dog Linux.

In 2003, Red Hat discontinued the Red Hat Linux line in favor of Red Hat Enterprise Linux (RHEL) for enterprise environments. Fedora, developed by the community-supported Fedora Project and sponsored by Red Hat, is a free-of-cost alternative intended for home use. Red Hat Linux 9, the final release, hit its official end-of-life on April 30, 2004, although updates were published for it through 2006 by the Fedora Legacy project until that shut down in early 2007.

Features

Version 3.0.3 was one of the first Linux distributions to support Executable and Linkable Format instead of the older a.out format.

Red Hat Linux introduced a graphical installer called Anaconda developed by Ketan Bagal, intended to be easy to use for novices, and which has since been adopted by some other Linux distributions. It also introduced a built-in tool called Lokkit for configuring the firewall capabilities.

In version 6 Red Hat moved to glibc 2.1, egcs-1.2, and to the 2.2 kernel. It also introduced Kudzu, a software library for automatic discovery and configuration of hardware. Red Hat Linux was originally developed exclusively inside Red Hat, with the only feedback from users coming through bug reports and contributions to the included software packages – not contributions to the distribution as such. This was changed in late 2003 when Red Hat Linux merged with the community-based Fedora Project. The new plan is to draw most of the codebase from Fedora when creating new Red Hat Enterprise Linux distributions. Fedora replaces the original Red Hat Linux download and retail version. The model is similar to the relationship between Netscape Communicator and Mozilla, or StarOffice and OpenOffice.org, although in this case the resulting commercial product is also fully free software.

FEDORA

Version 7 was released in preparation for the 2.4 kernel, although the first release still used the stable 2.2 kernel. Glibc was updated to version 2.1.92, which was a beta of the upcoming version 2.2 and Red Hat used a patched version of GCC from CVS that they called "2.96". The decision to ship an unstable GCC version was due to GCC 2.95's bad performance on non-i386 platforms, especially DEC Alpha. Newer GCCs had also improved support for the C++ standard, which caused much of the existing code not to compile.In particular, the use of a non-released version of GCC caused some criticism, e.g. from Linus Torvalds and the GCC Steering Committee; Red Hat was forced to defend their decision. GCC 2.96 failed to compile the Linux kernel, and some other software used in Red Hat, due to stricter checks. It also had an incompatible C++ ABI with other compilers. The distribution included a previous version of GCC for compiling the kernel, called "kgcc"

Red Hat Linux lacked many features due to possible copyright and patent problems. For example, MP3 support was disabled in both Rhythmbox and XMMS; instead, Red Hat recommended using Ogg Vorbis, which has no patents. MP3 support, however, could be installed afterwards, although royalties are required everywhere MP3 is patented.Support for Microsoft's NTFS file system was also missing, but could be freely installed as well.

ORACLE LINUX

Oracle Linux (OL, formerly known as Oracle Enterprise Linux) is a Linux distribution packaged and freely distributed by Oracle, available partially under the GNU General Public License since late 2006. It is compiled from Red Hat Enterprise Linux (RHEL) source code, replacing Red Hat branding with Oracle's. It is also used by Oracle Cloud and Oracle Engineered Systems such as Oracle Exadata and others.

Potential users can freely download Oracle Linux through Oracle's E-delivery service (Oracle Software Delivery Cloud) or from a variety of mirror sites, and can deploy and distribute it without cost. The company's Oracle Linux Support program aims to provide commercial technical support, covering Oracle Linux and existing RHEL or CentOS installations but without any certification from the former (i.e. without re-installation or re-boot).[clarification needed] As of 2016 Oracle Linux had over 15,000 customers subscribed to the support program.

RHEL compatibility

Oracle Corporation distributes Oracle Linux with two alternative Linux kernels:

Red Hat Compatible Kernel (RHCK) – identical to the kernel shipped in RHEL

Unbreakable Enterprise Kernel (UEK[7]) – based on newer mainline Linux kernel versions, with Oracle's own enhancements for OLTP, InfiniBand, SSD disk access, NUMA-optimizations, Reliable Datagram Sockets (RDS), async I/O, OCFS2, and networking.

Oracle promotes Unbreakable Enterprise Kernel as having 100% compatibility with RHEL. Oracle claims this allows unchanged installation and run of Oracle

middleware and third-party RHEL-certified applications, but it does not provide any reference to third-party documentation.

Hardware compatibility

Oracle Linux is certified on servers including from IBM, Hewlett-Packard,]Dell, Lenovo, and Cisco. In 2010, Force10 announced support for Oracle VM Server for x86 and Oracle Linux. Oracle Linux is also available on Amazon EC2 as an Amazon Machine Image, and on Microsoft Windows Azure as a VM Image.

Oracle/Sun servers with x86-64 processors can be configured to ship with Oracle Linux.

Visit the Hardware Certification List for the complete list of the certified hardware on Oracle Linux and Oracle VM.In November 2017, Oracle announced Oracle Linux on the ARM platform with support for the Raspberry Pi 3, Cavium ThunderX and X-Gene 3.

Virtualization support

Under the Oracle Linux Support program, Oracle Linux supports KVM and Xen.

Other Oracle products are only supported under the Xen-based Oracle VM Server for x86.

Sun Fire systems

In March 2012, Oracle submitted a TPC-C benchmark result using a Sun Fire server running Oracle Linux and Unbreakable Enterprise Kernel. With 8 Intel Xeon processors running Oracle DB 11 R2, the system is able to handle over 5.06 million tpmC (New-Order transactions per minute while fulfilling TPC-C[26]). The server is the third fastest TPC-C non-clustered system and is the fastest x86-64 non-clustered system.

Oracle also submitted a SPECjEnterprise2010 benchmark record using Oracle Linux and Oracle WebLogic Server, and achieved both a single node and an x86 world record result of 27,150 EjOPS (SPECjEnterprise Operation/second).

MANDRIVA LINUX

Mandriva Linux (a fusion of the French distribution Mandrakelinux or Mandrake Linux and the Brazilian distribution Conectiva Linux) was a Linux distribution developed by Mandriva S.A.Each release lifetime was 18 months for base updates (Linux, system software, etc.) and 12 months for desktop updates (window managers, desktop environments, web browsers, etc.). Server products received full updates for at least 5 years after their release.The last release of Mandriva Linux was in August 2011. Most developers who were laid off went to Mageia. Later on, the remaining developers teamed up with community members and formed OpenMandriva, a continuation of Mandriva.

History

The first release of Mandrake was based on Red Hat Linux (version 5.1) and K Desktop Environment 1 in July 1998. It has since moved away from Red Hat's distribution and has become a completely separate distribution in its own right. Mandriva now includes a number of original tools, mostly to ease system configuration. Mandriva Linux is the brainchild of Gaël Duval, who wanted to focus on ease of use for new users.

This goal was met as Mandrake Linux gained a reputation as "one of the easiest to install and user-friendly Linux distributions". At this time Internet Explorer held a dominant share of the web browser market, and Microsoft a near monopoly in operating systems. Web browsers for Linux were limited to Mozilla, followed by a variety of poorly performing Linux-specific browsers such as Konqueror or Galeon. Mandrake Linux earned praise as a Linux

distribution that users could use all the time, without dual booting into Windows for compatibility with web sites or software unavailable under Linux. CNET called the user experience of Mandrake Linux 8.0 the most polished available at that time.Duval became the co-founder of Mandrakesoft, but was laid off from the company in 2006 along with many other employees.

Name changes

Installation screen of Linux-Mandrake 8.0

From its inception until the release of version 8.0, Mandrake named its flagship distribution Linux-Mandrake. From version 8.1 to 9.2 the distribution name was reversed and called Mandrake Linux.In February 2004, MandrakeSoft lost a court case against Hearst Corporation, owners of King Features Syndicate. Hearst contended that MandrakeSoft infringed upon King Features' trademarked character Mandrake the Magician. As a precaution, MandrakeSoft renamed its products by removing the space between the brand name and the product name and changing the first letter of the product name to lower case, thus creating one word. Starting from version 10.0, Mandrake Linux became known as mandrakelinux, and its logo changed accordingly. Similarly, MandrakeMove (a Live CD version) became Mandrakemove.In April 2005, Mandrakesoft announced the corporate acquisition of Conectiva, a Brazilian-based company that produced a Linux distribution for Portuguese-speaking (Brazil) and Spanish-speaking Latin America. As a result of this acquisition and the legal dispute with Hearst Corporation, Mandrakesoft announced that the company was changing its name to Mandriva, and that their Linux distribution Mandrake Linux would henceforward be known as Mandriva Linux.

Features

Installation, control and administration

Mandriva Linux contained the Mandriva Control Center, which eases configuration of some settings. It has many programs known as Drakes or Draks, collectively named drakxtools, to configure many different settings. Examples include MouseDrake to set up a mouse, DiskDrake to set up disk partitions and drakconnect to set up a network connection. They are written using GTK+ and Perl, and most of them can run in both graphical and text mode using the ncurses interface.