Red Hat Enterprise Linux 5
5.7 Release Notes

Release Notes for Red Hat Enterprise Linux 5.7

Red Hat Inc.

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Legal Notice

Abstract

Red Hat Enterprise Linux minor releases are an aggregation of individual enhancement, security and bug fix errata. The Red Hat Enterprise Linux 5.7 Release Notes documents the major changes made to the Red Hat Enterprise Linux 5 operating system and its accompanying applications for this minor release.

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Red Hat Enterprise Linux minor releases are an aggregation of individual enhancement, security and bug fix errata. The *Red Hat Enterprise Linux 5.7 Release Notes* documents the major changes made to the Red Hat Enterprise Linux 5 operating system and its accompanying applications for this minor release.

The Release Notes provide high level coverage of the improvements and additions that have been implemented in Red Hat Enterprise Linux 5.7. For detailed documentation on all changes to Red Hat Enterprise Linux for the 5.7 update, refer to the Technical Notes.

> **Note**
>
> Refer to the Online Release Notes for the most up-to-date version of the Red Hat Enterprise Linux 5.7 Release Notes.

> **Note**
>
> Under Red Hat Enterprise Linux 5.7, please use *RHN Classic Subscription Management* if you have subscriptions for the following products:
>
> » Red Hat Enterprise Linux Server for HPC Compute Node
> » Load Balancer Add-on
>
> For more information on the new features of subscription management, please refer to the Red Hat Knowledgebase.

1. Installation

The Red Hat Enterprise Linux installer (also known as **Anaconda**) assists in the installation of Red Hat Enterprise Linux 5. The Red Hat Enterprise Linux 5.7 includes the following enhancements:

» A kickstart installation, by default, has the SSH port open in the firewall settings. In Red Hat Enterprise Linux 5.7, the new `--no-ssh` kickstart option for the `firewall` command can be used to ensure that SSH access to a system is disabled.

» The new `blacklist` functionality in **Anaconda** is used to avoid the installation or probing of drivers.

» **Anaconda** provides added support for the subscription and entitlement changes implemented in Red Hat Enterprise Linux 5.7. Refer to Section 2, "Red Hat Subscription Manager and the Subscription Service" for further information.

2. Red Hat Subscription Manager and the Subscription Service

Effective software and infrastructure management requires a mechanism to handle the software inventory — both the type of products and the number of systems that the software is installed on. In parallel with Red Hat Enterprise Linux 5.7, Red Hat is introducing a new subscription service which provides oversight for the software subscriptions for an organization and a more effective content delivery system.

On local systems, the new Red Hat Subscription Manager offers both GUI and command-line tools to manage the local system and its allocated subscriptions. A better method to handle subscriptions will help our customers allocate their subscriptions more effectively and will make installing and updating Red Hat products much simpler.

In Red Hat Enterprise Linux 5.6 and older, subscriptions were based on *access to channels* and were assigned to an organization as a whole. Starting in Red Hat Enterprise Linux 5.7, subscriptions are based on *installed products* and are assigned to systems individually. This provides clear and delineated control over the products used by and subscribed to by a specific system.

As part of the new subscription structure, the Customer Portal provides two paths to manage subscriptions: Certificate-based Red Hat Network, which uses the new subscription service, and RHN Classic, which uses the traditional channels. Systems must be managed either by the new Certificate-based Red Hat Network or by RHN Classic, but not both.

If a system was previously managed by RHN Classic, there is no direct, supported migration path from RHN Classic to Certificate-based Red Hat Network.

> **Note**
>
> The Red Hat Enterprise Linux 5.7 Deployment Guide contains further information on managing subscriptions.
>
> The Red Hat Enterprise Linux 6.1 Installation Guide contains further information on the registration and subscription process during firstboot and kickstart.

3. Virtualization

3.1. Xen

Xen is a high performance and secure open source virtualization framework. Virtualization allows users to run guest operating systems in virtual machines on top of a host operating system. Red Hat Enterprise Linux 5.7 provides the following bug fixes and enhancements for Xen:

- The performance of Xen guests in 32-bit domains is improved.
- The maximum amount of disks that can be attached to a Xen guest has been increased from 100 to 256.
- The time needed to boot Xen guests is reduced.
- Xen guests now support up to 4 serial ports.
- xz compression support is now available in Xen **PyGrub**.

3.2. KVM

Red Hat Enterprise Linux 5.7 includes support for the Kernel-based Virtual Machine (KVM) hypervisor. KVM is integrated into the Linux kernel, providing a virtualization platform that takes advantage of the stability, features, and hardware support inherent in Red Hat Enterprise Linux.

This release provides the following bug fixes and enhancements:

- CD-ROM emulation in KVM is improved.
- Live migration convergence speed is improved.
- Issues with the boot order of virtual machines have been fixed.

4. Device Drivers

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4.1. Storage Drivers

▶ The **bnx2i** driver for Broadcom NetXtreme II iSCSI has been updated to version 2.6.2.3.

▶ The **mpt2sas** driver that supports the SAS-2 family of adapters from LSI has been updated to version 08.101.00.00. Most notably, this update provides support for WarpDrive SSS-6200 devices.

▶ The **megaraid** driver is updated to version 5.34.

▶ The **arcmsr** driver for Areca RAID controllers is updated.

▶ The **bfa** driver for Brocade Fibre Channel to PCIe Host Bus Adapters is updated to the current scsi-misc version.

▶ The **be2iscsi** driver for ServerEngines BladeEngine 2 Open iSCSI devices is updated.

▶ The **qla2xxx** driver for QLogic Fibre Channel HBAs is updated to version 8.03.07.00.05.07. Additionally, the qla24xx and 25xx firmware is updated to 5.03.16.

▶ The **lpfc** driver for Emulex Fibre Channel Host Bus Adapters is updated to version 8.2.0.96 driver.

▶ The IBM Virtual Ethernet (**ibmveth**) driver is updated, adding support for the optional flush of the rx buffer, scatter-gather, rx_copybreak, and tx_copybreak support, and enhanced power virtual ethernet performance.

▶ The **ibmvfc** driver is updated to version 1.0.9.

▶ The **mptfusion** driver is updated to version to 3.04.18rh.

▶ The **cciss** driver for HP Smart Array controllers has been updated, adding kdump support and performance mode support on the controller.

4.2. Network Drivers

▶ The **cxgb4** driver for Chelsio Terminator4 10G Unified Wire Network Controllers is updated.

▶ The **cxgb3** driver for the Chelsio T3 Family of network devices is updated.

▶ The **e1000** driver for Intel PRO/1000 network devices has been updated, adding support for the Marvell Alaska M88E1118R PHY and CE4100 reference platform.

▶ The **enic** driver for Cisco 10G Ethernet devices has been updated to version 2.1.1.9.

▶ The **myri10ge** driver for Myricom Myri-10G Ethernet devices has been updated to version 1.5.2.

▶ The **igb** driver for Intel Gigabit Ethernet Adapters is updated.

▶ The **tg3** driver for Broadcom Tigon3 ethernet devices is updated to version 3.116, adding support for EEE.

▶ The **bna** driver for Brocade 10Gb Ethernet devices is updated to version 2.3.2.3.

▶ The **qlcnic** driver is updated to 5.0.13, adding support for large receive offload (LRO) and generic receive offload (GRO).

▶ The **netxen** driver for NetXen Multi port (1/10) Gigabit Network devices is updated to version 4.0.75, adding support for GbE port settings.

- The **be2net** driver for ServerEngines BladeEngine2 10Gbps network devices is updated, adding support for multicast filter on the Lancer family of CNAs and enabling IPv6 TSO support.

- The **ixgbe** driver for Intel 10 Gigabit PCI Express network devices is updated to version 3.2.9-k2, adding support for FCoE and kcq2 support on the 57712 device.

- The **iwl6000-firmware** is updated to version 9.221.4.1.

- The **iwl5150-firmware** package is now available on the Supplementary CD.

- The **1000e** driver is updated to version 1.3.10.

- The **ixgbevf** driver is updated to version 2.0.0-k2.

- The **igbvf** driver is updated.

- The **bnx2x** driver is updated to version 1.62.00-6, adding DCB/PFC and FCoE ring support, 57712 device support, and adding BCM84823 to the supported PHYs. Additionally, the bnx2x firmware is updated to version 6.2.5.0.

- The **bnx2** driver is updated to version 2.0.18+.

- The **atl1e** driver for Atheros GbE NICs driver is now available in Red Hat Enterprise Linux 5.7.

- The **iw_cxgb4** driver is now available in Red Hat Enterprise Linux 5.7.

- The **iw_cxgb3** driver is updated.

4.3. Graphics Drivers

- The **vesa** driver is updated, to allow the native screen resolution (1360x768) to be set on Dell M4500 machines.

- The **ati** driver is updated, enabling DisplayPort interfaces on **RV635/RV730** cards.

- The **mga** driver is updated, providing support for **G200eH/eR** devices.

5. File System / Storage Management

Red Hat Enterprise Linux 5.7 provides the following notable file system improvements:

- A new debugging facility for Network File System (NFS) address space operations (**aops**)

- Additional checks to ensure that quota limits cannot be set too high.

5.1. Global File System 2 (GFS2)

The Red Hat GFS2 file system is a native file system that interfaces directly with the Linux kernel file system interface (VFS layer). When implemented as a cluster file system, GFS2 employs distributed metadata and multiple journals.

GFS2 in Red Hat Enterprise Linux includes the following notable new features:

- The **fallocate()** system call preallocates file system blocks to a file. Red Hat Enterprise Linux 5.7 introduces support for the **fallocate()** system call on the GFS2 file system.

- Performance when bouncing locks in a cluster with GFS2 is improved.

❯ **gfs2_grow** is used to expand the GFS2 file system. Previously, growing a GFS2 file system, that was at full capacity, was unsupported. Red Hat Enterprise Linux 5.7 introduces support for growing a full GFS2 file system.

5.2. The XFS File System

XFS is a highly scalable, high-performance file system which was originally designed at Silicon Graphics, Inc. It was created to support extremely large file systems (up to 16 exabytes), files (8 exabytes) and directory structures (tens of millions of entries).

Usage of XFS in conjunction with Red Hat Enterprise Linux 5.7 High Availability Add-On/Clustering as a file system resource is now *fully* supported.

6. System Security Services Daemon (SSSD)

The System Security Services Daemon (SSSD) provides a set of daemons to manage access to remote directories and authentication mechanisms. It provides Name Service Switch (NSS) and Pluggable Authentication Modules(PAM) interfaces toward the system and a pluggable back end system to connect to multiple different account sources.

SSSD in Red Hat Enterprise Linux 5.7 includes the following notable enhancements:

❯ The new **ding-libs** package provides utility functions to manipulate file system pathnames (**libpath_utils**), a hash table which dynamically resizes to achieve optimal storage and access time properties (**libdhash**), a data type to collect data in a hierarchical structure for easy iteration and serialization (**libcollection**), a dynamically growing, reference-counted array (**libref_array**), and a library to process configuration files in initialization format (INI) into a library collection data structure (**libini_config**).

❯ Added support for **netgroups**.

❯ Group support to the simple access provider is now supported.

❯ A Kerberos access provider is now included to honor **.k5login**.

❯ Improved support for delayed online Kerberos authentication.

❯ Significantly reduced time between connecting to a network or Virtual Private Network (VPN) and acquiring a Ticket Granting Ticket (TGT).

❯ The new automatic Kerberos ticket renewal feature allows long-lived processes or cron jobs to function even when the user logs out.

❯ Support for **shadow** access control.

❯ Support for **authorizedService** access control.

❯ Ability to mix-and-match LDAP access control features.

❯ A new option, providing separate password-change LDAP servers for platforms where LDAP referrals are not supported.

❯ Performance improvements when group processing RFC2307 LDAP servers.

❯ A new option, **dns_discovery_domain**, for better configuration when using SRV records for failover.

A. Revision History

Revision 1-2.402	**Fri Oct 25 2013**	**Rüdiger Landmann**

Rebuild with Publican 4.0.0

Revision 1-2.33	**July 24 2012**	**Ruediger Landmann**

Rebuild for Publican 3.0

Revision 1-2	**Thu Jul 21 2011**	**Martin Prpič**

Release of the Red Hat Enterprise Linux 5.7 Release Notes

Revision 1-1	**Mon May 23 2011**	**Ryan Lerch**

Initial Release of the 5.7 Beta Release Notes