Red Hat Enterprise Linux 5
5.8 Release Notes

Release Notes for Red Hat Enterprise Linux 5.8
Edition 8

Landmann

Red Hat Enterprise Linux 5 5.8 Release Notes

Release Notes for Red Hat Enterprise Linux 5.8
Edition 8

Landmann
rlandmann@redhat.com

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 5.8 Release Notes document the major changes made to the Red Hat Enterprise Linux 5 operating system and its accompanying applications for this minor release. Detailed notes on all changes in this minor release are available in the Technical Notes.

Table of Contents

Preface

The Release Notes provide high level coverage of the improvements and additions that have been implemented in Red Hat Enterprise Linux 5.8. For detailed documentation on all changes to Red Hat Enterprise Linux for the 5.8 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 5.8 Release Notes.

Chapter 1. Installation

Installation over IPoIB

Red Hat Enterprise Linux 5.8 supports installation over the IP over Infiniband (IPoIB) interface.

Chapter 2. Kernel

2.1. Kernel Platform Enhancements

Power Management Quality of Service

Support for the Power Management Quality Of Service (**pm_qos**) infrastructure has been added in Red Hat Enterprise Linux 5.8. The **pm_qos** interface provides a kernel and user mode interface for registering performance expectations by drivers, subsystems and user space applications for one of the currently supported **pm_qos** parameters: *cpu_dma_latency*, *network_latency*, *network_throughput*. For more information, refer to **/usr/share/doc/kernel-doc-<VERSION>/Documentation/power/pm_qos_interface.txt**.

PCIe 3.0 support

Red Hat Enterprise Linux 5.8 provides PCIe 3.0 full function support by adding ID-based ordering, OBFF (Optimized Buffer Flush/Fill) enable/disable support, and latency tolerance reporting enable/disable support.

ALSA HD Audio support

Support for ALSA HD Audio on Intel's next Platform Controller Hub has been added.

Added Device IDs

Device IDs have been added to provide full support of Intel's next Platform Controller Hub for the following drivers: SATA, SMBus, USB, Audio, Watchdog, I2C.

StarTech PEX1P

Support for the StarTech 1 Port PCI Express Parallel Port device has been added.

configure-pe RTAS call

Support for the **configure-pe** RTAS (RunTime Abstraction Services) call on the PowerPC platform has been added.

Updated JSM driver

The JSM driver has been updated to support the Bell2 (with PLX chip) 2-port adapter on IBM POWER7 systems. Additionally, EEH support has been added to the JSM driver.

2.2. Kernel Generic Features

RSS and swap size information

In Red Hat Enterprise Linux 5.8, the **/proc/sysvipc/shm** file (which provides a list of shared memory in use) now contains the RSS (Resident Set Size—portion of the process residing in the memory) and swap size information.

OProfile support

Support for the OProfile profiler on Intel's Sandy Bridge platform has been added by supporting all core events (except Precise Event-Based Sampling).

Wacom Bamboo MTE-450A

Red Hat Enterprise Linux 5.8 adds support for the *Wacom Bamboo MTE-450A* tablet.

X-keys Jog and Shuttle Pro

Support for the *X-keys Jog and Shuttle Pro* device has been added to Red Hat Enterprise Linux 5.8.

Bonding module allows all speeds for NICs

The bonding module in the kernel now reports the current link-speed for any network interface controller. Previously, the bonding module only reported speeds of 10/100/1000/10000. This change provides accurate reporting of the link-speed in blade enclosure environments that may use non-standard speeds such as 9 Gbs.

Maximum number of allowed serial interfaces

The *CONFIG_SERIAL_8250_NR_UARTS* parameter defines the maximum number of serial interfaces supported by the kernel. In Red Hat Enterprise Linux 5.8, the value of *CONFIG_SERIAL_8250_NR_UARTS* parameter has been increased to **64** for systems which have more than 32 (and up to 64) console connections.

The `blacklist` option in `/etc/kdump.conf`

The **blacklist** option is now available for Kdump configuration. This option prevents modules from being loaded in **initramfs**. For more information, refer to the **kdump.conf(5)** manual page.

`fnic` and `iscsi` support in Kdump `initrd`

Support for the **fnic** and **iscsi** drivers has been added to Kdump's initial RAM disk (**initrd**).

Kdump on Xen HVM guests

Kdump on Xen HVM guests is now enabled in Red Hat Enterprise Linux 5.8 as a Technology Preview. Performing a local dump to an emulated (IDE) disk using an Intel 64 Hypervisor with an Intel CPU is the only supported implementation. Note that the dump target must be specified in the **/etc/kdump.conf** file.

Chapter 3. Device Drivers

3.1. Storage Drivers

❯ The `ipr` driver for IBM Power Linux RAID SCSI HBAs has been updated to enable SAS VRAID functions and add definitions for new adapters.

❯ The `megaraid` driver has been updated to version 5.40, which provides a fix for FastPath I/O to work with degraded RAID 1.

❯ Panther Point PCH driver has been updated to add the AHCI (Advanced Host Controller Interface) mode for Intel Panther Point Device IDs.

❯ The `qla2xxx` 4G and 8G driver firmware was updated to version 5.06.01.

❯ The `qla2xxx` driver for QLogic Fibre Channel HBAs has been updated to version 8.03.07.09.05.08-k, which provides support for ISP82xx to capture a dump (a minidump) on when failure occurs.

❯ The `qla4xxx` driver has been updated to version 5.02.04.00.05.08-d0.

❯ The `lpfc` driver for Emulex Fibre Channel Host Bus Adapters has been updated to version 8.2.0.108.1p.

❯ The `cciss` driver has been updated to the latest version, which adds a command line switch to provide support for CCISS simple mode.

❯ The `be2iscsi` driver for ServerEngines BladeEngine 2 Open iSCSI devices has been updated to support the `pci_disable` device option and a shutdown routine.

❯ The `bnx2i` driver for Broadcom NetXtreme II iSCSI has been updated to version 2.7.0.3.

❯ The kernel multipath driver has been updated to add detailed SCSI I/O errors.

❯ The `bfa` firmware was updated to version 3.0.2.2.

❯ The `bfa` driver was updated to include the following enhancements:

  ▫ Support for configuration of flash partitions.

  ▫ Support for collecting and resetting **fcport** statistics.

  ▫ Support for I/O profiling.

  ▫ Updated RME interrupt handling.

  ▫ Support for FC-transport asynchronous event notification.

  ▫ Support for PHYsical Layer Control (PHY) querying.

  ▫ Support for Host Bus Adapters (HBA) diagnostics.

  ▫ Support for obtaining Small Form Factor (SFP) information.

  ▫ Support for CEE information and statistics querying.

  ▫ Support for Fabric Assigned Address (FAA).

  ▫ Support for collecting driver/fw statistics and performing adapter/ioc enable/disable operations.

❯ The **mpt2sas** driver was updated to version 09.100.00.00, which adds support for customer specific branding.

❯ The **mptsas** driver was updated to version 3.04.20rh.

❯ The **isci** driver has been updated to add type safety to the state machine interface and support for Intel's next chipset.

❯ The **uIP** driver has been updated to version 0.7.0.12 as a part of the updated *iscsi-initiator-utils* package.

❯ The **megaraid_sas** driver has been updated to version 5.40-rh1.

3.2. Network Drivers

❯ The **bnx2x** driver firmware has been updated to version 7.0.23, which provides support for new Broadcom 578xx chips.

❯ The **bnx2x** driver has been updated to version 1.70.x.

❯ The **bnx2i** driver has been updated to version 2.7.0.3+.

❯ The **bnx2** driver has been updated to version 2.1.11.

❯ The **cnic** driver has been updated to version 2.5.3+.

❯ The **cxgb3** driver for the Chelsio T3 family of network devices has been updated to the latest upstream version.

❯ The **cxgb4** driver for Chelsio Terminator4 10G Unified Wire Network Controllers has been updated to the latest upstream version.

❯ The **iw_cxgb4** driver has been updated to the latest upstream version.

❯ The **netxen_nic** driver has been updated to version 4.0.77, which adds support for VLAN RX HW acceleration.

❯ The **tg3** driver for Broadcom Tigon3 Ethernet devices has been updated to version 3.119.

❯ The **ixgbe** driver for Intel 10 Gigabit PCI Express network devices has been updated to upstream version 3.4.8-k.

❯ The **ixgbevf** driver has been updated to upstream version 2.1.0-k.

❯ The **igbvf** driver has been updated to the latest upstream version.

❯ The **igb** driver for Intel Gigabit Ethernet Adapters has been updated to the latest upstream version, which adds entropy support.

❯ The **e1000e** driver for Intel 82563/6/7, 82571/2/3/4/7/8/9, and 82583 PCI-E family of controllers has been updated to version 1.4.4.

❯ The **e1000** driver for Intel PRO/1000 PCI and PCI-X family of adapters has been updated to the latest upstream version.

❯ The **bna** driver has been updated to version 3.0.2.2, which provides support for the Brocade 1860 AnyIO Fabric Adapter.

❯ The **qlge** driver has been updated to version 1.00.00.29.

❧ The `qlcnic` driver for HP NC-Series QLogic 10 Gigabit Server Adapters has been updated to version 5.0.18.

❧ The `be2net` driver for ServerEngines BladeEngine2 10Gbps network devices has been updated to the latest upstream version.

❧ The `enic` driver for Cisco 10G Ethernet devices has been updated to version 2.1.1.24.

❧ The `nbd` driver has been updated to add a user-settable timeout (*NBD_SET_TIMEOUT*) for I/O operations.

3.3. Graphics drivers

❧ Intel's `i810` graphics driver (provided by the *xorg-x11-drv-i810* package) has been updated to fix various bugs for the family of 32nm processors with Intel Integrated Graphics (codenamed IronLake).

❧ The Matrox `mga` video card driver has been updated to provide full resolution support for ServerEngines Pilot 3 (Kronos 3) chips.

Chapter 4. File System and Storage Management

--nosync option for CLVM mirrored volume extension

Clustered LVM includes a new **--nosync** option for extending mirrored logical volumes. When the **--nosync** option is specified, extending a clustered mirrored logical volume does not cause the volume to get synchronized after the extension, potentially skipping resource intensive synchronization of empty data.

Automatic re-sizing of ext4

After executing the **lvextend** command with the **-r/--resizefs** option, the ext4 file system automatically re-sizes itself. Performing a manual re-size with the **resize2fs** is no longer required.

Insecure ports used by NFS clients

With Red Hat Enterprise Linux 5.8, NFS clients are allowed to use insecure ports (that is, 1024 and above).

Active multipath devices not scanned by LVM

LVM no longer scans multipath member devices (underlying paths for active multipath devices) and prefers top level devices. This behavior can be switched off using the **multipath_component_detection** option in the **/etc/lvm/lvm.conf**.

Chapter 5. Authentication and Interoperability

Support for DNS SRV records

DNS SRV record support has been added to the *nss_ldap* package.

Support for paged LDAP look-ups

SSSD is now able to perform a paged LDAP look-up to handle large number of records returned by a single request.

New SSSD configuration options

In Red Hat Enterprise Linux 5.8, SSSD supports the following new configuration options in the `/etc/sssd/sssd.conf` file:

- `override_homedir`

- `allowed_shells`

- `vetoed_shells`

- `shell_fallback`

- `override_gid`

For more information about these options, refer to the **sssd.conf(5)** manual page.

Chapter 6. Entitlement

RHN Classic selected by default

When registering a system with **firstboot**, the RHN Classic option is checked by default in the Subscription part.

Automatic regeneration of a certificate after renewal of a subscription

It is now possible to automatically regenerate new entitlement certificates after the renewal of a subscription. Prior to this enhancement, customers were required to manually regenerate the certificate to continue to receive software updates and other subscription services. Automatically regenerating a certificate minimizes service interruptions. Users are also notified of cases where auto regeneration of certificates was not successful. For more information, refer to https://www.redhat.com/rhel/renew/faqs/.

Stacking Subscriptions

Red Hat Enterprise Linux 5.8 adds support for subscription stacking. This allows users to combine a set of subscriptions on a single machine in order to become compliant. For more information on subscription stacking, refer to the Red Hat Enterprise Linux 5 Deployment Guide.

Migration from RHN Classic to certificate-based RHN

Red Hat Enterprise Linux 5.8 includes a new tool to migrate RHN Classic customers to the certificate-based RHN. For more information, refer to the Red Hat Enterprise Linux 5 Deployment Guide.

Chapter 7. Security, Standards and Certification

SCAP 1.1

OpenSCAP has been upgraded to provide SCAP 1.1 (Security Content Automation Protocol) functionality.

DigiCert certificate added to *openssl*

With Red Hat Enterprise Linux 5.8, the *openssl* package includes the DigiCert certificate in the `/etc/pki/tls/certs/ca-bundle.crt` file (which contains trusted root CA certificates).

Chapter 8. Compiler and Tools

SystemTap

SystemTap is a tracing and probing tool that allows users to study and monitor the activities of the operating system (particularly, the kernel) in fine detail. It provides information similar to the output of tools like **netstat**, **ps**, **top**, and **iostat**; however, SystemTap is designed to provide more filtering and analysis options for collected information.

SystemTap in Red Hat Enterprise Linux 5.8 is updated to version 1.6, providing:

» Kernel modules with a hyphen ("**-**") in their name, such as `i2c-core` are now handled properly.

» `process.mark` now supports *$$parms* for reading probe parameters.

» Improved and simplified operation of the SystemTap **compile-server** and **client**:

  ▫ **compile-server** may cache script build results for improved performance.

  ▫ **compile-server** and **client** communicate to exchange version information to adjust the communication protocol accordingly and use the newest version of the server possible.

  ▫ Removal of deprecated tools: **stap-client**, **stap-authorize-server-cert**, **stap-authorize-signing-cert**, **stap-find-or-start-server**, and **stap-find-servers**.

» For remote execution, the `--remote USER@HOST` functionality can now be specified multiple times and will automatically build the script for distinct kernel and architecture configurations, and run it on all named machines at once.

» The **staprun** utility now allows multiple instances of the same script to be run at same time.

» A new `tz_ctime()` function prints the local time zone time.

» New `HZ()` and `jiffies()` functions have been added for lightweight approximate time keeping.

Chapter 9. Clustering and High Availability

Installing Packages from the High Availability and Resilient Storage Channels

On a Red Hat Enterprise Linux 5.8 system, installing the **cluster** and **cluster-storage** packages from cdn.redhat.com resulted in the associated products, High Availability and Resilient Storage, becoming marked as not having been installed. Red Hat recommends using the Red Hat Enterprise Linux 5.8 installation media, by providing the subscription number during installation, to install packages from **cluster** and **cluster-storage**. For more information about subscription numbers, which are also known as installation numbers, refer to the following KBase article.

> https://access.redhat.com/kb/docs/DOC-15408

Chapter 10. Virtualization

10.1. Xen

Attaching a host CD-ROM to a PV guest

Support for attaching a host CD-ROM to a paravirtualized guest as a virtual block device has been improved.

Dynamic re-sizing of guest VBDs

In Red Hat Enterprise Linux 5.8, virtual block devices in Xen guests reflect any on-line re-sizing of the host-side backing devices.

10.2. KVM

SPICE QXL drivers added to *virtio-win*

To enable simple installation and updating of drivers without requiring an MSI installer to be run, SPICE QXL drivers have been added to the virtio-win RPM package.

10.3. SPICE

New *pixman* package

Red Hat Enterprise Linux 5.8 includes a new *pixman* package which provides a low-level pixel manipulation library and offers features such as image compositing and trapezoid rasterization. The *pixman* package is added as a dependency of the *spice-client* package.

Chapter 11. General Updates

Improved PDF/A support

Red Hat Enterprise Linux 5.8 include improved support for PDF/A—the ISO-standardized version of the Portable Document Format—by upgrading to GhostScript version 9.01.

`connectiontimeout` parameter for `httpd`

The **httpd** service includes a new ***connectiontimout*** parameter which specifies the amount of time the service should wait for the creation of a connection to the back-end to complete. By specifying this parameter, the number of timeout errors propagated to the client when using load balancing via Apache is greatly reduced.

iptables `reload` option

The **iptables** services now includes a **reload** option which refreshes **iptables** rules without unloading/reloading the modules and dropping any already-established connections.

xz support for RPM

In Red Hat Enterprise Linux 5.8, RPM utilizes the *xz* package to handle compression/decompression of packages that use LZMA encryption.

The *python-ctypes* package

Red Hat Enterprise Linux 5.8 adds a new *python-ctypes* package. **python-ctypes** is a python module which creates and manipulates C data types in Python, and calls functions in dynamic link libraries (DLLs) or shared libraries. It allows wrapping of these libraries in pure Python. This package serves as a dependency of the **iotop** utility.

64-bit version of unixOBDC

A new 64-bit version of unixODBC has been added to Red Hat Enterprise Linux 5.8 via the *unixODBC64* package. Along with the *unixODBC64* package, two packages providing specific database support have been added: *mysql-connector-odbc64* and *postgresql-odbc64*. Users who need to interoperate with third-party ODBC drivers are advised to install the *unixODBC64* package, and then install the *postgresql-odbc64* and/or *mysql-connector-odbc64* packages if needed.

The iotop utility

A new **iotop** utility has been added. **iotop** is a Python program with a user interface similar to the one of the **top** utility, and used to show continuous I/O operation statistics for running processes.

binutils for BD-capable `gcc44`

Red Hat Enterprise Linux 5.8 provides a new *binutils220* package, capable of using BD instructions when compiling with **gcc44**. This enables users to build programs which take advantage of the AMD Bulldozer CPU features.

`httpd` service restart after an upgrade

The **httpd** service is now automatically restarted after the *httpd* package is upgraded.

Curl support for Kerberos negotiation

The **curl** utility now includes negotiate proxy support in order to use Kerberos authentication to communicate with remote machines.

`ssl_request_cert` option for vsftpd

The *vsftpd* package now includes a `ssl_request_cert` option which allows client certificate checks to be disabled. If enabled, **vsftpd** requests (but not necessarily requires) a certificate on incoming SSL connections. The default setting for this option (in the `/etc/vsftpd/vsftpd.conf` file) is **Yes**.

Added device IDs in the *hwdata* package

The hwdata package contains tools for accessing and displaying hardware identification and configuration data. Device IDs have been added for the following hardware:

» Intel Core i3, i5, i7 and other processors formerly code named "Sandy Bridge"

» the latest HP Integrated Lights-Out 4 (iLO) devices

» Atheros 3x3 a/g/n (Madeira) wireless LAN

Appendix A. Revision History

Revision 8-10.400	**2013-10-31**	**Rüdiger Landmann**
Rebuild with publican 4.0.0		

Revision 8-10	**2012-07-18**	**Anthony Towns**
Rebuild for Publican 3.0		

Revision 1-0	**Thu Feb 21 2012**	**Martin Prpič**
Release of the Red Hat Enterprise Linux 5.8 Release Notes		

Revision 8-10.400	**2013-10-31**	**Rüdiger Landmann**