



# Red Hat Enterprise Linux 5

## 5.5 リリースノート

新機能と主な更新点



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新機能と主な更新点

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## 概要

Red Hat Enterprise Linux ミラーリリースは個別の拡張とセキュリティとバグ修正エラータの集大成です。Red Hat Enterprise Linux 5.5 のリリースノートは Red Hat Enterprise Linux 5 オペレーティングシステムとこのマイナーリリース用の付帯アプリケーションへの主な変更点を文書化しています。このマイナーリリース内の全ての変更についての詳細はテクニカルノート内でご覧になります。Red Hat Enterprise Linux 5.5 リリースの特徴として、Intel Boxboro-EX プラットフォームと、AMD Magny-Cours プロセッサと、IBM Power 7 プロセッサのハードウェア有効化が含まれています。仮想化も向上しており、複数の 10 GigE SR-IOV カードのサポートと、システム上で有効になった時の仮想ゲストメモリー用の hugepage の自動使用が付加されています。相互操作性の

改善として、**Microsoft Office 2007** 用の **OpenOffice** フィルタへの更新、**Windows 7** 用の **Samba** 互換性、及び **Microsoft** ベースの **PXE** サービスを使用した仮想マシン用のブートサポートがあります。

## 目次

<b>1. INSTALLATION</b> .....	<b>2</b>
<b>2. VIRTUALIZATION</b> .....	<b>3</b>
<b>3. KERNEL</b> .....	<b>3</b>
3.1. Kernel Platform Enablement	4
3.2. Kernel Generic Features	4
<b>4. DEVICE DRIVERS</b> .....	<b>4</b>
4.1. Network Device Drivers	4
4.2. Storage Device Drivers	6
<b>5. FILESYSTEM/STORAGE MANAGEMENT</b> .....	<b>7</b>
<b>6. TOOLS</b> .....	<b>7</b>
6.1. GNU プロジェクトデバッガ (GDB)	7
6.2. SystemTap	8
6.3. Valgrind	9
<b>7. DESKTOP UPDATES</b> .....	<b>9</b>
<b>8. NEW PACKAGES</b> .....	<b>9</b>
<b>A. 改訂履歴</b> .....	<b>12</b>

## 1. INSTALLATION

Red Hat Enterprise Linux 5.5 introduces many bugfixes and enhancements to the system installer (**anaconda**).

The interactive installer has been enhanced, adding the ability to specify additional Network File System (NFS) mount options when installing from an NFS source ([BZ#493052](#)). Additionally, install sources (e.g. kickstart files) located on password protected File Transport Protocol (FTP) servers can now be retrieved during installation ([BZ#505424](#)).

### Kickstart

Kickstart provides a way for users to automate a Red Hat Enterprise Linux installation. Using kickstart, a system administrator can create a single file containing the answers to all the questions that would normally be asked during a typical installation.

Kickstart debugging and error reporting has been improved. The installer now retains kickstart scriptlets during debugging, logs *standard output* (**stdout**) and *standard error* (**stderr**) streams, and logs error messages to **anaconda.log** ([BZ#510636](#)).

Package groups can now be excluded in a kickstart installation in the same manner that individual packages are excluded ([BZ#558516](#)). Additionally, the **bootloader** command now supports the **--hvargs** parameter, allowing Xen hypervisor arguments to be specified during a kickstart installation ([BZ#501438](#)).

Previously, the kickstart installation method offered two options to select all packages **@Everything** and **\*** (wildcard). As of Red Hat Enterprise Linux 5.5, both of these options have been **deprecated**. Attempting to use a select all packages option will fail, unless the kickstart file also includes package negation for conflicting packages. Therefore, to install all packages but conflicting packages, the kickstart file must contain:

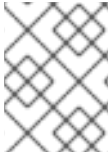
```
%packages
@Everything
-@Conflicts
```

Red Hat Enterprise Linux 5.5 includes the new package sets **samba3x**, **freeradius2**, **postgres84**. These package sets are only available via **kickstart** during system installation or through **yum** for existing systems.

### Hardware Support

The following device drivers are now supported during installation:

- the **pmcraid** driver for PMC Sierra MaxRAID Controller Adapters ( [BZ#532777](#) )
- the **ibmvfs** driver for Power6 Virtual FC devices ( [BZ#512237](#) ).
- the **bfa** driver for Brocade Fibre Channel to PCIe Host Bus Adapters ( [BZ#475707](#) )
- the **be2iscsi** driver for ServerEngines BladeEngine 2 Open iSCSI devices ( [BZ#529442](#) ).



### 注記

For detailed information on installation, the [Installation Guide](#) documents how to install Red Hat Enterprise Linux 5.

## 2. VIRTUALIZATION

Red Hat Enterprise Linux 5.5 delivers many updates to virtualization. Detailed notes on all the changes to virtualization components are available in the [Technical Notes](#).



### 注記

Management of KVM based virtual guests using Cluster Suite is now fully supported.



### 注記

Red Hat Enterprise Linux 5.5 includes components providing functionality for the **Simple Protocol for Independent Computing Environments (SPICE)** remote display protocol. These components, are for use in conjunction with Red Hat Enterprise Virtualization products and are not guaranteed to have a stable ABI. The components will be updated to synchronize with functional requirements of Red Hat Enterprise Virtualization products. Migration to future releases may require manual operations on a per-system basis.

### PCI passthrough improvements

PCI passthrough allows PCI devices to appear and behave as if they were physically attached to the guest operating system. KVM and Xen hypervisors both support attaching PCI devices on the host system to virtualized guests.

The AMD input/output memory management unit (IOMMU) kernel driver, which assists in PCI passthrough, has been updated. This update fixes an issue where system management requests were handled incorrectly. ([BZ#531469](#))

Support for PCI passthrough using Intel VT-d extensions on the KVM hypervisor has been improved. Devices (either physical or virtual) can now be shutdown and unassigned from a guest during runtime, allowing the device to be reassigned to another guest. This reassignment can also be carried out live ([BZ#516811](#)). Additionally, 1:1 mapping performance has been improved ( [BZ#518103](#)).



### 注記

For detailed information on virtualization, the [Virtualization Guide](#) is the definitive guide for virtualization on Red Hat Enterprise Linux.

### HugePages Support

New rules are available in `libvirt` to enable `hugetlbfs` (HugePages). When a system is configured with Hugepages, `libvirt` automatically allocates memory from `hugetlbfs` to back the virtual guest memory. When combined with extended page tables and nested page tables in hardware, significant performance improvements can be achieved by the guest. ([BZ#518099](#))

## 3. KERNEL

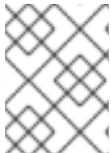


## 3.1. Kernel Platform Enablement

This release introduces support for Intel's new platforms, code-named **Boxboro-EX** and **Boxboro-MC**, AMD's new processor family, code-named **Magny-Cours** and IBM's **Power7** processor.

## 3.2. Kernel Generic Features

The recommended minimal memory requirement on x86 and x86\_64 for Red Hat Enterprise Linux 5.5 is now 1GB per logical CPU.



### 注記

A logical CPU is defined as any entity that can be scheduled (i.e. every core or thread in a multi-core or multi-thread processor is defined as a logical CPU).

### Detecting kernel tasks stuck in the uninterruptible sleep state

In some circumstances, tasks in the kernel may permanently enter the uninterruptible sleep state (D-State), making the system impossible to shut down. With this update, the *Detect Hung Task* kernel thread has been added, providing the ability to detect tasks permanently stuck in the D-State.

This new feature is controlled by the `CONFIG_DETECT_HUNG_TASK` kernel flag. When set to `y` tasks stuck in the D-State are detected; when set to `n` it is off. The default value for the `CONFIG_DETECT_HUNG_TASK` flag is `y`.

Additionally, the `CONFIG_BOOTPARAM_HUNG_TASK_PANIC` flag has been added. When set to `y`, a kernel panic is triggered when a task stuck in the D-State is detected. The default value for the `CONFIG_BOOTPARAM_HUNG_TASK_PANIC` flag is `n`.

[BZ#506059](#)

### Signed s390 Kernel Modules

Starting at Red Hat Enterprise Linux 5.5, all s390 kernel modules are now signed. [BZ#483665](#)

[BZ#456181](#), [BZ#448130](#), [BZ#427709](#)

## 4. DEVICE DRIVERS

the `hpilo` driver for HP iLO/iLO2 management processors has been updated.

The Advanced Linux Sound Architecture (ALSA) has been updated – providing enhanced support for High Definition Audio (HDA). ([BZ#525390](#)).

the `i2c` device driver for the iic-bus interface has been updated with support for the SB900 SMBus controller. ([BZ#516623](#))

the `m1x4` driver for Mellanox ConnectX HCA InfiniBand devices has been updated to version 1.4.1 ([BZ#514147](#) [BZ#500346](#))

### 4.1. Network Device Drivers

#### Wireless Rebase

Red Hat Enterprise Linux 5.5 contains a major updates to wireless drivers and subsystems in the kernel.

The `iwlmwifi` drivers for Intel wireless network adapters have been updated. Devices in this hardware line support `802.11a`, `802.11b`, `802.11g`, and `802.11n` wireless protocols. This update provides new support for `iwl6000` and `iwl1000` devices, and enhanced support for `iwl5000`, `iwl4965` and `iwl3945` devices.

The `rt2x00` drivers for wireless devices has been updated. This update refreshes the drivers for the Ralink `rt2400pci`, `rt2500pci`, `rt2500usb`, `rt61pci` and `rt73usb` chipsets, and the drivers for the `rt18180` and `rt18187` Realtek chipsets.

The `ath9k` driver for Atheros 802.11n wireless LAN adapters has been enabled.

To support the features of these drivers, the `mac80211` and `cfg80211` kernel subsystems have been updated.

#### **Solarflare driver**

In Red Hat Enterprise Linux 5.5, the Solarflare driver (`sfc`) has been added ([BZ#448856](#))

#### **Neterion's X3100 Series 10GbE PCIe driver**

The `vxge` driver for Neterion's X3100 Series 10GbE PCIe devices has been updated ([BZ#453683](#)).

#### **ServerEngines BladeEngine2 10Gbps driver**

the `be2net` driver for ServerEngines BladeEngine2 10Gbps network devices has been updated ([BZ#549460](#))

#### **Cisco 10G Ethernet Driver**

the `enic` driver for Cisco 10G Ethernet devices has been updated to version 1.1.0.100. ([BZ#519086](#), [BZ#550148](#))

#### **QLogic 10 Gigabit PCI-E Ethernet Driver**

the `qlge` driver for QLogic 10 Gigabit PCI-E ethernet devices has been updated to version 1.00.00.23. ([BZ#519453](#))

#### **Broadcom Tigon3 ethernet devices**

the `tg3` driver for Broadcom Tigon3 ethernet devices has been updated. ([BZ#515312](#))

#### **Intel Gigabit Ethernet Network Devices**

the `igb` driver for Intel Gigabit Ethernet Network devices has been updated. ([BZ#513710](#))

#### **Intel 10 Gigabit PCI Express Network Devices**

the `ixgbe` driver for Intel 10 Gigabit PCI Express Network devices has been updated. ([BZ#513707](#), [BZ#514306](#), [BZ#516699](#))

#### **Intel PRO/1000 Network Devices**

The `e1000` driver for Intel PRO/1000 network devices has been updated ([BZ#515524](#))

#### **NetXen Multi port (1/10) Gigabit Network Devices**

The `netxen` driver for NetXen Multi port (1/10) Gigabit Network devices has been updated.

([BZ#542746](#))

#### **Broadcom Everest network devices**

The `bnx2x` driver for Broadcom Everest network devices has been updated to version 1.52.1-5. ([BZ#515716](#), [BZ#522600](#))

#### **Broadcom NetXtreme II network devices**

The `bnx2` driver for Broadcom NetXtreme II network devices has been updated to version 2.0.2 ([BZ#517377](#))

#### **Broadcom NetXtreme II iSCSI**

The `bnx2i` driver for Broadcom NetXtreme II iSCSI has been updated. ([BZ#516233](#))

#### **RealTek 8169 ethernet driver**

the `r8169` driver for RealTek 8169 ethernet devices has been updated. ( [BZ#514589](#))

## **4.2. Storage Device Drivers**

#### **QLogic Fibre Channel Host Bus Adapter Driver**

the `qla2xxx` driver for QLogic Fibre Channel HBAs has been updated to version 8.03.01.04.05.05-k ([BZ#519447](#) [BZ#542834](#) [BZ#543057](#))

#### **HighPoint RocketRAID 3xxx/4xxx**

The `hptiop` driver for HighPoint RocketRAID 3xxx/4xxx controllers has been updated, adding support for RR44xx adapters. ([BZ#519076](#))

#### **Emulex Fibre Channel Host Bus Adapter Driver**

The `lpfc` driver for Emulex Fibre Channel HBAs has been updated to version 8.2.0.63.3p. ([BZ#515272](#)) [BZ#549763](#)

#### **LSI SAS-2 family of adapters**

The `mpt2sas` driver that supports the SAS-2 family of adapters from LSI has been updated to version 02.101.00.00. This update fixes many issues, most notably:

- Sanity checks have been added when volumes are added and removed, ignoring events for foreign volumes.
- driver is now legacy I/O port free
- An issue that may have resulted in a kernel oops at hibernation or resume has been fixed.

([BZ#516702](#))

#### **LSI Fusion MPT**

The `mptque` base driver for devices using LSI Fusion MPT firmware has been updated to version 3.4.13rh. This update fixes many issues, most notably:

- The serial attached SCSI (SAS) topology scan has been restructured, adding expander, link status and host bus adapter (HBA) events.

- Intermittent issues caused by SAS cable removal and reinsertion have been fixed.
- An issue where SATA devices received different SAS addresses has been fixed.
- The device firmware now reports the queue full event to the driver and the driver handles the queue full event using the SCSI mid-layer.

[\(BZ#516710\)](#)

### LSI MegaRAID SAS controllers

The `megaraid_sas` driver for LSI MegaRAID SAS controllers has been updated to version 4.17-RH1. This update fixes many issues, most notably:

- An issue during firmware boot and initialization has been fixed.
- An issue that resulted in devices hanging during hibernation has been fixed.
- The driver now auto updates the device when added or deleted.
- MegaRAID SAS driver is now legacy I/O port free

[BZ#518243](#)

## 5. FILESYSTEM/STORAGE MANAGEMENT

### Improved CFQ I/O scheduler performance

Some applications (e.g. `dump` and `nfsd`) try to improve disk I/O performance by distributing I/O requests to multiple processes or threads. However, when using the Completely Fair Queuing (CFQ) I/O scheduler, this application design negatively affected I/O performance. In Red Hat Enterprise Linux 5.5, the kernel can now detect and merge cooperating queues. Additionally, the kernel can also detect if the queues stop cooperating, and split them apart again.

### New GFS2 mount option

This update introduces GFS2 support for the `errors=` mount command line option, which may assist in troubleshooting. The default option, `errors=withdraw` results in the filesystem attempting to withdraw from the cluster if an I/O error or metadata error is encountered. The alternative, `errors=panic` results in a panic in the same situation. ( [BZ#518106](#) )

### CIFS Update

The Common Internet File System (CIFS) has been updated in the kernel. ([BZ#500838](#))

## 6. TOOLS

### 6.1. GNU プロジェクトデバッガ (GDB)

GNU プロジェクトデバッガ (俗称 **GDB**) は 制御された方法で実行してそのデータを出力することにより C や C++ やその他の言語で書かれたプログラムをデバッグします。

Red Hat Enterprise Linux 5.5 では、GDB はバージョン 7.0.1 に更新されています。変更点の詳細一覧については、テクニカルノート [の GDB セクション](#) をご覧下さい。

#### 拡張型 C++ のサポート

GDB 内の C++ プログラミング用サポートが向上しています。特筆すべき点は以下ようになります:

- 表現構文解析に多数の改善
- タイプ名処理の改良
- 無関係引用への必要性はほとんど取り除かれています。
- "next" and other stepping commands work properly even when the inferior throws an exception.
- GDB has a new "catch syscall" command. This can be used to stop the inferior whenever it makes a system call.

### 全角及び複数バイトの文字へのサポート

GDB は今回、全角及び複数バイトの文字をターゲット上でサポートします。

### 独立したスレッドのデバッグ

Thread execution now permits debugging threads individually and independently of each other; enabled by new settings "set target-async" and "set non-stop".

## 6.2. 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.

### New Kernel Tracepoints

Tracepoints are placed in important sections of the kernel, allowing system administrators to analyze the performance of, and debug portions of code. In Red Hat Enterprise Linux 5.5, a wide range of tracepoints have been added to the kernel ([BZ#475710](#)), including tracepoints for networking ([BZ#475457](#)), coredump ([BZ#517115](#)) and signal ([BZ#517121](#)).



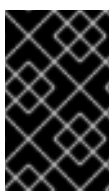
#### 注記

A list of tracepoints available in the kernel can be obtained with:

```
stap -L 'kernel.trace("*')' | sort
```

### Unprivileged mode

Previously, only users with root privileges were able to use SystemTap. This update introduces SystemTap's unprivileged mode, allowing non-root users to still use SystemTap. Detailed information on unprivileged `man stap-client` manpage.



#### 重要

Unprivileged mode is considered a Technology Preview in the Red Hat Enterprise Linux 5.5. The `stap-server` facility on which it relies is undergoing work for security improvements and should be deployed with care on a trustworthy network.

### C++ Probing

The C++ program probing improvements also allows better probing of user-space programs.

### 6.3. Valgrind

Valgrind is used to monitor memory read, write, and allocation operations. The valgrind tool is frequently used by developers to diagnose and debug memory management problems.

Valgrind has been updated to version 3.5.0, providing enhanced support for a wide range of system architectures. This update introduces many improvements to performance, scalability and usability of the Valgrind. Notably, the usability and scalability of the Helgrind tool – which is used to detect race conditions – has been improved. The leak checking capabilities of the Memcheck tool are also improved. Additionally, support for DWARF debugging information has been enhanced.

## 7. DESKTOP UPDATES

### OpenOffice.org

OpenOffice.org is an Open Source, multi-platform office productivity suite. It includes key desktop applications, such as a word processor, spreadsheet, and presentation manager. OpenOffice.org has been updated, providing many bugfixes and enhancements, including support for Microsoft Office 2007 OOXML formats.

### Metacity

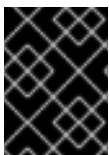
Metacity, the default window manager for the GNOME desktop has been updated, providing enhancements, additional GConf keys to control the the behavior of metacity and bug fixes.

## 8. NEW PACKAGES

### FreeRADIUS

FreeRADIUS is a high-performance, highly configurable, free Remote Authentication Dial In User Service (RADIUS) server. It is designed to allow centralized authentication and authorization for a network.

FreeRADIUS 2.0 is available as a new package (**freeradius2**) in Red Hat Enterprise Linux 5.5. FreeRADIUS 1 is still available in Red Hat Enterprise Linux 5 in the original **freeradius** package. Version 2.0 of FreeRADIUS introduces many new features including the programming language **unlang**, virtual server support., additional directories for improved RFC coverage and full IPv6 support for both attributes & network packets.



### 重要

The **freeradius** and **freeradius2** packages share common files, and cannot be installed together on the same system.

### PostgreSQL 8.4

PostgreSQL 8.4 (**postgresql84**) is now included as a fully supported option in Red Hat Enterprise Linux 5. New features in PostgreSQL 8.4 include: parallel database restore, per-column permissions and new monitoring tools.

**重要**

A data dump and restore using `pg_dump` is required for migration from the existing PostgreSQL 8.1 (supplied by the `postgres` package). Due to this requirement, `postgres` and `postgresql84` contain package level conflicts and only a single version can be installed on a system.

**Samba**

Samba is a suite of programs used by machines to share files, printers, and other information.

The Samba3x package set was originally introduced in the `x86_64` Supplementary for the 5.4 release. In Red Hat Enterprise Linux 5.5, Samba3x has been updated and is now **supported** on all architectures. Samba3x includes support for Microsoft® Windows™ 7 interoperability.

**重要**

Clustered Samba support is still a Technology Preview and only available on the `x86_64` architecture.

Samba3x is based on the upstream Samba 3.3 release and includes the following changes in the configuration file options:

Parameter	Description	Default
<code>cups connection timeout</code>	New	30
<code>idmap config DOM:range</code>	Removed	
<code>idmap domains</code>	Removed	
<code>init logon delayed hosts</code>	New	""
<code>init logon delay</code>	New	100
<code>ldap ssl</code>	Changed Default	start tls
<code>share modes</code>	Deprecated	
<code>winbind reconnect delay</code>	New	30

The samba source component has been refactored to generate a `libsmbclient` package. The `libsmbclient` is included into both `samba` and `samba3x` packages to provide client interfaces to other components in the environment.

**重要**

All previous samba3x Technology Preview packages must be removed before installing the supported version of Samba3x.

**gPXE**

Red Hat Enterprise Linux 5.5 introduces the new gPXE package, an open source Preboot eXecution Environment (PXE) implementation. gPXE provides the ability to boot installation images via a network connection.



## A. 改訂履歴

<b>改訂 0-45.1.33.402</b> Rebuild with Publican 4.0.0	<b>Fri Oct 25 2013</b>	<b>Rüdiger Landmann</b>
<b>改訂 0-45.1.33</b> Rebuild for Publican 3.0	<b>2012-07-22</b>	<b>Anthony Towns</b>
<b>改訂 0-0</b> Publican を使用した文書の初期作成	<b>Tue Nov 24 2009</b>	<b>Ryan Lerch</b>