

Red Hat Linux 7.1 Release Notes

Red Hat, Inc.

1. Introduction

This document describes features that are new to Red Hat Linux 7.1, but may not have been available prior to our documentation being finalized. For the very latest information, please read the RELEASE-NOTES file on the Red Hat Linux CD #1.

2. Last Minute Changes

1. The Oracle installation program (versions 8.1.7, 8.1.6, and possibly others) does not work properly with glibc 2.2 and above. The problem is that it is linking object files compiled against different glibc (binary compatibility is ensured only for linked executables and shared libraries through symbol versioning). You may work around this by installing the Red Hat Linux 6.2 compatibility packages (compat-egcs, compat-glibc and compat-libs) and issuing the following commands before running the Oracle installation program:

```
export LD_ASSUME_KERNEL=2.2.5
. /usr/i386-glibc21-linux/bin/i386-glibc21-linux-env.sh
```

The second line exports environment variables which will cause gcc and ld to look for glibc 2.1.3 compatibility headers and libraries.

2. Reminder regarding NFS, FTP, or HTTP installations — Because the Red Hat Linux 7.1 installation program is capable of installing Red Hat Linux from multiple CD-ROMs, if you intend to support NFS, FTP, or HTTP installations it is

no longer possible to simply mount a single Red Hat Linux CD-ROM, and install from it.

Instead, you must copy the `RedHat` directory from each CD-ROM comprising Red Hat Linux 7.1 onto a disk drive:

```
Insert CD 1
mount /dev/cdrom /mnt/cdrom
cp -var /mnt/cdrom/RedHat /location/of/disk/space
umount /mnt/cdrom
```

```
Insert CD 2
mount /dev/cdrom /mnt/cdrom
cp -var /mnt/cdrom/RedHat /location/of/disk/space
umount /mnt/cdrom
```

You must then make `/location/of/disk/space` accessible to the installation program (for example, exporting it for NFS installations):

```
Export /location/of/disk/space
```

3. Installation-Related Enhancements and Changes

The Red Hat Linux 7.1 installation program includes a number of new features. For more information, please refer to the *Official Red Hat Linux Installation Guide*.

1. **Swap-related issues** — The 2.4 kernel is more aggressive than the 2.2 kernel in its use of swap space. However, as with previous versions of the kernel, the optimal sizing of swap space remains dependent on the following:
 - a. The amount of RAM installed
 - b. The amount of disk space available for swap
 - c. The applications being run

- d. The mix of applications that are run concurrently

No rule-of-thumb can possibly take all these data points into account. However, we recommend the following swap sizes:

- a. Single-user systems with less than 128MB physical RAM: 256MB
- b. Single-user systems and low-end servers with more than 128MB physical RAM: two times physical RAM (2xRAM)
- c. Dedicated servers with more than 512MB physical RAM: highly dependent on environment (must be determined on a case-by-case basis)

While it is certainly possible for systems with specific configurations and application loads to run with less (or even no) swap space, these guidelines attempt to ensure that you will not run out of swap. The old saying certainly applies to swap space:

"It's better to have it and not need it, than to need it and not have it."

2. **Swap-related issues specific to upgrades** — If you are performing a fresh Red Hat Linux 7.1 installation, the sizing of swap partitions is a relatively-straightforward process. However, if you have an older Red Hat Linux system that you wish to upgrade to Red Hat Linux 7.1, please keep in mind that the size of the swap partition(s) you had previously created may no longer be sufficient.

The Red Hat Linux 7.1 installation program now examines the available swap space. If insufficient swap space exists, it will configure additional swap space in the form of a swap file. The installation program will do this by asking you to select a partition on which to create a swap file. You will also be asked for the desired size of the new swap file.

Note: In no instance will the Red Hat Linux 7.1 installation program create a swap partition or file larger than 2GB. Should your swap requirements exceed this size, you will need to address this after the installation has completed.

3. **XFree86 4.0.3** — The Red Hat Linux 7.1 installation program includes improved test screens and better detection of video memory, doing more than ever to help you get everything correct with a minimum of fuss.
4. **Firewall Configuration** — For added security, you can now configure a firewall as part of your system installation. You can choose from two levels of security, as well as choosing which common system services should be allowed or disallowed by default.

Please note that both **medium** and **high** firewall settings will cause RPC-based services (such as NIS or NFS) to be blocked, and thus fail.

5. **Hard Drive Installation** - ISO images are now required for hard drive installations, making it no longer necessary to copy and install the entire tree. Instead, simply put the required ISO images in a directory. During the hard drive installation, point the Red Hat Linux installation program at that directory. In addition, since Red Hat publishes MD5 checksums for all ISO images, it is now possible to ensure that you are using officially-released software by running the md5sum program against your ISO images, and comparing the checksums against the ones published by Red Hat.
6. **Language Selection** — Language selection has been significantly re-vamped. It is now possible to install in one language, but specify that the system, after installation, will operate in another language.
7. **Laptop Installation Class** — A new *Laptop* installation class is available, which enables PCMCIA support by default. It should be detected automatically if your computer has a supported PCMCIA controller.
8. **LBA32 Support** — There is now support for the LBA32 option in LILO. This makes it possible to boot from partitions partially or completely above cylinder 1024 (which had been a historical limitation). Note, however, that we have found that not all motherboards support this option, even when the BIOS claims support is available. Therefore, this option is disabled by default. Note also that this option is available **ONLY** when a partition has been created using fdisk, and that partition is then chosen as the `/boot` or `/` partition. The fdisk restriction is necessary as it is not possible to create a bootable partition above cylinder 1024 using Disk Druid.
9. **Disk Druid Improvements** — Disk Druid now detects partition table

inconsistencies, such as partitions that do not end on cylinder boundaries. This can be caused if the geometry of a hard disk drive is detected differently than when the drive was originally partitioned. In these cases, we recommend that you use the `fdisk` program to more closely inspect these inconsistencies, or choose to skip the drive entirely.

10. **Graphical Kickstart Configuration** — Red Hat Linux 7.1 now provides a graphical interface for creating kickstart configurations, allowing custom, unattended installations to be created with greater ease than ever before.
11. **Improved Rescue Mode** — Rescue mode now attempts to mount the filesystems listed in `/etc/fstab` (assuming the root filesystem can be found). The filesystems are mounted under `/mnt/sysimage`. This eliminates a very confusing step for users using rescue-mode for the first time.
12. **New Authentication Configuration Security Option** — Authentication configuration now includes the ability to use Transport Layer Security (TLS) when performing lookups. TLS allows LDAP clients to use an encrypted connection when performing authentication.
13. **Miscellaneous Installation Program Improvements** — Overall, there are many additional tests and checks performed to catch potential problems which previously caused tracebacks (installation program crashes). This should reduce the number of poor out-of-box experiences for newer users.

4. System-Related Enhancements and Changes

There are many features new to Red Hat Linux 7.1 that are not part of the installation process. Some new features are server-oriented programs, while others are new applications or desktop environment changes. This list will provide a bit more information about what to expect from Red Hat Linux 7.1 once you are actually using the OS.

1. **Upgraded Core System Components** — The following major system

components have been upgraded in Red Hat Linux 7.1:

- a. kernel 2.4.x (with additional fixes)
 - b. glibc 2.2.2
 - c. KDE 2.1.1
 - d. XFree86 4.0.3 with the Xft anti-aliased font render extension
 - e. GCC 2.96-RH, with many new fixes since the original 7.0 release
2. **Improved USB Support** — The 2.4 kernel gives Red Hat Linux 7.1 more mature USB support than previous versions of Red Hat Linux. It contains more drivers, and includes support for storage devices such as CD-ROMs. It also supports *hot-pluggable* or removable devices — if a supported device is plugged in after booting, the necessary drivers will load automatically.
3. **Removable media drives automatically added to `/etc/fstab`** — Red Hat Linux 7.1 now includes the ability for users to mount and unmount removable media drives. This is done by the `updfstab` program (which is part of the `kudzu` boot-time hardware configurator). It adds and removes the necessary entries in `/etc/fstab`. Note that each entry managed by `updfstab` contains the new `kudzu` option — this acts as a token indicating that the entry may subsequently be removed; if you wish to permanently add such an entry to your `fstab`, simply remove the `kudzu` option.

Hot-pluggable devices are handled through a combination of `cardmgr`, `hotplug`, `updfstab`, and `pam_console_apply`. When the kernel notifies `hotplug` or `cardmgr` that a new storage device has been attached to the system, `updfstab` is run to add the new entries to the `fstab`. Then, `updfstab` runs `pam_console_apply`, which uses the rules specified in `/etc/security/console.perms` to give the current console user access to the device.

GNOME users who run `magicdev` will see device icons appear on their desktop automatically. `magicdev` regularly checks the timestamp of `/etc/fstab`, and directs `gmc` to rescan devices when the `fstab` has changed. If you do not run

magicdev, the **Rescan Devices** option on the root gmc menu (which appears when you right-click on the desktop) performs an equivalent function.

KDE users will see similar functionality.

4. **New and Updated Drivers** — Many drivers are new to Red Hat Linux 7.1, or have been upgraded as a result of switching to a 2.4-based kernel. Changes include:
 - a. Updated Adaptec AIC7XXX SCSI driver
 - b. IEEE1394 (FireWire(tm)) subsystem
 - c. Adaptec starfire quad ethernet
 - d. Aironet 802.11 WiFi ethernet
 - e. National Semiconductor DP83810 ethernet
 - f. ATM subsystem and various ATM drivers
 - g. DECnet subsystem
 - h. Cyclom 2X, DEFEA, and DEFPA FDDI
 - i. IPv6 support
 - j. NFS version 3
 - k. iptables, an improved firewall layer
 - l. Maestro3 sound
 - m. Broadcom BCM5700 PCI-X 10/100/1000BASE-T controller
 - n. IDE UltraDMA/66 and UltraDMA/100 controller support

5. **3D acceleration under XFree86 4.0.3** — A wide variety of 3DFX cards have been added to the list of cards supporting accelerated 3D graphics. In addition, Intel i810, Matrox G200, G400, G450 (NOTE: dual-head operation on the G450 is unsupported), and ATI Rage 128 based cards also support accelerated 3D graphics. Please note that 3D acceleration on ATI Radeon cards is not yet supported by XFree86 4.0.3.

6. New Apache Configuration Tool — `apacheconf`:
 - a. Helps manage virtual hosts in an intelligent fashion
 - b. Configured via the Alchemist Data Library
7. New BIND Configuration Tool — `bindconf`:
 - a. Makes DNS configuration easier
 - b. Configured via the Alchemist Data Library
8. New Printing Configuration Tool — `printconf`:
 - a. Filters are based on David Parson's `magicfilter`, the `foomatic` system, and the Linux Printing Database (<http://linuxprinting.org>).
 - b. Supports over 500 printers
 - c. Upgrades old systems configured with `printtool`
 - d. Configured via the Alchemist Data Library
9. Improvements to Red Hat Network, Software Manager service announced — Red Hat Network, and its client program Update Agent, have been extended for this release of Red Hat Linux. In addition, a new service — Software Manager — has been announced. This technology includes the following enhancements over the previous release:
 - a. Update Agent now fully supports command-line operation.
 - b. Text-mode configuration utility is included.
 - c. Usage of the GUI mode can be disabled by specifying the `—nox` command line option.
 - d. More intelligent resolution of complex chains of package inter-dependencies.
 - e. `—whatprovides` and `—solvedeps` command line options allow querying of the Red Hat Network database to visually report package dependencies.
 - f. `—packagedir` command line option allows a list of directories to be specified. These directories will be searched for packages when satisfying dependencies.

- g. Kernel upgrades can now be processed by Update Agent.
10. **Emacs/XEmacs `site-start.d` Directories** — Emacs/XEmacs each support a `site-start.d` directory. Packages can now place emacs `.el` startup files in the appropriate directory, and they will be loaded when the editor starts. This eliminates the need to edit the `site-start.el` file directly. The directories are:
 - a. `/usr/share/emacs/site-lisp/site-start.d`
 - b. `/usr/lib/xemacs/xemacs-packages/lisp/site-start.d`
 11. **New ADSL/ISDN Configuration Tool** — `internet-config` is a replacement for `adsl-config` and `isdn-config`. It guides new users through setting up networking for these popular connection methods.
 12. **PostgreSQL Upgrade-Related Notes** — If you are upgrading from Red Hat Linux 6.2 or earlier, your existing databases must undergo a dump and restore cycle. The best way to do this is to use `pg_dumpall(1)` *BEFORE* upgrading to Red Hat Linux 7.1. After the upgrade, please see the `README.rpm` file in `/usr/share/doc/postgresql*/.`

Note: Upgrading keeps the old binaries around (along with a helper script) after the upgrade, but doing the dump before the upgrade and restoring afterwards (after removing the old database) is highly recommended.
 13. **OpenLDAP Upgrade-Related Notes** — The on-disk storage format used by `slapd`, the standalone OpenLDAP server binary, has changed. Users upgrading LDAP servers from previous releases of Red Hat Linux will need to dump their directories to LDIF files using `ldbmcat -n` and re-import them into the new format using `slapadd`.
 14. **IMAP server changes** — The IMAP server now defaults to using its built-in SSL support instead of `stunnel`'s tunneling support. Accordingly, the name of the certificate file used by `imapd` has changed from `stunnel.pem` to `imapd.pem`. Users upgrading from previous releases of Red Hat Linux will need to rename, copy, or create a symbolic link to their existing certificate.

15. **Sendmail** — By default, sendmail does not accept network connections from any host other than the local computer. If you want to configure sendmail as a server for other clients, please edit `/etc/mail/sendmail.mc` and change **DAEMON_OPTIONS** to also listen on network devices, or comment out this option all together. You will need to regenerate `/etc/sendmail.cf` by running:

```
m4 /etc/mail/sendmail.mc > /etc/sendmail.cf
```

Note: You must have the sendmail-cf package installed for this to work.

16. Other package highlights:

- a. Ogg Vorbis audio encoder/decoder
- b. Mozilla Web browser
- c. LSB-compliant SGML and XML packages
- d. KDE 2.1 and KOffice
- e. BIND 9.x with DNSsec support and remote named control
- f. SSL support in links, slrn, OpenLDAP, and pine
- g. Pine 4.33
- h. Quanta HTML editor (on Powertools)
- i. Postfix and exim (on Powertools) include SSL/TLS support
- j. WINE (on Powertools) can directly execute Windows .exe binaries from Linux

17. **Deprecated Packages** — the following packages are deprecated, and could disappear in a future release:

- a. AfterStep
- b. Netscape 4.x
- c. Qt 1.x
- d. KDE v1 compatibility libraries / build environment

- e. elm
- f. linuxconf
- g. ncpfs
- h. mars_nwe

5. Known Issues / Trouble Spots:

1. PCMCIA support has changed greatly since Red Hat Linux 7; if you customized PCMCIA support under prior versions of Red Hat Linux, you should review your changes.
2. Some Java JVMs (both from Sun and IBM) don't work with the new floating stack feature of the i686 version of glibc. The failures are due to programming assumptions in the JVMs that are now invalid. JVM vendors are working on making the necessary corrections. Until corrected JVM packages are available, you may force glibc to use the deprecated stack model by setting the following environment variable:

```
LD_ASSUME_KERNEL=2.2.5
```

6. Documentation-Related Enhancements and Changes

1. Additional documentation regarding the `/etc/sysconfig/vncservers` file — Due to time constraints, the following information was not available prior to the *Official Red Hat Linux Reference Guide's* print date.

The `/etc/sysconfig/vncservers` file configures how the *Virtual Network Computing* (VNC) server starts up. VNC is a remote display system which allows

you to view a desktop environment not only on the machine where it is running but across different networks (from a LAN to the Internet) and using a wide variety of machine architectures.

It may contain the following:

VNCSERVERS=<value>, where <value> is set to something like 1:fred, to indicate that a VNC server should be started for user fred on display :1. User fred must have set a VNC password using vncpasswd before attempting to connect to the remote VNC server.

Note that when you use a VNC server, your communication with it is unencrypted, and so it should not be used on an untrusted network. For specific instructions concerning the use of SSH to secure the VNC communication, please read the information found at <http://www.uk.research.att.com/vnc/sshvnc.html>. To find out more about SSH, please refer to the *Official Red Hat Linux Reference and Customization Guides*.

