

# Red Hat Linux 8.0 Release Notes

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# 1. Anaconda/Installation Program Notes

## 1.1. Miscellaneous

- The installer has a built-in ability to test the integrity of the install media. It works with the CD, DVD, hard drive ISO, and NFS ISO installation methods. It is recommended to test all install media before installation and before reporting any installation issues. To use this test, type `linux mediacheck` at the `boot:` prompt.
- If you have a problem with installation, test your install media before reporting a bug. A significant number of the issues reported are from badly burned CDs. Also, when entering an installation bug, select the `anaconda` component.
- A new installation type called **Personal Desktop** is available, which installs pre-selected software for home or small-office use. It is possible later in the installation process to modify the software selection if you need a package that is not included in the **Personal Desktop** installation type by default.

The **Workstation** installation type has been redesigned for users who are interested in software development or system administration.

- The graphical installation program has a new package group selection screen that eases the process of customizing the software installed. If you choose a **Server** or **Custom** installation type, the package group selection screen will be displayed by default. If you choose a **Personal Desktop** or **Workstation** installation type, the installation program allows you to either customize packages with the package group selection screen or continue with the default package configuration.
- The installation program no longer uses the frame buffer X server for graphical installation. First, it attempts to use a native server compatible with the system's video chipset; failing that, it attempts to use the generic `vesa` driver.
- `isolinux` is now used for booting the CD. If you have problems booting from the CD, you can write the `images/boot.img` image to a diskette according to the directions in the *Official Red Hat Linux Installation Guide*.

If you want to make your own CD to boot the installation program, copy the `isolinux` directory from the first CD into a temporary directory (`cp -r /path/to/tree/isolinux/ /path/to/cdimage`) and then run the following command:

```
mkisofs -o /path/to/file.iso -b isolinux/isolinux.bin -c  
isolinux/boot.cat -no-emul-boot -boot-load-size 4 -boot-info-table -R -J  
-V -T /path/to/cdimage
```

- It is now possible to specify the boot order of your drives. To access this function, choose to configure advanced boot loader options from the graphical installation program.
- The components file `comps` has been replaced by an XML-based file `comps.xml`. The new format allows greater customization; however, if you have modified `comps` in the past, you must convert it to the new XML-based format.
- It is now possible to perform a network installation after booting from the CD. Type `linux askmethod` at the `boot:` prompt to be prompted for the install source when booting from CD.
- The installation program automatically configures a USB mouse in the X configuration file that it writes out, even if a USB mouse is not present at installation time; so, whenever a USB mouse is inserted, it will be functional.
- It is now possible to install from an IEEE-1394 (FireWire™) CD-ROM device. It requires being able to boot from the CD-ROM device. Installing to a IEEE-1394 hard drive is not supported.

- The `mkbootdisk` utility now supports creating a bootable ISO-9660 image. This is useful if the boot image is too large to fit on a floppy (for example, if LVM is used). The command line syntax for this option is:

```
mkbootdisk --iso --device <output-iso-name> <kernel-version>
```

where `<output-iso-name>` is the name of the output ISO-9660 image, and `<kernel-version>` is the version of the kernel.

- For more information on installation program updates or other installation-related information, refer to <http://rhlinux.redhat.com/anaconda/>.

## 1.2. Partitioning

- There is now an option in **Disk Druid** to help create large RAID arrays consisting of drives which are identically partitioned. The Clone Tool allows you to select a source drive and copy its partitioning layout onto an arbitrary number of other drives in the system.

NOTE: ALL DATA on the target drives will be DESTROYED!

The Clone Tool can be accessed by clicking on the **RAID** button. At least one unallocated software RAID partition must exist before the option will be available.

The source drive must meet the following criteria:

- It can only contain software RAID partitions

All the partitions must be constrained to the source drive (this can be set in the **Allowed Drives** checklist box when you edit the individual partitions). Pre-existing partitions satisfy this constraint by nature.

- None of the software RAID partitions can be currently allocated to a RAID device.

Each of the target drives must meet these criteria:

- It must be as large as the sum of the starting sizes (before growing takes affect) of all the partitions on the source drive.
- It cannot contain partitions which are members of RAID device or a LVM Volume Group, as this would prevent the removal of all the partitions on the target drive.

This option is only available in the GUI installation program currently.

- It is now possible to remove all partitions on a drive by selecting the drive in the GUI tree view and clicking the **Delete** button. You will receive a warning if some of the partitions could not be removed (due to being members of a RAID device or a LVM Volume Group). Note that this option is only available in the GUI installation program currently.
- Logical Volume Management (LVM) configuration is now available during installation.

To configure LVM during installation:

- 1) Create a new partition of type **physical volume (LVM)**. A physical volume must be constrained to one drive, and you can create more than one physical volume.
- 2) Click the **LVM** button in **Disk Druid** to collect the physical volumes into volume groups. A volume group is basically a collection of physical volumes. You can have multiple volume groups, but a physical volume can only be in one volume group.
- 3) For each volume group you need to create logical volumes (LV) which are assigned mount points and file system types.

You may want to leave some free space in the volume group so that you can increase the size of the logical volumes within it after installation.

- The `/boot` partition cannot be in a logical volume. If the root (`/`) partition is a logical volume, you need to create a separate `/boot` partition, which is not a part of a volume group.
- You can create and edit volume groups in the graphical installation program. In text installation program, you can only assign mount points to existing logical volumes.

### 1.3. Kickstart

- There is kickstart support for using LVM. To use it, you need something similar to the following partitioning section in your kickstart configuration file:

```
part /boot --size 50
part swap --recommended
part pv.01 --size 3000
volgroup myvg pv.01
logvol / --vgname myvg --size=2000 --name=rootvol
```

More information is available in the *Official Red Hat Linux Customization Guide*.

- Two commands are available in the installation environment which can be useful for creating dynamic kickstart files. The `list-harddrives` command will list the available block devices by device name, with the size (in units of 1k) in the second column. This command enables the creation of a kickstart include file with partitioning commands based on the probed hardware.

The other command is `kudzu-probe`, which lists all the common types of hardware that are detected. This can be useful to adjust the behavior of a kickstart script through kickstart include files based on the detected hardware configuration.

## 2. Distribution General Notes

- Red Hat Linux now installs using UTF-8 (Unicode) locales by default in languages other than Chinese, Japanese, or Korean.

This has been known to cause various issues:

- Line drawing characters in applications such as `make menuconfig` do not always appear correctly in certain locales.
- On the console, the `latarcyrheb-sun16` font is used for best Unicode coverage. Due to the use of this font, bold colors are not available.
- Certain third party applications, such as the Adobe® **Acrobat Reader**®, may not function correctly (or crash upon startup) because they lack support for Unicode locales. Until third party developers provide such support in their products, you may work around this issue by setting the `LANG` environment variable at the shell prompt to `C` prior to typing the application name. For example:

```
env LANG=C acroread
```

- The **OpenOffice.org** office suite is now included.
- Due to patent licensing, and conflicts between such patent licenses and the licenses of application source code, MPEG-1/2 audio layer 3 (mp3) support has been removed from applications in Red Hat Linux such as **XMMS** and **noatun**. Red Hat suggests the use of Ogg Vorbis™, an open, non-proprietary, patent-and-royalty-free compressed audio format.
- `dhclient` (from the `dhcp` package) is now the default DHCP client.

- Red Hat Linux now uses Xft for fonts in GNOME and KDE, which uses `fontconfig` for configuring fonts. The old style Xft config file `/etc/X11/XftConfig` is no longer used or supported, having been replaced by the new unified `fontconfig` method of configuration. The `fontconfig` config file can be customized by editing `/etc/fonts/fonts.conf` file.

If you have fonts that you would like to add to your configuration, you can copy them to `~/fonts` (or `/usr/share/fonts`), and run `fc-cache directory`. The fonts will then be available.

- GNOME 2.0 is now included and contains the following improvements and features over previous versions:
  - User-configurable support for anti-aliased fonts
  - Fixes to address flickering application window issues
  - Images are composited onto backgrounds with full alpha blending
  - Usability improvements, including dragging application windows to other workspaces using the **Workspace Switcher** applet, support for scrolling in long menus, and more
  - New, streamlined help application
  - Rewritten terminal application supporting tabs and personal profiles
  - Considerable performance improvements, particularly in the **Nautilus** file manager
  - Control panels have been simplified considerably
  - Full keyboard navigation of the user interface
  - GNOME 2.0 uses Unicode natively, allowing users to create and manipulate documents in multiple languages
- The GNOME Display Manager is now the default login and session manager. If you are upgrading from Red Hat Linux 7.3 or earlier and want to continue using your configured display manager (such as KDM or XDM), then you must add the following line to your `/etc/sysconfig/desktop` file.

*For KDM:*

**DISPLAYMANAGER="KDE"**

*For XDM:*

**DISPLAYMANAGER="XDM"**

- Legacy XFree86 3.3.6 video hardware support has now been removed from the distribution and is no longer supported. XFree86 4.2.0 is now the only X server shipped with Red Hat Linux. Hardware which has previously defaulted to using XFree86 3.3.6, now defaults to the native XFree86 4.x driver for the given video chipset if XFree86 4.x has any native support for the given chip. If there is no native driver in 4.x for a particular video chip, or if the native driver does not work properly, then the "vesa" driver will be used by default which uses the VESA Video BIOS Extension support present in the card's own BIOS to provide minimal 2D video support. Hardware for which neither of the above will work properly, are configured to use the VGA driver.
- The XFree86 4.x configuration file is now `/etc/X11/XF86Config`, which replaces `/etc/X11/XF86Config-4` which was used in previous releases. The `XF86Config-4` file is a backward compatibility feature that XFree86.org added to XFree86 4.x in order to allow distribution vendors to be able to ship both 4.x and 3.3.6 and allow them to coexist even though the config file formats are different. We no longer need to use this compatibility feature now that XFree86 3.3.6 is no longer supported, so our configuration tools have been modified to now write out the XFree86 4.x config file as `XF86Config`, which is the default name XFree86 expects when not coexisting with 3.3.6. This also should simplify end user confusion problems that resulted from having two separate config files.
- The Mesa libGL and libGLU shared libraries previously included as part of the `XFree86-libs` package are now separated into two new sub-packages, `XFree86-Mesa-libGL` and `XFree86-`

`Mesa-libGLU`. This enhancement was made in order to make it easier for hardware vendors who ship their own libGL and/or libGLU to replace the Mesa ones supplied in Red Hat Linux. It also makes it easier for users to install third party video drivers which provide their own libGL/libGLU.

- The first time Red Hat Linux boots, the **Red Hat Linux Setup Agent** is started. It allows the user to setup common system configurations, including the date, time, and sound card. It also allows the user to register the system with Red Hat Network and run the **Red Hat Update Agent** to download any software updates. The user can also install software from additional CDs from the Red Hat Linux product such as the Documentation CD.
- The GNU Compiler Collection (GCC) has been updated to version 3.2 and features the following improvements and features:
  - Block reordering using branch prediction
  - Profile-driven optimizations
  - Further ISO C99 and ISO C++98 feature additions
  - Tree inlining of the C front end for further optimization during compilation
  - Improvements in AMD Athlon™ CPU and Intel IA-32 code generation performance
  - the preprocessor is 10-50% faster than the GCC 3.0 preprocessor
  - Dwarf-2 (which includes Dwarf-3 extensions) has replaced Stabs as the default debugging format for most ELF platforms
  - Support for debug information for macros has been added

Note that because of significant ABI fixes, the C++ compiler included in GCC 3.2 produces code that is not binary compatible with previous versions of GCC, including versions 3.1.x and 2.96. Additionally, there are ABI fixes for the C compiler related to long long bitfields and where `__attribute__((aligned (xxx)))` type definitions used as base type bitfields work differently than using `__attribute__((aligned (xxx)))` directly on the bitfield.

Note also that binary compatibility is not guaranteed for future C++ compiler releases, as the need for standards compliant compilers may result in changes to the ABI.

- The GNU Compiler for the Java™ Programming Language (GCJ) has been updated to version 3.2 and includes the following improvements and features over previous releases:
  - Overall improvement in compiler performance and compatibility as well as parallel make support
  - Support for RMI, `java.lang.ref.*`, `javax.naming`, and `javax.transaction`
  - Property files and other system resources can be compiled into executables which use `libgcj` using the new `gcj --resource` feature
  - Support for built-in functions for known methods, such as `Math.cos`
  - JNI and JNI invocation interfaces are now implemented, so `gcj`-compiled Java code can now be called from a C/C++ application
  - Automatic removal of redundant array-store checks in some common cases
  - The `--no-store-checks` optimization method is now available. This can be used to omit runtime store checks for code that is known not to give `ArrayStoreException`
  - The `org.w3c.dom` and `org.xml.sax` third-party interface standards have been added
  - `java.security` has been merged with GNU Classpath. The new package is now JDK 1.2 compliant, and is much more complete
  - `java.lang.Character` has been rewritten to comply with the Unicode 3.0 standard as well as improve performance
  - Support for several additional locales have been added to `libgcj`
  - Socket timeouts have been implemented

- libgcj has been merged into a single shared library. There are no longer separate shared libraries for garbage collector and zlib
- libgcj includes support for hash synchronization (thin locks), a special allocation path for finalizer-free objects, Thread-local allocation, Parallel GC, and other GC modifications
- The GNU debugger (gdb) has been updated to version 5.2.1 and includes the following major improvements and features over previous releases:
  - multiple bug fixes
  - improved C++ debugging support
  - A new command has been implemented called `generate-core-file` (or `gcore`), which allows the user to drop a core file of the child process state at any time
  - The following command-line option is now available: `--pid` or `-p` followed by a process id
  - There is a subtle change in behavior in the way that GDB handles command line arguments. The first non-flag argument is always a program to debug, but the second non-flag argument may either be a corefile or a process id. Previously, GDB would attempt to open the second argument as a corefile, and if that failed, would issue a superfluous error message and then attempt to attach it as a process.

Now, if the second argument begins with a non-digit, it will be treated as a corefile. If it begins with a digit, GDB will attempt to attach it as a process, and if no such process is found, will then attempt to open it as a corefile
- The GNU C Library (glibc) has been updated to version 2.3 code base and includes the following major improvements and features over previous releases:
  - new locale model
  - performance tuned malloc
  - locale archives
  - rewritten standard conformant regex for performance increase
  - additional robustness in addressing multiple bugs
- The GNU C++ Library (libstdc++) has been updated and includes the following improvements and features over previous releases:
  - Additional C99 support
  - Bug fixes
  - I/O performance tuning
  - `stdio_filebuf` that takes `fd`, `FILE`
  - `__cxa_demangle` is now defined in `cxxabi.h` for C++ demangling
  - Wide-io support
  - Tuning for executable size and memory allocation
  - Support for symbol versioning for exported symbols and include files
  - Doxygen documentation has been extended, including man pages
  - `basic_string` optimizations and MT fixes
  - Full named locale support for all facets, choice of `gnu`, `ieee_1003.1-200x` (POSIX 2), or generic models
- The GNU binutils has been updated to 2.13 and includes the following improvements and features over previous releases:
  - `size`: Add `--totals` to display summary of sizes (Berkeley format only)

- readelf: Add --wide option to not break section header or segment listing lines to fit into 80 columns
- strings: Add --encoding to display wide character strings
- objcopy: Add --rename-section to change section names
- readelf: Support added for DWARF 2.1 extensions. Support added for displaying the contents of .debug.machinfo sections
- New command line switches added to objcopy to allow symbols to be kept as global symbols, and also to specify files containing lists of such symbols
- New command line switch to objcopy --alt-machine-code which creates a binary with an alternate machine code if one is defined in the architecture description. Only supported for ELF targets
- New command line switch to objcopy -B (or --binary-architecture) which sets the architecture of the output file to the given argument. This option only makes sense, if the input target is binary. Otherwise it is ignored
- Experimental prelink support is included

Prelink is a utility that modifies ELF shared libraries and executables. This results in no symbol lookups at startup time and fewer relocations to be applied, which allows programs to start faster and occupy less memory.

To prelink all binaries and libraries in directories specified in the prelink configuration file run the following command as root:

```
/usr/sbin/prelink --all --conserve-memory
```

To revert binaries and libraries into the original state run:

```
/usr/sbin/prelink --undo -all
```

When libraries are upgraded on prelinked a system, programs using those libraries won't be able to use the prelinking until prelink is run again (so they will start up at the same speed as they do without prelinking).

- The system-wide Linux profiler (oprofile) has been added. Oprofile allows for the profiling of code transparently in the background, using the hardware performance counters of modern processors. The version of oprofile included in Red Hat Linux includes the following major improvements and features over previous oprofile releases:
  - Reworked to support the kernel included in Red Hat Linux 8.0
  - Option to exclude symbols in the op\_time listing
  - oprofpp has a new reverse sort (-r) option
  - oprofpp -s is now much faster, and the percentages are now relative to the selected symbol
  - The System.map file is no longer required

Note: The kernel's oprofile interface is still changing. Red Hat expects that future versions of the kernel may require new versions of the oprofile package in order to use the oprofile feature. If you use the oprofile interface for other code, expect the interface to change in errata releases of the kernel for Red Hat Linux 8.0, as well as in future releases of Red Hat Linux.

- Perl has been updated to version 5.8, and includes the following new features and improvements over 5.6.x as shipped with Red Hat Linux 7.3:
  - Threading and multiple interpreters
  - Full Unicode/UTF-8 support
  - Large file support

Note that though source compatibility with previous versions of Perl has been preserved in this release, any binary modules will need to be recompiled.

- The Apache HTTP server has been updated to version 2.0. The updated package replaces version 1.3 and has been renamed to `httpd`.
  - The `auth_ldap`, `mod_put`, `mod_roaming`, `mod_auth_any`, `mod_bandwidth`, `mod_throttle`, and `mod_dav` modules have been removed.
  - WebDAV functionality is now included with the `httpd` package.
  - Some changes to existing configuration files are needed. Refer to the migration guide at `/usr/share/doc/httpd-<ver>/migration.html` for more details.
- The main `sendmail` configuration file has moved from `/etc/sendmail.cf` to `/etc/mail/sendmail.cf`.
- The Sendmail mail transport agent (MTA) has been updated to version 8.12 and is no longer `setuid` root. Because of this, the mail queuing functionality needs to be able to connect to the mail server running on the local machine. Hence, `DAEMON=no` in `/etc/sysconfig/sendmail` is now ignored.
- By default, the Sendmail mail transport agent (MTA) 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/mail/sendmail.cf` by running:

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

Note that you must have the `sendmail-cf` package installed for this to work.

- By default, the LPRng print spooler does not accept network connections from any host other than the local computer. If you want to configure LPRng as a server for other clients, edit `/etc/lpd.perms`.

For more information and configuration examples, refer to the `lpd.perms` manual page accessible by typing `man lpd.perms` at a shell prompt.

- There are observed issues upgrading Red Hat Linux 6.x, 7.0, 7.1, 7.2, 7.3 and 8.0 systems running Ximian GNOME. The issue is caused by version overlap between the official Red Hat Linux RPMs and the Ximian RPMs. This configuration is not supported by Red Hat. You have several choices in resolving this issue:

1) You may remove Ximian GNOME from your Red Hat Linux system prior to upgrading Red Hat Linux.

2) You may upgrade Red Hat Linux, and then immediately reinstall Ximian GNOME.

3) You may upgrade Red Hat Linux, and then immediately remove all remaining Ximian RPMs, and replace them with the corresponding Red Hat Linux RPMs.

You *must* resolve the version overlap using one of the above choices. Failure to do so will result in an unstable GNOME configuration.

- The **Netscape**<sup>TM</sup> Web browser has been removed.
- The **Mozilla** Web browser has been updated to version 1.01 and features improvements in speed, stability, and standards compliance.
- The `semi` package, which provides MIME features for **Emacs** mail client access, has been merged into the `wl` (**Wanderlust**) package, since there are no other packages which require the `semi` library. **Wanderlust** is an IMAP4, POP, and NNTP client for **Emacs**.
- The RPM Package Manager (RPM) functionality has been separated into two packages with distinct functionalities. The `rpm` package is for installing, querying, verifying and removing RPM packages from your Red Hat Linux system; the `rpm-build` package is for building and creating RPM packages for your Red Hat Linux system. Refer to the manual pages for both `rpm` and `rpm-`

build by typing `man rpm` and `man rpmbuild` at a shell prompt for more information about these commands.

- RPM verifies digital signatures when reading packages during installation. In order to verify signatures for packages after installation, the package's public key must be imported into the rpm database. For example, to import the Red Hat public key, type the following as root at a shell prompt:

```
rpm --import /usr/share/doc/rpm-<version>/RPM-GPG-KEY
```

Note that this key will be imported the first time `up2date` is run.

After importing the public key, you can verify package digest and signature information using the following command:

```
rpm -K -V package_name
```

- RPM will also suggest package(s) that will satisfy unresolved dependencies if the `rpmdb-redhat` package is installed. For example, if you are attempting to upgrade the `gnumeric` without a necessary library, you will see the following message:

```
rpm -Uvh gnumeric-1.0.5-5.i386.rpm
error: Failed dependencies:
libbonobo-print.so.2 is needed by gnumeric-1.0.5-5
libbonobo.so.2 is needed by gnumeric-1.0.5-5
libbonobox.so.2 is needed by gnumeric-1.0.5-5
Suggested resolutions:
bonobo-1.0.20-3.i386.rpm
```

The above mechanism is equivalent to (and will replace) the existing `--redhatprovides` mechanism.

- GNU Ghostscript has been upgraded to version 7.05.
- By default, `top` and `ps` only display the main (initial) thread of thread-aware processes. To show all threads, use the command `ps -m` or type `[H]` in `top`.
- The `junkbuster` proxy filter package has been replaced by the `privoxy` package which can now filter animations, pop-ups, refresh tags, and *webbugs*.
- If you are upgrading from Red Hat Linux 7.2 or earlier and have an older version of PostgreSQL installed than PostgreSQL 7.2, you must dump your database to a file before upgrading. You can then restore the database after the upgrade. Information on dumping a database to a file can be found by typing `man pg_dumpall` at a shell prompt.
- Red Hat Linux 8.0 contains the following new configuration and system tools:

**Log Viewer** (`redhat-logviewer`)

**NFS Configuration Tool** (`redhat-config-nfs`)

**X Configuration Tool** (`redhat-config-xfree86`)

**Sound Card Configuration Tool** (`redhat-config-soundcard`)

**Language Selection Tool** (`redhat-config-language`)

**Keyboard Configuration Tool** (`redhat-config-keyboard`)

**Mouse Configuration Tool** (`redhat-config-mouse`)

**Root Password Tool** (`redhat-config-rootpassword`)

**Security Level Configuration Tool** (`redhat-config-securitylevel`)

**Package Management Tool** (`redhat-config-packages`)

- The following packages have been renamed:

apache, apache-devel, and apache-manual - renamed httpd, httpd-devel, and httpd-manual

apacheconf - renamed redhat-config-httpd

bindconf - renamed redhat-config-bind

dateconfig - renamed redhat-config-date

ksconfig - renamed redhat-config-kickstart

printconf - renamed redhat-config-printer

printconf-gui - renamed redhat-config-printer-gui

serviceconf - renamed redhat-config-services

sysctlconfig - renamed redhat-config-proc

- Some of the configuration tools use `pam_timestamp`, a module for implementing `sudo`-style authentication timestamps via PAM. The authentication function checks for the existence of the `timestamp` file. If the file exists and is less than five minutes old (the same default as `sudo`), authentication succeeds without prompting for the root password again.

If a program with `pam_timestamp` support is started from the **Main Menu** button or **Nautilus** and successfully authenticated, a key icon will appear in the panel notification area to show that an authenticated user has cached root authentication. When the authentication expires, the icon is removed.

### 3. Package Reorganization

The following packages have been replaced:

- `Xconfigurator` - replaced by `redhat-config-xfree86`
- `ucd-snmp` - replaced by `net-snmp`
- `ee` - replaced by `eog`
- `gtop` - replaced by `gnome-system-monitor`
- `console-tools` - replaced by `kbd`
- `junkbuster` - replaced by `privoxy`
- `python-xmlrpc` - now part of `python`
- `ncftp` - is still available to install, but `lftp` is now the default FTP client installed.

The following packages have been removed from this release of Red Hat Linux:

- `alien`
- `auth_ldap`
- `blt`
- `dip`
- `fvwm2`
- `elm`
- `extace`
- `glms`

- `gnomeicu`
- `gnome-pim`
- `gnorpm`
- `gphoto`
- `gq`
- `ical`
- `jikes`
- `kaffe`
- `kontrol-panel`
- `metamail`
- `micq`
- `mm`
- `mod_auth_any`
- `mod_bandwidth`
- `mod_dav`
- `mod_put`
- `mod_roaming`
- `mod_throttle`
- `netscape`
- `playmidi`
- `pump`
- `rpmfind`
- `rpmlint`
- `rxvt`
- `sliplogin`
- `smpeg`
- `smpeg-xmms`
- `snavigator`
- `taper`
- `xbill`
- `xdaliclock`
- `xlockmore`
- `xmailbox`
- `xpilot`

The following packages have been deprecated and will be removed in a future release of Red Hat Linux:

- `LPRng` (although it remains the default print spooler for this release)
- `lilo`

- `sndconfig`

## 4. Kernel Notes

The kernel used in this release contains the following improvements and new features: Adaptec U320 support, updated `aacraid` driver, `speakup` accessibility, `HZ=512` for `i686` and `Athlon`, and network console and crash dump. Also, there are several small improvements not listed here. The kernel is based on the 2.4.18 with selected bits from the 2.4.19 and the `-ac` patchset.

- The kernel included in Red Hat Linux 8.0 is compiled with GCC version 3.2. Testing has shown that it is not possible to use kernel modules compiled with older (GCC 2.96 or previous) GCC compilers with GCC 3.2 compiled kernels. The kernel includes workarounds for older GCC bugs that change the signatures of data structures. These restrictions are not in use when GCC 3.2 is used. All kernel modules included in Red Hat Linux 8.0 are compiled with GCC 3.2; however, when using third-party modules it is important to make sure that every module and its dependent objects, in their entirety, is compiled with GCC 3.2. The `modutils` programs `insmod` and `modprobe` have rudimentary checks for this and will prevent loading of modules in the case of compiler version mismatches; these modules can be forced to load via the `-f` parameter.
- `HZ=512` on `i686` and `Athlon` means that the system clock ticks 5 times as fast as on other x86 platforms (`i386` and `i586`); `HZ=100` has been the Linux default on x86 platforms for the entire history of the Linux kernel. This change provides better interactive response, lower latency response from some programs, and better response from the scheduler. We have adjusted the `/proc` file system to report numbers as if using the default `HZ=100`.
- The kernel now supports up to 256 `scsi` disks (the previous limit was 128).
- The latest `aacraid` driver now includes 64-bit support. It has been observed (on the newest version of `aacraid` hardware and firmware) to have much higher performance on systems with more than 4GB of system memory when using the `bigmem` kernel.
- The network console and crash dump functionality from Red Hat Linux Advanced Server 2.1 has been ported to this release. Documentation for setting this up is included in the `netdump` and `netdump-server` packages and is also available as a white paper at the following URL: <http://www.redhat.com/support/wpapers/redhat/netdump/index.html>
- The Red Hat Linux 8.0 kernel contains a preview release of a new client called `kafs` for the AFS distributed filesystem. This client is not yet fully featured and provides only read-only mode. The client is for testing purposes only and is not supported.
- DMA is disabled on CD-ROM drives in this release in a different but more reliable way than previously. If you are sure that your CD-ROM drive is capable of IDE DMA, place the following line in the `/etc/modules.conf` file:

```
options ide-cd dma=1
```

- *Special Note:* The ACL support added to the kernel in the first two public beta releases proved to be unstable and caused the kernel to regress in terms of standards compliance. Red Hat has therefore removed that ACL support from the kernel for Red Hat Linux 8.0. Kernel engineers will continue work on improving the ACL support, which will be available in a future release. The `attr` and `acl` packages needed to support ACLs are still included to make it easier for users and developers who wish to test ACLs. Red Hat may, at our discretion, provide ACL support for this release of Red Hat Linux by means of an upgrade, if future testing demonstrates that the ACL support has sufficiently improved in quality.