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Guide to linux configuration files

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This guide will show where various [linux](#) configuration files are located, shows howto configure them.

In many cases are global config files, and local config files.

- Global config files
 - Apply to all users
 - Usually located in /etc
- Local config files
 - Applies to a specific user
 - Stored in the users home dir, as ~/.example or ~/.config/example
 - AKA dot files

Locations of config files change name and location over time and different [Linux Distributions](#), so the files listed here may not match your Linux installation, but the are generally close.

For example

- bashrc may be located in /etc/bash/bashrc or /etc/bashrc
- kdmrc may be located in /usr/share/config/kdm/kdmrc, /usr/local/share/config/kdm/kdmrc, or /opt/kde/share/config/kdm/kdmrc

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/etc - the basics

- /etc/DIR_COLORS - colors use by the "ls" command
- /etc/X11/ - config files for X-Windows
- /etc/adjtime - correction factor for the RTC (do not edit)
- /etc/bash/ - config files for bash
- /etc/conf.d/ - config dir for Gentoo and other Distributions
- /etc/cron.d/
- /etc/cron.daily/ - scripts within are run daily by cron
- /etc/cron.deny - list of users for which cron is denied
- /etc/cron.allow - list of users for which cron is allowed
- /etc/cron.hourly/ - scripts within are run hourly by cron
- /etc/cron.monthly/ - scripts within are run monthly by cron
- /etc/cron.weekly/ - scripts within are run weekly by cron
- /etc/crontab - general config for cron
- /etc/cups/ - config dir for CUPS printer server
- /etc/dbus-1/ - dir for dbus config files
- /etc/default/ - dir for dbus config files like adduser
- /etc/dhcpd.conf
- /etc/dispatch-conf.conf
- /etc/e2fsck.conf - config for fsck for ext2 and ext3 filesystems
- /etc/env.d/ - dir for environment variables in Gentoo and other distributions
- /etc/environment - environment variables [1] (<https://help.ubuntu.com/community/EnvironmentVariables>)
- /etc/exports - file systems are exported to remote hosts [2] (http://www.centos.org/docs/5/html/Deployment_Guide-en-US/s1-nfs-server-config-exports.html)
- /etc/filesystems - defines the filesystems search order used by *mount -t auto*
- /etc/fonts/ - config dir for fontconfig
- /etc/fstab - mount points
- /etc/gconf/ - dir for Gnome based applications [3] (<http://projects.gnome.org/gconf/>)
- /etc/gpm/ - console mouse
- /etc/group - groups and the users within them
- /etc/group- - (do not edit)
- /etc/gshadow - Secure group account information
- /etc/gshadow- - (do not edit)
- /etc/host.conf - specifies how host names on a network are resolved [4] (http://www.linfo.org/etc_host_conf.html)
- /etc/hosts - associates IP addresses with hostnames
- /etc/init.d/ or /etc/rc.d/init.d/ - dir for init scripts
- /etc/inittab - describes which processes are started at bootup [5] (<http://netadmintools.com/html/5inittab.man.html>)
- /etc/inputrc - keyboard mapping for bash and most other shells
- /etc/issue - message displayed before console or ssh logins [6] (<http://www.linuxfromscratch.org/blfs/view/cvs/postlfs/logon.html>)
- /etc/kernel/ - dir for scripts such as post-installation of the Linux kernel
- /etc/ld.so.cache - (do not edit)
- /etc/ld.so.conf - library path
- /etc/ld.so.conf.d/ - dir for config files that include library paths
- /etc/local.d/ - scripts run by "local" init script



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to keep passwords in this file.

An entry in this file is of the form:

```
alice*:134:20:Alice Monkey:/home/alice/./bin/bash
```

It has seven sections which going from left to right are,

- (*alice*) The username.
- (*) The password in a hashed form. In modern systems a star indicates shadowing is in use and hence the password can be found in `/etc/shadow/`.
- (*134*) The unique id assigned to the user. Some unique ids have special purposes. For example, the user id `0` is used for the `root` user.
- (*20*) The group that the user is assigned to upon login.
- (*Alice Monkey*) The GCS field can be used for anything or left blank. Normally used for personal information about the user such as full name.
- (*/home/alice/*) The home directory of the user.
- (*/bin/bash*) The users default shell.

Groups: `/etc/group`

`/etc/group` stores the definitive list of the users groups and their members.

A typical entry is:

```
root::0:root,alice
```

It has four sections which going from left to right are,

- (*root*) The group name.
- () The group password in a hashed form. Normally not used.
- (*0*) The unique id assigned to the group. Group ids below `10` are reserved for system use. Some unixs such as HP-UX reserve other groups numbers as well.
- (*root,alice*) The list of users who are members of that group.

Boot Up Settings

- Boot file sequence in the order they are accessed or executed
 1. boot loader (grub/lilo)
 2. linux kernel
 3. `/etc/inittab`
 4. `/etc/rc.sysinit`
 1. init scripts
 5. Login or X windows
- `/etc/inittab` - runs different programs and processes on startup. This is typically the program which is responsible for, among other things, setting the default runlevel, running the `rc.sysinit` script contained in `/etc/rc.d`, setting up virtual login terminals, bringing down the system in an orderly fashion in response to `[Ctrl][Alt][Del]`, running the `rc` script in `/etc/rc.d`, and running `xdm`

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See: [Guide to linux boot sequence](#)

LILO

- /etc/lilo.conf - configuration file for lilo boot loader

Grub

- Grub (legacy)
 - /boot/grub/grub.conf
- Grub2
 - /boot/grub/grub.cfg - Menu information
 - /etc/default/grub - Basic configs
 - /etc/grub.d/ - scripts in this directory are read during execution of the update-grub command and their instructions are incorporated into /boot/grub/grub.cfg.
- References: [\[11\]](#) (<https://help.ubuntu.com/community/Grub2>)

Package Managers

portage

- /etc/make.conf
- /etc/make.profile
- /etc/portage/package.keywords
- /etc/portage/package.use
- /etc/portage/package.mask
- /etc/portage/package.unmask
- /etc/portage/package.accept_keywords
- /etc/portage/rsync_excludes
- /etc/portage/package.env
- /etc/portage/env/debug-flags
- /etc/portage/postsync.d/

Optional:

- /etc/dispatch-conf.conf - dispatch-conf

References: [\[12\]](#) (<http://www.gentoo.org/doc/en/handbook/handbook-x86.xml?part=3&chap=1>)

Paludis

- /etc/paludis/general.conf
- /etc/paludis/keywords.conf (Gentoo) or /etc/paludis/platforms.conf (Exherbo)
- /etc/paludis/use.conf (Gentoo) or /etc/paludis/options.conf (Exherbo)
- /etc/paludis/licenses.conf (Gentoo) or /etc/paludis/licences.conf (Exherbo)
- /etc/paludis/bashrc
- /etc/paludis/repositories/gentoo.conf (Gentoo)
- /etc/paludis/repositories/installed.conf
- /etc/paludis/repositories/paludis-overlay.conf
- /etc/paludis/repositories/layman.conf

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opkg

- `/etc/opkg.conf`

Reference : [21] (<http://wiki.openwrt.org/doc/techref/opkg>)

Smart Package Manager

`/etc/smart/`

Libraries

- Library Path
 - `/etc/ld.so.conf`

after editing, execute `'/sbin/ldconfig'` to refresh the library cache

Environment Variables

- Generally **environment variables** are set in the shell start up scripts
- [Guide to environment variables](#)
- [Howto set environment variables](#)

Networking

- `/etc/hosts` - contains a list of host names and absolute IP addresses.
- `/etc/hosts.allow` - hosts allowed (by the `tcpd` daemon) to access Internet services
- `/etc/hosts.deny` - hosts forbidden (by the `tcpd` daemon) to access Internet services
- `/etc/resolv.conf` - contains a list of domain name servers used by the local machine
- `/etc/hostname` - stores the name of the host computer

[Howto setup a network in linux](#)

Servers

Config file for various Linux daemons. Included is Apache, Lighttpd, OpenSSHd, Samba, ProFTPd, MySQL, PostgreSQL, OpenNTPD, vsftpd, WU-FTPd, DNS BIND, NSD pdnsd

See: [Guide to linux configuration files/Servers](#)

System

Setting System/Hardware Clock

- **Symbolic link** to timezone
 - `/etc/localtime`



- [Howto Set the computers clock in unix](#)
- [Howto set the computers timezone](#)

Hard/USB/floppy/CDROM/Network Drive Mounts

- `/etc/fstab` - Links devices to mount points
- [Howto edit fstab](#)

Locale

- `/etc/locale.gen`
- `~/.dmrc` - Gnome language encoding config

Reference: [22] (<https://www.cyberciti.biz/tips/gnome-language-encoding-different-than-console.html>)

locate/slocate/mlocate

- `/etc/updatedb.conf`

sudo

- `/etc/sudoers`

Kernel

- `/usr/src/linux/.config` - the kernel's config file that is used to compile

Kernel Modules

- `/etc/modules.conf`
- `/etc/modprobe.conf` or `/etc/modprobe.d/modprobe.conf`

Cron

- `/etc/crontab` - shell script to run different commands periodically (hourly, daily, weekly, monthly, etc.)
- `/etc/cron.deny` - deny user the ability run crontab
- `/etc/cron.d/`
- `/etc/cron.hourly/`
- `/etc/cron.daily/`
- `/etc/cron.weekly/`
- `/etc/cron.monthly/`

mdadm (RAID)

- `/etc/mdadm/mdadm.conf` or `/etc/mdadm.conf`

References: [23] (http://linuxconfig.org/Linux_Software_Raid_1_Setup)

mkinitcpio (RAM disk init)

`/etc/mkinitcpio.conf` `/etc/mkinitcpio.d/linux.preset`

References: [24] (<https://wiki.archlinux.org/index.php/Mkinitcpio>)

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• syslogd

• /etc/syslog.conf

References: [25] (<http://linux.die.net/man/5/syslog.conf>)

• syslog-ng

• /etc/syslog-ng/syslog-ng.conf

References: [26] (<http://linux.die.net/man/8/syslog-ng>)

ALSA

• /etc/asound.conf

• ~/.asoundrc

References: [27] (https://wiki.archlinux.org/index.php/Advanced_Linux_Sound_Architecture)

DBUS

• /etc/dbus-1/system.conf

• /etc/dbus-1/system.d/

• /etc/dbus-1/session.conf

• /etc/dbus-1/session.d/

References: [28] (<http://dbus.freedesktop.org/doc/dbus-daemon.1.html>)

udev

• /etc/udev/* - udev config files

• /etc/dev.d/* - programs invoked by udev

References: [29] (http://linuxcommand.org/man_pages/udev8.html)

logrotate

• /etc/logrotate.conf

• /etc/logrotate.d/

References: [30] (<http://www.yolinux.com/TUTORIALS/LinuxTutorialSysAdmin.html>)

AT

• /etc/at.deny

• /etc/at.allow

References: [31] (<http://www.yolinux.com/TUTORIALS/LinuxTutorialSysAdmin.html>)

PAM

• /etc/pam.conf - the configuration file

• /etc/pam.d - the Linux-PAM configuration directory.
Generally, if this directory is present, the /etc/pam.conf file is ignored.

References: [32] (<http://linux.die.net/man/8/pam>)

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See: [Guide to linux configuration files/Applications](#)

Shells

- `/etc/DIR_COLORS` - used to store colors for different file types when using `ls command`. The `dircolors` command uses this file when there is not a `.dir_colors` file in the user's home directory. Used in conjunction with the `eval` command (see below).
- `/etc/motd` - message of the day file, printed immediately after login. This is often overwritten by `/etc/rc.d/rc.S` (Slackware) or `/etc/rc.d/rc.local` (Mandrake/Red Hat) on startup. See the remarks in connection with `/etc/issue`.
- `/etc/issue` - pre-login message. This is often overwritten by the `/etc/rc.d/rc.S` script (in Slackware) or by the `/etc/rc.d/rc.local` script (in Mandrake and Red Hat, and perhaps other rpm-based distributions). The relevant lines should be commented out (or changed) in these scripts if a custom pre-login message is desired.

bash

- `/etc/bashrc`
- `/etc/profile`
- `/etc/bashrc`
- `/etc/bash/bashrc`
- `/etc/bash/bash_profile`
- `/etc/bash/bash_login`
- `/etc/bash/bash_logout`
- `~/.profile`
- **`/etc/profile`** contains the system default settings for users who login using the Bourne shell, `"/bin/sh"`. When these users login, the Bourne shell runs the commands in this file before giving the shell prompt to the user. Most of these commands are variable assignments which configure the behavior of the shell.
- `~/.bash_logout` - file executed by bash shell on logout
- `~/.bash_profile` - initialization of bash shell run only on login. Bash looks first for a `.bash_profile` file when started as a login shell or with the `-login` option. If it does not find `.bash_profile`, it looks for `.bash_login`. If it doesn't find that, it looks for `.profile`. System-wide functions and aliases go in `/etc/bashrc` and default **environment variables** go in `/etc/profile`.
- `~/.bashrc` - initialization command run when bash shell starts up as a non-login shell
- `/etc/inputrc`

Examples: http://dotfiles.org/.bash_profile

Examples: <http://dotfiles.org/.bashrc>

csh

- `profile.csh`
- `csh.login`
- `csh.envc`
- `sh.cshrc`
- `/etc/cshrc`
- `~/.login`
- `~/.cshrc`





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zshell (zsh)

- Order they are loaded: `/etc/zshenv` then `~/.zshenv`, if login shell `/etc/zprofile` then `~/.zprofile`, if interactive shell `/etc/zshrc` then `~/.zshrc`, If login shell, `/etc/zlogin` and `~/.zlogin`
- **/etc/profile** contains the system default settings for users who login using the Bourne shell, `"/bin/sh"`. When these users login, the Bourne shell runs the commands in this file before giving the shell prompt to the user. Most of these commands are variable assignments which configure the behavior of the shell.

Examples: <http://dotfiles.org/.zshrc>

Examples: <http://dotfiles.org/.zlogin>

tcsh

- `~/.login`
- `~/.tcshrc`
- `~/.logout`

ksh

- `~/.kshrc`
- `/etc/profile`
- `~/.profile`

sh

- `/etc/profile`
- `~/.profile`

X Windows

1. Starting X Windows

1. `/etc/X11/XF86Config` for XFree86,
`/etc/X11/xorg.conf` for **X.Org**
2. many different scripts depending on install
3. `~/.xinitrc`
 - Executed when running `startx`, should contain your window managers executable
4. `~/.Xdefaults`

- Howto configure XF86config

Look and Feel (User Interface)

Not all Windows managers follow these config files but many do.

- Default application for a mimetype (XGD spec)
 - `/usr/share/applications/defaults.list`
- `~/.local/share/applications/mimeapps.list`
- Application launcher, for menus and default apps

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Distribution Specific

Redhat

- Main Config files dir
 - /etc/sysconfig/
- Redhat 8-9
- Login Manager, add window manager
 - /etc/X11/xdm/Xsession
 - /usr/share/apps/switchdesk/Xclients.wmaker
 - /etc/X11/gdm/Sessions/wmaker

Suse

- Main Config files dir
 - /etc/sysconfig/

Fedora

- Main Config files dir
 - /etc/sysconfig/

References: [Fedora 12 - Chapter 17. The sysconfig Directory](http://docs.fedoraproject.org/en-US/Fedora/12/html/Deployment_Guide/ch-sysconfig.html)
(http://docs.fedoraproject.org/en-US/Fedora/12/html/Deployment_Guide/ch-sysconfig.html)

Gentoo

- Main Config files dir
 - /etc/conf.d/
 - /etc/env.d/
- Portage
 - /etc/portage/package.keywords
 - /etc/portage/package.unmask
 - /etc/portage/profile/package.provided
- Compileing
 - /etc/make.conf
 - /etc/make.profile/make.defaults
 - /etc/make.profile/packages
 - /etc/make.profile/parent
- /etc/profile.env
- /etc/env.d/*
 - /etc/env.d/10ldpath
 - /etc/env.d/05gcc
 - /etc/env.d/01hostname
 - /etc/env.d/00basic
- /etc/conf.d/*
 - /etc/conf.d/local.stop
 - /etc/conf.d/local.start

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the list

- `/etc/aliases` - file containing aliases used by sendmail and other MTAs (mail transport agents). After updating this file, it is necessary to run the `newaliases` utility for the changes to be passed to sendmail.
- `/etc/conf.modules` - aliases and options for configurable modules
- `/etc/exports` - specifies hosts to which file systems can be exported using NFS. Man exports contains information on how to set up this file for remote users.
- `/etc/inetd.conf` - configures the inetd daemon to tell it what TCP/IP services to provide (which daemons to load at boot time). A good start to securing a Linux box is to turn off these services unless they are necessary.
- `~/.login` - initialization file when user logs in
- `~/.logout` - commands run when user logs out
- `~/.wm_style` - gives choice of default window manager if one is not specified in startx
- `~/.xsession` - configuration file for xdm

`/etc/sysctl.conf` configures the behavior of the running Unix [kernel](#). During system boot, the scripts read this file and use "sysctl" to set the parameters shown in the file. Changing the file has no effect before the next reboot.

- `~/.htaccess`

Related guides

- [Guide to Linux status and log files](#)

References

- http://www.comptechdoc.org/os/linux/commands/linux_crspfiles.html
- <http://www.sabayonlinux.org/forum/viewtopic.php?f=54&t=10863>
- <http://www.ibm.com/developerworks/linux/library/l-config/index.html>
- <http://news.softpedia.com/news/Linux-configuration-files-and-what-they-do-34292.shtml>
- http://www.comptechdoc.org/os/linux/commands/linux_crspfiles.html
- http://www.science.uva.nl/ict/guides/login/index_en.html
- https://wiki.archlinux.org/index.php/Window_Manager#Window_managers
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