



Gentoo Linux Install Reference

1. Quick Install Reference

The installation ISOs are on the [Gentoo Mirrors](#). Detailed descriptions of the different CDs are available in the [Gentoo Store](#). CD 1 contains everything you need to install Gentoo Linux quickly and without a connection to the Internet. CD 2 is optional and contains pre-compiled packages such as KDE, GNOME, OpenOffice, Mozilla, Evolution and more.

Boot from the first Gentoo CD. Press <F1> and/or <F2> to see what boot options are available. Press <ENTER> at the bootscreen to continue with the default kernel. You'll eventually receive a prompt.

Code Listing 1.1: Beginning settings

```
# date (Make sure your time and date is correct. If wrong, set it with date MMDDhhmmCCYY )
# modprobe module_name (Optional - Load any necessary modules)
# net-setup eth0 (Configure the network)
# fdisk /dev/hda (Partition your drive)
```

The recommended setup is a 64 meg boot volume with ext2, a swap partition twice the size of your available RAM, and the rest for your root partition using ReiserFS.

Initialise your partitions using `mke2fs` (Ext2), `mke2fs -j` (Ext3), `mkreiserfs` (ReiserFS), `mkfs.xfs` (XFS), `mkfs.jfs` (JFS) and `mkswap` (swap partition). For instance: `mke2fs -j /dev/hda3`.

Continue by mounting the partitions and extracting the appropriate stage file.

Code Listing 1.2: Preparing the Installation

```
(Activate the swap partition) # swapon /dev/hdax
(Mount the root partition) # mount /dev/hdax /mnt/gentoo
(Create the boot mountpoint) # mkdir /mnt/gentoo/boot
(Mount the boot partition) # mount /dev/hdax /mnt/gentoo/boot
(Go to the mountpoint) # cd /mnt/gentoo
(Extract a stage tarball...) # tar -xvjpg /mnt/cdrom/stages/stage?-*tar.bz2
(or download the latest tarball...) # lynx http://www.gentoo.org/main/en/mirrors.xml
( ... and extract) # tar -xvjpg stage*
(Optional: unpack a portage tree) # tar -xvjpg /mnt/cdrom/snapshots/portage-*tar.bz2 -C /mnt/gentoo/us
(Optional: copy over distfiles) # cp -R /mnt/cdrom/distfiles /mnt/gentoo/usr/portage/distfiles
(Select a mirror) # mirrorselect -a -s4 -o >> /mnt/gentoo/etc/make.conf
(Copy over nameserver information) # cp /etc/resolv.conf /mnt/gentoo/etc/resolv.conf
(Mount the proc filesystem) # mount -t proc none /mnt/gentoo/proc
(Chroot into the new environment) # chroot /mnt/gentoo /bin/bash
(Load the necessary variables) # env-update; source /etc/profile
(Network-only, non-GRP: update Portage) # emerge sync
```

Now we install Gentoo:

Code Listing 1.3: Installing Gentoo

```
(Change USE, CFLAGS and CXXFLAGS. Stage1 can also change CHOST) # nano -w /etc/make.conf
(Stage1 only: bootstrap system) # cd /usr/portage; scripts/bootstrap.sh
(Stage1, Stage2 only: install base system) # emerge system
```

Next we set up the necessary information:

Code Listing 1.4: Setting up Configuration Files

```
(Set timezone information) # ln -sf /usr/share/zoneinfo/<path to time zone file> /etc/localtim
(Edit fstab file) # nano -w /etc/fstab
```

Use the following as a template (don't copy verbatim) for `/etc/fstab`:

Code Listing 1.5: `/etc/fstab`

# <fs>	<mountpoint>	<type>	<opts>	<dump/pass>
/dev/hdax	/boot	ext2	noauto,noatime	1 2
/dev/hdax	none	swap	sw	0 0
/dev/hdax	/	reiserfs	noatime	0 1
/dev/cdroms/cdrom0	/mnt/cdrom	auto	noauto,user	0 0
none	/proc	proc	defaults	0 0
none	/dev/shm	tmpfs	defaults	0 0

Continue by installing the Linux kernel:

Code Listing 1.6: Installing the Kernel

```
(Install the kernel sources) # emerge <kernel-package-here>
(Configure your kernel using genkernel...) # emerge genkernel; genkernel --menuconfig all
(or (1) manually build your kernel) # cd /usr/src/linux; make menuconfig;
( (2) Include VM fs, /proc fs, /dev fs, /dev fs auto mount at boot)
( (3) Compile your kernel) # make dep && make clean bzImage modules modules_install
( (4) Copy over the kernel) # cp arch/i386/boot/bzImage /boot; cp System.map /boot
```

Now install other tools you might want:

Code Listing 1.7: Install important system tools

```
(Install system logger; choice: syslogd, metalog, msyslog, syslog-ng) # emerge syslog-ng
(Have the systemlogger automatically started at boot) # rc-update add syslog-ng default
(Install cron daemon; choice: vixie-cron, dcron, fcron) # emerge vixie-cron
(Have the cron daemon automatically started at boot) # rc-update add vixie-cron default
(genkernel users only: install hotplug) # emerge hotplug
(genkernel users only: have hotplug automatically started at boot) # rc-update add hotplug default
(Non-ext2,ext3 users only; choice: reiserfsprogs, xfsprogs, jfsutils) # emerge reiserfsprogs
(Domain name init script) # rc-update add domainname default
```

If you need specialised kernel ebuids, now is a good time to install them:

Code Listing 1.8: Install Specialised Kernel Ebuids

```
# emerge pcmcia-cs (or nforce-net, nforce-audio, e100, e1000, ati-drivers, rp-pppoe)
# VIDEO_CARDS="yourcard" emerge xfree-drm (for ATI Radeon up to 9200, Rage128, Matrox, Voodoo and other cards)
```

Finalise the settings for your Gentoo system:

Code Listing 1.9: Finalise the Configuration Settings

```
(Set root password) # passwd
(Create a user) # useradd your_user -m -G users,wheel,audio -s /bin/bash
(Set password for that user) # passwd your_user
(Set the system hostname) # echo mymachine > /etc/hostname
(Set the system domainname) # echo mydomain.com > /etc/dnsdomainname
(Set the hostsfile, ex:"127.0.0.1 localhost mymachine") # nano -w /etc/hosts
(Configure basic system settings; follow comments) # nano -w /etc/rc.conf
```

Code Listing 1.10: Set up Networking

```
(Setup networking; dhcp-users should set iface_eth0="dhcp") # nano -w /etc/conf.d/net
(List modules to be loaded at startup) # nano -w /etc/modules.autoload.d/kernel-<version>
(Non-PCMCIA only: start networking automatically at boot) # rc-update add net.eth0 default
(Only if you have multiple network interfaces:)
(1) Create initscripts for each interface) # ln -s /etc/init.d/net.eth0 /etc/init.d/net.ethx
(2) Automatically start at boot if no PCMCIA) # rc-update add net.ethx default
(PCMCIA only: verify /etc/conf.d/pcmcia and load PCMCIA at boot) # rc-update add pcmcia boot
```

Now install a bootloader.

Code Listing 1.11: Install and configure GRUB

```
# emerge grub
# grub
grub> root (hd0,0)
grub> setup (hd0)
grub> quit
# nano -w /boot/grub/grub.conf
default 0
timeout 15
splashimage=(hd0,0)/grub/splash.xpm.gz

title=Gentoo Linux
root (hd0,0)
# genkernel users:
kernel /kernel-<kernel version> root=/dev/ram0 init=/linuxrc real_root=/dev/hda3
initrd /initrd-<kernel version>
# non-genkernel users:
kernel /kernel-<kernel version> root=/dev/hda3
```

Code Listing 1.12: Install and configure LILO

```
# emerge lilo
# nano -w /etc/lilo.conf
boot=/dev/hda
prompt
delay=50
default=gentoo

image=/boot/kernel-<kernel version>
label=gentoo
read-only
# genkernel users:
append="init=/linuxrc real_root=/dev/hda3"
root=/dev/ram0
initrd=/boot/initrd-<kernel version>
# non-genkernel users:
root=/dev/hda3

# /sbin/lilo
```

Now unmount all partitions and reboot into your new system:

Code Listing 1.13: Finishing off and installing GUI

```
(Exiting the chroot) # exit; cd /
(Unmounting partitions) # umount /mnt/gentoo/boot /mnt/gentoo/proc /mnt/gentoo
(Reboot; Remove the install CD from the tray) # reboot
(After booting:)
(ADSL-users only) # adsl-setup
(GRP-users only)
( (1) Mount CD2) # mount /dev/cdrom /mnt/cdrom
( (2) Copy over packages) # cp -a /mnt/cdrom/packages/* /usr/portage/packages/
( (3) Install extra software) # USE="bindist" emerge -k xfree gnome kde mozilla openoffice-bin
( (4) Configure your Xserver) # /usr/X11R6/bin/xf86config
```

You can get more information from the [Gentoo Documentation](#).

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