

LiveCD Creation

For DC404.org

What is a Live CD:

Wikipedia says:

A LiveCD is an operating system (usually containing other software as well) stored on a bootable CD-ROM that can be executed from it, without installation on a hard drive. The system returns to its previous OS when the LiveCD is ejected and the computer is rebooted.

Most LiveCDs contain a system based on the Linux kernel, but there are also LiveCDs based on other operating systems, such as Mac OS, Mac OS X, BeOS, FreeBSD, Plan 9 or Microsoft Windows, though the legal status of LiveCDs based on Windows code is dubious.

Why remaster one:

- Personalize Distribution to hardware

You may have a LiveCD that requires long cheat codes, or may not boot on a specific computer.

May need special drivers as part of the kernel to get required hardware usable from the CD.

- Add/Remove/Update software

With updates & exploits coming out on a routine basis, the LiveCD you currently have may be susceptible to a current exploit.

May not have your favorite program as part of it's installed packages.

May have program installed that you do not want or need.

- Because you can!

You may be one of those individuals that want to customize your LiveCD to your whims, just because you can.

How to do it:

- From scratch

This method is very time intensive & requires a lot of knowledge of the Operating system you are modifying. This method will not be covered in this presentation.

- From an existing LiveCD

I will be using this one as my example. Since the steps for this one are well documented & apply to most LiveCD implementations. This method takes me around 3 hours to perform.

- remastering without remastering

Also known as simply saving your settings for an existing LiveCD.

Remastering consists of 4 stages.

- Copying an existing LiveCD to your Hard drive
- Chroot to source & make your desired changes.
- Rebuild the ISO
- Moving it to media.

Copying an existing LiveCD to your Hard drive

- The operating system you choose, will determine how much disk space you will need to remaster your Live CD.



Notes before you begin:

- For Knoppix it is suggested that you designate 3-5GB of space to this endeavor.
- In my experience, 5GB is a good rule of thumb to use, it gives you plenty of room to work without having to worry about having an ISO so large that it will not fit on a normal CD. If you already have a working *nix based computer, you can get away with downloading the base tar ball for your LiveCD from their repository or website.
- For Knoppix that would be <http://debian.tu-bs.de/Knoppix/debian/sarge-live-base/KNOPPIX.build.tar.gz>.
- After you have the base system, you can extract it & chroot to that directory.

Advice

- Don't reinvent the wheel, use an existing LiveCD. This will save you a lot of time & help you avoid the many mistakes that can be encountered when trying to create a LiveCD from scratch.



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- Many of the HOWTO's available suggest you use separate partitions for remastering, However if you know how to mount directories via loop back, that method also works.

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- If these steps are beyond your capabilities, be prepared for many more hardships as it only gets harder from here.

Chroot to source & make your desired changes.

- Changing the root directory will be needed so that any changes you make apply to your desired LiveCD and not the current distribution. For Linux boxes, you will need to mount a /proc and/or /devpts file system for the chrooted environment

Make Your Changes

Many folks want to make sweeping system wide changes their first time through. I advise making small changes & only changing things you know how to change.

- This is where the bulk of your work should take place, if you are making package changes or configuration changes.

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- Many LiveCDs have a package manager included in them
 - Knoppix uses apt-get,
 - Gentoo LiveCDs use portage
 - FreeBSD has ports.

Rebuild the ISO

After you are done making your changes

- Exit the chroot environment
- Unmount any /proc or /dev file structures.
- Create the compressed operating system file
- Create the ISO

Moving it to media.

- *Burn the image to the proper media*

```
cdrecord -v dev=0,0,0 speed=4  
remaster/My_LiveCD.iso
```

Or throw it on a USB drive.

Apple Macintosh OS based

- * System folder of Mac OS on a CD or on a floppy disk
- * BootCD from Charlessoft (<http://www.charlessoft.com/>) for Mac OS X



[BSD Based]

- DragonFly BSD
(<http://www.dragonflybsd.org/main/download.cgi>)
- FreeBSD
- Frenzy mini-CD
- NetBSD - official livecd image.
- Direct link
(<ftp://ftp.netbsd.org/pub/NetBSD/iso/2.0/i386live.iso>)
and quick reference documentation
(<ftp://ftp.netbsd.org/pub/NetBSD/iso/2.0/README.i386live>).

Linux Based

- Knoppix - the "original" Debian-based LiveCD, popular but not for disk installs
- MEPIS - Widely-praised (like Progeny) for making a clean (Debian APT compatible) installation
- Damn Small Linux - Knoppix cut down to a business card-sized CD.
- MandrakeMove
- ROCK Linux LiveCD Target for PPC
- Slax



Microsoft Windows based

- BartPE [2]
(<http://www.nu2.nu/pebuilder/>)
(Windows 2000/XP/2003)
- 911 Rescue CD
(<http://www.911cd.net/>) (Windows
NT/2000/XP/2003)