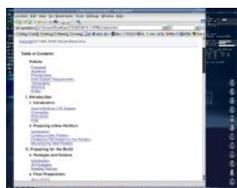# Linux From Scratch 6.1 (part 1?)

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[4]Linux From Scratch 6.1 was released [5] on July 10 and I thought I'd take a look. This will be my third attempt at installing LFS. My first attempt was way back when I still ran Mandrake everyday (ie. - about 3 years ago) and I got as far as setting up the filesystem directories when I decided this was too much like work and abandoned the quest. My second was not so long ago when 6.0 was the latest and greatest version. I got a base installed and booted, but could not get xorg (blfs) to build. The project was put on the back burner until it simmered away. Today I begin again. Will I have the time and inclination to complete it this time? You know what they say, "third time's a charm!" ... or it is "three strikes, your out?" We'll see.

The first thing I did was untar/uncompress the LFS-Book-6.1-html [6]. Yep, that's how this unique distro is distributed - not by iso or stage tarball, but by instructions. I fired up Konqueror and navigated to the index.html where I read the prerequisites telling me if I didn't know about linux, read "some links to newbie's guides". Then next the system requirements.

I wanted to build from my gentoo install, and I knew that I was using a 2.6.12 kernel with gcc 3.4.4. The system requirements stated that "the host must be running at least a 2.6.2 kernel compiled with GCC-3.0 or higher." So, I guess I'm good.

I recall reading their "book" from cover to cover, or at least until the building of xorg last time, so I refreshed my memory some by reading the preface and introduction. I was a little anxious to get compiling, but I knew if I skipped this step - I'd be sorry later. One of the subheadings is called Errata, and they recommend clicking on the link and checking for any pressing issues prior to building. Yippee - none were listed yet - this version was only just released today

[5]. I'll be one of their guinea pigs. I could just follow the guide.

Heyyyy, Chapter 1.1 - How to Build an LFS System states that "As an alternative to installing an entire separate distribution onto your machine, you may wish to use the Linux From Scratch LiveCD. The CD works well as a host system, providing all the tools you need to successfully follow the instructions in this book. Additionally, it contains all the source packages, patches and a copy of this book. So once you have the CD, no network connection or additional downloads are necessary. For more information about the LFS LiveCD or to download a copy, visit http://www.linuxfromscratch.org/livecd/ [7]." augh well.... Skipping to Chapter 2... 😎

 [8]I already had a partition set up and a filesystem created, so... whoops, it's reiser and they recommend ext2 or 3. I guess I'll `mke2fs /dev/hda13` and `tune2fs -j /dev/hda13`. Next, mount it. I still had my /mnt/lfs from the last attempt, so I `export LFS=/mnt/lfs` as instructed as well as `mount /dev/hda13 $LFS` and `mkdir $LFS/sources`. Thus begins the tendious task of downloading all the recommended packages and patches. One bit of advice for ya here: download all tar.gz packages. In my infinite wisdom, I chose as many tar.bz2 packages as possible, but not all are available in bunzip2. Later it would make for more delays when having to check if the package was gunzip'd or bunzip'd and issueing the correct command to decompress.

Next was setting up some further environmental variables and stuff, followed by binutils. LFS offers a suggestion to keep a `time` on this first compile so that you may be able to estimate how long the remaining packages take to compile - measured in BSUs. My BSU for binutils was:
```
 real 2m26.874s
 user 1m44.221s
 sys 0m29.469s
```

As the first pass of gcc builds, I can report the problems encountered so far with book. Root directory owned by root and package sources and directory owned by host system user, causing permission problems when we got to the mkdir ../binutils and ../gcc build directories. Also, no /home/lfs instruction which caused the su - lfs to fail the first attempt. I mkdir /home/lfs and chown lfs:lfs /home/lfs and then as root from host system, just chowned lfs:lfs /mnt/lfs. I hope this is okay and doesn't cause problems later on. But with everything being built and installed by the lfs user, that is of course the permissions on all the files and executables. It only stand to reason the initial directory permissions should be the same. We'll see.

At this point I was just more or less highlighting and pasting the given commands into the virtual environmental shell. All went well and it was time to chroot into lfs and continue with chapter 6. The permissions issue mentioned in the previous paragraph are addressed here. A root group/user is added and directory permissions are changed.

From that point on I just followed the guide through the package recompiles. It was as they say "by the book". I configured the kernel and skipped the grub portion. I set up some of the config files "the book" suggested - some I copied from gentoo, like my /etc/resolv.conf. I copied the boot kernel and files to /boot, then mv'd that to /boot.bak. I then mounted my hda5 as /boot and copied all the files from /boot.bak to /boot. I set up an entry in my gentoo's lilo.conf, ran lilo and rebooted.

The system rebooted into my fresh LFS install without issue. All the included configuration instructions seemed fairly complete and accurate enough given the users' input and ability to know small details about their machines. Overall I found the instructions in the book easy to follow and accurate. I think anyone with basic commandline experience could have a successful install and with just a few more hints (for example: delete previous gcc-build directory/sources and untar/compress fresh), a newbie might too. Tho LFS is designed to be just your basic system ready for your customizations and additions, the book *really* needs to include at least a console web browser (links or lynx) and wget.

It took me about 10 hours or so to go from clicking on the html book to logging into my new system (bearing in mind I had to break from time to time to eat, watch some movies, and fight with my boyfellar). So for anyone wanting their own homemade system or to learn more how a Linux operating system is put together and works (if one pays attention to valuable information/explanations included as opposed to <cough>mindlessly <cough>copying and pasting), I can recommend LFS-6.1.

Now on to BLFS. Unfortunately Beyond Linux From Scratch is always a book behind it seems. To me it's not a *real* install until one can log into a window manager. Hopefully by next weekend BLFS will be caught up and we can possibly have a part 2 [9]. But I have a base ready and waiting for it.

Linux Reviews -s

Source URL: http://www.tuxmachines.org/node/1715

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