

# How To Install DSL on the Hard Drive via a DSL Frugal Installation

Submitted by clivesay from the DSL forums

## Definition:

Frugal install is basically the equivalent to running the CD compressed image on a hard drive partition (a Knoppix poorman's install) except it's booted with the lilo bootloader by default. You also have the ability to assign boot time options and automate backup restore. For memory savings, there is the option to have a persistent /home and /opt directory on a partition.

This is a great way to run a practically bulletproof system. It also lends itself to simple upgrades.

In this document, we'll walk through a Frugal installation.

## Hard Drive Preparation:

The first thing you need to do is figure out how you want to setup your hard drive partitions. There are two preliminary requirements of a frugal install. One is the install must be on the primary drive on your PC (hda). You can install on any partition on that drive (hda1, hda2, etc) but the drive must be recognized as /dev/hda by Linux. The second is you'll want a primary bootable linux (type 83) partition for DSL. The compressed image is 50mb so you can have a partition as small as 55mb to hold DSL. All other partitions are optional.

My personal recommendation is that your system is setup with at least 3 partitions:

1. Primary bootable linux (type 83) for the DSL file
2. Secondary linux (type 83) for the persistent /home, /opt, mydsl extensions, backup/restore, etc...
3. Secondary linux swap (type 82) for swap memory. You may not need this if you're running a machine with something like a gig of ram.

You can make your primary as large as you want and place your mydsl extensions and backup file in that partition if you like. Setup is really a personal preference. The critical components are that you install on /dev/hda and you have a linux partition specified.

For this tutorial, it will be assumed you know how to use either fdisk or cfdisk to setup your partition tables. If you are using cfdisk in DSL it's recommended that you boot the CD with the boot code *dsl 2*. This will boot DSL in text mode only. After working on low ram machines, I've learned

that the frugal setup needs to be a two boot process to prevent possible errors.

At the prompt, type *cfdisk* and <enter>. After creating your partitions and writing the partition table you'll want to prepare your drive.

I like to get my drives formatted and ready to go. Even though you only need to have a linux partition for the DSL installation, I like to go ahead and format the partition with ext2 so that it's sure to be recognized. If you created a second partition to hold personal files, you will need to format that partition manually. We also need to get swap setup and initialized. It's an easy process, let's do it!

I'll show a typical configuration based on a three partition setup

*hda8* (partition with the DSL image)  
*mke2fs /dev/hda8*

*hda9* (partition for persistent /home /opt backup mydsl)  
*mke2fs /dev/hda9*

*hda10* (memory swap) (OPTIONAL)  
*mkswap /dev/hda10*  
*swapon /dev/hda10*

If you have successfully completed these steps without error, we're ready to do an installation. Let's reboot so the partition table can be reset.

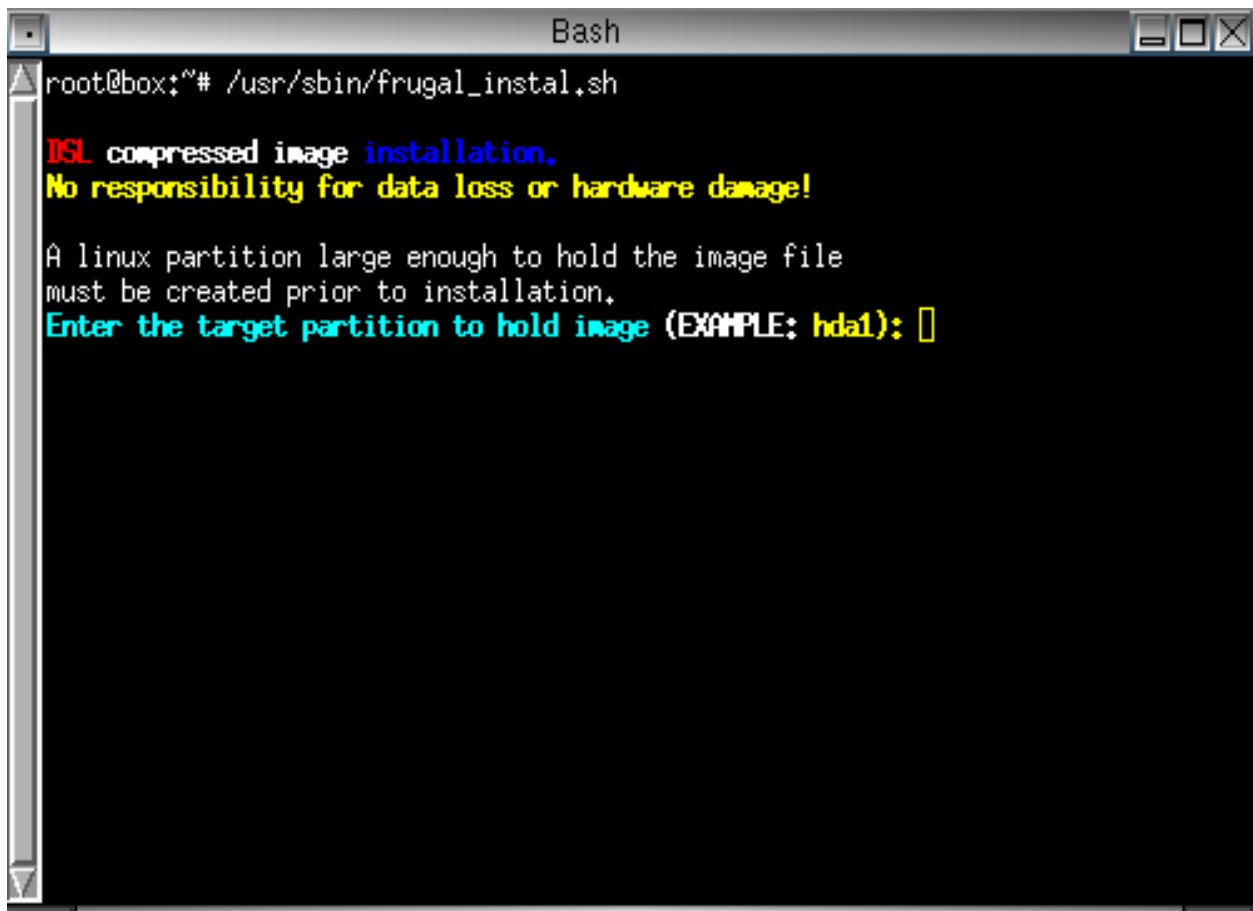
*shutdown -r now*

At the CD boot, type in *dsl 2* again to get us back to the prompt. We do this so we aren't eating up system resources by running X. This gives us a better change at a clean installation.

Let's install Frugal!!!

At the command prompt type:

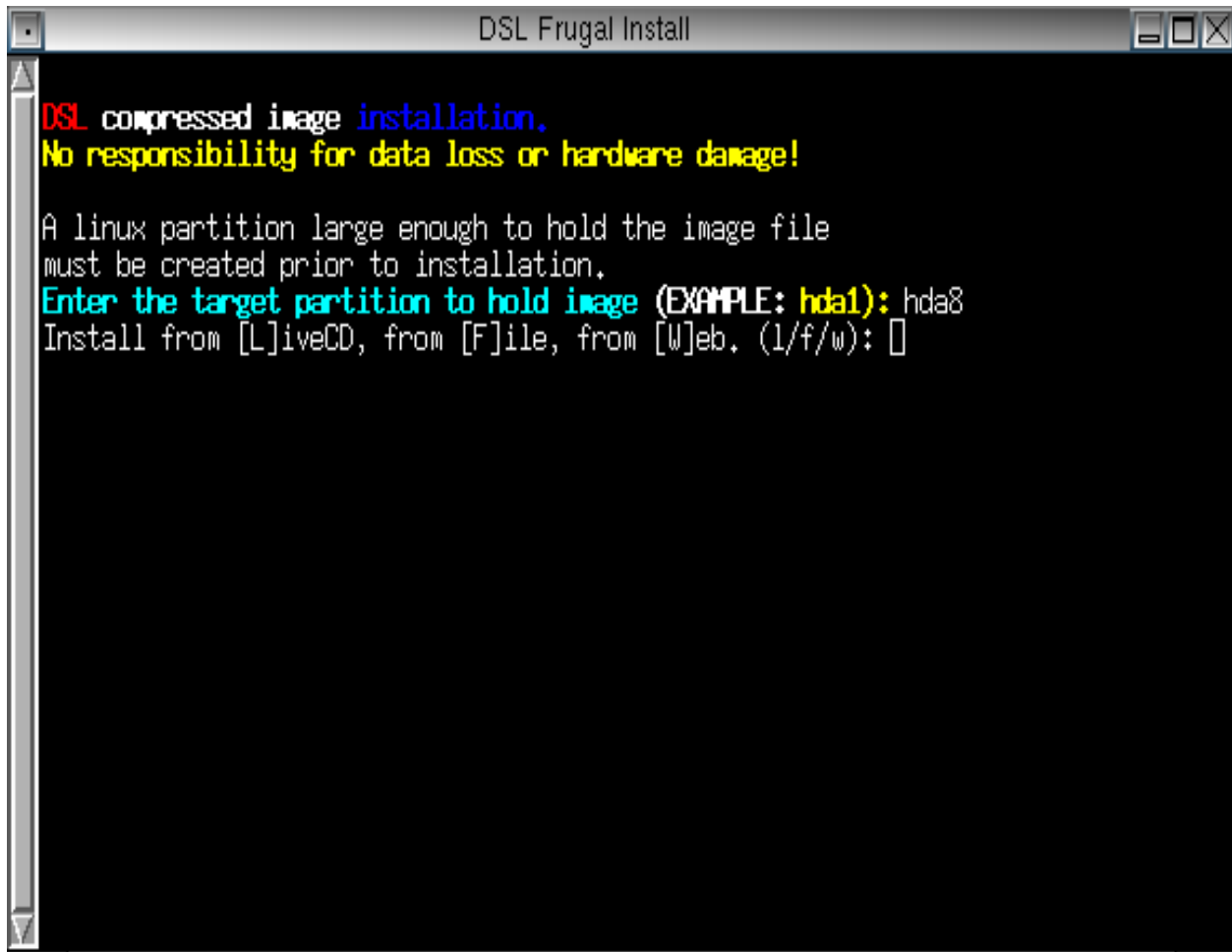
`/usr/sbin/frugal_instal.sh`



```
Bash
root@box:~# /usr/sbin/frugal_instal.sh
DSL compressed image installation.
No responsibility for data loss or hardware damage!
A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1):
```

Now we are in the frugal install script. The first thing you'll need to do type the name of the partition that will hold the compressed image.

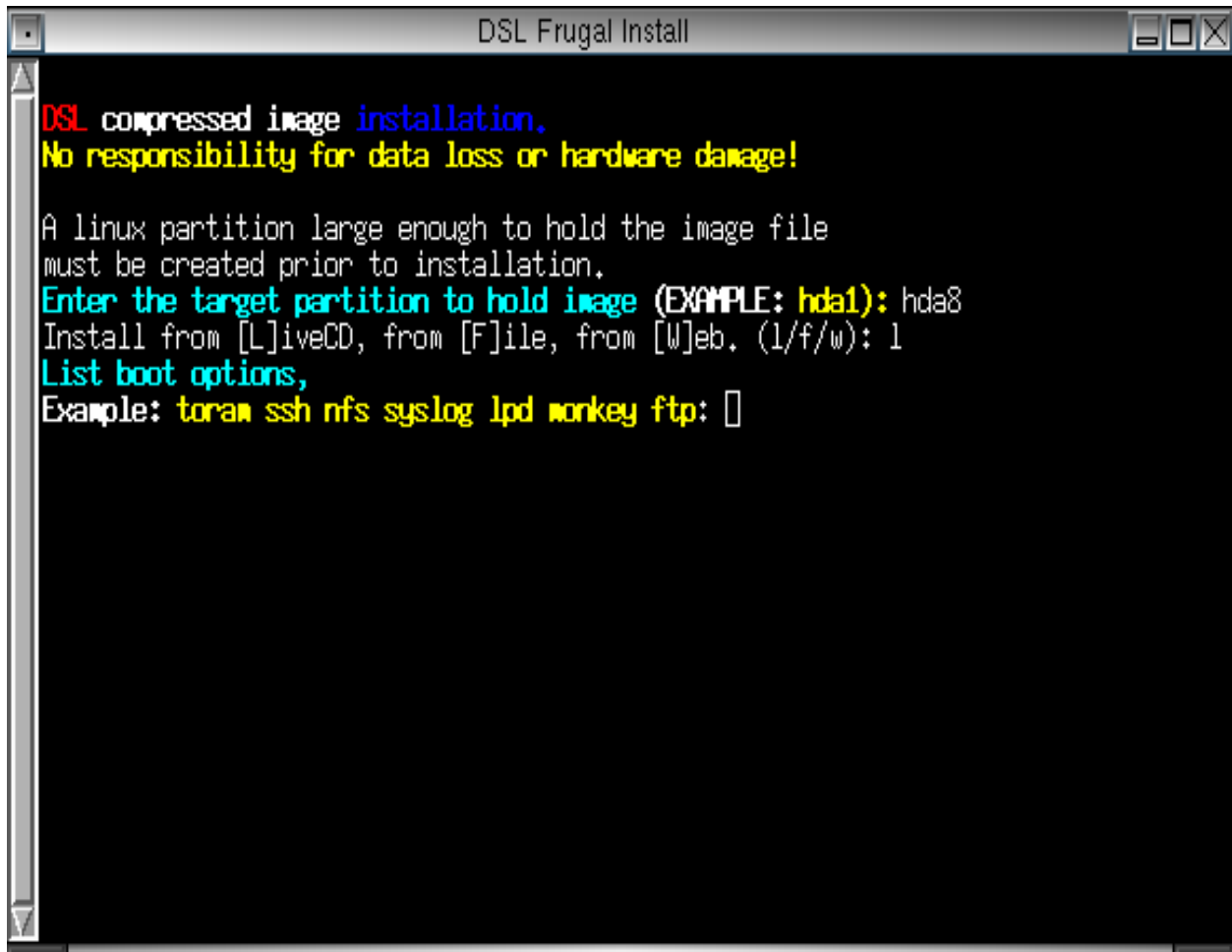
If you're using our example, type `hda8` and press <enter>



You can create a Frugal install from three sources:

1. [L]ive - DSL CD
2. [F]ile - Existing KNOPPIX file on your hard drive
3. [W]eb - Via a network.

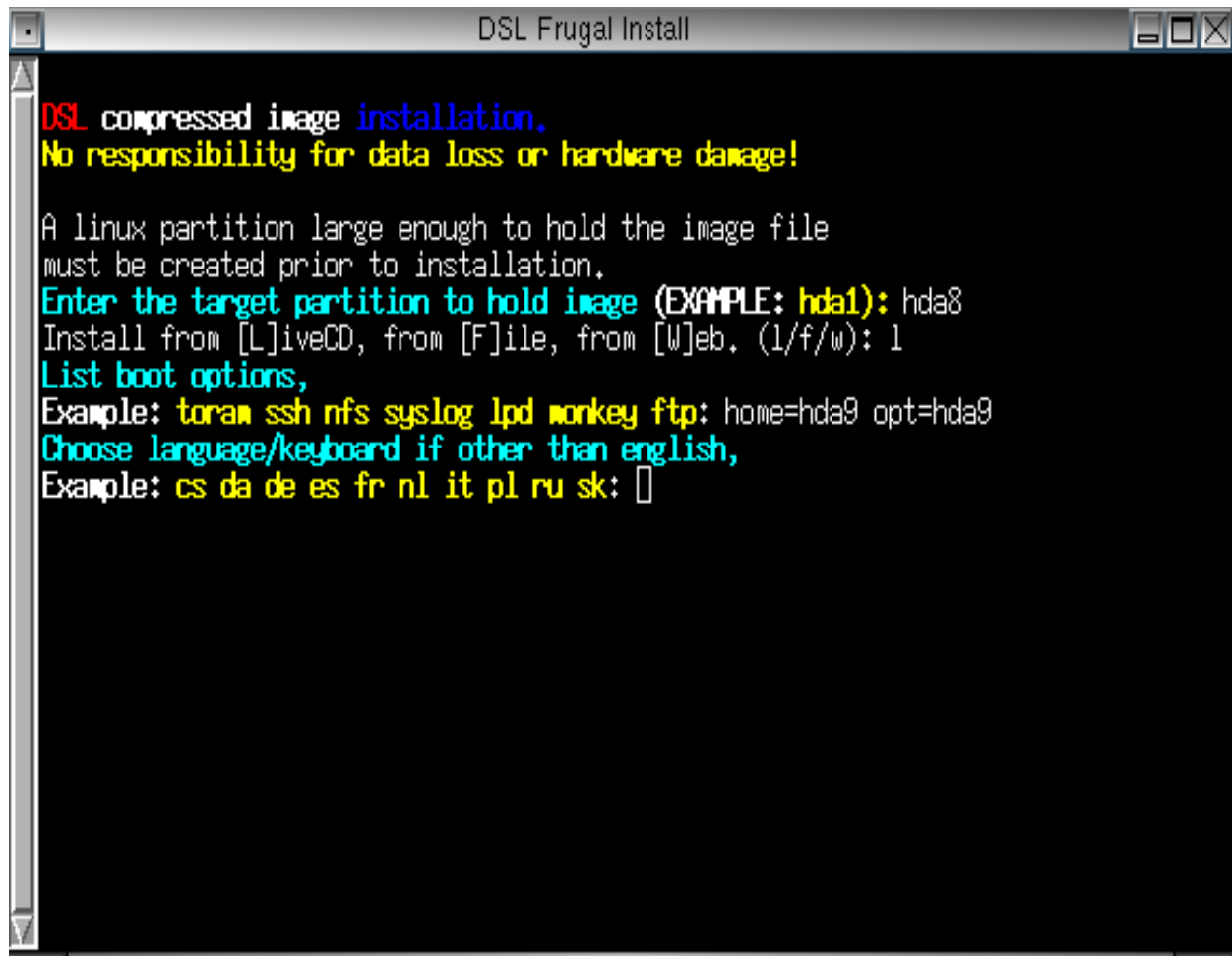
For this example we will use the CD we are running from. Type an 'L' and press <enter>

A screenshot of a terminal window titled "DSL Frugal Install". The terminal displays the following text:

```
DSL compressed image installation.  
No responsibility for data loss or hardware damage!  
  
A linux partition large enough to hold the image file  
must be created prior to installation.  
Enter the target partition to hold image (EXAMPLE: hda1): hda8  
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l  
List boot options,  
Example: toram ssh nfs syslog lpd monkey ftp: 
```

Now we have the opportunity to add boot time options. If you entered options when you booted the CD, those will carry over to the frugal install. Just enter any additional ones here. We are going to use the hda9 partition for persistent /opt and /home so we'll enter *home=hda9* and *opt=hda9* and press <enter>

NOTE: don't designate the mydsl partiton here. We'll be prompted for that later.

A screenshot of a terminal window titled "DSL Frugal Install". The window has a standard Linux-style title bar with minimize, maximize, and close buttons. The terminal content is as follows:

```
DSL compressed image installation.  
No responsibility for data loss or hardware damage!  
  
A linux partition large enough to hold the image file  
must be created prior to installation.  
Enter the target partition to hold image (EXAMPLE: hda1): hda8  
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l  
List boot options,  
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9  
Choose language/keyboard if other than english,  
Example: cs da de es fr nl it pl ru sk: 
```

If you keyboard language is other than english, enter it here. Otherwise, just press <enter>

```
DSL Frugal Install
DSL compressed image installation.
No responsibility for data loss or hardware damage!

A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1): hda8
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l
List boot options,
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9
Choose language/keyboard if other than english,
Example: cs da de es fr nl it pl ru sk:
Do you wish to specify a default restore partition (y/..)? 
```

Now we have to decide if we want an automated backup and restore. We want this so type "y" and press <enter>

```
DSL Frugal Install
DSL compressed image installation.
No responsibility for data loss or hardware damage!

A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1): hda8
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l
List boot options,
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9
Choose language/keyboard if other than english,
Example: cs da de es fr nl it pl ru sk:
Do you wish to specify a default restore partition (y/..)? y
Enter the partition to be used for backup/restore.(EXAMPLE: hda3):
```

Let's enter our backup restore partition. Type *hda9* and press <enter>



```
DSL Frugal Install
DSL compressed image installation.
No responsibility for data loss or hardware damage!

A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1): hda8
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l
List boot options,
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9
Choose language/keyboard if other than english,
Example: cs da de es fr nl it pl ru sk:
Do you wish to specify a default restore partition (y/..)? y
Enter the partition to be used for backup/restore.(EXAMPLE: hda3): hda9
Do you wish to specify a different partition for myDSL (y/..)? 
```

If you place all your mydsl extensions in the same partition as the KNOPPIX image then you answer 'n' here. We are placing our extensions in hda9 so we want to type 'y' and press <enter>

```
DSL Frugal Install
DSL compressed image installation.
No responsibility for data loss or hardware damage!

A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1): hda8
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l
List boot options,
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9
Choose language/keyboard if other than english,
Example: cs da de es fr nl it pl ru sk:
Do you wish to specify a default restore partition (y/..)? y
Enter the partition to be used for backup/restore. (EXAMPLE: hda3): hda9
Do you wish to specify a different partition for myDSL (y/..)? y
Enter the partition to be used for myDSL applications. (EXAMPLE: hda3):
```

Type hda9 and press <enter> to assign the MyDSL partition.

```
DSL Frugal Install
DSL compressed image installation.
No responsibility for data loss or hardware damage!

A linux partition large enough to hold the image file
must be created prior to installation.
Enter the target partition to hold image (EXAMPLE: hda1): hda8
Install from [L]iveCD, from [F]ile, from [W]eb. (l/f/w): l
List boot options,
Example: toram ssh nfs syslog lpd monkey ftp: home=hda9 opt=hda9
Choose language/keyboard if other than english,
Example: cs da de es fr nl it pl ru sk:
Do you wish to specify a default restore partition (y/..)? y
Enter the partition to be used for backup/restore.(EXAMPLE: hda3): hda9
Do you wish to specify a different partition for myDSL (y/..)? y
Enter the partition to be used for myDSL applications.(EXAMPLE: hda3): hda9
Format the target partition /dev/hda8 (y/..)?
```

In the next steps you'll be asked if you're ready to format the root partition for Frugal. You want to answer 'y'. You'll be asked if you are sure. Once you continue, the partition will be formatted, the appropriate files will be copied and lilo will be installed in the master boot record to boot the frugal install.

After a reboot, you should be in your new frugal install! Congratulations!!

## FRUGAL NOTES

If you have a good amount of ram (512mb or more) you might want to consider copying your frugal install to memory. This will allow for very fast performance. You can do this by adding *toram* at the boot options.

If available, it is recommended you use *.uci* extensions for your Frugal install. These apps load in your persistent */opt* directory and use less memory than *.dsl* files.