

How to build a O/S Image File with Linux

The following steps shows a way for building a Linux-based O/S Image File from two given files (1. the kernel `zimage` and 2. the root file system `RIMAGE.GZ`). You can download this O/S Image File with the help of the (A)DNP/1486 Flash Loader to the flash memory.

- **1. Step:** Make a new and empty directory on your Linux-based development system.
- **2. Step:** Download the file `imgtool1.zip` form **www.dilnetpc.com** (i.e. enter the URL `www.dilnetpc.com/imgtool1.zip` to your browser). Unzip the files `boot.b`, `preload.bin`, `flash.cfg` and `lilo` to your new directory. Make sure, that `lilo` is executable (i.e. `chmod +x lilo`).
- **3. Step:** Copy your given files `zimage` and `rimage.gz` to the new directory. Make sure, that the file names are using only lowercase letters.
- **4. Step:** Open a shell within your new directory (`cd directory_name`).
- **5. Step:** Execute the Linux `dd` command with the following parameters.

```
dd if=/dev/zero of=flash.img bs=1024 count=1856
```

- **6. Step:** Execute the Linux `mkfs.minix` command with the following parameters.

```
mkfs.minix -i 32 -n 14 flash.img
```

- **7. Step:** Execute the Linux `mount` command with the following parameters.

```
mount -o loop -t minix flash.img /mnt
```

- **8. Step:** Execute the Linux `cp` command with the following parameters.

```
cp -p boot.b /mnt
```

- **9. Step:** Execute the Linux `cp` command with the following parameters.

```
cp -p rimage.gz /mnt
```

- **10. Step:** Execute the Linux `cp` command with the following parameters.

```
cp -p zimage /mnt
```

- **11. Step:** Execute the Linux **sync** command.

```
sync
```

- **12. Step:** Run **lilo** with the following command line.

```
./lilo -C flash.cfg
```

- **13. Step:** Execute the Linux **df** command with the following parameters.

```
df /mnt
```

- **14. Step:** Execute the Linux **sync** command.

```
sync
```

- **15. Step:** Execute the Linux **umount** command with the following parameters.

```
umount /mnt
```

- **16. Step:** Execute the Linux **cat** command with the following parameters.

```
cat preload.bin flash.img > dnp.x.img
```

- **17. Step:** Execute the Linux **ls** command with the following parameters.

```
ls dnp.x.img -al
```

Please note: The sequence of the copy commands is important. Do not change the sequence. If there is any error, execute `umount /mnt` and start again with `dd` command.

The maximum size for the O/S Image File `dnp.x.img` is 1.966.080 bytes. Make sure, that you never get a bigger file size.