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GNU/Linux

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1

GNU/Linux

GNU/Linux

가

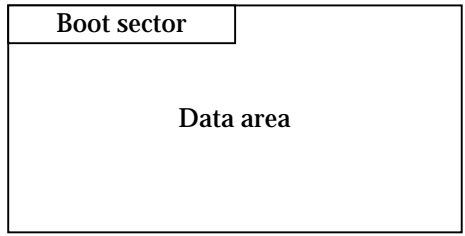
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3

x86 PC GNU/Linux 4 5 가  
 가 " Werner Almesberger , "LINUX hacker UNIX KERNEL  
 , "LILO Technical overview" 가 .  
 [1] 가 .

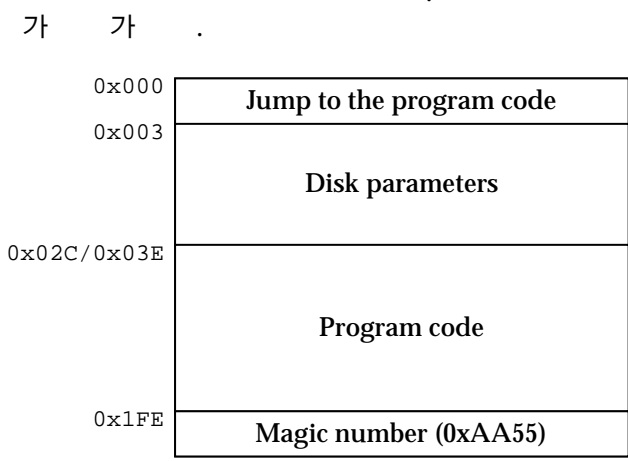
**2**

PC 가 , LILO GNU/Linux  
 가 "LILO User's guide" [1]  
 가 , FAT (File Allocation Table), (super block)  
 가 가 , 가  
 , GNU/Linux /dev/fd0



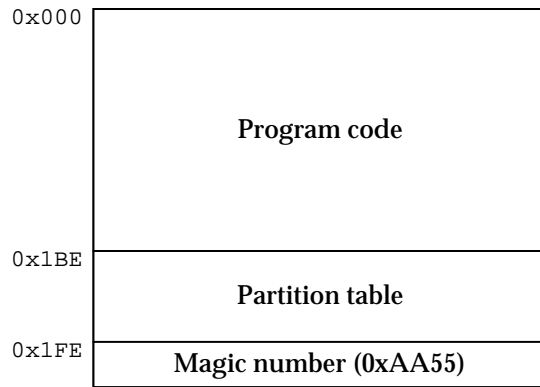
1 -

, MS-DOS



2 - MS-DOS

LILO , (disk parameters)



3 - LILO

가 . MS-DOS 가 , MS-DOS Minix, Ext2, LILO  
 LILO 가 MS-DOS 가 SYSLINUX [2] MS-DOS  
 LILO 가 .  
 . MS-DOS (primary partitions)  
 (extended partition) , (logical partitions) .  
 /dev/hda, /dev/hdb, /dev/sda, .  
 /dev/hda1, /dev/hda2 .

Partition table	/dev/hda
Partition 1	/dev/hda1
Partition 2	/dev/hda2

4 -

가 가 .  
 가 .

Partition table	/dev/hda
Partition 1	/dev/hda1
Partition 2	/dev/hda2
Extended partition table	/dev/hda3
Logical partition table	/dev/hda5
Partition 3	
Logical partition table	/dev/hda6
Partition 4	

5 -

가 ,

가

MBR (Master Boot Record)

3 LILO

LILO

LILO

- Linux

(/dev/fd0, etc.)

-

MBR (/dev/hda, /dev/sda, etc.)

-

(/dev/hda1, /dev/hda2, etc.)

-

(/dev/hda1, etc.)<sup>2</sup>

- Linux

( :MS-DOS )

- Linux

3

-

4

3

가

<sup>2</sup> FDISK

LILO activate  
fdisk , GNU/Linux

가

<sup>3</sup> LILO -b

<sup>4</sup>

가

가

. MS-DOS

가 가 , , 가 가

0, 0, 1

MBR . MBR

3 0x000 0x1BD 446  
 , 64 가 . 2 (magic  
 number)

MBR MBR

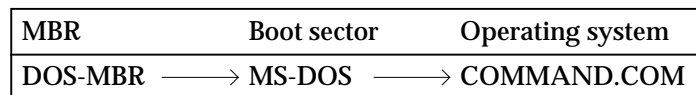
, MS-DOS

가

- "DOS-MBR": MS-DOS MBR "active" MS-DOS fdisk active
- Linux fdisk LILO activate
- "MS-DOS": IO.SYS, MS-DOS.SYS, COMMAND.COM MS-DOS
- "COMMAND.COM": MS-DOS
- "LOADLIN": MS-DOS RAM Linux CONFIG.SYS
- BOOT.SYS CONFIG.SYS
- "LILO": Linux

**3.1 MS-DOS**

6 MS-DOS가

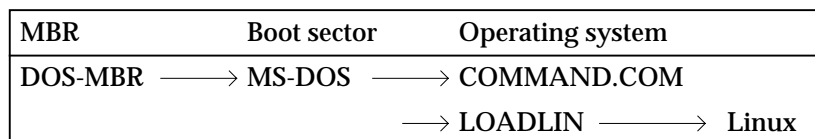


6 - MS-DOS

DOS-MBR (active partition) MS-DOS  
 IO.SYS MSDOS.SYS MS-DOS  
 MS-DOS COMMAND.COM

**3.2 LOADLIN**

LOADLIN MS-DOS Linux  
 MS-DOS 가 , CONFIG.SYS AUTOEXEC.BAT  
 LOADLIN .[3]

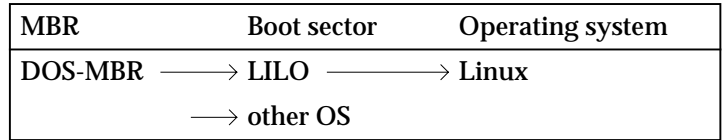


7 - LOADLIN

CONFIG.SYS AUTOEXEC.BAT BOOT.SYS  
 , 가 .[4]

### 3.3 DOS-MBR LILO

DOS-MBR LILO 가 , 가 LILO  
 가 Linux 가 LILO  
 , 가 fdisk activate "active"

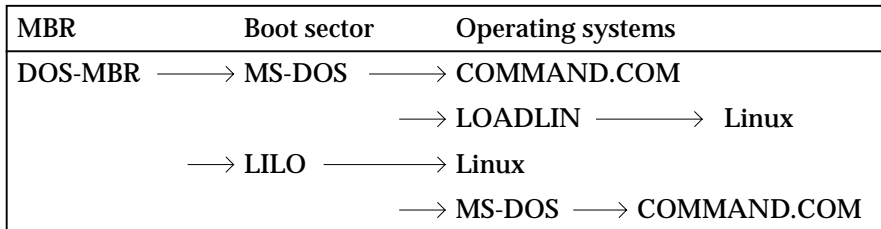


#### 8 - DOS-MBR LILO

- Linux LILO
- fdisk activate active
- 
- active
- LILO and/or Linux

### 3.4 DOS-MBR

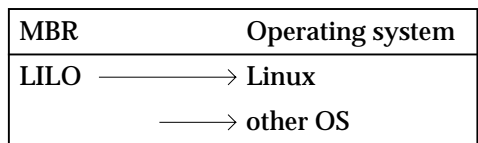
MBR Linux MS-DOS  
 3.3 . LILO



#### 9 - DOS-MBR

### 3.5 LILO

LILO , MBR LILO가 Linux  
 , LILO가 MBR  
 Linux MBR



#### 10 - LILO

LILO

```

- Linux
- MBR
dd if=/dev/hda of=/fd/MBR bs=512 count=1
- MBR LILO
-
LILO
- Linux
- MBR
if=/fd/MBR of=/dev/hda bs=446 count=1
LILO MBR LILO
(lilo.conf "boot=" )

```

#### 4

LILO가 가 GNU/Linux /etc/lilo.conf

```

boot = /dev/hda2
compact
image = /vmlinuz
image = /vmlinuz.old
other = /dev/hda1
table = /dev/hda
label = msdos

```

```

LILO Linux /vmlinuz /vmlinuz.old
/dev/hda1 MS-DOS
compact map installer

```

#### 4.1 BIOS

20GB  
 PC BIOS가 18  
 가  
 LILO 가 1024  
 LILO가  
 BIOS  
 BIOS  
 BIOS  
 IED 504MB 가  
 가 1024 10GB  
 BIOS 1024 LILO  
 linear .<sup>5</sup>

---

<sup>5</sup> /usr/src/linux/Documentation/ide.txt

- 1024 , 가 .
- .
- DOS/Windows , LILO LOADLIN .
- LILO가 BIOS .
- /boot/boot.b
- /boot/map<sup>6</sup>
- 
- LILO가
- 

Linux 가 /boot , /boot , /boot

#### 4.2 가 Linux가

가 Linux , MBR , 11 가  
LILO 가 , boot 가

MBR	/dev/hda
MS-DOS	/dev/hda1
Linux	/dev/hda2

11 - One disk, Linux on a primary partition

#### 4.3 가 Linux가

Linux  
Linux MBR  
LILO 12

MBR	/dev/hda
MS-DOS	/dev/hda1
Extended	/dev/hda2
Linux	/dev/hda5
....	/dev/hda6

12 - One disk, Linux on a logical partition

activate , active LILO

#### 4.4 가 Linux가

가 Linux

<sup>6</sup> /sbin/lilo



가 . Linux  
 .  
 , Linux , /boot/boot.b, /boot/map

**4.5 가 Linux**

가 가 Linux MBR 가 LILO  
 13 .

First Disk		Second Disk	
MBR	/dev/hda	MBR	/dev/hdb
MS-DOS	/dev/hda1	Linux	/dev/hdb1
Extended	/dev/hda2	....	/dev/hdb2
....	/dev/hda5		
....	/dev/hda6		

13 - Two disks, Linux on second disk, first disk has an extended partition

active LILO activate

**4.6 가 Linux**

가 Linux  
 LILO MBR 가 LILO가  
 14가

First Disk		Second Disk	
MBR	/dev/hda	MBR	/dev/hdb
MS-DOS	/dev/hda1	Linux	/dev/hdb1
....	/dev/hda2	....	/dev/hdb2

14 - Two disks, Linux on second disk, first disk has no extended partition

LILO MBR MBR , LILO가

MBR LILO가 /etc/lilo.conf boot  
 , 4 lilo.conf boot=/dev/hda2 boot=/dev/hda

**4.7 2 가**

가 가

LILO

BIOS가

Warning: BIOS drive 0xnynn may not be accessible

BIOS

Linux가

가

### 5 x86 GNU/Linux

GNU/Linux가

x86 CPU

PC

ROM

BIOS (Basic Input/Output System)

. BIOS

가

- POST (Power-On Self Test)

가

- I/O

-

- ROM (bootstrap routine)

RESET

, CPU

0FFFF0H

. 0FFFF0H

ROM

POST

x86 ROM

POST

RAM

ROM

.7[5]

BIOS

CD-ROM

ROM

가

가

가

가

. [6]

ROM

, MS-DOS

IO.SYS MSDOS.SYS

가

IO.SYS

MSDOS.SYS

IO.SYS

.8

RAM

Invalid system disk

Replace the disk, and then press any key

GNU/Linux

0,

0,

1

LILO

LILO가

가

Linux

(entry point)

.9

7 2

8

IO.SYS

, IO.SYS가 MSDOS.SYS

9

512

가

가

가

가

Linux

Linux 가 (boot loader) 가 BIOS

. GNU/Linux 가 LILO ,

. LILO . lilo.conf lilo.conf lilo LILO

가 . BIOS LILO 가 가 ,<sup>10</sup>

LILO , Linux ,<sup>11</sup>

가 , init inittab .

가 sysinit , fsck ,fstab

sysinit 가 init ,init

inittab initdefault default runlevel .

runlevel tty getty ,

getty "login: " , login

---

0 .

<sup>10</sup> 가 , LILO lilo.conf <http://www.linuxdoc.org/HOWTO/BootPrompt-HOWTO.html>

<sup>11</sup> RAM RAM RAM RAM RAM RAM

- [1] Werner Almesberger, "LILO User's guide",  
<ftp://metalab.unc.edu/pub/Linux/system/boot/lilo/>
- [2] H. Peter Anvin, "SYSLINUX - A boot loader for Linux using MS-DOS floppies"
- [3] LOADLIN, <ftp://sunsite.unc.edu/pub/Linux/system/boot/dualboot/lodlin16.tgz>
- [4] BOOT.SYS, <ftp://ftp.funet.fi/pub/Linux/tools/boot142.zip>
- [5] Microsoft PRESS, "2ed, Advanced MS DOS Programming", SOHNZS Research: ,
  
- [6] , "PC ",