

~~0x00000000~~ [0,0]

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links

- bios upgrade
<http://www-307.ibm.com/pc/support/site.wss/document.do?sitestyle=lenovo&Indocid=MIGR-70652>
- hard drive firmware
<http://www-307.ibm.com/pc/support/site.wss/document.do?Indocid=MIGR-63685>
- http://www.thinkwiki.org/wiki/BIOS_update_without_optical_disk

grub2 memdisk config

```
menuentry "HD firmware update" {  
    linux16 /memdisk iso  
    initrd16 /fwsh33.iso  
}
```

```
menuentry "BIOS update" {  
    linux16 /memdisk iso  
    initrd16 /7wuj39uc.iso  
}
```

mount image

```
dpavlin@x200:~$ sudo fdisk -l -u /boot/bios.img  
You must set cylinders.  
You can do this from the extra functions menu.
```

```
Disk /boot/bios.img: 0 MB, 0 bytes  
64 heads, 32 sectors/track, 0 cylinders, total 0 sectors  
Units = sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk identifier: 0x00000000
```

Device	Boot	Start	End	Blocks	Id	System
/boot/bios.img1	*	32	47103	23536	4	FAT16 <32M

calculate offset

```
dpavlin@x200:~$ echo '32*512' | bc  
16384
```

and mount it

```
dpavlin@x200:~$ sudo mount /boot/bios.img /tmp/bios/ -o loop,offset=16384 -t vfat
```