

## S.Ha.R.K. Installation How To



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## Tools

- Linux **fdisk** utility
- A copy of **Linux installation CD**
- A copy of **Windows® installation CD**
- Some **FreeDOS** utilities
- A copy of S.Ha.R.K.

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## Knoppix live CD



Download ISO from  
<http://www.knoppix.org>

- **boot** from CD
- **open** a command shell
- type "su" (**become root**), password is empty
- start **fdisk** (ex. **fdisk /dev/hda**)

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## Linux fdisk

Command	action
a	toggle a bootable flag
b	edit bsd disklabel
c	toggle the dos compatibility flag
d	delete a partition
l	list known partition types
m	print this menu
n	add a new partition
o	create a new empty DOS partition table
p	print the partition table
q	quit without saving changes
s	create a new empty Sun disklabel
t	change a partition's system id
u	change display/entry units
v	verify the partition table
w	write table to disk and exit
x	extra functionality (experts only)

Command (m for help):

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## HD partitioning




Primary	1st	FreeDOS	→	FAT32
	2nd	Windows®	→	FAT32
	3rd	Linux /	→	extX
Extended		Data 1	→	FAT32
		...		
		Data n	→	FAT32
	last	Linux swap	→	swap

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## HD partitioning



**FreeDOS must be installed into the first partition of your HD or it may not boot**



**format data partitions as FAT32, so that you can share your data between Linux, Windows® and FreeDOS**

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## HD partitioning

Windows® partition type



FAT32  
(LBA)



change the Windows® partition type only, to make Windows® leaving all the booting stuff into its own partition

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## Windows® installation

Install Windows®...



only tested for Windows® 2000 and above

Windows® 98 or older **should not work** if not installed into the 1st partition

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## FreeDOS installation

After Windows® installation:

- **reboot** with Knoppix CD inserted
- change the 1st partition type to
  - **FAT32** for normal usage
  - **FAT16** to use S.Ha.R.K.'s filesystem functions
- **format** the 1st partition

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## FreeDOS installation

Install

**FreeDOS**

download the packages from  
<http://www.freedos.org>



download the packages and copy them manually into the partition, I experienced some trouble with installation CD and floppy

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## FreeDOS bootsector image

- build a FreeDOS boot floppy
  - type "**sys a:**"
- copy **sys.com** on floppy
- boot from floppy
- create the boot sector image
  - type "**sys x: x:\fdosboot.img**"

"x:" is the drive letter of the partition in which FreeDOS has been installed as **seen by FreeDOS** after the boot from floppy

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## Linux installation



reboot and install your favourite Linux distro

After the installation, the GRUB boot manager should be installed in your MBR



I did not tried other boot managers, like LILO or XOSL

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## Modify grub.conf

You can find it in `/boot/grub/grub.conf`

```
title Win2000
  rootnoverify (hd0,1)
  chainloader +1

title FreeDOS - Shark
  rootnoverify (hd0,0)
  makeactive
  chainloader /fdosboot.img
  boot
```

Windows®

FreeDOS with S.Ha.R.K.

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## Example of modified grub.conf

```
default=0
timeout=10
splashimage=(hd0,2)/boot/grub/splash.xpm.gz
title Fedora Core (2.6.8-1.521)
  root (hd0,2)
  kernel /boot/vmlinuz-2.6.8-1.521 ro root=LABEL=/ rhgb quiet
  initrd /boot/initrd-2.6.8-1.521.img
title FreeDOS
  rootnoverify (hd0,0)
  makeactive
  chainloader /fdosboot.img
  boot
title Win2000
  rootnoverify (hd0,1)
  chainloader +1
```

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## A full-optional alternative

# ULTIMATE BOOT CD

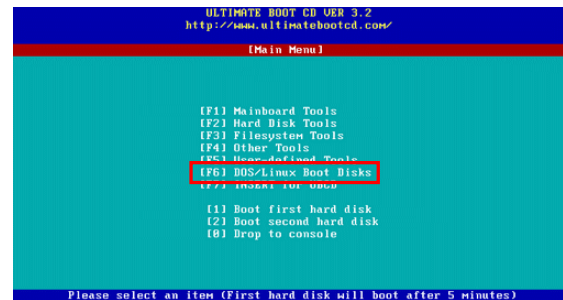
Download ISO from

<http://ubcd.sourceforge.net>

- DOS version of the **Linux fdisk**
- an already installed **FreeDOS** distribution
- many low-level **diagnostic tools**

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## A full-optional alternative



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## Installing S.Ha.R.K.

- Download the full package from <http://shark.sssup.it/>
- It includes
  - S.Ha.R.K. **source code**
  - The **eXtender**
  - **Unzip** utility
  - **DJGPP** compiler
  - **DOSLFN** utility to manage long file names

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## Installing S.Ha.R.K.

# SHARK

Do follow the instructions contained  
in  
**instnew.txt**  
to correctly build your S.Ha.R.K.  
distribution

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## S.Ha.R.K. boot CD-ROM



- No HD installation required
- Burn the ISO image on a CD
- Boot S.Ha.R.K. from CD
- Write your own project data on HD
- Optional resizable RAM disk

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## S.Ha.R.K. and network execution

If you install the Linux version you can build/develop/compile faster

however

S.Ha.R.K. needs a DOS environment to run applications

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## S.Ha.R.K. and network execution

therefore

You should **reboot** at every application execution

or

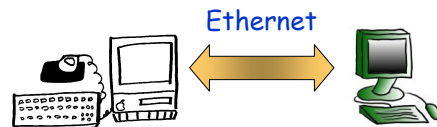
Use a floppy disk to move and run the application to a DOS machine

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## S.Ha.R.K. and network execution

or you may choose to

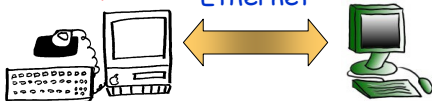
Run applications on a remote machine over Ethernet network



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## S.Ha.R.K. and network execution

- ✓ develop
  - ✓ compile
- Ethernet
- ✓ run
  - ✓ test



Linux/Windows + S.Ha.R.K. → DOS partition + packet driver + FTP server

FTP client

DHCP\*\*\* + TFTP server → GRUB built with network support

→ PXE capable network card

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## S.Ha.R.K. and network execution

- PXE and GRUB require to **reboot** the remote machine at every execution
- FTP does not! Faster & smarter...
- PXE also **requires GRUB** built with network and PXE support
- almost all network cards support PXE
- some NIC have **no packet drivers**
- PXE works on diskless machines
- FTP needs operations at the remote machine console



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