

Boot Diskettes, Bootable USB Keys and Live CDs

Used when the computer can't start for some reason, as a diagnostic, repair and recovery tool.

- Boot diskettes
- Floppy-based Linux distributions
- Bootable business cards
- USB keydisks
- LiveCD distros

Boot diskette

- This used to be created during Red Hat installation, but it's no longer possible; stock Linux 2.6 kernels won't fit on 1.44 MB floppies
- Starts machine from kernel on diskette, uses other OS files from hard drive
- Use the RHEL Installation Disk 1 in "rescue" mode instead

Floppy-based distributions

- Small Linux distributions designed to boot and run from one or more floppy disks
- Used for recovery when the hard disk is unbootable and/or the system files are corrupted
- Usually very basic toolsets; check to make sure your hard disk's file system and your favorite text editor are supported (problem for ext3 disks)
- Can usually run fsck, make a network connection, copy files to a server, edit configuration files

Floppy-based distros

- Tomsrtbt <http://www.toms.net/rb/>
- Trinux <http://trinux.sourceforge.net>

Most floppy-based distros can connect to the Internet, and can also read and sometimes write FAT and NTFS drives as well, making them useful for recovery of Windows machines, too.

Bootable Business Cards

- Linux distributions that can boot and run from a business-card sized CD.
- Machine must be able to boot from a CD (including non-round, if you're using a real BBC; not all CD drives like non-round disks)
- Provides a wider variety of tools for repair and recovery, since the BBC has 50 MB of space

BBC Distributions

- INSERT (Inside Security Rescue Toolkit)

http://www.inside-security.de/insert_en.html

- read/write support for NTFS volumes

- Damn Small Linux

<http://www.damnsmalllinux.org>

- DSL is based on Debian and can install to a full Debian install on hard disk

Bootable USB Disks

Allow you to boot a functional Linux distro from a USB “keydisk”

- Damn Small Linux
<http://www.damnsmalllinux.org>
- Feather Linux
<http://featherlinux.berlios.de/>

LiveCD Distributions

- Bootable CD or DVD containing a full feature-packed distribution of Linux
- Configuration files in RAMdisk, applications and utilities run from compressed drive on CD (uncompressed on DVD)
- Requires lots of RAM in machine (usually 128 MB min.)
- Most LiveCDs are based on the Debian distribution, which won't have the RedHat system-config-* tools.
- You must (usually) mount the hard disk manually to have read/write access.

LiveCD Distros

- **KNOPPIX**

<http://www.knopper.net/knoppix/index-en.html>

- Based on Debian GNU/Linux
- Most LiveCD distros are based on KNOPPIX

- **Ubuntu**

<http://www.ubuntulinux.org>

- A cutting-edge distro with LiveCD based on Debian unstable

LiveCD Distro

- Fedora LiveCD

<http://fedoraproject.org/wiki/FedoraLiveCD>

- LiveCD based on Fedora Core 6 via the Pilgrim project for easy remastering

- Puppy Linux

<http://www.puppylinux.org/>

- Designed for replacing Windows 9x on older machines
- Run from CD-R, CD can be removed
- Run from rewriteable drive, files and settings stored on disk (including CD-R, CD-RW and DVD-RW)

Using a LiveCD

- Start from CD
- Log in as root, or start a root shell
- Examine /etc/fstab, or use fdisk to determine partitions

`/sbin/fdisk /dev/hda`

(IDE disks)

`/sbin/fdisk /dev/sda`

(SCSI disks)

Repairing the Hard Disk

- Make sure the partition is not mounted

```
umount /dev/hda1
```

- Repair the disk

```
fsck -fv /dev/hda1
```

- If you suspect bad sectors, use

```
fsck -ckv /dev/hda1
```

This will take longer, but will use badblocks to check for bad sectors.

Mounting the hard disk

- Create a mount point

```
mkdir /mnt/part1
```

(Note: doesn't have to be under /mnt, some LiveCDs discourage using /mnt.)

- Mount the partition at that point

```
mount -t auto /dev/hda1 /mnt/part1
```

- Use normal tools to examine and modify files on /mnt/part1