

# 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, or use one of the LiveCD images on the Medusa CD

# 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

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

Many 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](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
- Can install to hard drive from the LiveCD

# LiveCD Distros

- Fedora LiveCD

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

- LiveCD based on current Fedora 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 if enough RAM
- 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