81 - Emergency Recovery

How to recover from no more booting because of bad configuration:

A short description of the kernels/bootdisks:

All kernels are modularized. This means that almost all drivers are loaded as kernel modules.
You can create a new boot or install floppy, if you have access to either a running Linux box or a running DOS box.

Choose one of the boot images in this directory according to this README
Under DOS, write it to a formatted (i.e. error-free) floppy using
CD1:`/dosutils/rawrite/rawrite.exe` .
Under Linux, to **format a floppy** use a command like: `fdformat /dev/fd0`

To create a boot and rescue disk from SuSE CD1:

```
dd if=/cdrom/disks/rescue of=/dev/fd0
```

- **Making Install disks**

  - Via command line

  ```
  mount /cdrom
  cd /cdrom/disks
  dd if=bootdisk of=/dev/fd0
  ```
  or
  ```
  dd if=/cdrom/disks/bootdisk of=/dev/fd0
  ```

- **Making Boot disk(rescue disk)**

  - **Via yast** --
    System Administration-->Kernel and bootconfiguration-->Create rescue disk
  - **Via command line**
    - `mount /cdrom`
    - `cd /cdrom/disks`
    - `dd if=rescue of=/dev/fd0`

    or
    ```
    dd if=/cdrom/disks/rescue of=/dev/fd0
    ```

  The same can be done for all other floppy disks images.

Now you have a new boot or install floppy which you can use
to boot either the installed system or the rescue system from CD.
If your computer is able to boot from CD-Rom, you can also boot from CD1.

If you lost the MBR (LILO) because you had to reinstall Windows.
Then use this boot floppy disk and boot the already installed system.
Before booting the system on the hard disk it needs to know the root partition
(`hda3`...`hda5` ect). If you don't know it then follow these instructions:

- Boot from the floppy and select the rescue system in the menu.
- Put the CD in the drive and chose the CD rom as source of rescue-Faster than the Floppy.
- Login as root . It won't ask for a password `yomama #` should appear.
- Then enter the command **`fdisk /dev/hda`** (if the Linux Drive is the `hda`)
- Then type ' **`p`** *<enter>* '
- A list of partitions and devices names will appear.
  Hopefully you can make sense of this list.
- When finished then type '**`q`** *<enter>*' to quit.
- Reboot again with the floppy and choose to *Boot an already installed system*.
- At this time it will ask to give the device name /`hda`? etc. ....
- Give the proper device name that you found as Linux Partition in the `fdisk` list.
- When booted login as root and type '`lilo`' command to rewrite LILO in the MBR
- Reboot without the floppy....cross your fingers ...it should work!!

Loging IN as Root without root password or floppies or CDROMs!!!

at `LILO Boot:`
press the **TAB** key and type
<linux_boot_menu_item> **`init=/bin/bash`**

the system root dir partition (/)will be mounted in read-only mode and you will be logged as root user. Then issue the following command to make it read-write:

```
mount -o remount,rw /
```

then you can erase the root password reference (x) by editing the `/etc/passwd`
eg. change the first line of `/etc/passwd` from :

```
root:x:0:0:root:/root:/bin/bash
```

to

```
root::0:0:root:/root:/bin/bash
```

When done, save the file and do the following command:

```
mount -o remount,ro /
```

and then reboot the system with the **Ctrl-Alt-Del**

the system will restart and allow to login as `root` without password.

Note: Make sure afterwards that the **x** is reentered in `/etc/passwd` before leaving the system to allow the real administrator to login with his root password and to prevent other users to login as root without password.

Protection against above loging in as root without password(till SuSE 7.0 only):

1 - Set the boot sequence to C only!!!
2 - Set a password for BIOS access
3 - Edit the `/etc/lilo.conf` and do the following modifications:

- Enter a new keyword anywhere at the beginning:
  `single-key`
- Make sure that all the menu items of LILO are only one character long:

eg:

```
image = /boot/vmlinuz
root = /dev/hda3
label = l       <---- l character is pressed to boot Linux

other = /dev/hda1
label = w       <---- l character is pressed to boot Windows
table = /dev/hda
```

4 - Save `/etc/lilo.conf`
5 - Refresh LILO with the command: `lilo`

How to protect with LILO From above Hack (from `SuSE 7.1`)

- Lock on the casing of the PC
- In BIOS: Boot only frm C:
- in `/etc/lilo.conf`
  `restricted`
  `password=`*`mypassword`* (cleartext!)

How to protect with GRUB from above hack

- Lock on the casing of the PC
- In BIOS: Boot only from C: and set a BIOS access password
- in `/boot/grub/menu.lst`

Protecting only against entering kernel options:

Globally with only one password:

`password` *`password`*

Protecting against booting.

Global password and individual locking:

In global section:

`password` *`password`*

Note: no " or ' should be used around the password. These characters are seen as part of the password.

In individual section:

`lock`

immediately at the line after the title of each section that requires a password to boot.

eg.

```
password password
title linux-scsi
      lock
```

```
                    kernel (hd1,1)/boot/vmlinuz.....
```

Individual password per section:

In individual section:

`password` *`password`*

eg.

```
title linux-scsi
        password mart28ty
        kernel (hd1,1)/boot/vmlinuz.....
```

Note: The user needs to press '`p`' before entering the password.