


```
### #### ##### (##### # #####) # ##-
##### ##### # ##### bash.
```

- ##### ##### ##### ##### ##### # #####
#####.
- ##### ## ##### ##### ## # ##### #####
#####, ## # #####.
- ##### ## ##### # ##### ##### # #####
#####.
- ##### # KVM ##### # ##### # #####
KVM, libvirt # QEMU.

3.2. Pre-installation Memory Test Incorrectly Identifies Good Memory as Bad

The pre-installation memory test (**memtest**) on the openSUSE 12.2 media got miscompiled. It reports errors in test 7 on good RAM modules. Use the openSUSE 12.1 media if you need to run **memtest**.

4.

4.1. ##### «zypper dup»

```
### ##### # ##### openSUSE 12.1 (### #####) ##### openSSH #####  
### ##### openssh. #### # ##### «zypper dup» ## SSH, #####  
«zypper dup» # ##### (#####, «screen» ## «tmux»), #####  
##### ## # ##### # ##### (#####,  
«nohup»).
```

4.2. ##### ## sysvinit

```
##### ##### ##### ##### ## ##, ##### systemd. #####  
#####, #### openSUSE 12.2 ##### ##### # ##### sysvinit ##  
##### ##, ## ## sysvinit ##### # # #####  
#####. ## ##### # #####, ##### sysvinit, #####  
##### ## ##### ## systemd.
```

4.3. mount # losetup ##### cryptoloop

```
cryptoloop ##### # ##### dm-crypt  
### #####. mount (#####, ##### /etc/fstab) # losetup #####-  
##### cryptoloop. ### ##### # fstab, ##### cryptoloop ##  
##### # #####. #####, ##### # #####-  
## ##### dm-crypt (/etc/crypttab). ##### # http://en.opensuse.org/  
Encrypted_Fileystems ## #####.
```

4.4. ##### systemd

```
##### systemd, ## ##-
##### noauto ## ## /etc/fstab. #####
##### nofail #####, #####:

/dev/mapper/cr_sda3 /home ext4 acl,user_xattr,noauto 0 2

##

/dev/mapper/cr_sda3 /home ext4 acl,user_xattr,nofail 0 2
```

5.

5.1. ##### KMS (Kernel Mode Setting)

With openSUSE 11.3 we switched to KMS (Kernel Mode Setting) for Intel, ATI and NVIDIA graphics, which now is our default. If you encounter problems with the KMS driver support (intel, radeon, nouveau), disable KMS by adding nomodeset to the kernel boot command line. To set this permanently using Grub 2, the default boot loader, add it to the GRUB_CMDLINE_LINUX_DEFAULT kernel default load options line in your /etc/default/grub text file as root and running the terminal command

```
sudo /usr/sbin/grub2-mkconfig --output=/boot/grub2/grub.cfg
```

for the changes to take effect. Else, for Grub Legacy, add it to the kernel command line in /boot/grub/menu.lst, also done as root. This option makes sure the appropriate kernel module (intel, radeon, nouveau) is loaded with modeset=0 in initrd, i.e. KMS is disabled.

```
# #####, ##### DRM ## initrd ##### # ## ##-
# KMS, ##### DRM # initrd. ## ##-
##### sysconfig NO_KMS_IN_INITRD # yes ##### YaST, ## ## initrd #####.
#####.

## ##### Intel ## KMS Xserver ##### fbdev (##### intel #####-
## ##### KMS); # ##### ## Intel #####
##### «intellegacy» (##### xorg-x11-driver-video-intel-legacy), ## ##-
##### UMS (User Mode Setting). ## ## ##### /etc/X11/
xorg.conf.d/50-device.conf # ##### intellegacy.

## ##### ATI ##### radeonhd. ## ##### NVIDIA
## KMS ##### nv (##### nouveau ##### KMS). #####
#####, ##### ## ATI # NVIDIA ## #####
nomodeset ##### fbdev.
```

5.2. ##### sysvinit

```
## ##### openSUSE ##### systemd. # ##### ##-
##### # sysvinit, ##### F5 #####.
```

5.3. systemd:

systemctl ##### «#####» ##### (##. <http://www.freedesktop.org/wiki/Software/systemd/Incompatibilities>).

```
### #####, #####, #####, #####, #####:

cd /etc/init.d
./apache2 <####_#####>
```

5.4. systemd:

```
### ##### systemd ##### halt -p ### shutdown -h
now # #####, #####
#####: ##### halt ## #####
```

5.5. systemd: ##### tmpfs: /run, /var/run, /media # #.

```
systemd #####, #####, ##
##### tmpfs: ##### /run, /var/run, /var/lock # /media.
#####: http://lwn.net/Articles/436012/.

#####: ##, #####, # /
run, /var/run # #.
```

5.6. systemd: ##### (/tmp # /var/tmp)

```
systemd #####, ## # tmpfiles.d # /lib/systemd/system/
systemd-tmpfiles-clean.timer. ##### ##
#### tmpfiles.d.

## systemd ##### tmp ##### # /usr/lib/tmpfiles.d/
tmp.conf:

d /tmp 1777 root root 10d
d /var/tmp 1777 root root 30d

#####: systemd ##### sysconfig # /etc/sysconfig/cron, ####
TMP_DIRS_TO_CLEAR.
```

5.7. ##### USB-#####

Gnome and Xfce now use `udisks2` to automatically mount USB media under `/run/media/$USER`. KDE still uses `udisks` version 1 and mounts USB media under `/media`.

5.8. Specifying Partitions for Loopback Devices

With Kernel 3.4 there are two ways to have partitions for loopback devices. The first is with `max_part` and the second is with the `-P` parameter to `losetup`. They behave slightly differently since `-P` will dynamically allocate minor numbers for each device (including adding or removing them on the fly with `blockdev --rereadpt`). Using the `max_part` parameter causes each loop device to allocate that many minor numbers for each device.

So when you use `max_part=8` and do not change `max_loop`, which defaults to 8, you are using all of the allocated minor numbers with the first device.

The solution is either to use `-P` or to *also* use `max_loop`.

5.9. ##### # ##### # # /etc/adjtime

```
##### /etc/adjtime #####  
# ##### BIOS — ##### UTC (##### HWCLOCK  
##### /etc/sysconfig/clock).
```

```
#### /etc/adjtime ##### (#####  
# ##### ntpdate ### ### ntpd), #####  
USE_ADJUST # ##### /etc/sysconfig/clock ##### "no".
```

5.10. GNU tar ## ##### POSIX-#####

```
GNU tar ##### --format=posix # ##### POSIX-#####  
##### PAX. #####  
#####.
```

```
##### (### # ##### # #####) #####  
#####:
```

```
TAR_OPTIONS='--format=gnu'
```

```
###
```

```
TAR_OPTIONS='--pax-option=delete=[ac]time*'
```