**Brightness of the display is wrong and not adjustable**

6. Some laptops have a problem with the brightness of the display: the Fn keys to adjust the brightness, don't work. Therefore the brightness of the screen may be too high or too low, which can be maddeningly annoying.

In some cases this can be solved by installing Brightness Applet in the panel. With that, you can try to adjust the brightness. But sometimes even that doesn't work. Then you can try the following progressive scheme:

Easy method: fix brightness for an Intel video card

6.1. ***Note: this step is only meant for computers that have only one graphics card, namely an integrated Intel chipset. It's not meant for laptops with hybrid video (with two video cards on board, namely both an Intel and an Nvidia or ATI/AMD video card). Do you have hybrid video? Then skip this step and proceed with step 6.2 in the right column.***

For an Intel video card you can do the following to fix the brightness:

a. Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

b. Copy/paste this command into the terminal:
ls /sys/class/backlight/

Press Enter. You have an Intel video card when the output reads:
intel\_backlight

c. Copy/paste the following command line into the terminal:
sudo touch /usr/share/X11/xorg.conf.d/20-intel.conf

Press Enter. When prompted, type your password. This will remain entirely invisible, you won't even see dots, this is normal. With this command you create an empty text file.

d. Now make sure that you have installed the applications gksu and leafpad:

Copy/paste into the terminal:
sudo apt-get install gksu leafpad

Press Enter.

e. Now copy/paste this line into the terminal:
gksudo leafpad /usr/share/X11/xorg.conf.d/20-intel.conf

Press Enter.

Copy/paste the following text block into that empty text file:

Section "Device"
        Identifier "card0"
        Driver "intel"
        Option "Backlight" "intel\_backlight"
        BusID "PCI:0:2:0"

EndSection

Save the modified text file and close it.

f. Reboot your computer: you should be able to change the display brightness now, with the usual Fn keys. If not, continue with item 6.2 in the right column of this page.

*(continued in the column on the right)*

**Another easy method to fix the brightness: add a Grub parameter**

6.2. It might be sufficient to add a parameter to Grub.

a. First make sure that you have installed the applications gksu and leafpad:

Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

Type (or copy/paste):
sudo apt-get install gksu leafpad

Press Enter and submit your password. Please note that the password will remain invisible, not even asterisks will show, which is normal.

b. Then type in the terminal (use copy/paste):
gksudo leafpad /etc/default/grub

In the text file that opens then, find the line:
GRUB\_CMDLINE\_LINUX=""

Replace it with this line:
GRUB\_CMDLINE\_LINUX="acpi\_osi=Linux"

Save the file and close it.

c. Now in the terminal:
sudo update-grub

Press Enter.
Type your password when required; this will remain entirely invisible, not even dots will show, this is normal. Press Enter again.

d. Reboot your computer. The Fn brightness keys should work now. If not, replace the line:
GRUB\_CMDLINE\_LINUX="acpi\_osi=Linux"
by this line:
GRUB\_CMDLINE\_LINUX="acpi\_backlight=vendor"

Then run sudo update-grub again and reboot.

When still no avail, continue with item 6.3 below.

**The moderately difficult method to fix the brightness: xbacklight**

6.3. By means of xbacklight you might achieve the desired result.

a. First, you install xbacklight:

Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

Type (use copy/paste):

sudo apt-get install xbacklight

Press Enter. When prompted, type your password. Your password will remain entirely invisible, not even dots will show, this is normal.
Press Enter again.

b. Then create a new startup application:

Query in the menu search box: startup.
Click on Startup Applications.
Click Add

Give the new addition the name Brightness and the command:

xbacklight -set 70

Click Add.

***Note:*** this only takes effect after logging into your user account. If the login window is too dark as well, you might configure your Linux to login automatically.

c. Reboot your computer. The screen brightness should be OK after logging in.

***Note:*** other brightness values than 70 might suit you better; you can experiment with that.

If this doesn't work, try 6.4:

**The more difficult method to fix the brightness: setpci**

6.4. If all else fails, you might try setpci:

a. Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

Type (use copy/paste):
lspci | grep -i vga

Press Enter. The output will show the exact type of your video card, and (what's more important right now) the BusID. That's the number with which the output line begins.

The BusID has five digits. Use your digit combination in the terminal command mentioned below (use copy/paste to avoid errors). I'll explain it by means of the following example:

b. When the BusID is 00:02.0, the command to ***dim*** an overly bright display is:
sudo setpci -s 00:02.0 F4.B=50

And for this same BusID the command to ***increase*** the brightness on a darkish display is:
sudo setpci -s 00:02.0 F4.B=90

Adapt this command according to your BusID.

Press Enter. Type your password when prompted; this remains entirely invisible, not even dots will show, this is normal. Press Enter again.

If all has gone well, this should set the brightness at a better level (in the example: either at 50 or at 90).

Experiment with other values in the range of 1 - 100, and pick the one you like best. 100 is maximum.

c. You can make this setting permanent, so that it'll survive a reboot. Like this:

- First make sure that you have installed the applications gksu and leafpad:

Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

Type in the terminal (use copy/paste):
sudo apt-get install gksu leafpad

Press Enter and submit your password. Please note that the password will remain invisible, not even asterisks will show, which is normal.

- Then type in the terminal (use copy/paste):
gksudo leafpad /etc/rc.local

Press Enter.

Now Leafpad opens with a text file. Add the following line (use copy/paste to avoid errors), just above the existing line exit 0:
setpci -s 00:02.0 F4.B=50

(adapt this line to your BusID and desired brightness level)

It will become like this then (example):

#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
setpci -s 00:02.0 F4.B=50
exit 0

Save and close the modified file.

d. Reboot your computer. The brightness should be alright now. If not, continue with 6.5.

**Last resort: use xrandr for adjusting the brightness**

6.5. You can also tune the display brightness with **xrandr**. That's being done on the software level and not on the hardware level, so it's not the most elegant solution. But sometimes it's the only means left.

First determine the video port to which your display is connected.

Launch a terminal window.
*(You can launch a terminal window like this:*[*\*Click\**](https://sites.google.com/site/easylinuxtipsproject/11)*)*

Copy/paste the following command line into the terminal:
xrandr | grep -w connected | cut -f1 -d" "

Press Enter.

On my laptop that generates the following output:
eDP1

That's the video port on my laptop, that's connected to the display.

You can now set the brightness from 0.1 to 1.0. On my laptop this creates a pleasant brightness:
xrandr --output eDP1 --brightness 0.8