

# Nvidia & Bumblebee

Prüfen, welche Karten eingebaut sind (mit zypper in lshw)

```
odysseus3:~ # lshw -c video
*-display UNCLAIMED
  description: VGA compatible controller
  product: GP107GLM [Quadro P2000 Mobile]
  vendor: NVIDIA Corporation
  physical id: 0
  bus info: pci@0000:01:00.0
  version: a1
  width: 64 bits
  clock: 33MHz
  capabilities: pm msi pciexpress vga_controller bus_master cap_list
  configuration: latency=0
  resources: memory:b2000000-b2ffffff memory:70000000-7fffffff
memory:b0000000-b1ffffff ioport:3000(size=128) memory:b3000000-b307ffff
*-display UNCLAIMED
  description: VGA compatible controller
  product: UHD Graphics 630 (Mobile)
  vendor: Intel Corporation
  physical id: 2
  bus info: pci@0000:00:02.0
  version: 00
  width: 64 bits
  clock: 33MHz
  capabilities: pciexpress msi pm vga_controller bus_master cap_list
  configuration: latency=0
  resources: memory:b4000000-b4ffffff memory:60000000-6fffffff
ioport:4000(size=64) memory:c0000-dffff
```

## Display Status prüfen

```
thommie@odysseus3:~> xrandr
xrandr: Failed to get size of gamma for output default
Screen 0: minimum 1920 x 1080, current 1920 x 1080, maximum 1920 x 1080
default connected primary 1920x1080+0+0 0mm x 0mm
  1920x1080    77.00*
```

Analyse mit inxi (zypper in inxi)

```
odysseus3:~ # inxi -Fxz
System:      Host: odysseus3 Kernel: 4.12.14-lp151.27-default x86_64 bits: 64
gcc: 7.4.0   Console: tty 0
              Distro: openSUSE Leap 15.1
Machine:     Device: laptop System: Dell product: Precision 7530 serial:
```

```
<filter>
      Mobo: Dell model: 03RV2M v: A00 serial: <filter> UEFI: Dell v:
1.6.0 date: 12/25/2018
Battery   BAT0: charge: 60.4 Wh 100.0% condition: 60.4/64.0 Wh (94%) model:
BYD DELL GHXKY8B status: Full
CPU:      Hexa core Intel Core i7-8750H (-HT-MCP-) arch: Skylake rev.10
cache: 9216 KB
      flags: (lm nx sse sse2 sse3 sse4_1 sse4_2 ssse3 vmx) bmips: 26496
      clock speeds: max: 4100 MHz 1: 2200 MHz 2: 2200 MHz 3: 2200 MHz
4: 2200 MHz 5: 2200 MHz 6: 2200 MHz
      7: 2200 MHz 8: 2200 MHz 9: 2200 MHz 10: 2200 MHz 11: 2200 MHz 12:
2200 MHz
Graphics: Card-1: Intel Device 3e9b bus-ID: 00:02.0
          Card-2: NVIDIA Device 1cba bus-ID: 01:00.0
          Display Server: X.org 1.20.3 drivers: fbdev (unloaded:
modesetting,vesa)
          tty size: 130x35 Advanced Data: N/A for root out of X
Audio:    Card Intel Device a348 driver: snd_hda_intel bus-ID: 00:1f.3
Sound: ALSA v: k4.12.14-lp151.27-default
Network:  Card-1: Intel Ethernet Connection (7) I219-LM driver: e1000e v:
3.2.6-k bus-ID: 00:1f.6
          IF: em1 state: down mac: <filter>
          Card-2: Intel Device 2526 driver: iwlwifi bus-ID: 6f:00.0
          IF: wlan0 state: up speed: N/A duplex: N/A mac: <filter>
Drives:   HDD Total Size: 512.1GB (52.0% used)
          ID-1: /dev/nvme0n1 model: KXG5AZNV512G_NVMe_SED_TOSHIBA_512GB
size: 512.1GB
Partition: ID-1: / size: 150G used: 23G (15%) fs: btrfs dev: /dev/nvme0n1p2
          ID-2: /var size: 150G used: 23G (15%) fs: btrfs dev:
/dev/nvme0n1p2
          ID-3: /opt size: 150G used: 23G (15%) fs: btrfs dev:
/dev/nvme0n1p2
          ID-4: /tmp size: 150G used: 23G (15%) fs: btrfs dev:
/dev/nvme0n1p2
          ID-5: /home size: 120G used: 59G (50%) fs: xfs dev: /dev/dm-0
          ID-6: swap-1 size: 38.65GB used: 0.00GB (0%) fs: swap dev:
/dev/nvme0n1p5
Sensors:  None detected - is lm-sensors installed and configured?
Info:     Processes: 351 Uptime: 0:53 Memory: 2537.2/31919.5MB Init:
systemd runlevel: 5 Gcc sys: 7.4.0
          Client: Shell (bash 4.4.231) inxi: 2.3.40
```

## Nvidia Treiber patchen

1. Download the following NVIDIA Driver Compiler/Installer file from NVIDIA website for Linux: NVIDIA-Linux-x86\_64-340.102.run
2. Go into CLI/Terminal, and SU into root(#)
3. Completely Exit Xorg Server: The command "systemctl isolate multi-user.target" usually followed by "CTL+ALT+[F1 to F6]" will do this

4. In CLI, go into root then provide execution permissions: `"chmod 755 NVIDIA-Linux-x86_64-340.102.run"`
5. Extract the Nvidia Driver Compiler/Installer Contents & Source Files: `"./NVIDIA-Linux-x86_64-340.102.run -extract-only"`
6. Copy [cp] Patch File `"nv_patch_340.102_linux_kernel_4.11"` into `"NVIDIA-Linux-x86_64-340.102"` directory
7. Go into [cd] `"NVIDIA-Linux-x86_64-340.102"` directory where patch file is now located
8. Apply Patch in that directory: `"patch -p0 < nv_patch_340.102_linux_kernel_4.11"`
9. Proceed with NVIDIA Driver Compilation & Installation by running `"./nvidia-installer"`. Important: Make sure the Nouveau Driver is disabled-blacklisted and modeset set to 0 in `/etc/modprobe.d` with `"blacklist nouveau"` & `"options nouveau modeset=0"`, and the Initial RAM Disk (initrd) is created prior to compiling, installing & rebooting. Enjoy!

Note: You may wish to test out the patch first by executing a Dry-Run with:  
`"patch -dry-run -p0 < nv_patch_340.102_linux_kernel_4.11"`

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