UNIX & LINUX

How to add virtual monitor with Nvidia proprietary driver

Asked 6 years, 1 month ago Modified 3 years, 8 months ago Viewed 21k times

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How can I add a virtual monitor with Nvidia proprietary driver? Previously I used an Intel card with this solution, which worked fine: Add VIRTUAL output to Xorg.

Now I want to switch to new hardware, without an Intel card. The solution mentioned in VNC-Server as a virtual X11 monitor to expand screen doesn't work in my case. When I want to add the mode to an output, `xrandr` throws an error.

```
xrandr --newmode test 173.00  1920 2048 2248 2576  1080 1083 1088 1120 -hsync +vsync
xrandr --addmode "DP-1" test
X Error of failed request:  BadMatch (invalid parameter attributes)
  Major opcode of failed request:  140 (RANDR)
  Minor opcode of failed request:  18 (RRAddOutputMode)
  Serial number of failed request:  41
  Current serial number in output stream:  42
```

Basic data:

- Hardware: HP ZBook 15 G3, configured for discrete graphics (Optimus doesn't work!)
- Software: Debian 10.0.2; Kernel: 4.19.0, Nvidia-Driver-Module: xserver-xorg-video-nvidia-legacy-390xx

If you ask, why I am doing this: I use a software to transfer the virtual screen to another machine via ethernet to achieve dual monitors with two notebooks. (https://github.com/B-LechCode/sooScreenShare)

on my machine, but it's unable to add
ea?

8:33
'Reinstate
76 132

asked Jan 2, 2020 at 10:59
B-LechCode
348 1 2 10

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20 at 17:10

found something called Deskreen which
n. Can share an entire virtual screen or a
single application. – aggregate1166877 May 26, 2025 at 1:46

3 Answers

Sorted by: Highest score (default)

8

I have a solution that works for me, though it's missing the ability to choose completely arbitrary resolutions. To be clear, this is just for the proprietary nvidia driver; the open-source nouveau driver works differently, as do other video card drivers.

The short version is: Use the `ConnectedMonitor` nvidia xorg.conf Screen option to activate the extra output in addition to your main monitor.

Here's the long version:

Run `xrandr --query` to get the names of your primary output and the unconnected one you plan to use for the virtual screen. For example, I get the following output:

```
LVDS-0 connected primary 1440x900+0+0 (normal left inverted right x axis y axis) 331mm
x 207mm
   [various monitor modes elided]
DP-0 disconnected (normal left inverted right x axis y axis)
DP-1 disconnected (normal left inverted right x axis y axis)
DP-2 disconnected (normal left inverted right x axis y axis)
DP-3 disconnected (normal left inverted right x axis y axis)
DP-4 disconnected (normal left inverted right x axis y axis)
DP-5 disconnected (normal left inverted right x axis y axis)
```

So in my case, the laptop screen is `LVDS-0` and I have `DP-0` through `DP-5` available. Like you, I'll choose `DP-1` for the virtual screen.

as well as a Device section for the
ut mine in `/etc/X11/xorg.conf.d/30-`

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esn't detect a monitor connected to it.
physical monitor) too, if you want to use
ivate any other outputs, even if it detects

Now restart X. You should see two active monitors with `xrandr` and other display-querying programs.

On my system the newly-activated virtual output has a variety of resolutions available. I can select any of them (e.g. via `xrandr --output DP-1 --mode 1600x900`) and the virtual output will resize itself. I cannot, however, add new modes (e.g. if I wanted a 1920x1080 resolution). That still gives me the "invalid parameter attributes" error. Fortunately, I can live with the modes available to me. With luck, you'll have something useful preset for you, too.

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answered Mar 20, 2021 at 19:14

asciipip
546 5 14

WOW! Thank you, I will test this, as soon I have time for it. – B-LechCode Apr 3, 2021 at 12:53

It works! The only thing is: There is no 1920x1200 mode available. Maybe there are other options for the config file to achieve this? – B-LechCode Jul 4, 2021 at 11:47

This worked for me as well, but in my case I needed to directly modify `/etc/X11/xorg.conf`, for some reason it was not working through xorg.conf.d. – Sasha Volokh Oct 20, 2022 at 20:26

I'll just add this because it took me a while to figure out, `LVDS-0` is this individual's real monitor, not a virtual flag. In my case with a desktop machine, my real monitor was `HDMI-0`. So if you get trapped with the virtual display being the primary, you can do something like: `xrandr --output HDMI-0 --primary` to make the real monitor the primary monitor. – aggregate1166877 May 26, 2025 at 1:50

https://askubuntu.com/a/803053/1568608 resolve asciiphil problem but You can't change resolution to for example 1920x1080 (invalid parameter attributes problem in asciiphil answer).
on "Screen":

```
MaxPClkCheck,NoHorizSyncCheck,NoVertRef
```

t 18:02

answered Feb 6, 2022 at 16:31

Dariusz Gardyński
11 2

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[redacted]

long, and it's not obvious to me what you mean
nd what problem it is solving. (2) I'm having
estion or not. If you are, please be clearer
, you probably shouldn't be posting it here at
all. … … …

answered May 26, 2022 at 2:06

Aevum Kairos

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