

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



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](#).

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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
lea?

8:33

'Reinstate

76 ● 132

asked Jan 2, 2020 at 10:59



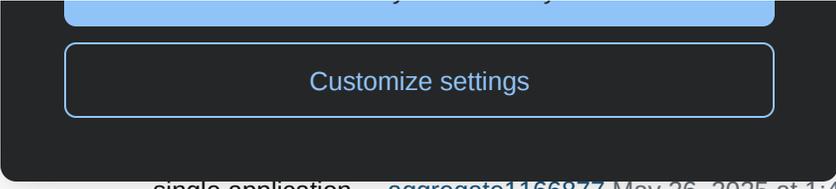
B-LechCode

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) 

 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.

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 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:



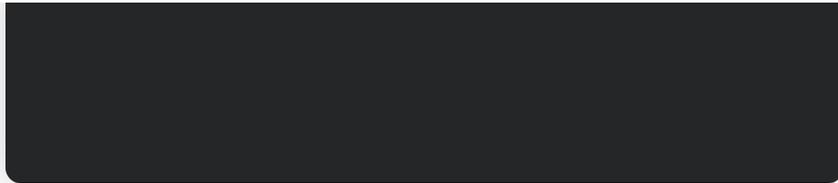
```
LVDS-0 connected primary 1440x900+0+0 (normal left inverted right x axis y axis) 331mm
x 207mm
[various monitor modes elided]
DP-0 disconnected (normal left inverted right x axis y axis)
DP-1 disconnected (normal left inverted right x axis y axis)
DP-2 disconnected (normal left inverted right x axis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



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



esn't detect a monitor connected to it. (physical monitor) too, if you want to use activate 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

 [asciiphil](#)
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`

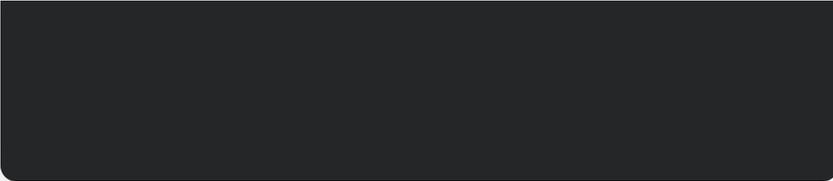
at 18:02

answered Feb 6, 2022 at 16:31

 [Dariusz Gardyński](#)
11 ● 2



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

all. ... Please do not respond in comments; [edit](#) your answer to make it clearer and more complete. – G-Man Says 'Reinstate Monica' Feb 6, 2022 at 18:38



If you'd like to attach a virtual display, just use

0

```
Option      "ConnectedMonitor" "HDMI-0"
```



replacing HDMI-0 with whatever display port you'd like your graphics card to use for the virtual display to the "Screen" section of your xorg.conf. Adding the following lines to will disable all of the necessary checks to allow you to set any unsupported resolution on newer NVIDIA graphics cards. Under Section "Screen":



```
Option      "UseEDIDFreqs" "False"
Option      "ModeValidation"
"NoDFPNativeResolutionCheck, NoVirtualSizeCheck, NoMaxPclkCheck, NoHorizSyncCheck, NoVertRef
AllowNonEdidModes"
```

then add the mode using the results from cvt and you're good to go! If you're still having trouble getting the resolution to set, you can add the ModeLine to your Monitor section and add the mode to your Display section to load it. More complete example:

```
Section "Monitor"
Modeline "2560x1440_120.00" <cvt output stuff>
EndSection
```

and



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```
MaxPclkCheck, NoHorizSyncCheck, NoVertRef
```

you generated by running `nvidia-xconfig` `xorg.conf`.

answered May 26, 2022 at 2:06



Aevum Kairos

1

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