xrandr X11 display layout

CONCEPTS

Run plain xrandr first: output names (HDMI-1, eDP-1, ...) differ per driver, and * marks the active mode.

Output HDMI-1, eDP-1
↓ `--mode`
Mode size + rate
↓ `--pos`
Position in the screen
↓ `--fb`
Screen one big canvas

Outputs are placed on one shared canvas (the screen); a position is the output's top-left corner on it.

X11 only. Under Wayland, Xwayland's RandR is read-only; use the compositor's own tool (e.g. wlr-randr, swaymsg output).

Changes last until the X server restarts: put your command in a startup script (.xprofile, i3 config) to keep it.

QUERY

xrandr
Show outputs, modes, active mode

xrandr --query
Same as no arguments

xrandr --current
Show state without re-probing hardware

xrandr --verbose
Detail incl. properties, gamma, transform

xrandr --prop
Show output properties (EDID, ...)

xrandr --listmonitors
List defined monitors

xrandr --listactivemonitors
List only active monitors

xrandr --listproviders
List GPU providers

xrandr --dryrun *<options>*
Check a command without applying it

ENABLE AND MODE

xrandr --output *<out>* **--auto**
Enable at its preferred mode

xrandr --output *<out>* **--off**
Disable the output

xrandr --output *<out>* **--mode** *<WxH>*
Set resolution

xrandr --output *<out>* **--mode** *<WxH>* **--rate** *<Hz>*
Set resolution and refresh rate

xrandr --output *<out>* **--preferred**
Select preferred mode only

xrandr --output *<out>* **--primary**
Make this the primary output

LAYOUT

xrandr --output *<out>* **--pos** *<X>***x***<Y>*
Place at exact pixel position

xrandr --output *<out>* **--left-of** *<other>*
Put to the left

xrandr --output *<out>* **--right-of** *<other>*
Put to the right

xrandr --output *<out>* **--above** *<other>*
Put above

xrandr --output *<out>* **--below** *<other>*
Put below

xrandr --output *<out>* **--same-as** *<other>*
Mirror another output

xrandr --output *<a>* **--auto --output** *<b>* **--auto --right-of** *<a>*
Configure two outputs in one call

ROTATE, SCALE, TRANSFORM

xrandr --output *<out>* **--rotate normal**
Reset rotation

xrandr --output *<out>* **--rotate left**
Rotate counter-clockwise

xrandr --output *<out>* **--rotate right**
Rotate clockwise

ROTATE, SCALE, TRANSFORM (cont.)

xrandr --output *<out>* **--rotate inverted**
Rotate 180 degrees

xrandr --output *<out>* **--scale** *<X>***x***<Y>*
Scale the output's picture

xrandr --output *<out>* **--scale-from** *<W>***x***<H>*
Show a W x H area of the screen

xrandr --output *<out>* **--transform none**
Remove the transform

xrandr --dpi *<n>*
Set reported DPI

COLOUR AND MODES

xrandr --output *<out>* **--brightness** *<n>*
Software brightness (1.0 = normal)

xrandr --output *<out>* **--gamma** *<R>*:*<G>*:*<B>*
Set gamma per channel

xrandr --newmode "*<name>***"** *<modeline>*
Define a custom mode

xrandr --addmode *<out>* *<name>*
Add a mode to an output

MONITORS AND PROVIDERS

xrandr --setmonitor *<name>* **auto** *<out>*
Define a monitor for an output

RECIPES

Laptop plus external, extended

```
xrandr --output eDP-1 --auto --pos 0x0 \
       --output HDMI-1 --auto --right-of eDP-1 --primary
```

Back to laptop only

```
xrandr --output HDMI-1 --off --output eDP-1 --auto
```

Presentation: mirror at 1920×1080

```
xrandr --output eDP-1 --mode 1920x1080 \
       --output HDMI-1 --mode 1920x1080 --same-as eDP-1
```