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
```