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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'xrandr.1' command

$ man xrandr.1

XRANDR(1) General Commands Manual XRANDR(1)

NAME

xrandr - primitive command line interface to RandR extension

SYNOPSIS

xrandr [--help] [--display display] [-q] [-v] [--verbose] [--dryrun]
[--screen snum] [--q1] [--q12] [--current] [--noprimary] [--panning
widthxheight[+x+y[/track_widthxtrack_height+track_x+track_y[/bor?
der_left/border_top/border_right/border_bottom]]]] [--scale xxy]
[--scale-from wxh] [--transform a,b,c,d,e,f,g,h,i] [--primary] [--prop]
[--fb widthxheight] [--fbmm widthxheight] [--dpi dpi] [--newmode name
mode] [--rmmode name] [--addmode output name] [--delmode output name]
[--output output] [--auto] [--mode mode] [--preferred] [--pos xxy]
[--rate rate] [--reflect reflection] [--rotate orientation] [--left-of
output] [--right-of output] [--above output] [--below output] [--same-
as output] [--set property value] [--off] [--crtc crtc] [--gamma
red:green:blue] [--brightness brightness] [-o orientation] [-s size]
[-r rate] [-x] [-y] [--listproviders] [--setprovideroutputsource
provider source] [--setprovideroffloadsink provider sink]

DESCRIPTION

Xrandr is used to set the size, orientation and/or reflection of the
outputs for a screen. It can also set the screen size.
If invoked without any option, it will dump the state of the outputs,
showing the existing modes for each of them, with a '+' after the pre?

ferred modes and a '*' after the current mode.

There are a few global options. Other options modify the last output that is specified in earlier parameters in the command line. Multiple outputs may be modified at the same time by passing multiple --output options followed immediately by their corresponding modifying options.

--help Print out a summary of the usage and exit.

-v, --version

Print out the RandR version reported by the X server and exit.

--verbose

Causes xrandr to be more verbose. When used with -q (or without other options), xrandr will display more information about the server state. Please note that the gamma and brightness informa? tions are only approximations of the complete color profile stored in the server. When used along with options that recon? figure the system, progress will be reported while executing the configuration changes.

-q, --query

When this option is present, or when no configuration changes are requested, xrandr will display the current state of the sys? tem.

--dryrun

Performs all the actions specified except that no changes are made.

--nograb

Apply the modifications without grabbing the screen. It avoids to block other applications during the update but it might also cause some applications that detect screen resize to receive old values.

-d, --display name

This option selects the X display to use. Note this refers to the X screen abstraction, not the monitor (or output).

--screen snum

This option selects which screen to manipulate. Note this refers

to the X screen abstraction, not the monitor (or output).

--q1 Forces the usage of the RandR version 1.1 protocol, even if a higher version is available.

--q12 Forces the usage of the RandR version 1.2 protocol, even if the display does not report it as supported or a higher version is available.

RandR version 1.4 options

Options for RandR 1.4 are used as a superset of the options for RandR 1.3.

--listproviders

Report information about the providers available.

--setprovideroutputsource provider source

Set source as the source of display output images for provider. This is only possible if source and provider have the Source Output and Sink Output capabilities, respectively. If source is 0x0, then provider is disconnected from its current output source.

--setprovideroffloadsink provider sink

Set provider as a render offload device for sink. This is only possible if provider and sink have the Source Offload and Sink Offload capabilities, respectively. If sink is 0x0, then provider is disconnected from its current render offload sink.

RandR version 1.3 options

Options for RandR 1.3 are used as a superset of the options for RandR 1.2.

--current

Return the current screen configuration, without polling for hardware changes.

--noprimary

Don't define a primary output.

Per-output options

--panning widthxheight[+x+y[/track_widthx?track_height+track_x+track_y[/border_left/border_top/border_right/bor?

der_bottom]]]

This option sets the panning parameters. As soon as panning is enabled, the CRTC position can change with every pointer move. The first four parameters specify the total panning area, the next four the pointer tracking area (which defaults to the same area). The last four parameters specify the border and default to 0. A width or height set to zero disables panning on the ac? cording axis. You typically have to set the screen size with --fb simultaneously.

--transform a,b,c,d,e,f,g,h,i

Specifies a transformation matrix to apply on the output. Auto? matically a bilinear filter is selected. The mathematical form corresponds to:

a b c

d e f

g h i

The transformation is based on homogeneous coordinates. The ma? trix multiplied by the coordinate vector of a pixel of the out? put gives the transformed coordinate vector of a pixel in the graphic buffer. More precisely, the vector (x y) of the output pixel is extended to 3 values (x y w), with 1 as the w coordi? nate and multiplied against the matrix. The final device coordi? nates of the pixel are then calculated with the so-called ho? mogenic division by the transformed w coordinate. In other words, the device coordinates (x' y') of the transformed pixel are:

x' = (ax + by + c) / w' and

y' = (dx + ey + f) / w' ,

with w' = (gx + hy + i) .

Typically, a and e corresponds to the scaling on the X and Y axes, c and f corresponds to the translation on those axes, and g, h, and i are respectively 0, 0 and 1. The matrix can also be used to express more complex transformations such as keystone

correction, or rotation. For a rotation of an angle T, this formula can be used:

```
cos T  -sin T   0
sin T   cos T   0
 0       0      1
```

As a special argument, instead of passing a matrix, one can pass the string none, in which case the default values are used (a unit matrix without filter).

--scale xxy

Changes the dimensions of the output picture. Values superior to 1 will lead to a compressed screen (screen dimension bigger than the dimension of the output mode), and values below 1 leads to a zoom in on the output. This option is actually a shortcut ver? sion of the --transform option.

--scale-from wxh

Specifies the size in pixels of the area of the framebuffer to be displayed on this output. This option is actually a shortcut version of the --transform option.

--primary

Set the output as primary. It will be sorted first in Xinerama and RANDR geometry requests.

RandR version 1.2 options

These options are only available for X server supporting RandR version 1.2 or newer.

--prop, --properties

This option causes xrandr to display the contents of properties for each output. --verbose also enables --prop.

--fb widthxheight

Reconfigures the screen to the specified size. All configured monitors must fit within this size. When this option is not pro? vided, xrandr computes the smallest screen size that will hold the set of configured outputs; this option provides a way to override that behaviour.

--fbmm widthxheight

Sets the reported values for the physical size of the screen. Normally, xrandr resets the reported physical size values to keep the DPI constant. This overrides that computation.

--dpi dpi

This also sets the reported physical size values of the screen, it uses the specified DPI value to compute an appropriate physi? cal size using whatever pixel size will be set.

--newmode name mode

New modelines can be added to the server and then associated with outputs. This option does the former. The mode is speci? fied using the ModeLine syntax for xorg.conf: clock hdisp hsync? start hsyncend htotal vdisp vsyncstart vsyncend vtotal flags. flags can be zero or more of +HSync, -HSync, +VSync, -VSync, In? terlace, DoubleScan, CSync, +CSync, -CSync. Several tools permit to compute the usual modeline from a height, width, and refresh rate, for instance you can use cvt.

--rmmode name

This removes a mode from the server if it is otherwise unused.

--addmode output name

Add a mode to the set of valid modes for an output.

--delmode output name

Remove a mode from the set of valid modes for an output.

Per-output options

--output output

Selects an output to reconfigure. Use either the name of the output or the XID.

--auto For connected but disabled outputs, this will enable them using their first preferred mode (or, something close to 96dpi if they have no preferred mode). For disconnected but enabled outputs, this will disable them.

--mode mode

This selects a mode. Use either the name or the XID for mode

--preferred

This selects the same mode as --auto, but it doesn't automati? cally enable or disable the output.

--pos xxy

Position the output within the screen using pixel coordinates. In case reflection or rotation is applied, the translation is applied after the effects.

--rate rate

This marks a preference for refresh rates close to the specified value, when multiple modes have the same name, this will select the one with the nearest refresh rate.

--reflect reflection

Reflection can be one of 'normal' 'x', 'y' or 'xy'. This causes the output contents to be reflected across the specified axes.

--rotate rotation

Rotation can be one of 'normal', 'left', 'right' or 'inverted'. This causes the output contents to be rotated in the specified direction. 'right' specifies a clockwise rotation of the picture and 'left' specifies a counter-clockwise rotation.

--left-of, --right-of, --above, --below, --same-as another-output

Use one of these options to position the output relative to the position of another output. This allows convenient tiling of outputs within the screen. The position is always computed rel? ative to the new position of the other output, so it is not valid to say --output a --left-of b --output b --left-of a.

--set property value

Sets an output property. Integer properties may be specified as a valid (see --prop) comma-separated list of decimal or hexadec? imal (with a leading 0x) values. Atom properties may be set to any of the valid atoms (see --prop). String properties may be set to any value.

--off Disables the output.

--crtc crtc

Uses the specified crtc (either as an index in the list of CRTCs or XID). In normal usage, this option is not required as xrandr tries to make sensible choices about which crtc to use with each output. When that fails for some reason, this option can over? ride the normal selection.

--gamma red:green:blue

Set the specified floating point values as gamma correction on the crtc currently attached to this output. Note that you cannot get two different values for cloned outputs (i.e.: which share the same crtc) and that switching an output to another crtc doesn't change the crtc gamma corrections at all.

--brightness brightness

Multiply the gamma values on the crtc currently attached to the output to specified floating value. Useful for overly bright or overly dim outputs. However, this is a software only modifica? tion, if your hardware has support to actually change the brightness, you will probably prefer to use xbacklight.

RandR version 1.1 options

These options are available for X servers supporting RandR version 1.1 or older. They are still valid for newer X servers, but they don't in? teract sensibly with version 1.2 options on the same command line.

-s, --size size-index or --size widthxheight

This sets the screen size, either matching by size or using the index into the list of available sizes.

-r, --rate, --refresh rate

This sets the refresh rate closest to the specified value.

-o, --orientation rotation

This specifies the orientation of the screen, and can be one of normal, inverted, left or right.

-x Reflect across the X axis.

-y Reflect across the Y axis.

EXAMPLES

Sets an output called LVDS to its preferred mode, and on its right put

an output called VGA to preferred mode of a screen which has been phys?
ically rotated clockwise:

xrandr --output LVDS --auto --rotate normal --pos 0x0 --output
VGA --auto --rotate left --right-of LVDS

Forces to use a 1024x768 mode on an output called VGA:

xrandr --newmode "1024x768" 63.50 1024 1072 1176 1328 768 771
775 798 -hsync +vsync
xrandr --addmode VGA 1024x768
xrandr --output VGA --mode 1024x768

Enables panning on a 1600x768 desktop while displaying 1024x768 mode on
an output called VGA:

xrandr --fb 1600x768 --output VGA --mode 1024x768 --panning
1600x0

Have one small 1280x800 LVDS screen showing a small version of a huge
3200x2000 desktop, and have a big VGA screen display the surrounding of
the mouse at normal size.

xrandr --fb 3200x2000 --output LVDS --scale 2.5x2.5 --output VGA
--pos 0x0 --panning 3200x2000+0+0/3200x2000+0+0/64/64/64/64

Displays the VGA output in trapezoid shape so that it is keystone cor?
rected when the projector is slightly above the screen:

xrandr --fb 1024x768 --output VGA --transform
1.24,0.16,-124,0,1.24,0,0,0.000316,1

SEE ALSO

Xrandr(3), cvt(1), xkeystone(1), xbacklight(1)

AUTHORS

Keith Packard, Open Source Technology Center, Intel Corporation. and
Jim Gettys, Cambridge Research Laboratory, HP Labs, HP.