Partial Updates in DRM Atomic

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Why partial updates?

Actual updates are often not full screen

E.g. blinking cursor in your text editor
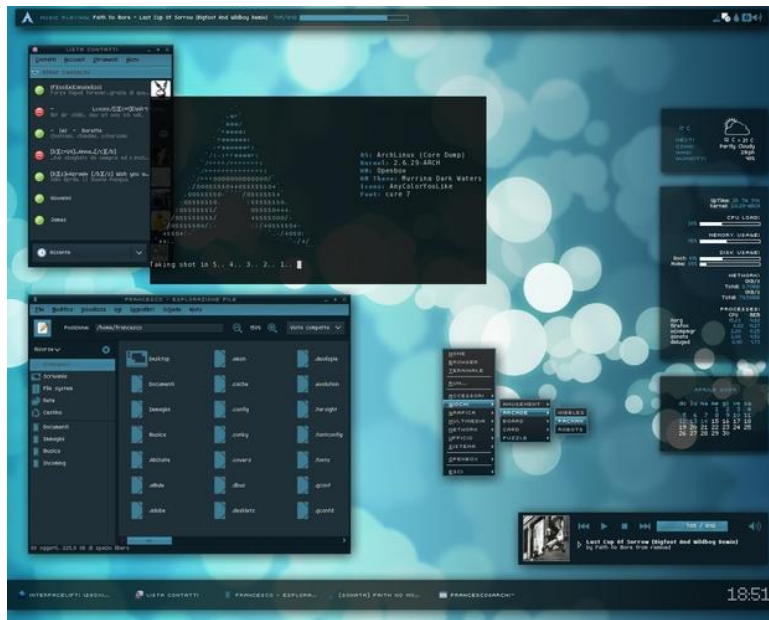
Or, a movie playback in a browser window

Image sourced from: http://www.techdrivein.com/2010/04/15-stunning-linux-desktop.html

However, a page flip always results in a full screen redraw

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Why bother?

Some DRM drivers could benefit from having more precise hints

   e.g. for virtual hardware, USB displays (udl, evdi...), tinydrm?

Smaller regions reported as changed may result in less work later on

Most compositors have all the required knowledge - but how to pass it to the kernel?

In past...

Userspace used to notify the kernel about damage regions via separate ioctl (DRM_IOCTL_MODE_DIRTYFB)

In the era of atomic drivers, is there a need for a replacement?

How?

Information about framebuffer changes is part of a drm_atomic_state

It seems logical to extend it, rather than using a separate ioctl on a side

What if we introduce a new property

That could be used to optionally indicate what actually changed between commits

If not used, assume full screen

We'd love to hear what you think!

Thank you!