

Outline of known work needed to fix resize

Tentative owners in []. Feel free to update.

Putting this in doc form initially until things are more concrete and to get more free form feedback in one place.

1. Surfaces changes
 - a. Maintain same surface id through resizing of frames. [jbauman] (P1)
 - b. If frame size does not match, draw gutter. [jbauman] (P1)
 - c. Use gutter color other than black. [???] (P2)
 - i. Will this fight with gutter color of the underlying window manager?
 - d. Hold onto Renderer's swap ack longer during resize. (P3)
 - i. May be redundant if we make Renderer resize-aware below. Table this for now?
2. Browser changes
 - a. Make Browser request specific frame size as part of BeginFrame message triggered by OS resize event. [tansell] (P1)
 - i. Resize event may come between BeginFrame boundaries. Will need coordination with normal BeginFrameSource.
 - ii. Delay BeginFrame until the Browser has received it's own swap ack to encourage lower end-to-end latency.
 - b. Disable impl-thread texture upload throttling. [tansell? / vmpstr? / reveman?] (P1)
 - i. Hopefully the back pressure we add everywhere else will help prevent this from flooding the gpu service.
3. Make Renderer resize aware
 - a. Force low latency of main and impl threads during resize. [tansell] (P2)
 - i. Notify cc::Scheduler of resize events.
 - ii. The Browser compositor configuration already has a forced low latency mode. See how we get to BEGIN_MAIN_FRAME_STATE_WAITING_FOR_DRAW.
 - iii. Make NotifyReadyToDraw reliable to enable 3.a.ii. This is also part of the checkerboard avoidance work. [brianderson] (P2)
 - b. Disable prepaint during resize in TileManager. [tansell?, vmpstr?] (P3)
4. GPU service changes
 - a. Allow Browser context to immediately pre-empt other contexts during resize? [sunnyps] (P3)
5. Platform considerations
 - a. TODO: Collect a matrix of OS+window manager resize behavior. [???] (P1)
 - b. Resize events keep coming on ui thread during raster. Do we need a nested loop to avoid gutter? Can we reuse Chris' work for Mac here? [tansell + ccameron?] (P1)
 - c. LTHI::~LTHI has a glFinish for WebView that hurts enter/exit of fullscreen on other platforms. [Remove it.](#) [brianderson] (P2)
 - d. On Windows, we get lots of resize events that prevent the Browser from activating. [jbauman?]
 - e. On Linux, [black flashes appear](#) likely because underlying frame buffer gets reallocated in the middle of our draw. Mostly fixed, but probably needs revisiting after everything else is fixed. [piman]

List of issues

- <https://code.google.com/p/chromium/issues/detail?id=505612> - Windows
- <https://code.google.com/p/chromium/issues/detail?id=506300> - Linux
- <https://code.google.com/p/chromium/issues/detail?id=503594> - WebView
- <https://code.google.com/p/chromium/issues/detail?id=326995> - Linux Flashes
- <https://code.google.com/p/chromium/issues/detail?id=497705> - Enter/exit fullscreen