WebGL Working Group Updates

WebGL Meetup, July 2021
Agenda

Cool WebGL Stuff
WebGL 2.0 in Safari Updates
Chrome Browser / ANGLE Status Updates
ANGLE Metal Backend Status Updates
WebGPU Status Updates
Cool WebGL Stuff

● Lots of great web sites and products using WebGL are released every day!
● Khronos’ WebGL working group tries to find and highlight these to the community
● They’re sent via email every couple of weeks to the WebGL Dev List
  ○ Also archived on this blog
● Please join the community, and share your own creations and findings!
WebGL 2.0 In Safari Updates

- WebGL 2.0 is **enabled by default** in Safari 15!
  - Uses ANGLE’s Metal backend
  - Huge thanks to Lê Hoàng Quyền for the original contribution
  - Credit to Kyle Piddington and team from Apple for the direct-to-Metal translator
- The latest code can be tested on both macOS and iOS
  - macOS: install macOS 12 (Monterey) Betas
  - iOS: install iOS 15 Betas
- Please test your applications now while bugs are still being fixed for the release!
- File any bugs you see on [bugs.webkit.org](http://bugs.webkit.org), WebGL component
Chrome Browser / ANGLE Status Updates

● Chrome browser making an architectural switch to use ANGLE everywhere
  ○ Centralizes WebGL validation
  ○ Enables switch to Vulkan / Metal backends
  ○ Many other benefits

● While switching to ANGLE on macOS, ran into showstopper problems in OpenGL driver
  ○ Graphical corruption
  ○ Kernel panics

● Diagnosed and worked around this problem

● Joint work between Chris Cameron, Geoff Lang, Ken Russell of Chrome team

● Can read the story to date on crbug.com/1181068

● Will probably give a presentation on this bug workaround in the future...
ANGLE Metal Backend Status Updates

- Ongoing collaboration between Apple and ANGLE team to upstream Apple's direct-to-Metal translator from WebKit's ANGLE snapshot
- While doing this, encountered another showstopper bug: kernel panics on Chromium's Mac testing machines
  - Older MacBook Pros still running macOS 10.14.6
- Thanks to Quyên Lê for finding the root cause
- Can read all about this on anglebug.com/6127
- Upstreaming is moving forward again
- Both teams are heavily invested in getting to a common code base
WebGPU Status Updates

- Spec and implementations are moving forward well
- Now’s a great time to try out the specification, shading language and various implementations!
  - They’re all behind flags in web browsers right now
  - Don’t browse the open web with these flags turned on yet
- WebGPU is the spec where compute shaders will be delivered to the web
  - WebGL 2.0 Compute spec is no longer being developed
- Jasper St. Pierre’s presentation today will show you how to get started bringing your WebGL application to WebGPU!
Presentations

Great group of presenters today!

- Jasper St. Pierre, Yacht Club Games: Porting WebGL to WebGPU
- Moritz Becher, UX3D: glTF™ Sample Viewer
- Sandra Voelker, Target: latest glTF extensions & advantages to tech artists
- Philip Taylor, Zea: leveraging multi-draw to speed up small object rendering
- Brendan Duncan, Unity: enabling SRP Batcher with WebGL

We’ll answer your Q&A live at the end of the session!