



Tooling for Microservices: Docker + Wasm

Michael Irwin

WASM
IS AWESOME

WebAssembly 101

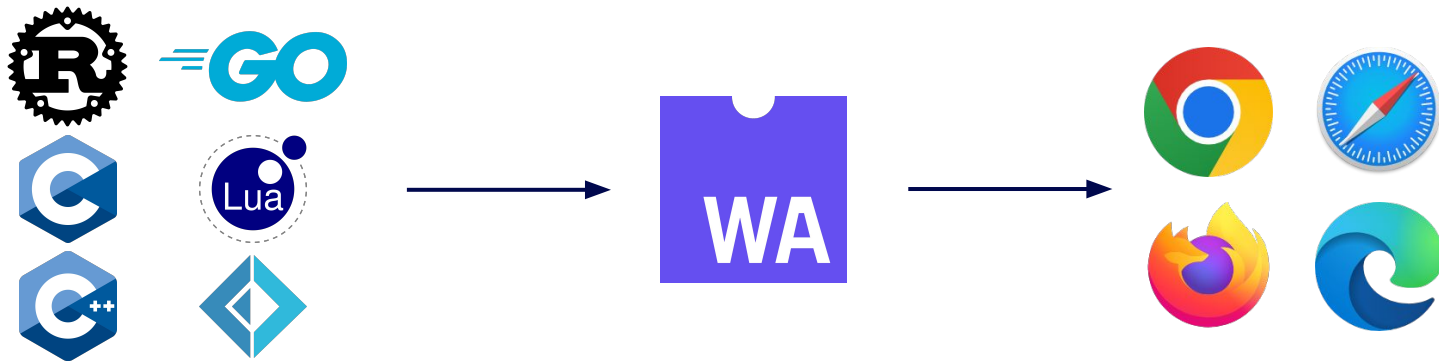


*“A safe, low-level code format
designed for efficient execution
and compact representation”*

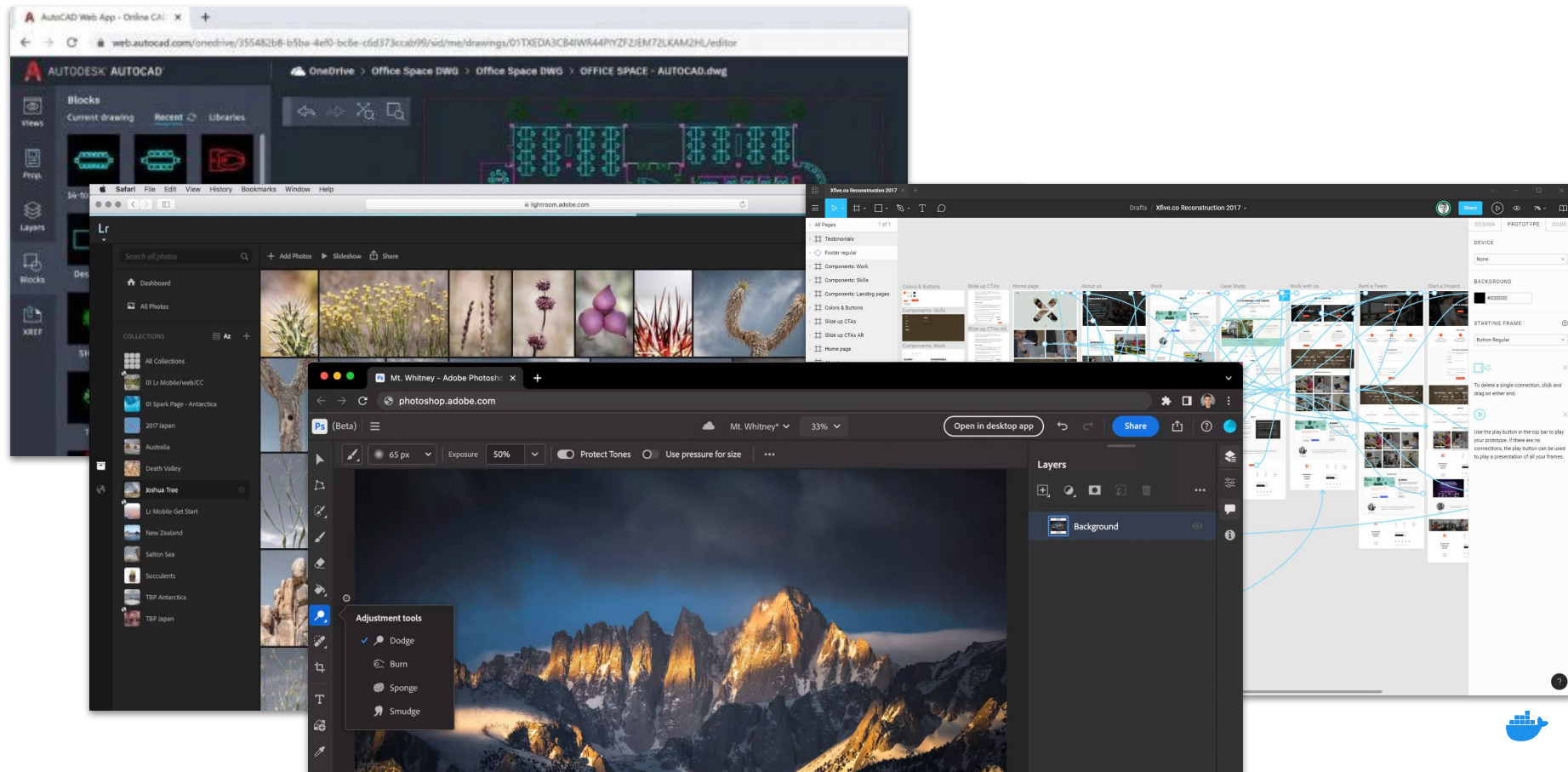


WebAssembly 101

- Often abbreviated as Wasm
- Standard/specification owned by W3C
- Originally designed to bring near-native code execution speeds into the browser
 - Built on the success of asm.js and Google Native Client



Web apps using Wasm



IF IT WORKS IN THE BROWSER

WHY NOT RUN IT EVERYWHERE?

imgflip.com



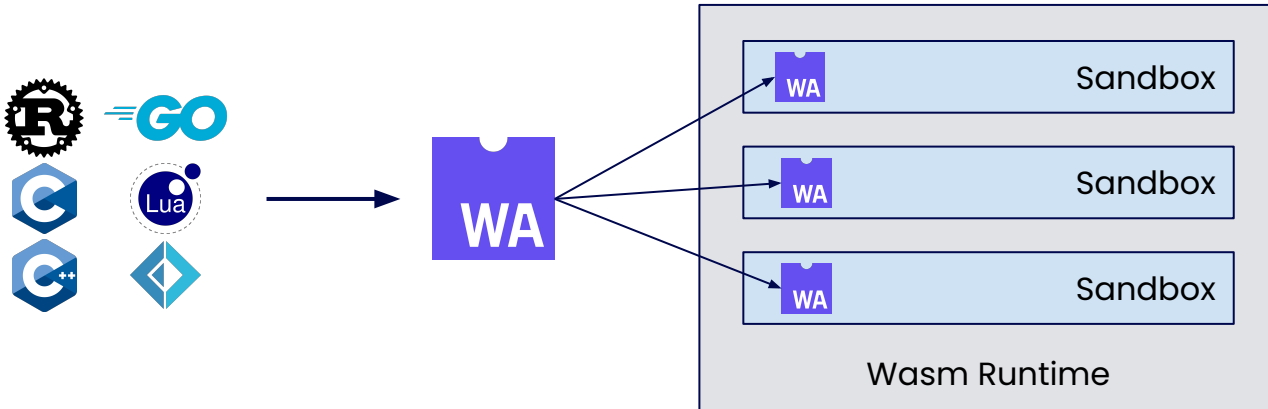
Why Wasm?

- Portability
- Strong sandboxing/isolation
- Supports 40+ languages
- Fast startup times
- Low resource overhead



Non-browser use cases

- IoT/Edge computing
- Microservices
- Plugin/extension systems



Why Docker?



What Docker can bring

- Same workflow that developers know and love
 - Build an OCI image (and compile using containers!)
 - Share the OCI image using an OCI compliant registry
 - Run the OCI image using a WASI runtime
- All of this built into Docker Desktop
- Interoperability with containers
- Need a DB or to use an existing Web service? No problem!

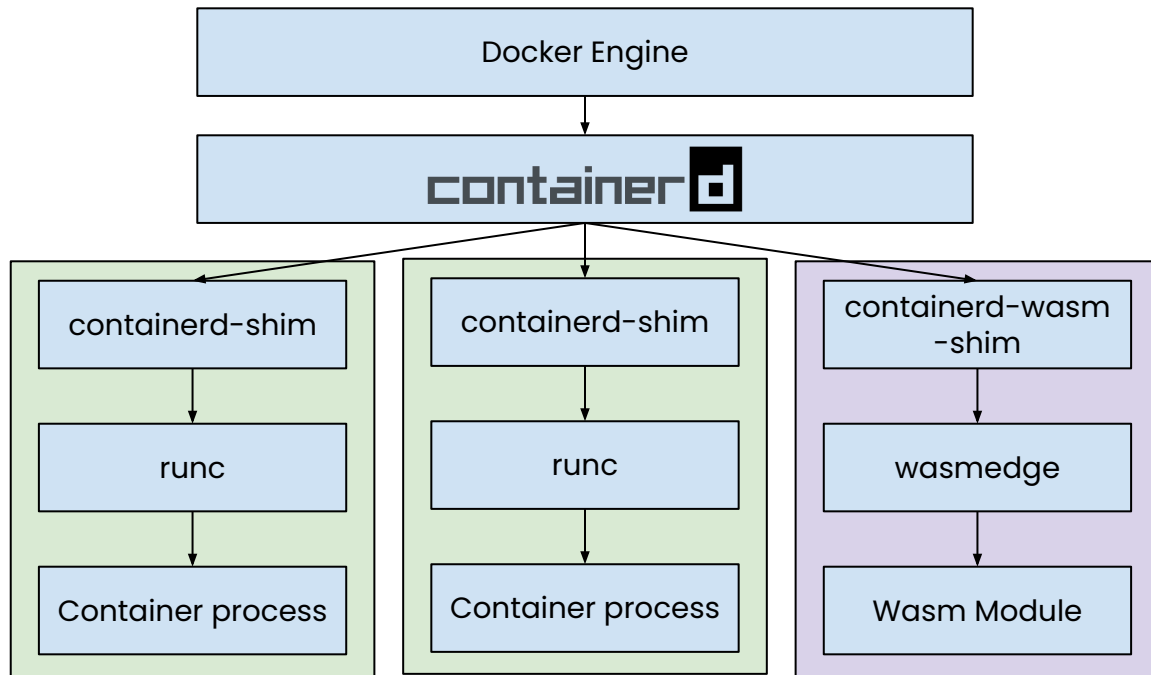


Browser Demo Time!

Source repo: github.com/mikesir87/wasm-game-of-life



What did we build?



Demo Time!

Source repo: github.com/second-state/microservice-rust-mysql/





Solomon Hykes

@solomonstre

The Docker+wasm announcement makes perfect sense. We no longer live in a single-runtime world: there are linux containers, windows containers and wasm containers. OCI can package them all, I should be able to build and run them all with [@docker](#).

4:02 AM · Oct 25, 2022 · Twitter for iPhone



What's next?

- Good question!
 - Path to production?
 - Using OCI artifacts for distribution/usage
 - Help us help developers!



Where to learn more!

- Check out the Technical Preview
 - <https://docs.docker.com/desktop/wasm>
- Join us in #wasm in the Docker Community Slack
- Reach out to me personally!
 - michael.irwin@docker.com
 - [@mikesir87](#)
 - [@mikesir87@cloud-native.social](#)



Thanks! Questions?

