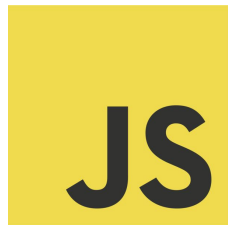# Multi-Platform Desktop Apps with Tauri

FrankenJS
2022-12-07
Bernd Kaiser

Agenda

1. Why do we need yet another JS Desktop App Toolkit
2. Tauri's approach
3. JWT Explorer - Demo
4. My XP Summary

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About me

Bernd Kaiser

- Software Engineer at inovex Erlangen
- CS Master with Focus on IT Security
- JS developer for over 20 years
- ☕ by day, 🦀 by night

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Using technology to inspire our clients.
And ourselves.

Why do we need another JS Desktop App Toolkit?

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Electron - the 800-pound 🦍 in the room

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- First released on 15 July 2013 by GitHub
- Ships a Chrome Browser
- Ships a NodeJS interpreter
- Cross Platform (Windows, macOS, Linux)

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Electron's disadvantages

- Huge files
- Memory hungry
- Plagued with security problems (but it's getting better!)

Tauri tries to solve these problems

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Tauri

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Tauri's Approach

- No bundled browser
- Core libraries written in Rust 🦀
- Commands to call native Rust extensions
- Optional JavaScript API for low-level system access

Tauri's bundled Browser alternative

Use the OS's web engine (web view) to avoid shipping a Browser

- Windows: WebView2 provided by Microsoft Edge Chromium
- macOS: WebKit which is native on macOS
- Linux: WebKitGTK for WebView (needs to be installed)
- Android*: Android WebView (Chromium based)
- iOS*: WKWebView (WebKit based)

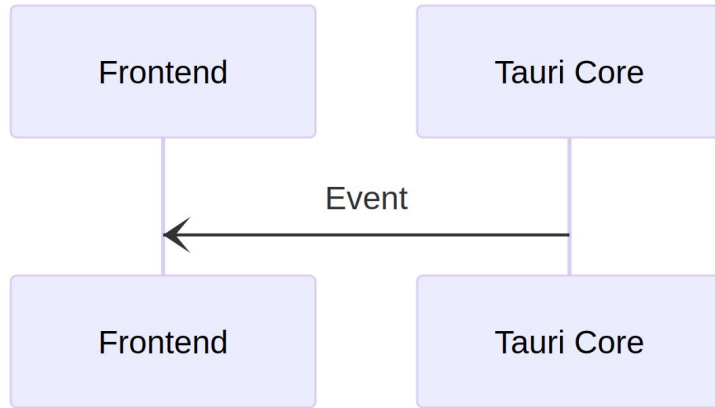*: Android/iOS support is on the roadmap for Tauri 2.0
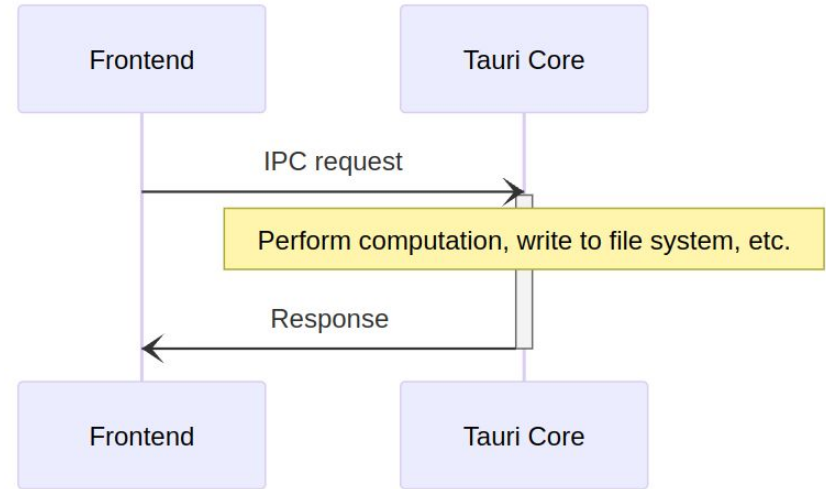
Tauri's Process Model

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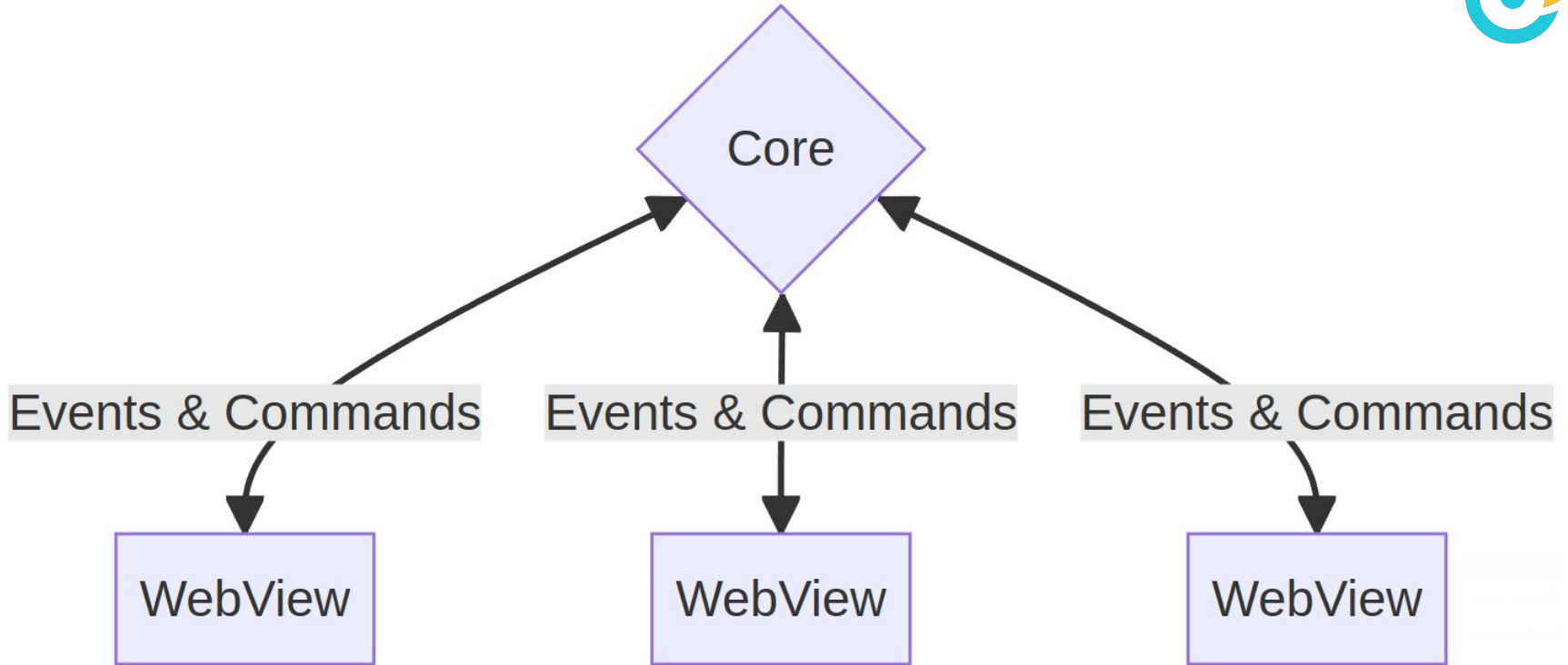
Events & Commands

Events

Commands

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Tauri's Features

Desktop Bundler

Bundle for all major desktops from native systems

Self Updater

Update Tauri Apps from within themselves

Core Plugin System

Build reusable plugins to extend Tauri core

Scoped Filesystem

Improved security of file interactions

App Tray

Cross-platform desktop icon tray

GitHub Action

Build your Tauri binary for macOS, Linux, and Windows

Native Notifications

Cross-platform notifications using polyfilled web API

Sidecar

Integrate and instrument other binaries

App Storage

Use a canonical location to store user data

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Tauri's Security

"Front-of-mind for the Tauri Team driving our highest priorities and biggest innovations."

- Allowing API
- Dynamic Ahead of Time Compilation
- Functional ASLR / Kamikaze Function Injection
- Decompilation is Difficult

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Tauri's JS API

- app
- cli
- clipboard
- dialog
- event
- fs
- globalShortcut
- http
- mocks

- notification
- os
- path
- process
- shell
- tauri
- updater
- window

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JWT Explorer

https://github.com/meldron/jwt-explorer

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My XP Summary

Pros:

- Great community
- Rust integration
- Great tooling (starter, signing, Github action templates)
- Easy to really tighten security

Cons:

- Multiple browser targets
- Loose Typescript typing for events and commands
- Some docs are incomplete/out of date

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Additional Resources

- [Website](), [Intro](), [Benchmarks](), [Get Involved]()
- [Discord Server]()
- [awesome-tauri](), [Github Actions]()
- Podcasts: [PodRocket](), [Changelog](), [Semaphore](), [Rustacean Station]()
- Videos: [Tauri in 100 Seconds](), [Tauri Foundations]()
- [JWT Explorer]()

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