DAILY BLOGGING EMBEDDED GECKO DEVELOPMENT

FOSDEM'24
FOSS on Mobile Devices Devroom

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ABOUT ME

1. Software Engineer for Jolla until a year ago
2. Now a Research Data Scientist for The Alan Turing Institute

https://www.flypig.co.uk
SAILFISH OS

1. Linux smartphone OS
2. glibc, busybox
3. A descendant of Maemo
4. Default sailfish-browser is gecko-based
GECKO

1. Mozilla’s rendering engine used in Firefox
2. Released in 2000, Netscape 6
3. Alternative to Blink, WebKit, Netsurf
GECKO ON SAILFISH OS

1. Artefact of Sailfish OS’s Maemo history
2. Based on EmbedLite and XULRunner
EMBEDDING GECKO

“Gecko has limited embedding capability that is not well-documented, not well-maintained and not heavily invested in... We have at various points in history had embedding APIs/capabilities, but we have either dropped them (gtk-mozembed) or let them bit-rot (IPCLite).”

Chris Lord, February 2016
SAILFISH BROWSER

- sailfish-browser
- embedlite-components
- qtmozembed
- gecko/xulrunner
# Sailfish Browser

<table>
<thead>
<tr>
<th>Language</th>
<th>Source Code Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++</td>
<td>8,552,649 lines</td>
</tr>
<tr>
<td>JS</td>
<td>3,033,285 lines</td>
</tr>
<tr>
<td>rust</td>
<td>135,220 lines</td>
</tr>
<tr>
<td>Qt</td>
<td>8,541 lines</td>
</tr>
<tr>
<td>Sailfish-Browser</td>
<td>60,106 lines</td>
</tr>
</tbody>
</table>
THE UPGRADE PROBLEM

1. Sailfish Browser ESR 60: February 2021
2. Sailfish Browser ESR 78: March 2022
3. Latest Firefox ESR: 115
4. By my estimate upgrading takes 36 person-months
1. In August I decided to attempt the upgrade from ESR 78 to ESR 91
2. Hoping my experience with 60 and 78 might help
3. I didn’t want to do it alone
WHAT IS A DEV DIARY?

“

A developer diary is where you write about developer things. It can be the record of what you worked on last, some decisions made by steak-holders [sic] in the product, and or a neat way to accomplish a task. It really comes down to what you want to put in it.

Jay Wilson, January 2023

”
HELPING ME CODE

1. Aide-mémoire
2. Build a searchable record of changes
3. Encourage structured thoughts
4. Motivate daily work
INVOLVE THE COMMUNITY

1. Browser upgrades are important
2. Users want to know about progress
3. Allow others to help
DOWNSIDES

1. Coding this way takes about twice as long
2. Daily updates are great motivation, but also a bind
3. Best for tasks that can be split into daily pieces
4. Visual output helps
COMMUNITY RESPONSE

1. Utterly overwhelming
2. People are so generous and nice
3. Did I join the wrong Internet?
DEMO
CLOSING THOUGHTS

1. Writing a dev diary is great for open source
2. It’s not literature, it’s code
3. Work a couple of entries in advance
4. Stick to a strict cadence
5. Write about what your tomorrow-self will need to know
THANK YOU!
FURTHER INFO

Dev Diary  https://www.flypig.co.uk/gecko

Sailfish Browser  https://github.com/sailfishos/sailfish-browser

Gecko source  https://github.com/llewelld/gecko-dev

Sailfish OS  https://sailfishos.org

Slides source  https://github.com/llewelld/fosdem24-gecko-dev