HTML5 apps on AGL platform, status update

Berlin F2F – September 2019

Lorenzo Tilve
Recap of 2019 goals
Goals for 2019

- Identified several aspects that required more work:
  - Continuous stabilization and maturity. Needed to maintain integration into Guppy/Halibut/Icefish, and fix and improve several components.
  - Finalize the replacement of pending Qt basic data structures.
  - Keep updating Chromium/WAM with any updates from WebOS, and reduce the delta with upstream.
  - Review memory management and integration of app lifecycle.
  - Targeting to full HTML5 demo.
Goals for 2019

• Chromium:
  - Rebase latest submissions from WebOS Chromium WebView.
  - Upstream the AGL changes into LG repositories.
  - Update to more recent Chromium version expecting some 7x codebase upgrade.
  - Additional bugfixing and performance improvements.
  - Better IPC for communication between WAM launcher and browser process.
Goals for 2019

• **Web Application Manager:**
  - Rebase latest commits available at upstream WAM.
  - Remove pending Qt dependencies.
  - Adaptation of WAM into new HMI architecture.
  - Launcher process permission control (SMACK permissions holder):
    • Protocol communication between launcher, browser and proxy.
    • Review token logic for HTML5 apps and remote clients/apps.
  - Integration with the new Pipewire audio framework.
  - Application life cycle on WAM with the AGL life cycle and memory management.
Milestones - M1

Work done for M1 – Automotive Linux Summit – July 17, 2019

a) Guppy integration stabilized for 7.0.3 release

b) Uprev of WAM to Yocto 2.6 (thud branch) released on Happy Halibut using Chromium 68 as the baseline

c) AGL guppy branch fixes upstreamed to LG WebOS OSE repository

d) Removal of all Qt dependencies for WAM

e) Initial integration with audio framework depending on the timing of PipeWire availability

f) Initial set of demo Web Apps released
Milestones - M2

Work done for M2 – Fall F2F meeting – September 21, 2019

a) Bugfixing and stabilization issues on Happy Halibut
b) Improvements on performance and webapps life cycle
c) Integration of HTML5 demo infrastructure
d) Second release of Qt webapps migration
Milestones - M2

Stabilization on Happy Halibut:

• Fixed several identified problems:
  – [SPEC-2657] Browser doesn't receive keyboard focus
  – [SPEC-2699] WAM crashes when trying to play a video in the Youtube webapp
  – [SPEC-2746] Dead keys not working in browser
  – [SPEC-2782] Auto-enable WAM remote debug when agl-devel is set
Milestones - M2

Stabilization on Happy Halibut:

- Changes on the sockets management after the new user model:
  - [SPEC-2684] WAM creates socket in /tmp
  - [SPEC-2685] Error creating lock file
  - [SPEC-2755] WAM lock file not deleted when service stopped

- Also looking into other issues as:
  - [SPEC-2586] Redundant systemd instance makes WAM and homescreen crash
Milestones - M2

Improvements on performance and webapps lifecycle

- Continued the work on backporting upstream fixes and performance improvements
  - [SPEC-2266] Backport Chromium-Wayland upstream patches

- Fixing activity of invisible webapps
  - [SPEC-1948] web apps should suspend and resume depending on visibility
Milestones - M2

Integration of HTML5 demo apps infrastructure

- Moving forward the generation of webapps and infrastructure:
  - Defining [SPEC-2773] Integration of web application workflow in the SDK
- Integration of recipes html5-launcher and html5-hvac into AGL repositories
  - [SPEC-2401] Create HTML5 homescreen and launcher
  - [SPEC-2645] Create HTML5 demos: HVAC
Milestones - M2

**Integration of HTML5 demo apps infrastructure**

- Working on some problems identified during the replacement of the html5-homescreen:
  - [SPEC-2793] Potential deadlock when autostarting webapps
  - [SPEC-2812] Address competition between native and html apps

- Fixed some issues on the HTML version of the launcher
  - [SPEC-2647] homescreen showWindow event not reaching listeners
Milestones - M2

Migration of native apps to HTML5
Milestones - M2

Migration of native apps to HTML5

- WIP for other apps (settings, mixer, mediaplayer)
Milestones - M2

Visibilization on webapp support on AGL

- Blogged about the work done and WAM status

- I will be delivering a talk on the Montecarlo AMM on “Development and integration of webapps into AGL platform”
Milestones - M2

Follow-ups for the next milestone:

• Integration with new Window Manager and Compositor (commented on the morning session)

• Continue the work on stabilization and app migration for the HTML5-only version of the demo platform.

• Needed updates on the WAM side for the changes on the security model.
  
  − [SPEC-2226] Use Token-based logic for HTML5 apps
Milestones - M2

Follow-ups for the next milestone:

- Integration of the WebOSE update to Chromium 72 into AGL
  - https://github.com/webosose/chromium72
- Looking into some identified issues happening on 8.0.1
- Reduced for now the priority of the work to support running WAM on the desktop for developers, to focus on other improvements for the demos instead.
2019 AGL Schedule

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC4</td>
<td>RC5</td>
<td>7.0.0</td>
<td>7.0.1</td>
<td>7.0.2</td>
<td>7.0.3</td>
<td>7.0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grumpy Guppy

Happy Halibut

Start of Development

Release Candidates

8.0.0

8.0.1

8.0.2

8.0.3

8.0.4

AMM

F2F

ALS

F2F

AMM

F2F

F2F

Itchy Icefish

Start of Development

Release Candidates

As of 16 September 2019
Milestones - M3

M3 – Itchy Icefish RC1 – November 22, 2019

a) Final Release Candidate of WebOS OSE, Web App Manager, and Chromium available in RC1 and ready for AGL CES demos to be held in January.

b) Third release of demo Web Apps available.

c) Revised Roadmap for 2020 development on Web App Manager and Chromium.
Milestones - M4

M4 – Final Release – January 31, 2020


b) Complete set of HTML5 demo apps to replace Qt Apps in primary AGL demo for CES 2020.
Doubts and comments