

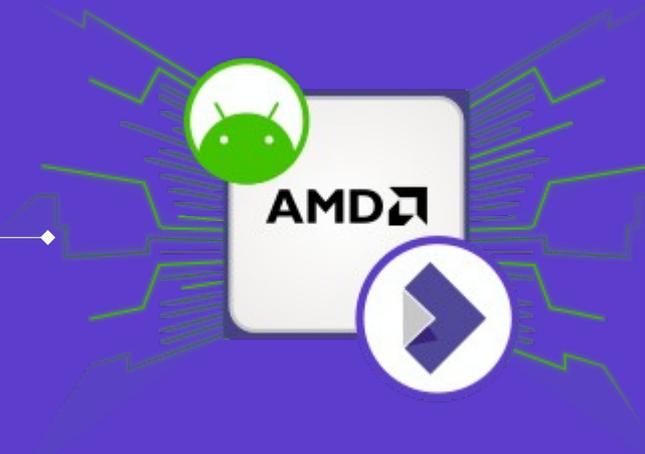
ChromeOS as a new Platform



By Jan Holešovský
Collabora Productivity

@JHolesovsky, <kendy@collabora.com>

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Chromebooks / ChromeOS – what's that?

- Chromebook (wikipedia): *A Chromebook is a laptop or tablet running the Linux-based Chrome OS as its operating system*
- Chrome OS (wikipedia): *Chrome OS is a Gentoo Linux-based operating system designed by Google*
- Announced in 2009, targeted to run ~everything in the browser
 - Web applications – gmail, etc.
 - Chrome Apps – available from the Chrome Web Store
 - Web apps running in the browser
 - Started phasing out in 2016 though – apparently didn't work out



More possibilities these days

- Android apps
 - Available in the operating system since 2014, Google Play support since 2016
 - Enabled by default
- Linux terminal & applications
 - Via project “Crostini” - virtual machine inside the Chrome OS
 - Has to be explicitly enabled first
 - No support in Google Play for this
 - But still you can install the apps trivially – just click a .deb file, and it’ll start the VM & installation
 - Eg. Android Studio installs this way



What to choose for our app?

- You can install LibreOffice right away in the Linux VM:
 - `sudo apt install libreoffice`
- This is great – but hard for the normal users
 - As said – Linux VM not enabled by default
- Solution: Use the existing Collabora Office Android app
 - Based on Collabora Online + LibreOffice core

Surprise!

It worked out of the box...

End of presentation?

Nope, not really...



Cannot open files

- The app only looked like working, but couldn't open files (the file picker shows only directories)
 - After quite some debugging, it turned out that limiting mime types to load makes it no showing any files :-)
 - Just disable that for Chrome OS...
- Couldn't write to Google Drive
 - All sorts of Content Providers on the device
 - But the one for Google Drive does not support writing!
 - Switched to read-only
- "My files" have the same problem! - ugh

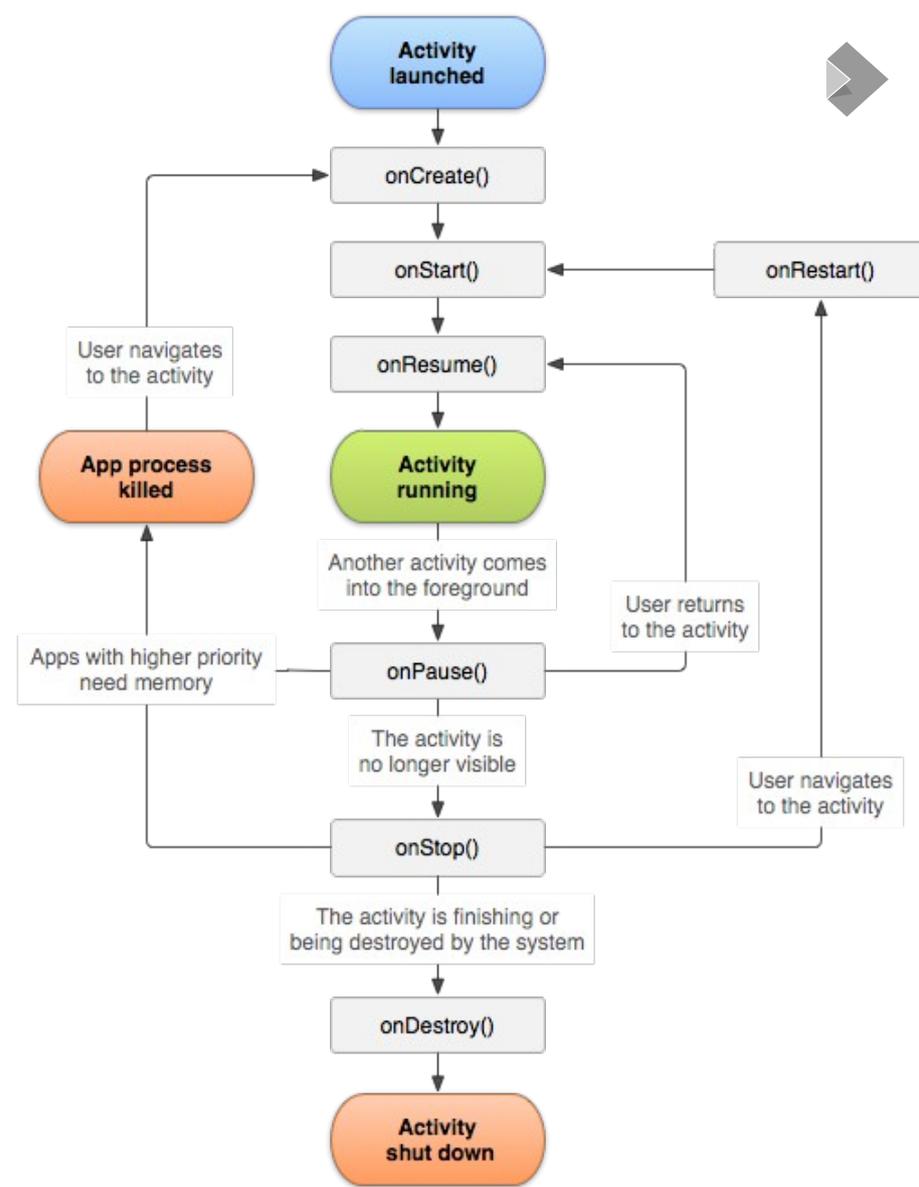


Platform enablement

- All this actually worked emulated!
 - Chromebook is x86-64, but the app so far was ARM/ARM64
 - <https://developer.android.com/topic/arc/device-support>
 - *“x86 Chromebooks try to translate ARM code whenever possible, but translation slows performance and increases battery usage.”*
- So we added x86-64 as a platform to the APK
 - But ouch - *“You should provide x86 builds for the best user experience.”*
 - Really, the Android layer in Chrome OS is **x86, not x86-64**
- But! <https://developer.android.com/distribute/best-practices/develop/64-bit>
 - *“Starting August 1, 2019, your apps published on Google Play will need to support 64-bit architectures.”*
 - So we had to provide both x86 and x86-64 anyway...

Lifecycle fixes

- Previously, we had a bug leading to not saving changes when the app was destroyed during editing
 - On a phone, this is a rare case
 - But on Chrome OS, `onDestroy()` is extremely common, it is bound to the window closing button in the top right
- Related to that, we started calling Save directly from the native code (like iOS)
 - Previously native → JS → Java; but the WebView could be dead by this time...





User Interface improvements

- Chromebook is actually a laptop!
 - Updated the isMobile() / isTablet() / isDesktop() detection + added isChromebook()
 - IsDesktop() true for them, and isChromebook() only at places that need special handling
- Hide the sidebar – the screen is small...
- Avoid using Hammer (support for touch screens) in most cases
- Fixed Floating Access Button for creation of new files
 - Sometimes it was missing on Chromebooks from some reason



Various cleanups

- Fontconfig update sorted out a terrible performance problem
 - Big thanks to **Michael Weghorn** who found out the new version fixes the load times of Noto fonts & updated the fontconfig to 2.13.91
- Support for ODF mimetypes
 - Missing on Chrome OS, had to come up with an intent-filter hack:

```
<data android:pathPattern=".*\\.odt" />
```

```
<data android:pathPattern=".*\\..*\\.odt" />
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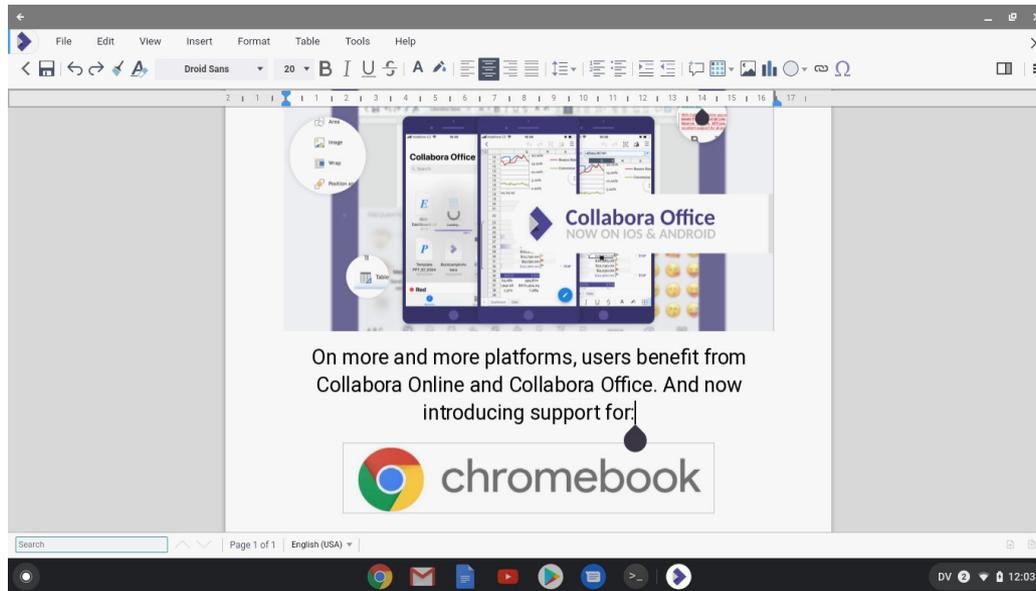
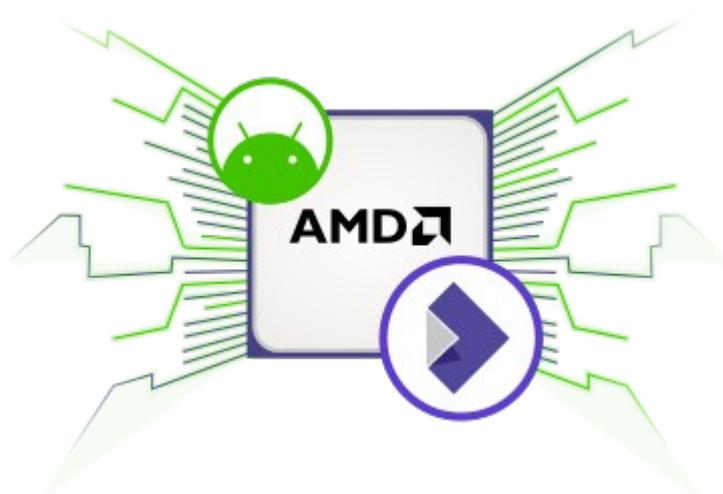
```
<data android:pathPattern=".*\\..*\\..*\\..*\\.odt" />
```

Etc. - huh...



And that's it...

- Get it from Google Play & enjoy:
<https://play.google.com/store/apps/details?id=com.collabora.libreoffice>
- Big thanks to **AMD** who made this work possible!





Collabora Office

Thank you!

Jan Holešovský

@JHolesovsky

<kendy@collabora.com>