



Polished Droids: Bringing Android Apps to Chromebooks

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Chromebooks ?



Background

- ★ Freelance Android and AOSP dev ~ 5 yrs
- ★ Use and ❤️ Chromebooks ~ 4yrs
- ★ Wrote Git client Chrome App

And now for something completely different...

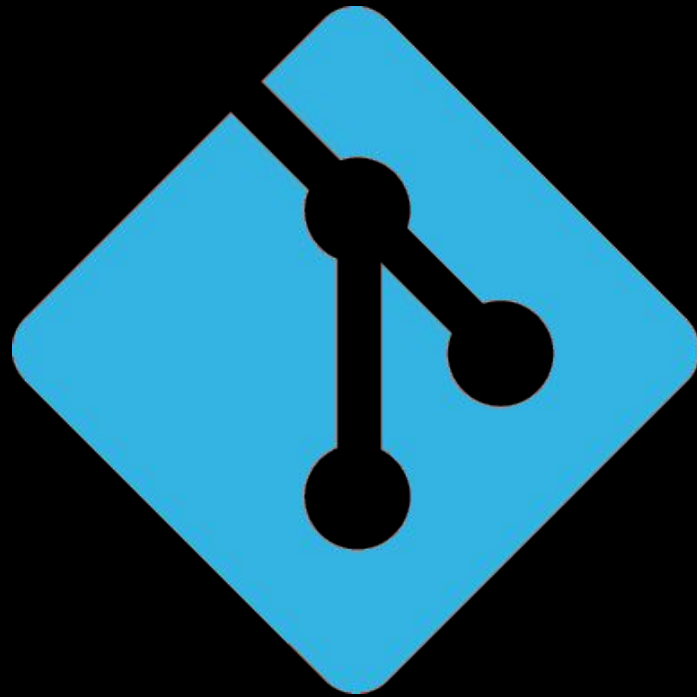
- ★ At I/O 2016 Google announced **Play** for ChromeOS
- ★ NOT using ARC (which used NaCl) but container running inside ChromeOS
- ★ But the name **“ARC”** is used in a lot of places
- ★ NOT (yet?) open source...

Google Says...

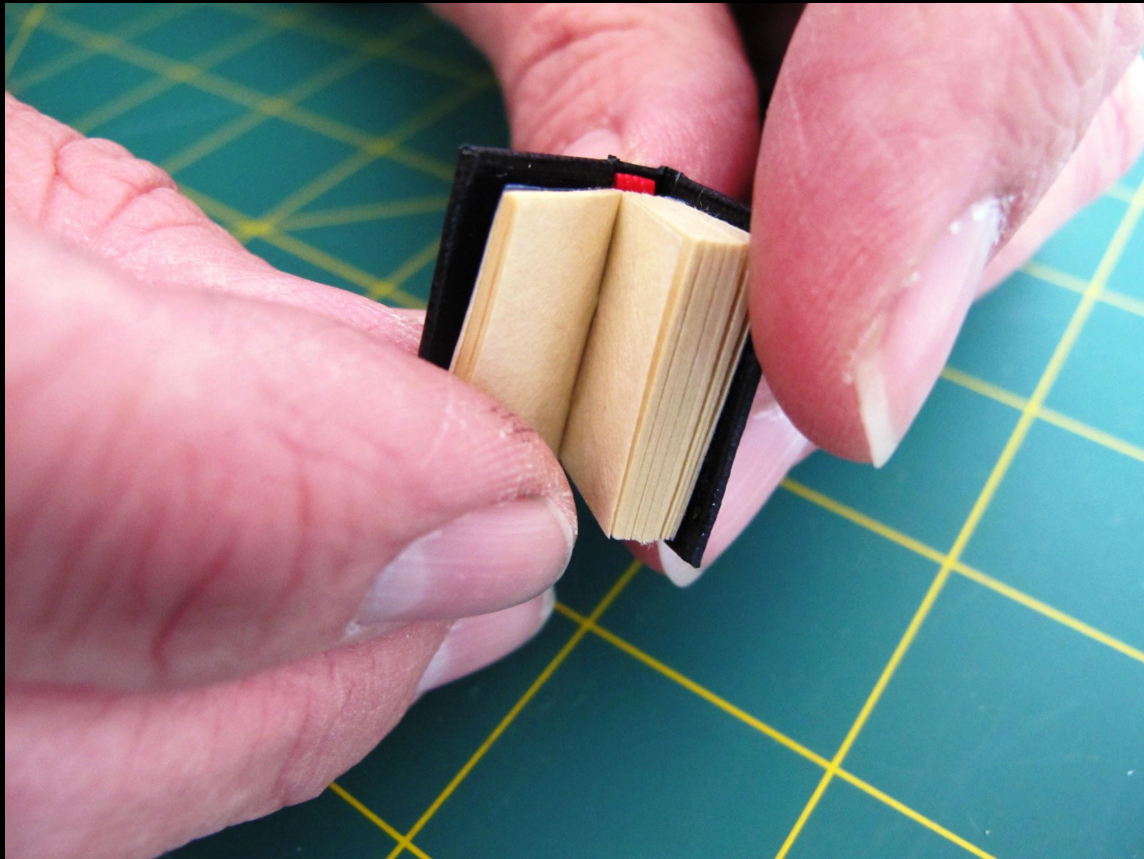
★ “**No** action is required,...”

★ “**But...**”

SGit



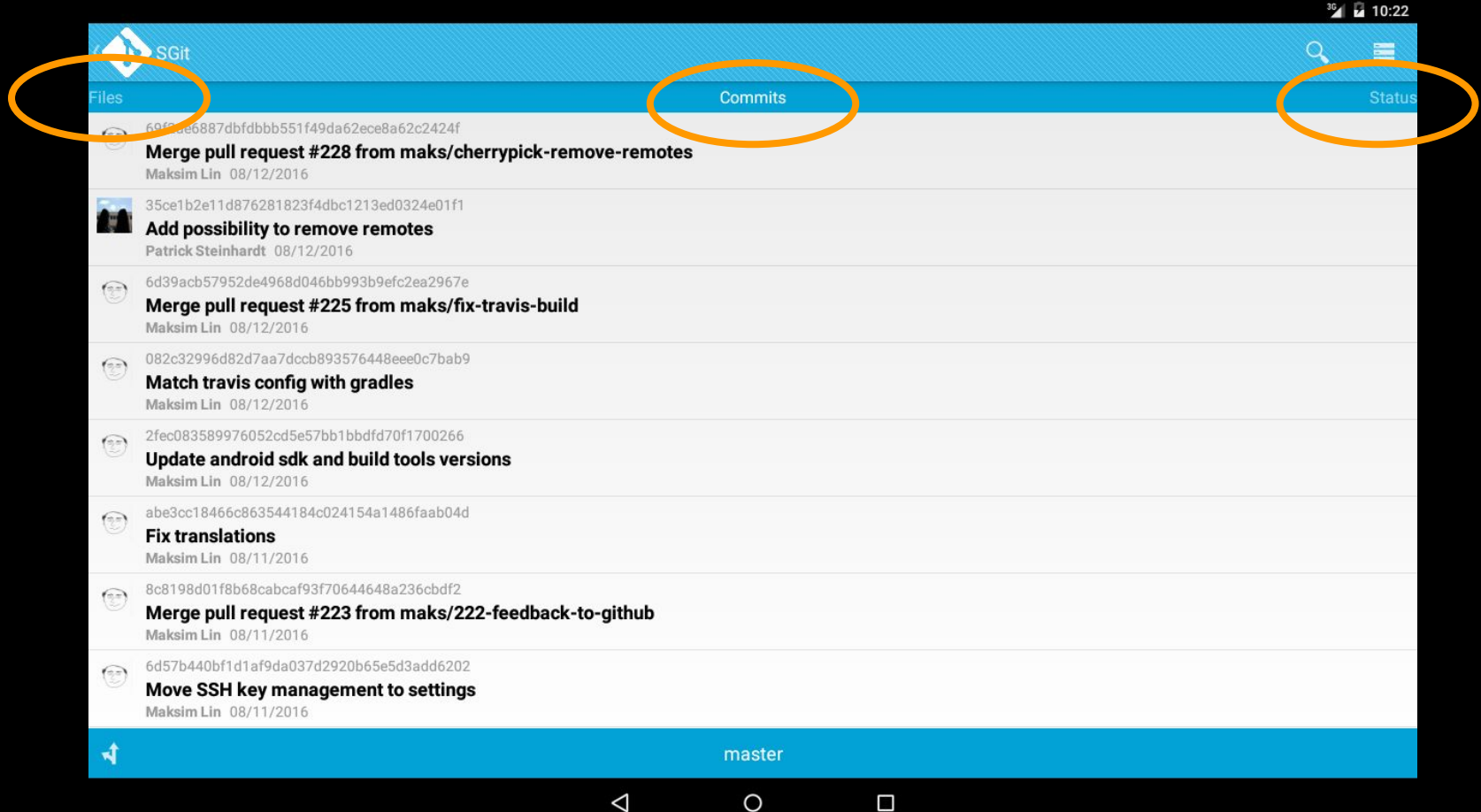
Hands-on



Hands-on

- ★ All Chromebooks have a *physical* keyboard
- ★ **Not** all Chromebooks have a *touch*screen
- ★ A lot of people touch type

Swipe to the left, swipe to the right...



Swipe to the left, swipe to the right...

- ★ Provide hotkeys as alternatives to touch gestures *difficult* to do with mouse/trackpad (eg. swipes)
- ★ Provide shortcut keys for power-users

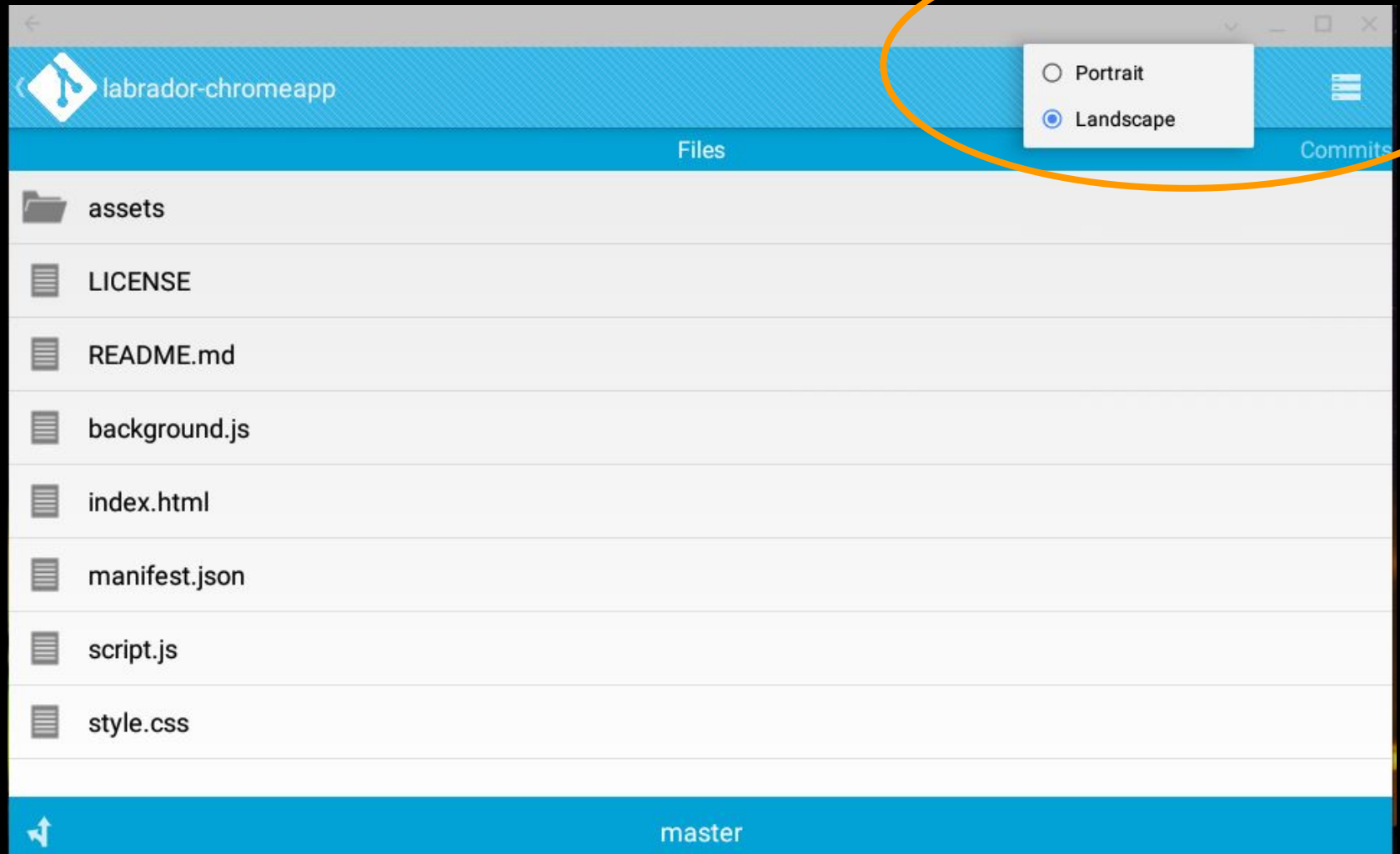
Use the Screen Luke...

★ Currently supported sizes are:

- Portrait: Similar to Nexus 5
- Landscape: Similar to Nexus 7
- Maximized: Uses all available screen pixels

★ When Android on ChrOS moves from M to N:

- resizing activities
- cross-app drag & drop
- mouse cursor API's

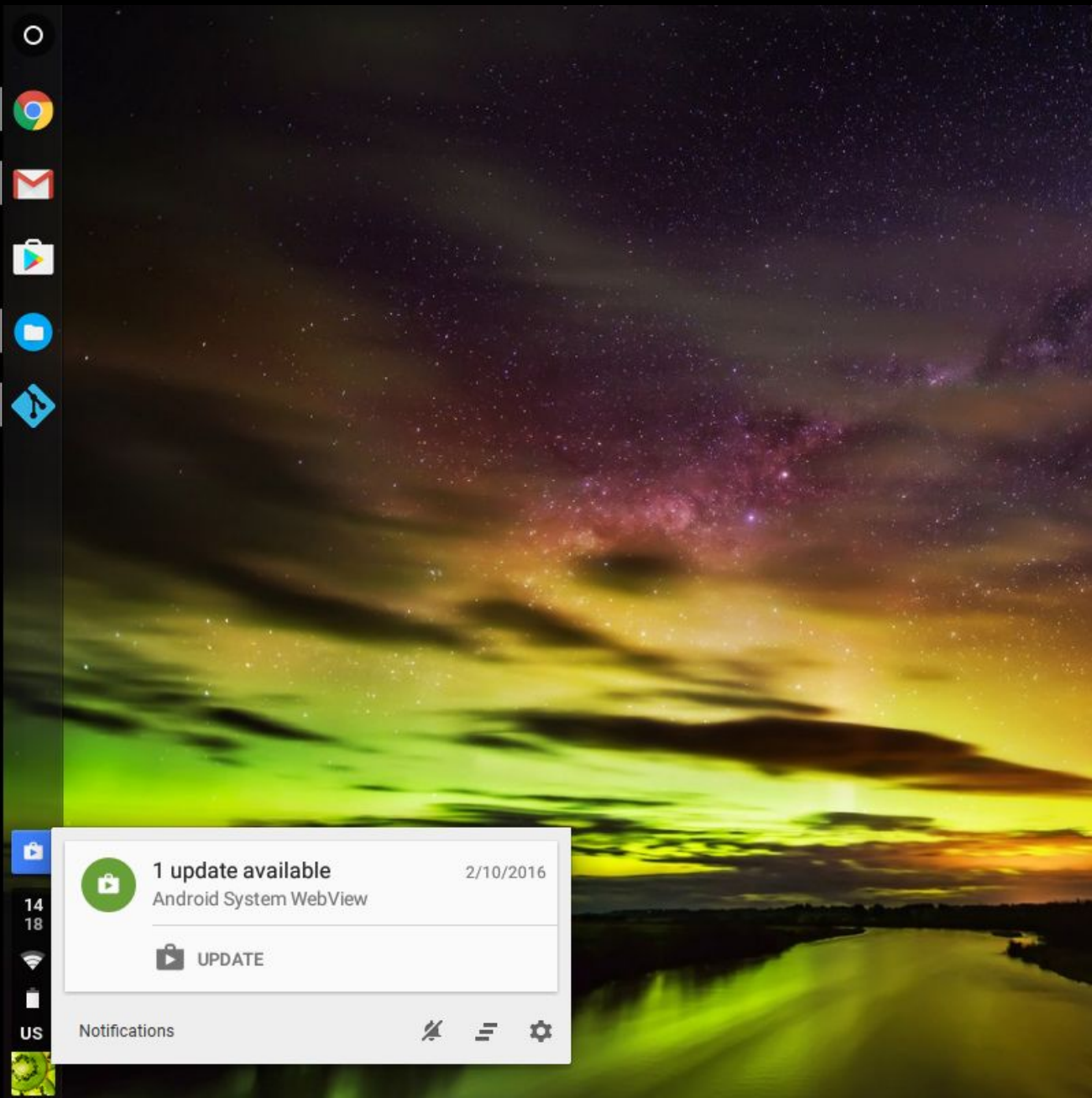


Sharing is Caring



Sharing is Caring

- ★ Clipboard is shared
- ★ Notifications are displayed by ChromeOS



Sharing is Caring

- ★ Clipboard is shared
- ★ Notifications are displayed by ChromeOS
- ★ **Downloads** folder across both FS is shared
- ★ Intents are **NOT** bridged to Android
- ★ Except for **URL** Intent.ACTION_VIEW **are**



Edit With ...



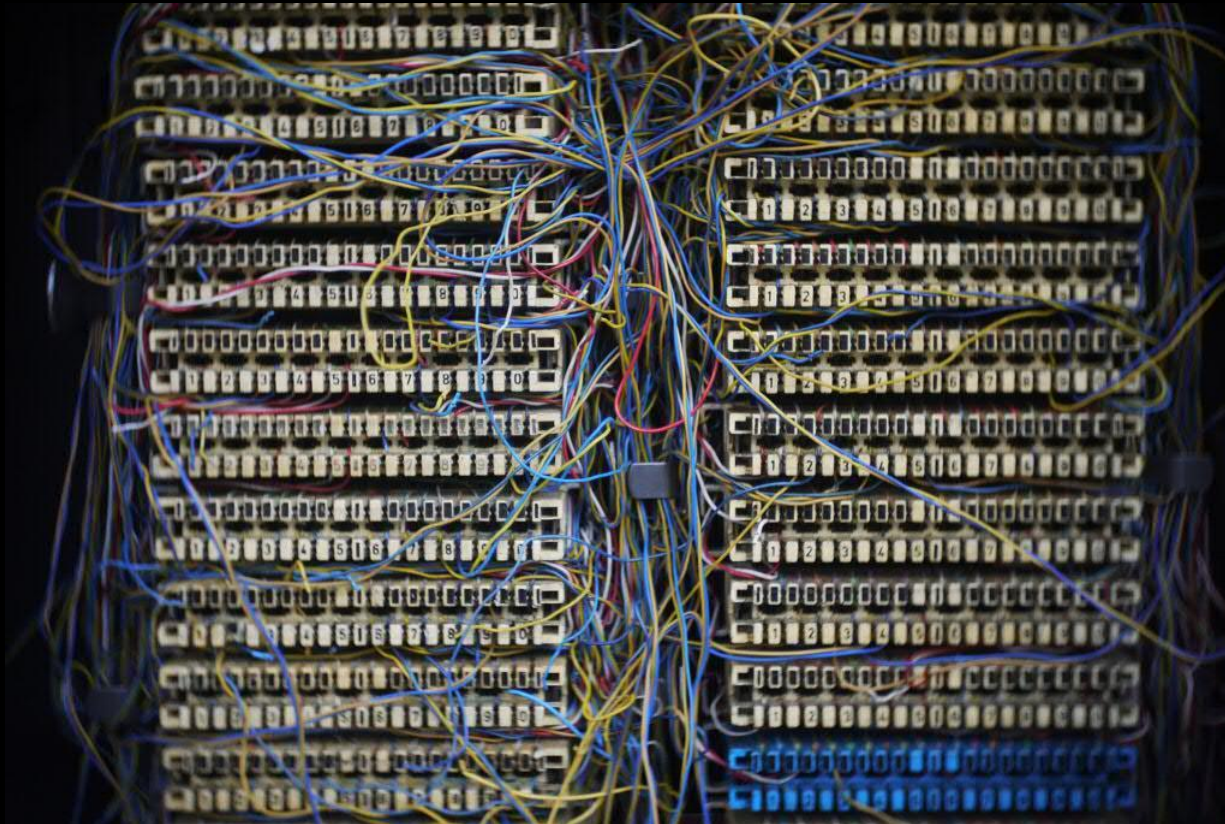
HTML Viewer

```
1 /**
2  * Listens for
3  *
4  * @see http://
5  */
6 chrome.app.runtime.onLaunched.addListener(function() {
7   chrome.app.window.create('index.html', {
8     id: "scaffoldID",
9     innerBounds: {
10      height: 480,
11      width: 640,
12      top: 10
13    }
14  });
15 });
16
```




Commits

Debugging




All hail SO!


 stackoverflow


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What will be the side-loading and debugging mechanism for Android apps on ChromeOS?


16





I've gone through everything on <http://www.chromium.org/chromium-os/android-apps> and also watched the IO video and there doesn't seem to be any mention of what the side-loading (and debugging) mechanism available for developing/testing Android apps on ChromeOS will be?




6

Given that the new implementation is different and its a full Android framework in a Linux container and has access to USB, will ADB be available for this purpose? Using ADB could also be useful for remote debugging since [Devtools already runs an adb client](#)


EDIT: As of 9 Aug 2016 [there is now official documentation available.](#)

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edited Aug 10 at 4:44


asked May 25 at 0:49

 **Maks**
3,091 ● 3 ● 20 ● 40

asked 3 months ago
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Complicated!

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What will be the side-loading and debugging mechanism for Android apps on ChromeOS?

I've gone through everything on <http://www.chromium.org/chromium-os/android-apps> and also watched the IO video and there doesn't seem to be any mention of what the side-loading (and debugging) mechanism available for developing/testing Android apps on ChromeOS will be?

I know that ARC used adb on desktops but not Chromebooks

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EDIT: As of 9 Aug 2016 there is now official documentation available.

androidgoogle-chrome-oschromeboschromiumoschromeos

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edited Aug 10 at 4:44

answered May 27 at 0:40

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Since none of this has been released yet, I think that you are "jumping the gun" a bit. - CommonsWare May 23 at 11:04

@CommonsWare the M33 release is already out and Google have said it's going out to the initial 3 Chromebooks in dev channel in "mid June" which is only a couple of weeks away, so would be nice to make some decisions on tooling setup prior to then. - Mike May 23 at 12:57

Yes, but until they announce the tooling setup, asking questions about the tooling setup is "jumping the gun" a bit. - CommonsWare May 23 at 13:21

1. New that the Android for the ASUS Chromebook Flip is available on the dev channel, and since I haven't seen any instructions from Google, the question becomes much more relevant: USB debugging options show up in the Android Settings app, but the Flip only has USB host ports, so that doesn't seem right. Also, as it's ported out elsewhere, or do not have access to allow "Unknown sources", as even manual APK copying is out, adb over WiFi, perhaps? - CommonsWare Jun 17 at 17:43

We now have official adb access instructions, though those instructions have bugs, at least at the present time. The blog post outlines what worked for me to get adb going. - CommonsWare Jul 8 at 14:12

add a comment

start a bounty

1 Answer

activeclosed

Unless you are in Developer Mode, you won't be able to enable unknown sources. So in order to side load apps you will need to put your device into Developer Mode (instructions here - follow the steps for the Chromebook Pixel 2015).

Once you are in Dev Mode, go to Chrome Settings > App Settings > Security > Unknown sources (move to the right)

After enabling developer mode you can side load apps in one of 2 ways:

1. Upload your apk to Google Drive or send it to yourself via email, and open it with the Android app equivalent (Drive and Gmail respectively)
2. Transfer the apk to the Downloads folder of your Chromebook using a thumb drive, and install it via a File Manager Android app
3. Transfer the apk over ethernet from another device, using V2-2 to access the command line on your Chromebook

Here is a sample walkthrough of setting up an ethernet connection for approach 3:

- On desktop - Plug ethernet cable into desktop
- On desktop - Set an IP: ifconfig eth1 10.xx.xx.xx netmask 255.255.252.4
- On Chromebook - Go to V2-2, eth-eth1 (s.k.a. 02)
- On Chromebook - Plug ethernet into Chromebook
- On Chromebook - Set an IP for the ethernet: ifconfig eth1 10.xx.xx.xx netmask 255.255.252.4
- Use scp to transfer the apk file from the desktop to the Chromebook

share edit flag

edited Jun 16 at 4:51

answered Jun 17 at 22:43

386 views

1,942 views

The documentation that you link to says that the details of Developer Mode are device-specific, then links here. That page, in turn, does not provide instructions for about half of the Chrome OS devices. Notably, it does not provide instructions for either the ASUS Chromebook Flip or the Acer Chromebook R11, which are two of the three devices that we are supposed to be using for testing. - CommonsWare Jun 17 at 23:17

1. For the ASUS Chromebook Flip and Acer Chromebook R11 the instructions are the same as for the Pixel 2 found here: chromium.org/chromium-os. Note that at the time of writing this, only the Chromebook Flip is supporting the Play Store on dev. - mhawes Jun 17 at 23:30

1. a. OK, I can confirm that putting the device into Chrome OS Developer Mode allows access to the "unknown sources" switch - many thanks! Note that you can also copy an APK over via a thumb drive, copy it from there into the File Manager, double-click, hold, and install via the manager. Android app (it will show up in Downloads) on external storage). OK, it behaves more or less normally for Android. I am hoping that we'll get adb access at some point (LogCat, debugging, etc.). Thanks again! - CommonsWare Jun 17 at 23:43

No problem! I've added the thumb drive approach to the answer to make it easier for people to see the possibilities. - mhawes Jun 17 at 23:48

@mhawes thanks for such quick and comprehensive answers. Would you know if it's possible to run to listen on a port and get access to adb inside the Android container? Using the IP connectivity as per your method 2? - Mike Jun 18 at 0:12

As far as per Q post, its same as above [<https://plus.google.com/+AbertMartin/posts/Ag3AtMnChou>] - Mike Jun 18 at 0:18

1. a. @Mike: per comments I posted on that Q post, make sure to adb connect to port 22 on the chromebook instead of the default: adb connect 10.22.22.22. - Elyse Taylor Jun 18 at 01:52

@Elyse Taylor Local adb (on the Chromebooks shell) works fine via connecting to the Android containers

asked 3 months ago

viewed 425 times

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How to set up ADB for remote development and local device

4

Install unknown source apk

Related

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Are users able to view source code on ChromeOS?

How to debug an android app the plugin on ChromeOS

Register protocol handler for chromebook:chrome OS or external link?

What IP's should be whitelisted managed ChromeOS devices?

Can an Android application be controlled in ChromeOS?

Android app doesn't show in google play

How can I view a ChromeOS report?

debug android app on chrome

Hot Network Questions

What does the second IP address?

Are there any known patents which prevented such that one could develop a

Isn't "Yes is best" grammatically wrong?

Reverse audio

What is some of this meta "stuff" on

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What is the use of Google's "Gmail

What would be the best of a human's

What is "Turner" in the Northern

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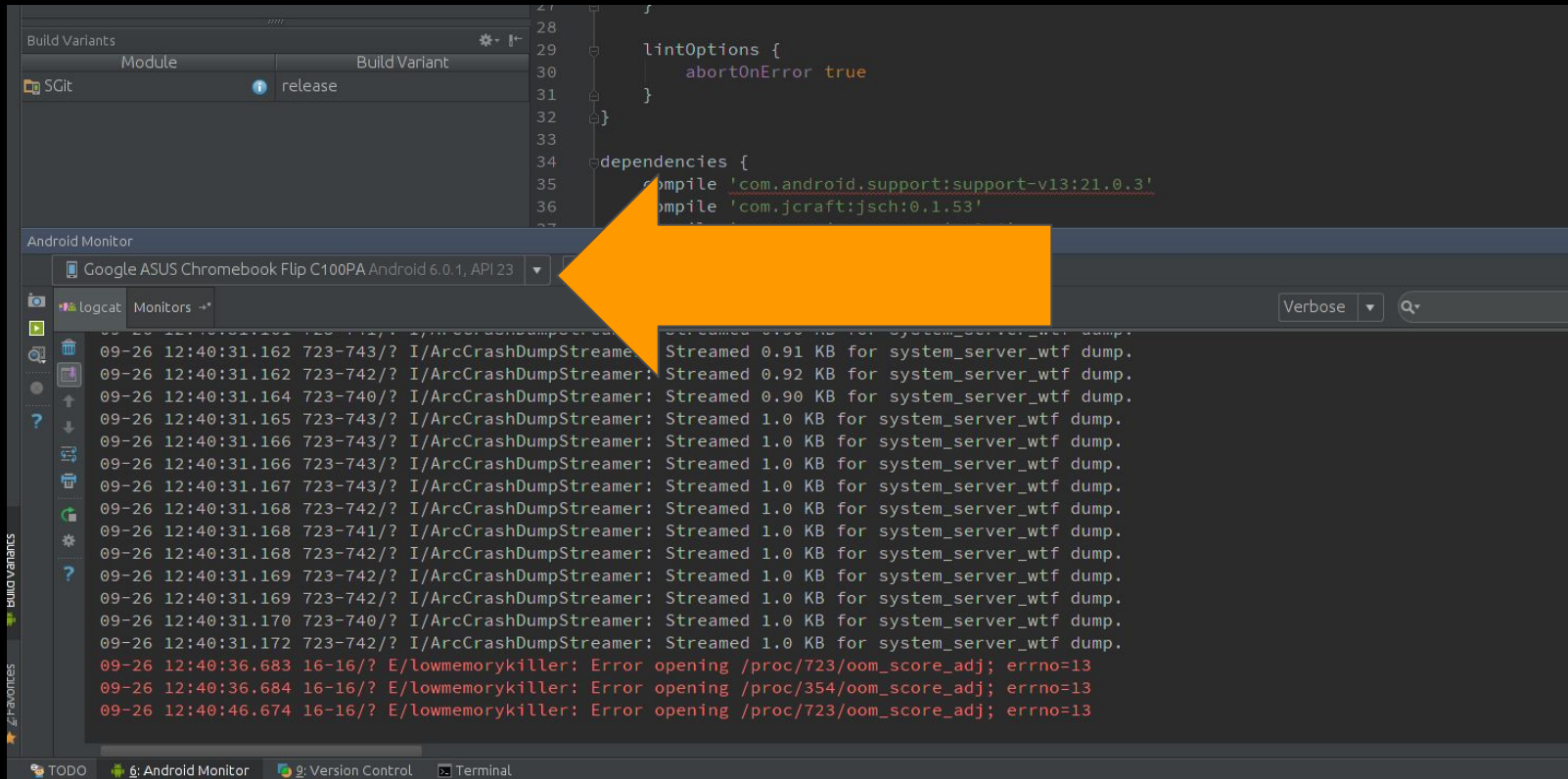
ations go to the Clinton Family

more hot questions

Debugging

- ★ USB **Host** not peripheral, so TCP it is...
- ★ Ironically ChromeOS already ships ADB
- ★ Complicated setup...
- ★ Tunneled via SSH
- ★ **Developer mode** needed on ChromeOS
- ★ Use `>adb connect <chrbook-ip-addr>:22`

...but do-able & very fast/stable



★ And now official documented too...

Known Issues



Known Issues

- ★ Bluetooth LE doesn't work
- ★ Slow first app startup after boot
- ★ **Feature:** Installed Apps sync'd automatically across ChromeOS devices
- ★ And...*"By default, automatic backup and restore of Android app data is turned on"*

Are we there yet?

★ **Stable** Channel !!! (21/9) for:

- Asus Flip
- Acer R11
- Google Pixel (2015)

★ The rest: “**...later in 2016/2017**”

★ Watch: Chrome Releases Blog

What did we cover?

- ★ (Touch) Screens
- ★ Keyboards
- ★ Windowing
- ★ Integration
- ★ Debugging (Adb)
- ★ Known Issues
- ★ Availability

References

Official Google documentation: <https://developer.android.com/topic/arc/index.html>

Chrome Releases Blog: <https://googlechromereleases.blogspot.com.au/>

List of Supported ChromeOS devices:

https://sites.google.com/a/chromium.org/dev/chromium-os/chrome-os-systems-supporting-android-apps?visit_id=1-636110464681851862-3569901987&rd=1

Image Credits

"Android-Chrome mashup image" <http://www.omgchrome.com/google-play-store-coming-chromebooks/>

"Telephone exchange wires" <https://flic.kr/p/7zjKyZ> (creative commons 2.0)

"David Hodge's smallest book yet" <https://flic.kr/p/8q7v2t>

"Two kids sharing one soda" <http://ghostsofbc.org/2012/10/03/cute-overload-one-soda-two-kids-two-straws/>

"Bush" <https://flic.kr/p/9qUd51> (creative commons 2.0)

Thank You!

Questions?

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