

# Apple Silicon M1 & Ionic

## Should I switch?

Philipp Höhne @ Zurich Ionic Meetup, 2020-12-21



# AGENDA

- Apple Silicon line-up
- Performance
- Get Ionic framework to work
- What else works / doesn't work (yet)
- Recommendation

# Apple Silicon line-up (for now)

- 1 x MacBook Air (MBA) 13"
- 1 x MacBook Pro (MBP)
- 13" Both running a Silicon M1 CPU @ 3.1 GHz
- Differences:
  - MBP has 1 GPU Core more
  - MBP has active cooling
  - MBP has a brighter screen
  - MBP has a touch bar + bigger touch pad
  - MBA is slightly lighter
  - MBP starting at 1'399 CHF (8GB / 256GB)
  - MBA starting at 1'079 CHF (8GB / 256GB)

# The story / Setup

- MBP 2017 (i5-7360U @ 2.30GHz, 8GB / 256, Catalina)  
=> broke at end of November, time-to-fix indicated with >= 4 weeks
- MBA 2020 (M1 @ 3.1 GHz, 8GB / 256 GB, Big Sur)  
=> as urgent replacement, about 2 weeks delivery time
- Recovered my complete apps + user from backup to MBA M1

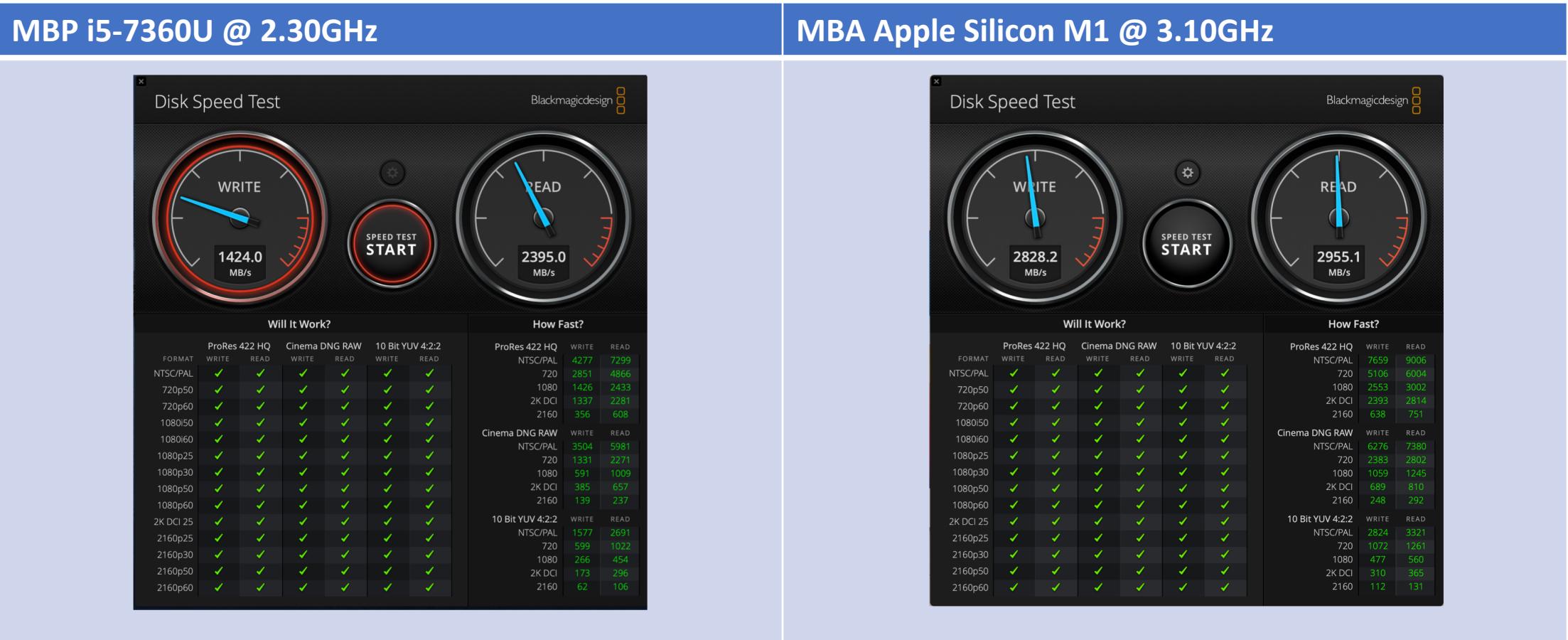
# Performance: CPU (Geekbench)

MBP i5-7360U @ 2.30GHz	MBA Apple Silicon M1 @ 3.10GHz
711 Single-Core Score	1988 Multi-Core Score
Geekbench 5.3.1 Tryout for macOS x86 (64-bit)	1739 Single-Core Score
	7493 Multi-Core Score
Geekbench 5.3.1 Tryout for macOS AArch64	



→ 2.4x single core and 4.3x multi-core performance  
But how will it hold up in “real life”???

# Performance: Disk (Black Magic)



# Performance: Disk (Amorpheus Disk Mark)



► Ambiguous results from different tools.  
But both tests show higher write speeds for the new MBA.

# Performance: Ionic build (approach)

## Setup:

- my little sports scores app  
(side menu, 3 tabs, 1 additional page, ng-signalr plug-in)
- ionic repair to clean and re-install dependencies
- Then (twice each):
  - ionic build
  - ionic cordova build android
  - ionic cordova build ios

# Performance: Ionic build (results)

Activity	Round	i5-7360U @ 2.3 GHz	Silicon M1 @ 3.1 GHz	Gain
build	1	00:01:28	00:00:44	100%
	2	00:00:23	00:00:10	130%
cordova build android	1	00:02:43	00:00:50	226%
	2	00:00:44	00:00:20	120%
cordova build iOS	1	00:01:57	00:00:31	277%
	2	00:01:07	00:00:25	168%

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- We see **double or even triple performance** for all build activities!

# Performance: Video Conversion (HandBrake)

“Big Buck Bunny” (AVI, 1080p, 930MB) to default profiles

Target Format	Silicon M1		Intel i5
	M1 Version	Intel Version	
<b>Absolute</b>			
MP4 (1080p, fast)	0:04:06	0:07:00	0:09:51
MKV (H.264)	0:05:00	0:09:25	0:11:40
MKV (H.265)	0:25:19	0:35:08	0:39:14
<b>Relative</b>			
MP4 (1080p, fast)	240%	141%	100%
MKV (H.264)	233%	124%	100%
MKV (H.265)	155%	112%	100%

► M1 optimized versions unleash the beast, but not for all tasks equally

# Getting Ionic to work [ 1 / 2 ]

- homebrew, node.js / npm didn't work, neither did Ionic builds
- removed node.js / npm completely
- re-installed node.js with homebrew
  - => this requires to clone the terminal app and set it to “rosetta mode”
- re-installed ionic / cordova to their latest stable versions
  - => ionic build still failed because of dependencies
- poor man's solution (I'm not good with that stuff ☹):
  - Create new ionic app
  - Copied package.json to my Ionic project
  - Started build, let it fail and installed missing dependencies one-by-one

# Getting Ionic to work [ 2 / 2 ]

- Updated Xcode & Android Studio
- To get Android builds to work:
  - Changed JAVA\_HOME to an JDK 1.8 (1.8.0\_102-b14) I had installed (else tools.jar is missing)
  - Changed minSdkVersion in config.xml from to 22  
(`<preference name="android-minSdkVersion" value="22" />`)

# Works: Software Essentials

- Homebrew
- Node (re-install required)
- VS Code (update required)
- MS Office (re-install required because Licenses not found)
- IDEA IntelliJ
- Net Beans, Community Edition
- mySQL WorkBench
- CyberDuck (update required)
- AMPPS (app doesn't start, giant memory leak but Apache & mySQL come up, let AMPPS try to start, wait a little until Apache is up, then kill AMPPS)
- Virtual C64 ;-)

# Works: Hardware

No issues with:

- Deployment to and file transfer from / to Android devices
- Logitech input devices (Bluetooth and Unified receiver)
- Printer (Brother MF Laser)
- Monitor (Philips with dock functionality)
- Other Bluetooth devices as headphones, speakers etc.
- Gamepads

# Doesn't work

- Windows applications / Parallels (never will?)
- Dual-boot Windows / Bootcamp (never will?)
- Android Simulator (first draft available, yet not fully functional)
- Docker (WIP but not available yet?)
- Intel CPU virtualization as Oracle's Open Box (never will?)
- XAMP (fails to read MAC address)

# Recommendation: Do switch if you...

- need much multi-core processing power in an Apple notebook for little money (e.g. for video rendering)
- do not care much about Android for your Ionic projects / can live with testing Android on-device only
- have one or two days to get stuff working again

# Recommendation: Do not switch (yet) if you...

- make your living with developing Ionic applications
- have an active Ionic application to support
- have a running system which you are mostly happy with
- need Windows applications or Windows dual-boot
- need Docker

# About me

- Scrum Master and Business Analyst for a major swiss bank in the area of work-flow automation.
- Coding web and mobile apps in my (rare ☹) spare time.
- Stack: Apache, mySQL, PHP, JAVA, Angular[JS], Ionic
- Happy member of Zurich Ionic Meet-up since 2018