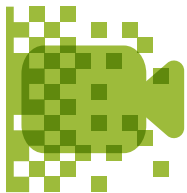Acer Chromebook™ CB515 with an

Intel® Pentium® N4200 processor

Render a video and save over 6 minutes in WeVideo

Export a video and save over 19 seconds in Lomotif

Merge audio tracks and save over 7 seconds in SoundTrap

Support your creative side with a faster Chromebook

A Chromebook powered by the Intel Pentium N4200 processor was faster at creative tasks than a MediaTek M8173C processor-based device

We use our screens to socialize, organize, and connect with our passions—so you need a device that can keep up with your life's pace. No matter how you choose to spend your downtime, having a fast computer by your side can really pay off.

At Principled Technologies, we tested two Chromebooks to see which was faster at performing everyday creative tasks: an Intel Pentium processor-powered Chromebook, or one based on a MediaTek processor.

In our hands-on tests, the Chromebook powered by Intel required less time to complete a variety of tasks, such as rendering video or putting together a song. When you have the urge to create, you don't want to wait on a sluggish system. Read the rest of this report to see just how fast a Chromebook powered by the Intel Pentium N4200 processor can be.

The following pages describe a fictional scenario in which a groom-to-be uses his Intel Pentium processor-powered Acer Chromebook CB515 for a wedding-day surprise. Though the story is hypothetical, it's based on PT facts. For more detailed testing information, see the appendices beginning on page six.

Lucas and Clara's wedding weekend

Lucas and Clara's home has been a hectic mess lately with all the planning they're doing for their wedding next weekend. Today, Clara is heading in for her final makeup and hair trial before the big day, while Lucas stays at home to watch their dog.

Lucas waits a minute to make sure Clara is really gone before setting to work on his top-secret wedding project: a video he's putting together for the rehearsal dinner. He heads upstairs, takes out his Intel Pentium N4200 processor-powered Chromebook, and loads up the different parts of the video. It should be a touching treat for their friends and family—if he can finish in time! Fortunately, the Intel Pentium processor-powered Chromebook is up for the task.
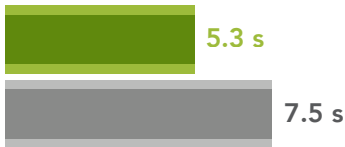
Android™ apps for Chromebooks

Google is rolling out support for Android apps on many Chromebook devices. Being able to install apps from the Google Play™ store opens your Chromebook to new possibilities and functionality you can't get with older or unsupported models.

To learn more about Android apps and the Chromebooks that support them, visit https://sites.google.com/a/chromium.org/dev/chromium-os/chrome-os-systems-supporting-android-apps.
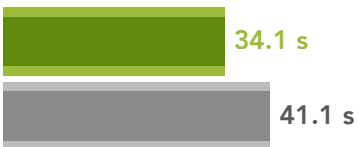
29%
less time

Save image to gallery
in Adobe Photoshop Lightroom

Time (sec)
lower is better

5.3 s

7.5 s

Editing photos and music

Lucas' video is going to showcase his and Clara's lives from birth, to their first date, to the present day. He's gathered hundreds of photos from family and friends, and is finally almost done with processing them.

Saving all those images to his photo gallery is a breeze with his Intel Pentium processor-powered Chromebook. For especially significant events in their lives, Lucas assembles some photos into a collage using Pixlr.

Next, Lucas moves onto the video's music. He's carefully curated three songs that perfectly encapsulate his relationship with Clara. He merges them using the Soundtrap web app—another piece of the puzzle done.

34%
less time
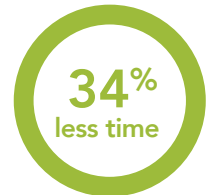
Create collage
in Pixlr

Time (sec)
lower is better

7.4 s

11.2 s

17%
less time

Merge audio tracks
in SoundTrap

Time (sec)
lower is better

34.1 s

41.1 s

Chromebook with Intel Pentium N4200 processor

Chromebook with MediaTek MTK 8173C processor

10%
less time

Load a project
in Scratch by MIT

Time (sec)
lower is better

11.0 s

12.2 s

21%
less time

Create a 720p 30 FPS movie
in FlipaClip

Time (sec)
lower is better

5.6 s

7.1 s

65%
less time
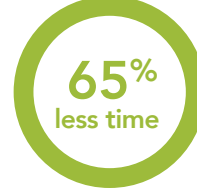
Render a video
in WeVideo

Time (min)
lower is better

3.2 m

9.4 m
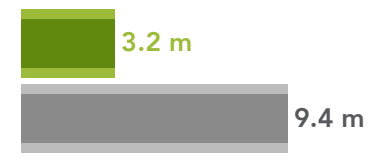
Animation and video processing

Lucas wants to add a short animated intro to the video, but he's not sure how to go about it. For inspiration, he loads the Scratch by MIT web app and watches some of the featured videos. After a few minutes, he has the perfect idea. Before long, Lucas creates and exports his animation in Flipaclip editor.

With the photos, music, and animations in place, there's only one thing left to do: export the final video. Thanks to his Intel Pentium processor-powered Chromebook, the rendering process goes by in a flash. Compared to the MediaTek processor-based Chromebook, it would take Lucas six fewer minutes to render the video in WeVideo, and 20 fewer seconds to process and export video in Lomotif.

Lucas gives his dog a tummy rub as thanks for the moral support before closing the project and hiding the files. And not a moment too soon! Clara's car pulls into the driveway just as Lucas sits down in his living room chair. Thanks to the speed of his Intel Pentium processor-powered Chromebook, Lucas' project will be a total surprise for their rehearsal dinner.
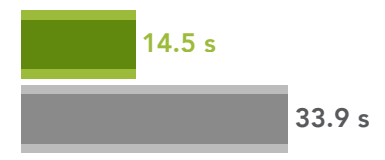
11%
less time

Process a video
in Lomotif

Time (sec)
lower is better

14.1 s

15.9 s

57%
less time
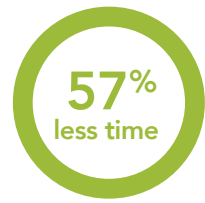
Export a video
in Lomotif

Time (sec)
lower is better

14.5 s

33.9 s

Chromebook with Intel Pentium N4200 processor

Chromebook with MediaTek MTK 8173C processor

Conclusion

Creating media with your Chromebook should be quick, easy, and fun. Having to suffer through long wait times can make the things we love to do frustrating and tiresome—so it pays to have a device that can finish tasks quickly.

In our tests, a Chromebook powered by the Intel Pentium N4200 processor was faster at completing photo, audio, and video tasks compared to a Chromebook with a MediaTek processor. Whatever your creative habits, a Chromebook powered by an Intel processor could enable you to finish faster so you can share your work with the people who matter most.

On January 2, 2018, we finalized the hardware and software configurations we tested. Updates for current and recently released hardware and software appear often, so unavoidably these configurations may not represent the latest versions available when this report appears. For older systems, we chose configurations representative of typical purchases of those systems. We concluded hands-on testing on January 4, 2018.

Appendix A: System configuration information

System	Acer Chromebook CB515	Lenovo Yoga N23
Proccesor	Intel Pentium N4200	MediaTek MTK 8173C
Processor freq (GHz)	1.1–2.5	1.2
Processor cores	4	2
Memory (GB)	4	4
Storage (GB)	32	32
Battery type	Li-Ion	Li-Ion
Battery capacity (Wh)	48	44
Display	15.6" 1,920 x 1,080	11.6" 1,366 x 768
Wireless	802.11 AC	802.11 AC
Bluetooth	4.0	4.0
USB ports	2x USB-C, 2x USB 3.1	1x USB-C, 1x USB 3.1
System weight (lbs.)	3.97	3.00
OS (version)	62.0.3202.97	62.0.3202.97
Build/firmware	Sand.9042.125.0	Hana.8438.100.0

Appendix B: How we tested

Creating the background workload

To simulate typical Chromebook use, we ran a combination of news, email, chat, document viewing, music, and social media websites in the background. For websites that required accounts, we created test profiles and logged in the users on each device.

1. From the shelf, open Chromebook settings.
2. Navigate to the On Startup section of the settings, and select Open a specific page or set of pages.
3. Insert the following URLs, and click OK.

   - forbes.com
   - markets.ft.com/data
   - arstechnica.com
   - mail.google.com
   - slack.com
   - drive.google.com
   - docs.google.com
   - youtube.com/feed/music
   - sheets.google.com
   - twitter.com
   - facebook.com

4. Restart the Chromebook. Before testing, navigate through each tab to ensure that both devices have fully loaded all the same content.

Testing each application

Adobe Photoshop Lightroom
Saving an image to a gallery (highest quality)

1. From the Google Play store, Install Adobe Photoshop Mix. Pin the app to the shelf.
2. Launch the app from the shelf, and click Get Started.
3. Click Add Photos.
4. Click Allow to enable access to device media storage.
5. Select the test image, and click Add.
6. Close the app, and relaunch it.
7. From the images list, click the test image thumbnail.
8. Click the dropdown menu icon.
9. Click Save to Gallery.
10. Click Highest Available Quality.
11. Simultaneously start the timer and click OK.
12. When the save completes, stop the timer.

Pixlr
Creating a collage from 10 images

1. From the Google Play Store, Install Pixlr. Pin the app to the shelf.
2. Launch the app from the shelf, and click I Accept.
3. Click Collage.
4. Click Allow to enable access to device media storage.
5. From the download folder, click each test image, for a total of 10 images to be added to a collage.
6. Simultaneously start the timer and click Next.
7. When the collage fully loads, stop the timer.

SoundTrap

Merging tracks

1. From the Chrome browser, navigate to soundtrap.com.
2. Sign in with the test account.
3. From the landing page, click Enter Studio.
4. From the template selection screen, click Dubstep DEMO.
5. Click Settings from the horizontal dropdown menu, and click Merge Tracks…
6. Check each instrument track to be merged.
7. With all tracks selected, simultaneously start the timer and click Merge.
8. When merging completes, stop the timer.

Scratch by MIT

Loading a featured project

1. From the Chrome browser, navigate to scratch.mit.edu.
2. Sign in with the test account.
3. Click the search bar, and search for "Saturn."
4. Simultaneously start the timer and click "Saturn – an AMV."
5. When the flash animation fully loads, stop the timer.

FlipaClip

Creating a 720p 30 FPS movie from 90 frames

1. From the Google Play Store, Install FlipaClip, and pin the app to the shelf.
2. Launch the app from the shelf.
3. Select an age for the test account, and click I Accept.
4. Right-click the sample project, and click the pencil icon.
5. Change the frames per second to 30.
6. Click Save Changes.
7. Click the sample project to open it.
8. Add 60 frames for a total of 90 frames.
9. Add a title to every 10th frame.
10. Click the dropdown menu icon.
11. Simultaneously start the timer and click Make Movie.
12. When the render completes, stop the timer.

WeVideo

Rendering a video

1. From the Google Play Store, install WeVideo. Pin the app to the shelf.
2. Launch the app from the shelf.
3. Click the blue + icon.
4. Click Gallery.
5. Click Allow to enable access to device media storage.
6. From the folder browser, select the test footage, and click the green checkmark icon.
7. Click the paper airplane icon.
8. Simulatneously start the timer and click Save with watermark.
9. When the save completes, stop the timer.

Lomotif

Processing a video

1. From the Google Play Store, install Lomotif, and pin the app to the shelf.
2. Launch the app from the shelf.
3. Click the green + icon.
4. Click Allow to enable access to device storage.
5. Select the Downloads folder, and click the test footage.
6. Click the Next arrow.
7. Click the song at the top of the Find Music section.
8. Simultaneously start the timer and click the Next arrow.
9. When the video finishes processing, stop the timer.

Exporting a video

1. Launch the app from the shelf.
2. Click the green + icon.
3. Click Allow to enable access to device storage.
4. Select the Downloads folder, and click the test footage.
5. Click the Next arrow.
6. Click the song at the top of the Find Music section.
7. Click the Next arrow.
8. When the video finishes processing, simultaneously start the timer, and click the Export icon.
9. When the video finishes its export, stop the timer.

This project was commissioned by Intel Corp.

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