



The science behind the report:

Run longer and complete everyday tasks faster with powerful Dell Latitude Chromebook Enterprise devices

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report [Run longer and complete everyday tasks faster with powerful Dell Latitude Chromebook Enterprise devices](#).

We concluded our hands-on testing on December 16, 2019. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on November 13, 2019 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

The tables below present our findings in detail. Note that, where appropriate, we rounded our results for ease of reading (we always round down to the nearest digit). We calculated our "win percentage" and "total" numbers using the original, unrounded results, so they may not always align exactly with the rounded numbers presented here.

Battery testing	Dell Latitude 5300 2-in-1 Chromebook™ Enterprise (Intel® Core® i5)	Google™ Pixelbook™ (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo® Yoga® Chromebook C630 (Intel Core i5)
Testing battery with power_LoadTest				
Median (hour:min:sec)	12:42:09	9:15:37	12:42:20	8:05:42
Dell Latitude win percentage	N/A	37%	0%	57%

Battery testing	Dell Latitude 5400 Chromebook Enterprise (16GB RAM)	Acer® Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Testing battery with power_LoadTest			
Median (hour:min:sec)	14:31:34	13:26:07	9:51:55
Dell Latitude win percentage	N/A	8%	47%

Productivity app performance testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Google Slides™ workflow				
Google Slides - Creating new Slides presentation				
Median (sec)	1.7	2.1	2.0	2.6
Google Slides - Opening large Slides presentation				
Median (sec)	3.4	4.1	3.3	5.9
Google Slides - Starting presentation				
Median (sec)	2.3	3.1	2.8	2.8
Total (sec)	7.4	9.3	8.0	11.2
Dell Latitude win percentage	N/A	20%	8%	34%
Google Docs™ workflow				
Google Docs - Opening large document				
Median (sec)	4.3	6.2	4.6	6.3
Google Docs - Exporting Google Doc to .docx				
Median (sec)	12.0	18.5	12.5	14.5
Total (sec)	16.2	24.7	17.1	20.9
Dell Latitude win percentage	N/A	34%	5%	22%
Google Sheets™ workflow				
Google Sheets - Creating new Sheets spreadsheet				
Median (sec)	5.6	5.7	6.3	6.0
Google Sheets - Opening large Sheets spreadsheet				
Median (sec)	2.3	3.3	2.7	3.3
Total (sec)	7.9	9.1	9.0	9.3
Dell Latitude win percentage	N/A	13%	12%	14%

Productivity app performance testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Google Slides workflow			
Google Slides - Creating new Slides presentation			
Median (sec)	1.9	1.7	5.1
Google Slides - Opening large Slides presentation			
Median (sec)	3.4	3.3	8.0
Google Slides - Starting presentation			
Median (sec)	2.2	3.2	7.5
Total (sec)	7.5	8.2	20.7
Dell Latitude win percentage	N/A	9%	64%
Google Docs workflow			
Google Docs - Opening large document			
Median (sec)	4.7	5.2	8.8
Google Docs - Exporting Google Doc to .docx			
Median (sec)	12.4	13.6	37.6
Total (sec)	17.1	18.8	46.3
Dell Latitude win percentage	N/A	9%	63%
Google Sheets workflow			
Google Sheets - Creating new Sheets spreadsheet			
Median (sec)	5.7	5.5	7.5
Google Sheets - Opening large Sheets spreadsheet			
Median (sec)	4.0	4.1	7.5
Total (sec)	9.7	9.5	15.0
Dell Latitude win percentage	N/A	-2%	35%

Productivity app performance testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Microsoft PowerPoint workflow				
Microsoft PowerPoint - Loading large PowerPoint presentation				
Median (sec)	1.9	2.4	2.2	3.7
Microsoft PowerPoint - Converting .ppt file to PDF				
Median (sec)	4.9	5.6	5.9	5.5
Total (sec)	6.8	7.9	8.1	9.2
Dell Latitude win percentage	N/A	15%	16%	27%
Microsoft Excel - Opening large Excel spreadsheet				
Median (sec)	13.7	19.0	14.0	17.2
Dell Latitude win percentage	N/A	28%	2%	21%
Microsoft Word workflow				
Microsoft Word - Creating new document				
Median (sec)	1.7	1.7	1.8	1.7
Microsoft Word - Opening large document				
Median (sec)	2.1	3.5	2.8	3.0
Microsoft Word - Print-previewing document				
Median (sec)	7.1	8.5	7.7	8.1
Microsoft Word - Sharing document as PDF attachment				
Median (sec)	7.5	8.6	7.8	9.6
Total (sec)	18.5	22.3	20.0	22.3
Dell Latitude win percentage	N/A	17%	8%	17%

Productivity app performance testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Microsoft PowerPoint workflow			
Microsoft PowerPoint - Loading large PowerPoint presentation			
Median (sec)	1.9	2.4	4.2
Microsoft PowerPoint - Converting .ppt file to PDF			
Median (sec)	4.8	5.4	6.8
Total (sec)	6.7	7.8	11.0
Dell Latitude win percentage	N/A	13%	39%
Microsoft Excel - Opening large Excel spreadsheet			
Median (sec)	16.2	15.8	46.6
Dell Latitude win percentage	N/A	-3%	65%
Microsoft Word workflow			
Microsoft Word - Creating new document			
Median (sec)	1.6	1.6	2.4
Microsoft Word - Opening large document			
Median (sec)	2.8	3.1	5.8
Microsoft Word - Print-previewing document			
Median (sec)	10.6	10.9	12.6
Microsoft Word - Sharing document as PDF attachment			
Median (sec)	10.8	8.7	12.1
Total (sec)	25.7	24.3	32.8
Dell Latitude win percentage	N/A	-6%	22%

Browser responsiveness testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Speedometer v2.0				
Overall score (median)	130.00	84.80	119.00	105.00
Dell Latitude win percentage	N/A	53%	9%	24%
WebXPRT 3				
Overall score (median)	207	149	193	167
Dell Latitude win percentage	N/A	39%	7%	24%
CrXPRT 2015				
Performance qualification score (median)	286	219	257	221
Dell Latitude win percentage	N/A	31%	11%	29%

Browser responsiveness testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Speedometer v2.0			
Overall score (median)	119.00	109.00	31.50
Dell Latitude win percentage	N/A	9%	278%
WebXPRT 3			
Overall score (median)	194	184	73
Dell Latitude win percentage	N/A	5%	166%
CrXPRT 2015			
Performance qualification score (median)	272	228	107
Dell Latitude win percentage	N/A	19%	154%

Photo editing testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Adobe® Photoshop® Lightroom® - Saving edited image to gallery				
Median (sec)	4.8	7.2	5.0	6.7
Dell Latitude win percentage	N/A	33%	4%	28%
Pixlr - Creating collage from 10 images				
Median (sec)	3.9	3.7	5.5	4.7
Dell Latitude win percentage	N/A	-6%	29%	17%

Photo editing testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Adobe® Photoshop® Lightroom® - Saving edited image to gallery			
Median (sec)	4.3	4.2	30.6
Dell Latitude win percentage	N/A	-4%	86%
Pixlr - Creating collage from 10 images			
Median (sec)	3.8	4.3	9.0
Dell Latitude win percentage	N/A	13%	58%

Linux (Beta) testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Visual Studio Code - Time to install				
Median (sec)	20.6	27.4	22.9	28.5
Dell Latitude win percentage	N/A	25%	10%	28%
LibreOffice - Time to install				
Median (sec)	143.0	226.2	148.9	174.8
Dell Latitude win percentage	N/A	37%	4%	18%
GIMP workflow				
GIMP - Time to install				
Median (sec)	108.9	154.8	104.1	124.3
GIMP - Opening large photo				
Median (sec)	4.2	7.0	4.9	5.2
GIMP - Exporting large photo				
Median (sec)	81.8	113.4	84.8	94.1
Total (sec)	194.9	275.1	193.8	223.6
Dell Latitude win percentage	N/A	29%	-1%	13%

Linux (Beta) testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Visual Studio Code - Time to install			
Median (sec)	25.5	27.7	29.5
Dell Latitude win percentage	N/A	8%	13%
LibreOffice - Time to install			
Median (sec)	149.1	162.0	315.8
Dell Latitude win percentage	N/A	8%	53%
GIMP workflow			
GIMP - Time to install			
Median (sec)	85.6	105.3	224.9
GIMP - Opening large photo			
Median (sec)	4.5	4.7	13.3
GIMP - Exporting large photo			
Median (sec)	108.5	125.7	183.6
Total (sec)	198.6	235.6	421.8
Dell Latitude win percentage	N/A	16%	53%

Serviceability testing	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)
Customer-replaceable SSD	Yes	No	No	No
Customer-replaceable RAM	Yes	No	No	No
Customer-replaceable battery	Yes	No	No	No
Customer-replaceable WLAN	Yes	No	No	No

Serviceability testing	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Customer-replaceable SSD	Yes	No	No
Customer-replaceable RAM	Yes	No	No
Customer-replaceable battery	Yes	No	No
Customer-replaceable WLAN	Yes	No	No

System configuration information

The table below presents detailed information on the systems we tested.

	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i5)	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)
Processor			
Vendor	Intel	Intel	Intel
Name	Core i5	Core i7	Core i7
Model number	8365U	8665U	7Y75
Core frequency (GHz)	1.60-4.10	1.90-4.80	1.30-3.60
Number of cores	4	4	2
Cache	6 MB Smart Cache	8 MB Smart Cache	4 MB Smart Cache
Memory			
Amount (GB)	16	32	16
Graphics			
Vendor	Intel	Intel	Intel
Model number	UHD Graphics 620	UHD Graphics 620	HD Graphics 615
Storage			
Amount (GB)	128	256	512
Type	M.2 PCIe NVMe Class 35 SSD	M.2 PCIe NVMe Class 40 SSD	NVMe SSD
Connectivity/expansion			
Wireless internet	Intel Dual Band Wireless AC 9560	Intel Dual Band Wireless AC 9560	802.11 a/b/g/n/ac, 2x2 (MIMO), dual-band
Bluetooth	5.0	5.0	4.2
USB	1 x USB 3.1 Gen 1 with PowerShare 1 x USB Type-C 3.1 Gen 2 with Power 1 x USB 3.1 Gen 1	1 x USB 3.1 Gen 1 with PowerShare 1 x USB Type-C 3.1 Gen 2 with Power 1 x USB 3.1 Gen 1	2 x USB Type-C
Battery			
Type	Lithium-ion	Lithium-ion	Lithium-ion
Rated capacity (Wh)	60	60	41
Display			
Size (in.)	13.3	13.3	12.3
Resolution	1,920 x 1,080	1,920 x 1,080	2,400 x 1,600
Operating system			
Vendor	Google	Google	Google
Name	Chrome OS™	Chrome OS	Chrome OS
Build number or version	77.0.3865.105	77.0.3865.105	77.0.3865.105

	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i5)	Dell Latitude 5300 2-in-1 Chromebook Enterprise (Intel Core i7)	Google Pixelbook (Intel Core i7)
Dimensions			
Height (in)	0.66-0.76	0.66-0.76	0.4
Width (in)	12.0	12.0	11.4
Depth (in)	8.16	8.16	8.7
Weight (lbs.)	3.0		2.4

	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)
Processor			
Vendor	Intel	Intel	Intel
Name	Core i7	Core i5	Core i5
Model number	8650U	8250U	8365U
Core frequency (GHz)	1.90-4.20	1.60-3.40	1.60-4.10
Number of cores	4	4	4
Cache	8 MB Smart Cache	6 MB Smart Cache	6 MB Smart Cache
Memory			
Amount (GB)	16	8	8
Graphics			
Vendor	Intel	Intel	Intel
Model number	UHD Graphics 620	UHD Graphics 620	UHD Graphics 620
Storage			
Amount (GB)	64	128	128
Type	eMMC	eMMC	M.2 PCIe NVMe Class 35 SSD
Connectivity/expansion			
Wireless internet	Intel Dual Band Wireless-AC 7265	Intel Dual Band Wireless-AC 7265	Intel Dual Band Wireless AC 9560
Bluetooth	4.2	4.1	5.0
USB	2 x USB 3.1 Type-C 1 x USB 3.1 Gen 1	2 x USB-C 1 x USB 3.0	1 x USB Type-C 3.1 Gen 2 with Power 3 x USB 3.1 Gen 1
Battery			
Type	Lithium-ion	Lithium-ion	Lithium-ion
Rated capacity (Wh)	60	56	42
Display			
Size (in.)	14	15.6	14
Resolution	1,920 x 1,080	3,840 x 2,160	1,920 x 1,080

	HP Chromebook x360 14 G1 (Intel Core i7)	Lenovo Yoga Chromebook C630 (Intel Core i5)	Dell Latitude 5400 Chromebook Enterprise (8GB RAM)
Operating system			
Vendor	Google	Google	Google
Name	Chrome OS	Chrome OS	Chrome OS
Build number or version	77.0.3865.105	77.0.3865.105	77.0.3865.105
Dimensions			
Height (in)	0.63	0.7	0.77
Width (in)	12.81	14.2	12.7
Depth (in)	8.93	9.8	8.5
Weight (lbs.)	3.7	4.2	3.24

	Dell Latitude 5400 Chromebook Enterprise (16GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Processor			
Vendor	Intel	Intel	AMD
Name	Core i5	Core i5	A4
Model number	8365U	8350U	9120C
Core frequency (GHz)	1.60-4.10	1.70-3.60	1.60-2.40
Number of cores	4	4	2
Cache	6 MB Smart Cache	6 MB Smart Cache	1 MB
Memory			
Amount (GB)	16	8	4
Graphics			
Vendor	Intel	Intel	AMD
Model number	UHD Graphics 620	UHD Graphics 620	Radeon™ R4
Storage			
Amount (GB)	128	64	32
Type	M.2 PCIe NVMe Class 35 SSD	eMMC	eMMC
Connectivity/expansion			
Wireless internet	Intel Dual Band Wireless AC 9560	IEEE 802.11a/b/g/n/ac	Qualcomm 6174 802.11 AC
Bluetooth	5.0	4.2	4.2
USB	1 x USB Type-C 3.1 Gen 2 with Power 3 x USB 3.1 Gen 1	1 x USB 3.1 Gen 1 2 x USB 3.1 Gen 1 Type-C	2 x USB-C 2 x USB 3.0
Battery			
Type	Lithium-ion	Lithium-ion	Lithium-ion
Rated capacity (Wh)	68	52	57

	Dell Latitude 5400 Chromebook Enterprise (16GB RAM)	Acer Chromebook 714 (8GB RAM)	Lenovo Chromebook 14e (4GB RAM)
Display			
Size (in.)	14	14	14
Resolution	1,920 x 1,080	1,920 x 1,080	1,920 x 1,080
Operating system			
Vendor	Google	Google	Google
Name	Chrome OS	Chrome OS	Chrome OS
Build number or version	77.0.3865.105	77.0.3865.105	77.0.3865.105
Dimensions			
Height (in)	0.77	0.7	0.69
Width (in)	12.7	12.7	12.91
Depth (in)	8.5	9.4	8.85
Weight (lbs.)	3.24	3.53	3.27

How we tested

Performing the WebXPRT 3 test

1. Open the web browser under test, and go to www.principledtechnologies.com/benchmarkxprt/webxprt/.
2. Click Run WebXPRT 3.
3. At the Ready to test your browser screen, click Continue.
4. Click the Start button.
5. When the test completes, record the results.
6. Repeat steps 1 through 5 two times.

Performing the Speedometer v2.0 test

1. Open the web browser under test, and go to <https://browserbench.org/Speedometer2.0/>.
2. When the test completes, record the results.
3. Repeat steps 1 and 2 two times.

Performing the CrXPRT 2015 test

1. Add CrXPRT to Chrome from the Chrome web store: <https://chrome.google.com/webstore/detail/crxprt/hajjjaeaacmnpjpkcfnhohmaiianjgf>.
2. Launch CrXPRT.
3. Click Performance Test.
4. Click Start Test. When the test completes, record the results.
5. Repeat steps 2 through 4 two more times.

Performing the power_LoadTest test

1. Download the power_LoadTest extension from https://chromium.googlesource.com/chromiumos/third_party/autotest/+archive/master/client/site_tests/power_LoadTest.tar.gz.
2. Unpack the power_LoadTest.tar.gz file.
3. In the extension folder, locate params.js and double-click to open the file. Change the test_time_ms variable from the default run time of 1 hour to 18 hours.
4. Navigate to chrome://extensions and click Load unpacked extension.
5. Select the unpacked extension directory from the tar.gz file, and click Open.
6. Set screen brightness to ~80 nits.
7. Set the volume to 10%.
8. Charge the system to 100%.
9. Open a browser window.
10. Unplug the system and click the power_LoadTest extension. We used a webcam and laptop to capture and time the battery life drain.
11. When the system shuts down, the test is complete. Record the time the system lasted unplugged.
12. Repeat steps 7 through 11 two more times.

Testing performance with Google Docs

Opening large document

1. Launch the Docs app.
2. Start the timer, and click the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Exporting Google Doc to .docx

1. Launch the Docs app.
2. Click to open the test document.
3. Click the drop-down menu, click Share & export, and click Save As.
4. Leave the Word (.docx) format selected, start the timer, and click OK.
5. Stop the timer when the document finishes exporting.
6. Repeat steps 1 through 5 two more times.

Testing performance with Google Sheets

Creating new Sheets spreadsheet

1. Launch the Sheets app.
2. Click the + button to open the new document dialog.
3. Start the timer, and click New spreadsheet.
4. Stop the timer when the new spreadsheet fully loads.
5. Repeat steps 1 through 4 two more times.

Opening large Sheets spreadsheet

1. Launch the Sheets app.
2. Start the timer, and click the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Testing performance with Google Slides

Creating new Slides presentation

1. Launch the Slides app.
2. Click the + button to open the new document dialog.
3. Start the timer, and click New presentation.
4. Stop the timer when the new presentation fully loads.
5. Repeat steps 1 through 4 two more times.

Opening large Slides presentation

1. Launch the Slides app.
2. Start the timer, and click the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Starting presentation

1. Launch the Slides app.
2. Click to open the test document.
3. Click the play icon.
4. Start the timer, and select Present on this device.
5. Stop the timer when the presentation fully loads.
6. Repeat steps 1 through 5 two more times.

Testing performance with Microsoft Word

Creating new document

1. Launch the Word app.
2. Start the timer, and click Blank document.
3. Stop the timer when the document fully loads.
4. Repeat steps 1 through 3 two more times.

Opening large document

1. Launch the Word app.
2. Start the timer, and click the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Print-previewing document

1. Launch the Word app.
2. Click to open the test document.
3. Click File, start the timer, and select Print.
4. Stop the timer when the Print preview fully loads.
5. Repeat steps 1 through 3 two more times.

Sharing document as PDF attachment

1. Launch the Word app.
2. Click to open the test document.
3. Click File, and select Share.
4. From the Share dropdown menu, click Share as attachment.
5. Start the timer, and click PDF.
6. Stop the timer when the document finishes exporting.
7. Repeat steps 1 through 6 two more times.

Testing performance with Microsoft Excel

Opening large Excel document

1. Launch the Excel app.
2. Start the timer and click to open the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Testing performance with Microsoft PowerPoint

Loading large PowerPoint presentation

1. Launch the PowerPoint app.
2. Start the timer and click to open the test document.
3. Stop the timer when the test document fully loads.
4. Repeat steps 1 through 3 two more times.

Converting .ppt file to PDF

1. Launch the PowerPoint app.
2. Click to open the test document.
3. Click File, and select Share.
4. From the Share dropdown menu, click Full Document.
5. Start the timer, and click PDF.
6. Stop the timer when the document finishes exporting.
7. Repeat steps 1 through 6 two more times.

Testing performance with Adobe Photoshop Lightroom

Saving edited image to gallery

1. Launch the Adobe Photoshop Lightroom app.
2. Click to select and open the test image.
3. Click the adjustments icon to open the adjustments fly-out menu.
4. From the adjustments menu, click the AUTO button.
5. Click the Share icon.
6. Start the timer, and click Save to Device.
7. Stop the timer when the image finishes exporting.
8. Repeat steps 1 through 7 two more times.

Testing performance with Pixlr

Creating collage from 10 images

1. Launch the Pixlr app.
2. Click Collage.
3. Navigate to the test image folder, and click each of the ten test photos to add them to the collage queue.
4. Click Done.
5. Leave the default collage arrangement, click Next, and then click OK to confirm.
6. Click Done.

7. Start the timer, and click Save Image.
8. Leave the default image size (Max), start the timer, and click OK.
9. Stop the timer when the image finishes saving.
10. Repeat steps 1 through 9 two more times.

Testing performance with Linux (Beta)

Installing Linux (Beta) feature

1. From the Chrome OS desktop, click the time in the taskbar to open the notification tray.
2. From the notification tray, click the gear icon to open Settings.
3. From Settings, type `Linux` into the search bar.
4. For the Linux (Beta) settings, click Turn On.
5. Once the installation is complete, the device will restart.
6. Repeat steps 1 through 5 two more times.

Installing Visual Studio Code

1. Before testing, download the latest version of Visual Studio Code from <https://code.visualstudio.com/download> (we selected the .deb 64 bit download), and unpackage the contents in the device's Linux files folder.
2. Launch the Terminal app.
3. Change directory to the folder containing the installation package.
4. Start the timer, and issue the installation command: `sudo dpkg -i code_1.40.2-1574694120_amd64.deb`
5. Stop the timer when installation completes.
6. Repeat steps 1 through 5 two more times.

Installing LibreOffice

1. Before testing, download the latest version of LibreOffice from https://www.libreoffice.org/download/download/?type=deb-x86_64 (we selected the Linux (64-bit) (deb) download), and unpackage the contents in the device's Linux files folder.
2. Launch the Terminal app.
3. Change directory to the folder containing the installation packages.
4. Start the timer, and issue the installation command: `sudo dpkg -i *.deb`
5. Stop the timer when installation completes.
6. Repeat steps 1 through 5 two more times.

Installing GIMP

1. Before testing, download the latest version of GIMP from <https://pkgs.org/download/gimp> (we selected the Debian 9 download), and unpackage the contents in the device's Linux files folder.
2. Launch the Terminal app.
3. Change directory to the folder containing the installation package.
4. Start the timer, and issue the installation command: `sudo dpkg -i gimp_2.8.18-1+deb9u1_amd64.deb`
5. Stop the timer when installation completes.
6. Repeat steps 1 through 4 two more times.

Opening large photo in GIMP

1. Launch the GIMP app.
2. Click File, and select Open.
3. Select the test image, start the timer and click Open.
4. Stop the timer when the image fully loads.
5. Repeat steps 1 through 4 two more times.

Exporting large photo in GIMP

1. Launch the GIMP app.
2. Click File, and select Open.
3. Select the test image, and click Open.
4. When the image loads, click File, and select Export As...
5. Click the Select File Type dropdown, and choose .PNG.
6. Start the timer and click Export.
7. Stop the timer when the export completes.
8. Repeat steps 1 through 7 two more times.

Read the report at <http://facts.pt/pnkbetr> ►

This project was commissioned by Dell Technologies.



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