WebXPRT 4 release notes

Thank you for using WebXPRT 4. If you have any questions or concerns, please contact us at BenchmarkXPRTSupport@principledtechnologies.com

Running WebXPRT 4

To run the WebXPRT 4, navigate to https://www.principledtechnologies.com/benchmarkxprt/webxprt/2021/wx4_build_3_7_3/.

The WebXPRT 4 UI is simple. Here is the start page.

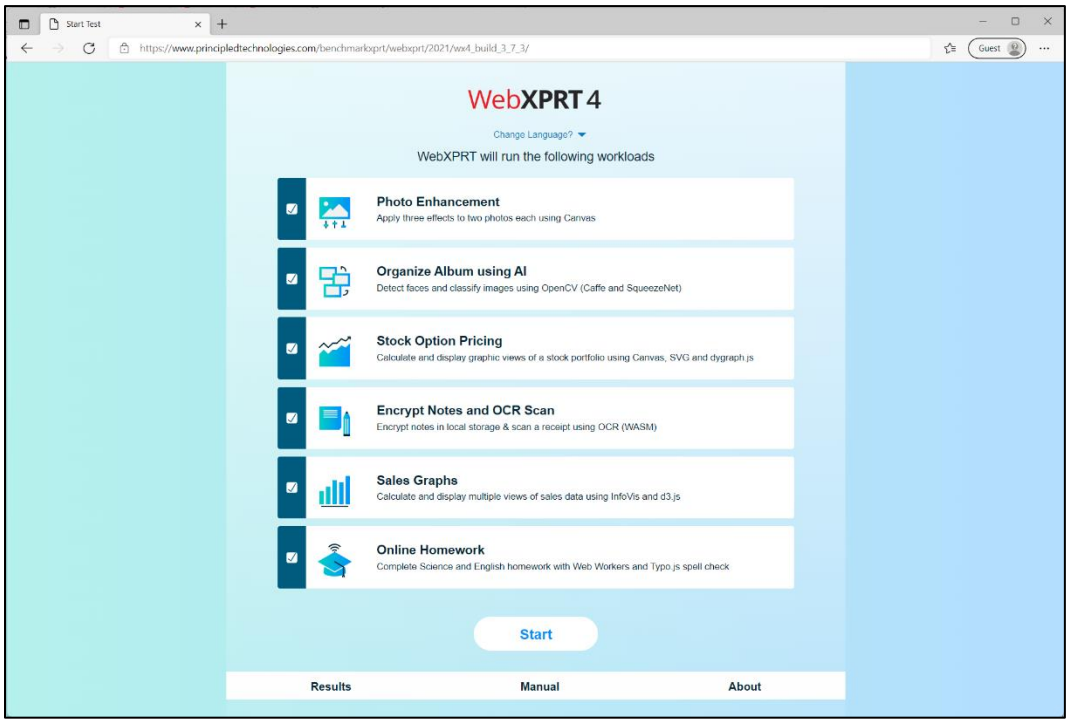

Figure 1: The WebXPRT 4 start page.

By default, all tests are selected. You may deselect any test by unchecking the box to the left of the workload name and description. However, you will not get an overall score unless you run all six tests.

Start the test by clicking the white start button below the test list. Small form factor devices may require you to scroll down to see all the controls. To change the interface language to German or Simplified Chinese, click the Change Language drop-down menu located at the top of the screen, just below the WebXPRT 4 logo.

Once you click Start, the test will begin. As the tests start running, you will see a description of each test, a progress indication bar immediately below the header, and the test completion percentage indicator in the upper right-hand corner of the screen.

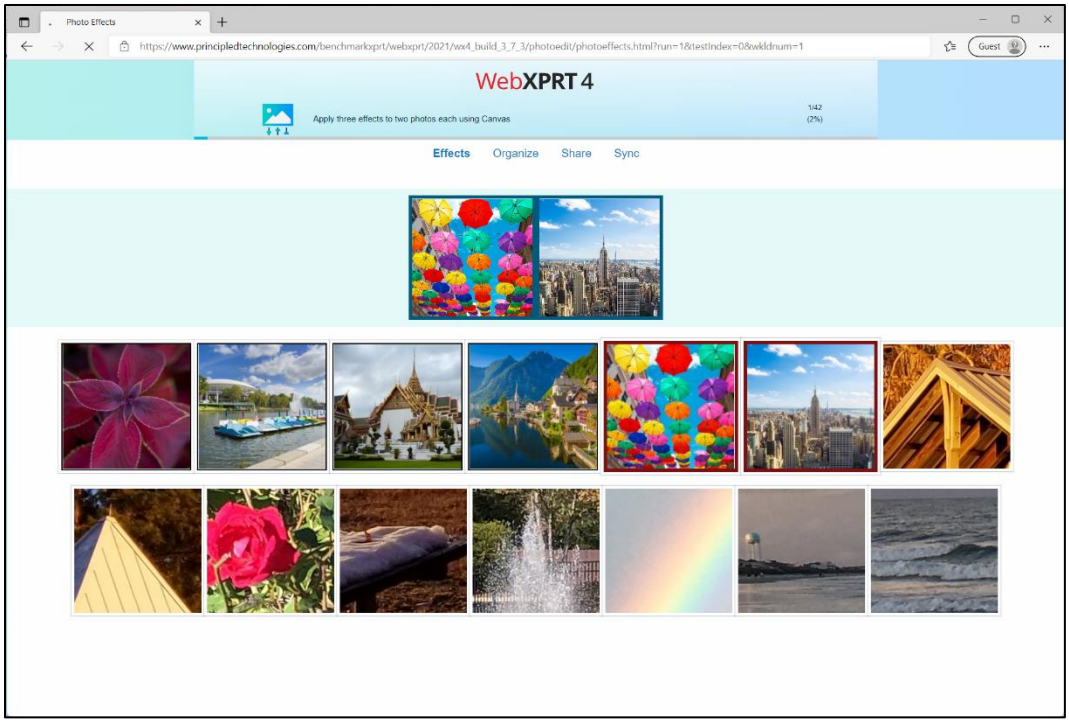

Figure 2: WebXPRT 4 during testing. Note the progress indication bar immediately below the header and the test completion percentage indicator in the upper right-hand corner.

After the test completes, WebXPRT displays the overall score at the top of the results screen. The overall score is the primary score that most testers use for performance comparisons. The results screen also offers the option to submit your results to be considered for publication on WebXPRT.com, to download your results locally, and to run the test again. Further down, you will find additional test information and individual workload scores. On mobile devices, you may need to scroll to see all the results data.

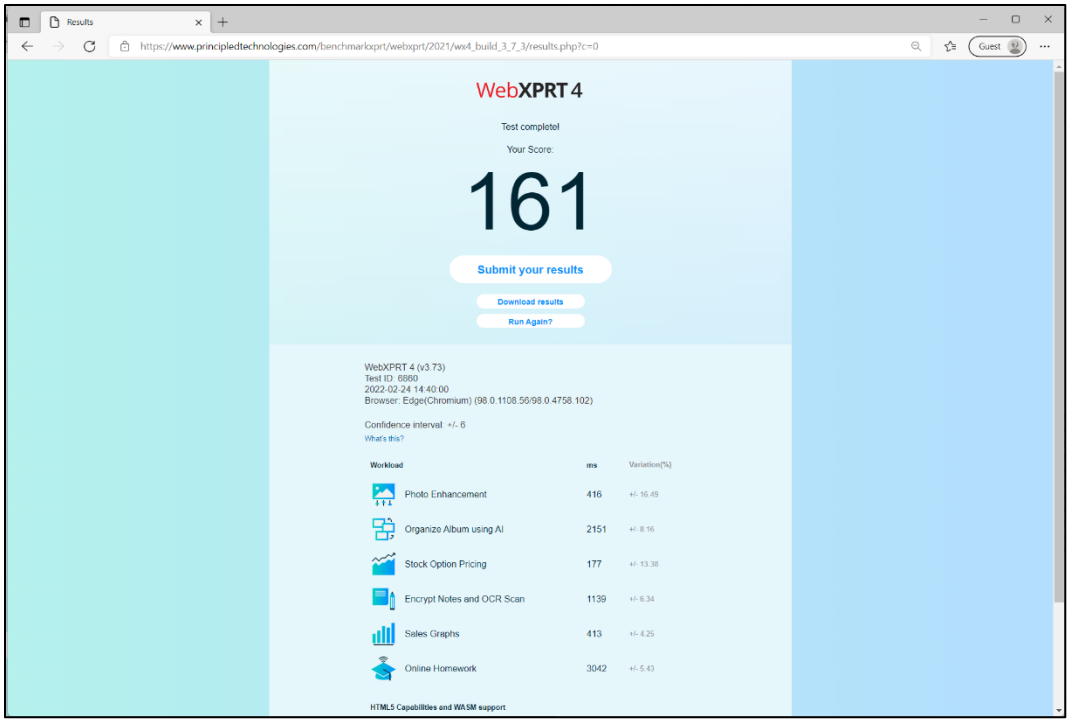

Figure 3: The WebXPRT 4 results screen.

Submitting results

To submit results after a run, click the Submit your results button below the overall score, complete the short submission form, and click Submit. The results submission form requires the following system information:

- Device name
- Model number
- Processor
- Memory
- Operating system
- Browser and version

Please be as specific as possible when filling in the system information fields. Detailed device information helps us assess whether individual scores represent valid test runs.

We also ask submitters to enter a contact email address in case we need to ask follow-up questions about the submission. After you submit your score, we'll contact you to confirm the name we should display as the source for the data. You can use one of the following:

- Your first and last name.
- "Independent tester" (if you wish to remain anonymous).
- Your company's name (if you have permission to submit the result in their name). If you want to use a company name, we ask that you provide your work email address.

We will not publish any additional information about you or your company without your permission.

To run the test using automation

You can run scripts to automate WebXPRT 4 testing, controlling the execution of the WebXPRT 4 benchmark using parameters and values appended to the WebXPRT URL. WebXPRT has three available parameters:

testtype

WebXPRT 4 currently offers one test type (core tests). In the future, we hope to add the option of experimental tests:

- Core tests: 1

tests

This lets you specify the tests to run by using the following codes:

- Photo Enhancement: 1
- Organize Album using AI: 2
- Stock Option Pricing: 4
- Encrypt Notes and OCR Scan using WASM: 8
- Sales Graphs: 16
- Online Homework: 32

To run an individual test, use its code. You can specify multiple tests by using the sum of the codes. For example, to run Stocks (4) and Notes (8), use the sum of 12. To run all core tests, use 63, the sum of all the individual test codes (1+2+4+8+16+32 = 63).

result

You can also select the format of the results:

- Display the result as an HTML table: 1
- Display the result as XML: 2
- Display the result as CSV: 3
- Download the result as CSV: 4

To use the automation feature, start with the URL http://www.principledtechnologies.com/benchmarkxprt/webxprt/2021/wx4_build_3_7_3/auto.php, then append a question mark (?) and add the parameters and values separated by ampersands (&). For example, to run all the core tests and download the results, you would use the URL http://principledtechnologies.com/benchmarkxprt/webxprt/2021/wx4_build_3_7_3/auto.php?testtype=1&tests=63&result=4.

Changes between WebXPRT 3 and WebXPRT 4

WebXPRT 4 shares core harness and workload structures with WebXPRT 3, except for a few changes and additions, which we have detailed below.

Harness and UI changes

1. We have updated the aesthetics of the WebXPRT UI to make WebXPRT 4 visually distinct from older versions. We did not significantly change the flow of the UI.
2. We have updated content in some of the workloads to reflect changes in everyday technology, such as upgrading most of the photos in the photo processing workloads to higher resolutions.

Workload additions and changes

1. Test calibration: We updated the test calibration system to a MacBook Pro (13-inch, M1 2020, 8GB RAM) with MacOS Monterey (Version 12.0.1), running Safari 15.1 (17612.2.9.1.20).
2. Score calculations: We changed the score multiplier in order to easily differentiate scores between WebXPRT 4 and earlier versions of WebXPRT.
3. Photo Enhancement: We increased the efficiency of the workload's Canvas object creation function, and replaced the existing photos with new, higher-resolution photos.
4. Organize Album using AI: We replaced ConvNetJS with WebAssembly (WASM) based OpenCV.js for both the face detection and image classification tasks. We changed the images for the image classification tasks to images from the ImageNet dataset.
5. Stock Option Pricing: We updated the dygraph.js library.
6. Encrypt Notes and OCR Scan using WASM: We replaced ASM.js with WASM for the Notes task and updated the WASM-based Tesseract version for the OCR task.
7. Sales Graphs: We made no changes to this workload.
8. Online Homework: In addition to the existing scenario which uses four Web Workers, we have added a scenario with two Web Workers. The workload now covers a wider range of Web Worker performance, and we calculate the score by using the combined run time of both scenarios. We also updated the typo.js library.

Bugs and limitations

At the time of the v3.73 build release, WebXPRT 4 contained no known bugs or limitations.

License information

Below, we list license information for the software used in each of WebXPRT 4's workloads.

1. Photo Enhancement: MOZILLA PUBLIC LICENSE Version 1.1 – included in photoedit\scripts\effects.js.
2. Organize Album using AI: WebXPRT 4 uses OpenCV.js - opencv-4.5.2. Uses Apache license - https://github.com/opencv/opencv/blob/4.x/LICENSE
3. Stock Option Pricing: The following text is included in stocksdash\JS\dygraph.min.js.

   @license Copyright 2017 Dan Vanderkam (danvdk@gmail.com) MIT-licensed (http://opensource.org/licenses/MIT)
4. Encrypt Notes and OCR Scan using WASM: localstoragedb: The following license is included in notes\scripts\localstoragedb.min.js.

License : MIT License

Tesseract.js: The full Apache license is included in notes\LICENSE

Apache License

Version 2.0, January 2004

http://www.apache.org/licenses/

5. Sales Graphs:

   For d3.js, we use a BSD 3-clause "New" or "Revised" license. The license is included under productivity\scripts\LICENSE.txt.

   The InfoVis Tool Kit (jit-yc.js) license is from http://philogb.github.io/infovis.

   Copyright (c) 2011 Sencha Inc. - Author: Nicolas Garcia Belmonte (http://philogb.github.com/)

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6. Online Homework: The license is in the onlinehw\scripts\ sequencingFuncs.js file. The DNA sequencing uses the following license:

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   Typos.js: The license is included at onlinehw\scripts\ license.txt. Copyright (c) 2011, Christopher Finke. All rights reserved.

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