The science behind the report:

Enjoy smoother creative workflows with the HP Z2 Tower G1i Workstation Desktop PC

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 Enjoy smoother creative workflows with the HP Z2 Tower G1i Workstation Desktop PC.

We concluded our hands-on testing on October 22, 2025. 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 September 30, 2025 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to https://facts.pt/calculating-and-highlighting-wins. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Median results of our benchmark testing. Higher scores, more samples per minute, more FPS, and lower task completion time are better.

Test / Subtest	HP Z2 Tower G1i	Dell™ Pro Max Tower T2
Cinebench R23		
CPU single-core	2,413	2,298
CPU multi-core	42,402	39,279
Cinebench 2024		
CPU single-core	144	131
CPU multi-core	2,353	2,310
GPU	32,185	32,246
Geekbench 6 Pro		
CPU single-core	3,273	3,237
CPU multi-core	21,538	20,711
GPU	315,595	307,261

Test / Subtest	HP Z2 Tower G1i	Dell™ Pro Max Tower T2
3DMark		
Fire Strike Extreme	34,516	31,487
Time Spy Extreme	15,504	13,845
Port Royal	21,140	17,689
Steel Nomad Light Unlimited	37,917	34,825
Wild Life Extreme Unlimited	63,353	57,920
Blender (samples per minutes)		
Classroom	126.02	122.73
Monster	260.84	242.54
The Junk Shop	163.85	158.90
Amuse 3.1 (mm:ss)		
Time to generate an image	2:06	2:26
Time to generate a 2-sec video	0:49	1:00
Stable Diffusion 1.5 (mm:ss)		
Time to create an image	1:50	1:58
Procyon AI Image Generation (FP16)		
Stable Diffusion 1.5	3,346	3,087
Stable Diffusion XL	4,298	3,964
Procyon AI Text Generation		
Llama 2	4,951	4,660
Llama 3.1	4,558	4,448
Phi-3.5	5,443	5,321
Mistral 7B	5,220	5,073
Topaz Video AI (FPS)		
FHD Iris 2x	19.00	16.45
FHD Proteus 2x	18.37	16.85
4K Apollo 4x SlowMo	12.02	10.88
4K Gaia 2x	1.80	1.65
Geekbench AI		
Single Precision (FP32)	9,799	9,570
Quantized (INT8)	16,981	17,323
Half Precision (FP16)	10,497	9,321

System configuration information

Table 2: Detailed information on the systems we tested.

System configuration information	HP Z2 Tower G1i	Dell Pro Max Tower Desktop
Processor		
Vendor	Intel®	Intel®
Model number	Core™ Ultra 9 285K	Core™ Ultra 9 285K
Core frequency (GHz)	3.7 – 5.7	3.7 – 5.7
Number of cores	24	24
Number of threads	24	24
Cache (MB)	36	36
Memory module(s)		
Amount (GB)	64	64
Type	DDR5	DDR5
Speed (MT's)	5600	5600
Graphics		
Vendor	NVIDIA®	NVIDIA
Model number	RTX 6000 Ada Generation	RTX 6000 Ada Generation
Driver	NVIDIA v32.0.15.7260	NVIDIA v32.0.15.7260
Storage controller		
Amount (TB)	1	1
Type	M.2 2280 NVMe® PCIe® Gen 4 x4	M.2 2280 NVMe PCIe Gen 4 x4
Connectivity/expansion		
Communications	LAN: Intel Ethernet Connection I219-LM WLAN: Intel Wi-Fi 7 BE200 320MHz	LAN: Intel Ethernet Connection I219-LM WLAN: Intel Wi-Fi 7 BE200 320MHz
Bluetooth	5.4	5.4
USB	2 x USB Type-C 20Gbps 6 x USB Type-A 10Gbps 3 x USB Type-A 480Mbps	2 x USB Type-C 20Gbps 1 x USB Type-C Thunderbolt 1x USB Type-C 10Gbps 2 x USB Type-A 10Gbps 2 x USB Type-A 5Gbps 2 x USB Type-A 480Mbps
Video	2 x DisplayPort 1.4	2 x DisplayPort 1.4
Display		
Size (in.)	27	27
Type	Dell P2715Q	Dell P2715Q
Resolution	1,920 x 1,200	1,920 x 1,200

System configuration information	HP Z2 Tower G1i	Dell Pro Max Tower Desktop
Operating system		
Vendor	Microsoft	Microsoft
Name	Windows 11 Pro	Windows 11 Pro
Build number or version	24H2 Build 26100.4652	24H2 Build 26100.6584
BIOS		
BIOS name and version	HP X50 Ver.01.04.03 (04/25/2025)	Dell Inc. 1.8.1 (08/15/2025)

How we tested

Setting up the system

Setting up and updating the OEM image

1. Boot the system.
2. Follow the on-screen instructions to complete installation, using the default selections when appropriate.
3. Set the Windows Power Mode to Best Performance.
4. Set Screen and Sleep options to Never:
    a. Right-click the desktop, and select Display settings.
    b. Select System from the left column.
    c. Click Power & Battery.
    d. For all power options listed under Screen and Sleep, select Never.
5. Disable User Account Control notifications:
    a. Select Windows Start, type `UAC`, and press the Enter key.
    b. Move the slider control to Never notify, and click OK.
6. Run Windows Update, and install all updates available.
7. Run the HP/Dell/Lenovo Support Assistant utilities, and install all recommended BIOS and driver updates available.
8. Verify the date and time are correct and synchronize the system clock with the time server.
9. Pause Automatic Windows Updates:
    a. Click the Windows Start button.
    b. Type `Windows Update settings` and press the Enter key.
    c. From the Pause updates drop-down menu, select Pause for 5 weeks.

Capturing an image

1. Connect an external HDD to the system.
2. Click Windows Menu button, and type Control Panel in the search bar. Click Control Panel → System and Security → Backup and Restore (Windows 7) → Create a system image.
3. Verify that the external HDD is selected as the save drive, and click Next.
4. Verify that all drives are selected to back up, and click Next.
5. Click Start backup.
6. When you see the prompt to create a system repair disc, select No, and close the dialogs.

Restoring an image

1. Connect an external HDD to the system.
2. Press and hold the Shift key while restarting the system.
3. Select Troubleshoot.
4. Select Advanced options.
5. Select See more recovery options.
6. Select System image recovery.
7. Select the User account.
8. Enter the system password, and click Continue.
9. At the Restore system files and settings screen, select Next.
10. Verify that the external HDD is selected, and click Next.
11. Once the recovery has completed, click Finish.

3DMark testing

Setting up the test

1. Download 3DMark from http://www.futuremark.com/benchmarks/3dmark/all.
2. To install 3DMark with the default options, double-click the 3DMark installer.exe file.
3. To launch 3DMark, double-click the 3DMark desktop icon.
4. Enter the registration code, and click Register.
5. Exit 3DMark.

Running the test

1. To launch the benchmark, double-click the 3DMark desktop icon.
2. At the 3DMark Home screen, click the More Tests button.
3. Select the desired benchmark to run (i.e., Fire Strike, Fire Strike Extreme, Time Spy, or Time Spy Extreme).
4. Move the slider button to turn off the "Include Demo" feature.
5. Click Run.
6. When the benchmark run completes, record the results.
7. Perform steps 1 through 6 two more times for each benchmark, and report the median result of the three runs.

Amuse 3.1 testing

Setting up the test

1. Download the Amuse application from https://www.amuse-ai.com/.
2. Using all the defaults, run the installer, and install the application.

Running the test

1. Launch Amuse.
2. In the prompt type `A cute raccoon playing guitar on the beach.`
3. Select Image, and set the following parameters:
   - Image Count = 4
   - Aspect Ratio = Landscape (v3.0.1=768 x 512). (v3.1.0=1280x768)
   - Performance slider = Quality (Note: If the system is an AMD system and supports AMD XDNA Super Resolution, allow the toggle to be enabled (default setting.)
4. Select Create new variant each generation:
5. Click Generate Images. If prompted to, download needed model files. Accept the license agreement, and click Download.
6. After the image generation has completed, record the elapsed time.
7. Wait 5 minutes, repeat steps 2 through 6 twice, and record the median results of the three runs.
8. In the prompt type `A cute raccoon playing guitar on the beach.`
9. Select Video, and set the following parameters:
   - Video Count = 4
   - Aspect Ratio = Landscape (704 x 448)
   - Performance slider = Quality (Note: If the system is an AMD system and supports AMD XDNA Super Resolution, allow the toggle to be enabled (default setting.)
   - Video Length = 2 seconds
10. Select Create new variant each generation:
11. Click Generate Videos. If prompted to, download needed model files. Accept the license agreement, and click Download.
12. After the video generation has completed, record the elapsed time.
13. Wait 5 minutes.
14. Repeat steps 8 through 13 twice, and record the median result of the three runs.

Automatic1111 testing

Setting up the test

1. Download Python from https://www.python.org/ftp/python/3.10.6/python-3.10.6-amd64.exe.
2. Double-click the installer.
3. Check the Add Python 3.10 to PATH box, and click Install Now.
4. To end the installer wizard, click Close.
5. Download git from https://github.com/git-for-windows/git/releases/download/v2.45.2.windows.1/Git-2.45.2-64-bit.exe.
6. Double-click the installer.
7. Click Next through the default options, and click Install.
8. To end the installer wizard, click Finish.
9. Reboot the system.
10. Open a command prompt, and navigate to c:\Users\[your username].
11. From that prompt, enter the following command:

```
git clone https://github.com/AUTOMATIC1111/stable-diffusion-webui.git
```

12. On completion, open file explorer, and browse to C:\Users\[your username]\stable-diffusion-webui\models\.
13. Open a web browser, and download a checkpoint file from https://huggingface.co/runwayml/stable-diffusion-v1-5/resolve/main/v1-5-pruned-emaonly.ckpt .
14. Copy that downloaded the checkpoint file into the models folder.
15. Browse up one level to C:\Users\[your username]\stable-diffusion-webui\ and execute the webui-user.bat file. The batch file will take about 5 minutes to complete, and will launch a browser with http://127.0.0.1:7860 as the address. Use this browser window to execute testing.
16. Close the command session.

Running the test

For testing, we used default settings, except for the following modifications:

- Set width to 640 and height to 360.
- Check the box for Hires. Fix. Expand the panel, and change the upscale to 3 for 1080p image quality.
- Change sampling steps from 20 to 100.

1. Enter a prompt into the txt2image text box.
2. To start the image creation, click Generate.
3. After the image generation has completed, record the elapsed time.
4. Wait 5 minutes, repeat steps 1 through 3 twice, and record the median result of the three runs.

Blender testing

Setting up the test

1. Download the Blender Benchmark from https://opendata.blender.org/.

Running the test

1. Launch the Blender Benchmark.
2. At the Welcome screen, click Next.
3. Select Blender version 4.3.0, and click Next.
4. At the Benchmark Scenes screen, click Next.
5. At the Benchmark Device screen, select either the CPU or GPU option, and click Start Benchmark.
6. Record the results.
7. Wait 15 minutes before performing the next run.
8. Repeat steps 1 through 7 twice, and record the median result of the three runs.

Cinebench R23 testing

Setting up the test

1. Download and install Cinebench R23 from https://www.maxon.net/en/downloads.

Running the test

1. Launch Cinebench.
2. Select File→Advanced benchmark.
3. Set the Minimum Test Duration to Off.
4. Select either CPU (multi-core) or CPU (single-core), and click Start.
5. Record the result.
6. Wait 10 minutes before rerunning the benchmark.
7. Repeat steps 1 through 6 twice, and record the median result of the three runs.

Cinebench 2024 testing

Setting up the test

1. Download and install Cinebench 2024 from https://www.maxon.net/en/downloads/cinebench-2024-downloads
2. Launch Cinebench 2024.
3. Select File->Advanced benchmark.
4. From the Minimum Test Duration drop-down menu, select Off.

Running the test

1. Launch Cinebench 2024.
2. Click File, Run All tests.
3. Record the result.
4. Wait 10 minutes before rerunning the benchmark.
5. Repeat steps 1 through 4 twice, and record the median result of the three runs.

Geekbench AI testing

Setting up the test

1. Purchase and download a Geekbench AI Pro license from https://www.geekbench.com/ai/download/.
2. Using all the defaults, run the installer, and install the benchmark.

Running the test

1. Launch Geekbench AI.
2. Enter the license key.
3. For CPU/NPU testing, select the following parameters:
   - AI Framework: OpenVINO™
   - AI Backend: CPU/NPU
   - AI Device: processor/Intel AI Boost
4. Wait 5 minutes before rerunning the benchmark.
5. Repeat steps 3 and 4 twice, and record the median result of the three runs.

Geekbench 6 Pro testing

Setting up the test

1. Purchase a Pro license and download and install Geekbench 6 Pro from https://www.geekbench.com/download/.

Running the test

1. Launch Geekbench.
2. Click Run CPU Benchmark or Run Compute Benchmark.
3. Record the result.
4. Wait 5 minutes before rerunning the benchmark.
5. Repeat steps 1 through 4 twice, and record the median result of the three runs.

Procyon AI testing

Setting up the test

1. Purchase and download the Procyon AI image or text generation benchmark from https://benchmarks.ul.com/procyon.
2. Install the benchmark.
3. Double-click the installer.
4. Click Next.
5. Click to agree to EULA, and click Next.
6. Click Next.
7. Launch Procyon.
8. Select Settings and input the Procyon benchmark license key.
9. Close Procyon.

Running the test

1. Launch Procyon.
2. Select the appropriate test.
3. Choose the GPU, and select the model.
4. To begin the test, click Run.
5. When the test completes, record the results.
6. Wait 15 minutes before rerunning the benchmark.
7. Repeat steps 1 through 6 twice, and record the median result of the three runs.

Topaz Labs Video AI testing

Setting up the test

1. Download and install Topaz Labs Video AI from https://www.topazlabs.com/downloads.

Running the test

1. Launch Topaz Labs Video AI.
2. Choose Free demo, and close the activation window.
3. Select Process -->Benchmark.
4. From the Input Resolution drop-down menu, select 1920x1080 (FHD) or 3480x2160 (4K).
5. Click Benchmark.
6. When the test completes, record the results.
7. Wait 15 minutes before rerunning.
8. Repeat steps 1 through 7 twice, and record the median results of the three runs.

Read the report ▶

This project was commissioned by HP.

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