

Assignment 1. (What, How, Results)

Geekbench's CPU benchmark is broken down into a number of key tests that have a single-core and multi-core section. Each section is grouped into two subsections: integer workloads and floating point workloads.

Geekbench tests the ability of your device's chipset, it tests different types of workloads split into categories. These categories are split into productivity, developer, machine learning and image synthesis.

Scores are computed using a weighted arithmetic mean of subsection scores, with the integer subsection accounting for 65% of the score and the floating point subsection accounting for the remaining 35%.

Geekbench 6 measures your processor's single-core and multi-core power, for everything from checking your email to taking a picture to playing music, or all of it at once. Geekbench 6's CPU benchmark measures performance in new application areas including Augmented Reality and Machine Learning, so you'll know how close your system is to the cutting-edge.

File compression workloads test how good your device is at compressing and decompressing files using different compression format. It models use cases where a user may look to compress a file to send to someone else in order to reduce data and bandwidth.

It compresses the Ruby 3.1.2 source archive, which is a 75 MB archive containing 9841 files, using LZ4 and ZSTD compression. It then verifies the compressed files via an SHA-1 hash.

HTML5 Browser - opens a number of HTML5 pages and models a user browsing the web in a modern browser such as Chrome/Safari. It uses a headless browser and opens, parses, lays out, renders texts and images based on popular sites, including Instagram, Wikipedia, etc. This test renders eight pages in single-core mode and 32 pages in multi-core mode.

Other tests include developer workloads: text processing, Asset compression; machine learning workloads: object detection, background blur; Image editing: object remover, etc.

3DMark

- It is a computer benchmarking tool created and developed by UL, to determine the performance of a computer's 3D graphic rendering and CPU workload processing capabilities. Running 3DMark produces a 3DMark score, with higher numbers indicating better performance.
- Steel Nomad (Cross-platform, non-raytraced benchmark for high-end gaming PCs) - it uses graphics technologies just like your favourite new game titles to give you a good idea of how your system will run the latest heavy PC games. It runs at a 4k resolution, and adds new graphics technologies like volumetric skies, procedural grass, volume illumination, ambient occlusion.
- Solar Bay (Ray-tracing benchmark for lightweight and mobile devices) - it's designed for measuring gaming with ray-tracing performance on phones and tablets. The ray traced workload increases linearly over three stages, letting you see how your device handles a variety of raytraced gaming workloads.
- Storage Benchmark (SSD performance test for gamers) - dedicated to testing the SSD and other storage hardware. It supports all the latest storage technologies and tests practical, real world gaming performance for activities such as loading games, saving progress, installing game files and recording gameplay video streams.
- CPU Profile (CPU benchmarks for modern processors)
Instead of producing a single number, the 3DMark CPU Profile shows how CPU performance scales with the number of cores and threads used. The CPU Profile has six tests that use 1, 2, 4, 8, 16 or the max. number of available threads. These tests help you benchmark and compare CPU performance for gaming, overclocking and other scenarios.
- Stress Tests (Check the reliability and stability of your PC)
It can help you identify faulty hardware or a need for better cooling.