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Asus PRIME Z390-P Performance Results

ADD TO PC BUILD TEST YOUR PC

Benchmarks - excluding HDD

Gaming 101%
UFO

Desktop 83%
Aircraft carrier

Workstation 75%
Battleship

Save results Copy results User guide

- PC Status**: Overall this PC is performing as expected (58th percentile). This means that out of 100 PCs with exactly the same components, 42 performed better. The overall PC percentile is the average of each of its individual components.
- Processor**: With a brilliant **single core** score, this CPU is the business: It demolishes everyday tasks such as web browsing, office apps and audio/video playback. Additionally this processor can handle typical workstation, and even moderate server workloads. Finally, with a gaming score of 88.5%, this CPUs suitability for 3D gaming is excellent.
- Graphics**: 113% is an outstanding 3D score, it's the bee's knees. This GPU can handle almost all 3D games at very high resolutions and ultra detail levels.
- Boot Drive**: 107% is a very good SSD score. This drive is suitable for moderate workstation use, it will facilitate fast boots, responsive applications and ensure minimum IO wait times.
- Memory**: 16GB is enough RAM to run any version of Windows and it's more than sufficient for nearly all games. 16GB also allows for very large file and system caches, software development and batch photo editing/processing.
- OS Version**: Windows 10 is the most recent version of Windows, and the best to date in our opinion.

Motherboard	Asus PRIME Z390-P (all builds)
Memory	9.6 GB free of 16 GB @ 3 GHz
Display	2560 x 1440 - 32 Bit colors
OS	Windows 10
BIOS Date	20190311
Uptime	2.3 Days
Run Date	Jun 30 '19 at 05:27
Run Duration	186 Seconds
Run User	USA-User
Background CPU	2%

PC Performing as expected (58th percentile)

Actual performance vs. expectations. The graphs show user score (x) vs user score frequency (y).

Processor

Intel Core i7-9700K \$365
51,160 User benchmarks, average bench 114%

1GA1151, 1 CPU, 8 cores, 8 threads
Base clock 3.6 GHz, turbo 3.6 GHz (avg)
▲ Performing way below expectations (3rd percentile)

Bench: 88.5% Excellent

Single core: SC Int 106, SC Fleat 117, SC Mixed 111 (89% 111 pts)

Quad core: QC Int 415, QC Fleat 466, QC Mixed 438 (100% 439 pts)

Multi core: MC Int 760, MC Fleat 897, MC Mixed 836 (124% 831 pts)

Graphics Card

Nvidia RTX 2060-6GB \$350
50,546 User benchmarks, average bench 107%

MS(1462 3755)
CLim: 2100 MHz, MLim: 3500 MHz, Ram: 6GB, Driver: 430.86
✓ Performing way above expectations (87th percentile)

Bench: 113% Outstanding

3D DX9: Lighting 355, Reflection 303, Parallax 386 (113% 348 fps)

3D DX10: MRender 289, Gravity 302, Splating 196 (114% 263 fps)

Drives

WDC WDS100T2B0A-00SM50 1TB
1,453 User benchmarks, average bench 105%

787GB free (System drive)
Firmware: 401000WD
SusWrite @10s intervals: 259 291 411 441 449 450 MB/s
✓ Performing as expected (50th percentile)

Bench: 107% Outstanding

Sequential: Read 496, Write 440, Mixed 401, SusWrite 383 (97% 430 MB/s)

Random 4k: 4K Read 36.7, 4K Write 82.2, 4K Mixed 45.2 (157% 54.7 MB/s)

Deep queue 4k: DQ Read 375, DQ Write 310, DQ Mixed 244 (210% 310 MB/s)

Seagate SkyHawk 6TB (2016) \$190
35 User benchmarks, average bench 83%

3TB free
Firmware: SC60
SusWrite @10s intervals: 139 141 137 143 143 142 MB/s
▲ Relative performance n/a - RAM cached drive detected

Bench: 50% Above average

Sequential: Read 123, Write 125, Mixed 93.8, SusWrite 113 (154% 114 MB/s)

Random 4k: 4K Read 1, 4K Write 2.4, 4K Mixed 1 (119% 1.47 MB/s)

WD My Book 1140 3TB
2,025 User benchmarks, average bench 36%

2TB free, PID 1140
Operating at USB 3.0 Speed
SusWrite @10s intervals: 113 114 109 114 114 114 MB/s
✓ Performing way above expectations (85th percentile)

Bench: 50% Above average

Sequential: Read 123, Write 125, Mixed 93.8, SusWrite 113 (154% 114 MB/s)

Random 4k: 4K Read 1, 4K Write 2.4, 4K Mixed 1 (119% 1.47 MB/s)

Memory Kit

G.SKILL Trident Z RGB DDR4 3000 C16 2x8GB \$96
33,223 User benchmarks, average bench 85%

2 of 4 slots used
16GB DIMM DDR4 clocked @ 3000 MHz
✓ Performing above expectations (65th percentile)

Bench: 94.2% Outstanding

Multi core: MC Read 37.4, MC Write 37, MC Mixed 27 (97% 33.8 GB/s)

Single core: SC Read 19.2, SC Write 34.7, SC Mixed 26.2 (76% 26.7 GB/s)

Latency: Latency 56.5 (71% 56.5 ns)

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System Memory Latency Ladder

L1/L2/L3 CPU cache and main memory (DIMM) access latencies in nano seconds (explanation by AdoredTV).



PC Games

Compare your in-game performance to other users with your hardware: RTX 2060-6GB, Display(DELL S2719DM), 2560 x 1440, 59 Hz.

1. Pick a game that you play on this PC.

2. What settings do you play on?
Settings: Low Med High Max

3. How many (uncapped) fps do you get?
Avg. fps: [input field]

SUBMIT YOUR FPS

Custom PC Builder (Explore upgrades for this PC)

Build your perfect PC: compare component prices, popularity, speed and value for money.

CHOOSE AN UPGRADE:

CPU GPU SSD HDD RAM MBD

Typical PRIME Z390-P Builds (Compare 2,123 builds)

See popular component choices, score breakdowns and rankings.

Gaming 127% UFO

Desktop 137% UFO

Workstation 99% Nuclear submarine

Motherboard: Asus PRIME Z390-P - \$143

CPU	GPU	SSD	RAM
Core i5-9600K Intel \$220 Bench 104%, 45,976 samples	RTX 2080 Nvidia \$740 Bench 147%, 78,108 samples	970 Evo NVMe PCIe M.2 500GB Samsung \$100 Bench 265%, 89,072 samples	Vengeance LPX DDR4 3000 C15 2x8GB Corsair \$70 Bench 85%, 201,375 samples
Core i7-9700K Intel \$365 Bench 114%, 51,160 samples	RTX 2070 Nvidia \$480 Bench 130%, 101,079 samples	970 Evo NVMe PCIe M.2 250GB Samsung \$90 Bench 237%, 65,646 samples	DDR4 3000 20Z 2x8GB Adata Bench 94%, 7,413 samples
Core i9-9900K Intel \$490 Bench 120%, 64,981 samples		860 Evo 500GB Samsung \$78 Bench 108%, 125,047 samples	DDR4 3200 2x8GB Adata Bench 98%, 1,114 samples

EDIT WITH CUSTOM PC BUILDER Value: 132% - Outstanding Total price: \$1,273

The Best.

CPU	GPU	SSD
Intel Core i7-8700K \$345 AMD Ryzen 5 2600 \$150 AMD Ryzen 7 2700X \$275	Nvidia GTX 1070 \$415 Nvidia GTX 1060-6GB \$230 Nvidia GTX 1080-Ti \$808	Samsung 850 Evo 250GB \$104 Samsung 850 Evo 500GB \$100 Samsung 850 Pro 256GB \$163
HDD	RAM	USB
Seagate Barracuda 1TB (2016) \$40 Seagate Barracuda 3TB (2016) \$72 WD Blue 1TB (2018) \$36	Corsair Vengeance LPX DDR4 3000 C15 2x8GB \$70 G.SKILL Trident Z DDR4 3200 C14 4x16GB \$646 Corsair Vengeance LPX DDR4 3200 C16 2x8GB \$75	SanDisk Extreme 64GB \$45 SanDisk Extreme 32GB \$48 SanDisk Ultra Fit 32GB \$12

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