

ALCHEMY PERFORMANCE LAB • VERIFIED REPORT

Verified Report

Before/after measurement and documentation of the changes.

REPORT ID	AVR-2026-0001
DATE	2026-07-04
CLIENT	Client #001 (anonymized)
SERVICE	Full Optimization
CPU	Intel Core i5-10400F
GPU	NVIDIA GeForce GTX 1660 SUPER
RAM	16 GB DDR4-2666
STORAGE	NVMe SSD 500 GB
OS	Windows 11 Pro 24H2 (26100.x)



FINAL VERDICT

Final result. Based on the measurements.

"Measure first. Change second."

2 defensible improvements, 1 within noise, 1 inconclusive (noisy), 1 advisory.

● 2

IMPROVED

A measurement-supported gain.

● 1

WITHIN NOISE

Change within expected variation.

● 1

NOISY / INCONCLUSIVE

Signal not strong enough for a conclusion.

● 1

ADVISORY

Proxy metric; outside the final verdict.

KEY TAKEAWAYS

+13.03%

Disk 4K Random Read (QD1)

+7.30%

CPU Compute Throughput

✓

No regressions

No metric showed a defensible regression.

Overall result: The system shows a measurable improvement, supported by repeated measurements, in 4K random read (+13.0%) and CPU throughput (+7.3%). The remaining metrics either did not change beyond noise or do not permit a reliable conclusion, and are reported as such. No metric showed a defensible regression.

ADVISORY results are used as supporting information. WITHIN NOISE and INCONCLUSIVE mean that the data does not support a clear conclusion about a meaningful change.

MEASUREMENT METHODOLOGY

Methodology. Consistent conditions, repeated measurements.

20

test runs per metric

More data for more reliable results.

3

warm-up runs excluded

Eliminates start-up and caching effects.

Δ

Evidence threshold

A change counts only if it exceeds the run-to-run variation and a practical per-metric floor.

CV

CV stability checks

Results validated for consistency using the coefficient of variation.

Evidence threshold: $|\Delta| \geq 1.5 \times \text{pooled_stddev}$ AND $|\Delta\%| \geq \text{per-metric floor (calibrated)}$ · Stability: $CV \leq 5\%$ per side; metrics above that are flagged as noisy. The rules below apply to the before/after comparison. **Tools:** Collect-Disk.ps1 (DiskSpd 2.2.0), Collect-CPU.ps1, Collect-GPU.ps1 (vkpeak), verdict.py

Test conditions Same before/after conditions: same power plan during measurement, a 10-minute idle normalization period followed by a pre-capture system-state check, network inactive, same driver versions unless the driver change is part of the intervention.

RESULTS

#	METRIC	BEFORE (MEAN)	AFTER (MEAN)	Δ%	VERDICT
1	Disk Sequential Read MB/s · ↑ better	2,431.5 CV 1.57%	2,448.1 CV 1.67%	+0.68%	● WITHIN NOISE
2	Disk 4K Random Read (QD1) MB/s · ↑ better	46.8 CV 2.35%	52.9 CV 2.27%	+13.03%	● IMPROVED
3	Disk Write Latency (avg) ms · ↓ better	0.412 CV 8.47%	0.395 CV 7.85%	-4.13%	● NOISY / INCONCLUSIVE
4	CPU Compute Throughput ops/s · ↑ better	184,200 CV 1.20%	197,650 CV 1.04%	+7.30%	● IMPROVED
5	Responsiveness Proxy (jitter window) ms · ↓ better	1.86 CV 7.53%	1.52 CV 7.24%	-18.28%	● ADVISORY

Disk Sequential Read: The difference clears neither the variation threshold nor the practical floor: no defensible change.

Disk 4K Random Read (QD1): Clear improvement, several times the noise band.

Disk Write Latency (avg): Inherent instability (CV > 5%) on both sides; the nominal improvement is not reliably supported.

CPU Compute Throughput: Consistent improvement, compatible with the power management changes.

Responsiveness Proxy (jitter window): Proxy metric, reported as advisory and not weighed equally in the final verdict.

Percentage changes are calculated relative to the baseline. For latency and jitter metrics, a lower value usually indicates a better result. Result labels consider both the size of the change and the stability of the measurement.

CHANGES APPLIED & DOCUMENTATION

Changes. Targeted and documented.

- 01

Clean GPU driver reinstall (DDU) and disabling of third-party overlay services

GPU vendor documentation
- 02

Power plan: documented processor power management parameters

Microsoft Learn: Power and performance tuning
- 03

Disabled 14 non-essential third-party startup entries (with rollback list)

Client rollback appendix

A rollback path is kept for every change; the client receives the rollback list together with this report.

CONFIGURATION VERIFIED (CHECKED, NOT CHANGED)

- ✓

MSI mode already active on the GPU and NVMe controllers

Microsoft Learn: Message-Signaled Interrupts (MSIs)

Integrity Declaration

Integrity statement

This report includes the measurements performed and reports their results without selectively hiding outcomes. Where a difference is not stable or large enough for a reliable conclusion, it is marked accordingly. No specific improvement percentage is assumed before measurement.

Vassilis · Alchemy Performance Lab
Signature / Stamp

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