FORMAL TECHNICAL REPORT

DXGI/D3D Regression on Dual-GPU Configuration with Optimus Disabled

Dell Precision 5520 — Windows 11 25H2 — KB5079473

March 2026

Recipients

This document is addressed to the engineering teams of:

Company	Recipient Team
Microsoft Corporation	Windows Update Engineering / DirectX / DXGI Team
Dell Technologies	Driver Certification Engineering — Precision Workstation
NVIDIA Corporation	Quadro / Maxwell Driver Compatibility — Windows Graphics

1. Hardware Configuration

Component	Detail
System	Dell Precision 5520 — Service Tag: JNR4RQ2
CPU	Intel Core i7-7820HQ (Kaby Lake)
RAM	2 x 16 GB DDR4
GPU 1 (Display Controller)	Intel HD Graphics P630 — Dell Driver 31.0.101.2137 (V9259)
GPU 2 (Renderer)	NVIDIA Quadro M1200 Maxwell — Driver 32.0.15.8195
GPU Configuration	Optimus DISABLED — display output hardwired through Intel P630
Operating System	Windows 11 Pro 25H2 — Build 26200.8037
Storage C:	Samsung 970 EVO Plus 1TB SSD (system)
Storage E:	Fanxiang PS1008 1TB SSD (Macrium backup destination)
Storage M:	Micron 1100 1TB SSD (personal data)
External Display	4K monitor via Thunderbolt
HAGS	Disabled (HwSchMode = 1)
TDR Timeout	TdrDelay = 8s, TdrDdiDelay = 8s

The Optimus-disabled configuration is the one recommended by Dell itself for professional workloads running Adobe Creative Suite (Premiere Pro, Photoshop, Lightroom Classic). In this mode, the Intel P630 display controller manages the video output while the Quadro M1200 executes CUDA/OpenGL rendering. The DXGI layer must therefore simultaneously serve both GPUs in a coordinated manner. This creates a critical dependency on correct adapter negotiation that is absent in standard consumer laptop configurations.

2. Regression History

Over the past several months, a recurring and reproducible pattern has emerged: each monthly Windows 11 Cumulative Update has introduced a regression in the DXGI/D3D layer that renders this workstation completely unusable for professional Adobe Creative Suite work. The documented timeline follows.

2.1 — January 2026: KB5074109

- Symptoms: Brave browser launching with entirely black windows; Adobe Premiere Pro freezing during GPU-accelerated timeline playback.
- Diagnosis: DXGI/D3D11 regression specific to dual-GPU configurations with Optimus disabled.
- Resolution adopted: manual removal of the KB; NVIDIA driver updated to 32.0.15.8195; Intel P630 driver locked to 31.0.101.2137.
- Countermeasures applied: HAGS disabled; TDR timeout raised to 8s; ExcludeWUDriversInQualityUpdate=1 set in registry.

2.2 — March 2026 (first wave): KB5077181

- Symptoms: systemic DXGI conflict; abnormal termination of all GPU-accelerated applications.
- Resolution adopted: KB removed; system restored from Macrium Reflect backup dated 09/03/2026.

2.3 — March 2026 (second wave): KB5079473 — installed 11/03/2026

- Symptoms: identical to previous incidents — Adobe Premiere Pro, Photoshop and Lightroom Classic crashing on first edit operation or video playback attempt.
- Additional behavior: Brave Browser crashes only when launched after an Adobe application has already been opened, confirming corruption of the shared DXGI context.
- Intel P630 driver forcibly updated from 31.0.101.2137 to 31.0.101.2140 despite ExcludeWUDriversInQualityUpdate=1 being active in the registry.
- Final resolution adopted: system restored from Macrium Reflect backup dated 09/03/2026; KB5079473 explicitly blocked via registry policy.

3. Technical Analysis

3.1 Nature of the Regression

The problem is neither random nor caused by misconfiguration. The causal chain is documented and reproducible:

1. The Cumulative Update distributes a new version of the Intel HD Graphics P630 driver (from 2137 to 2140) as a component of the Quality Update package, bypassing the ExcludeWUDriversInQualityUpdate=1 registry flag.
2. Intel driver version 2140 introduces a regression in the DXGI layer when operating in Optimus-disabled mode on Maxwell-architecture hardware.
3. Applications requiring DXGI/D3D11 hardware acceleration (Adobe CC suite, Brave browser) receive an invalid graphics context and either hang or terminate abnormally.
4. The problem persists even when Premiere Pro's Mercury Playback Engine is set to Software Only mode, indicating that the failure occurs at a level deeper than the application renderer, within the DXGI initialization layer itself.

3.2 Diagnostic Evidence Collected

- AIDA64 log analysis: IntelAudioService crash events from 05/03/2026; AUDIODG.EXE crash; svchost.exe Application Hang on 12/03/2026.
- Premiere Pro gpusniffer output: Plugin Loading.log = 0 bytes after KB5079473 installation — Premiere unable to initialize the GPU layer on startup.
- Mercury Playback Engine Software Only test: black preview and non-functional playback even without GPU acceleration — confirms failure precedes the application renderer.
- Application isolation test: Brave operates normally in isolation; crashes only after Adobe applications have corrupted the shared DXGI context.
- Registry verification: ExcludeWUDriversInQualityUpdate=1 was active during KB5079473 installation — the Intel driver was updated regardless.

3.3 Why This Configuration Is Vulnerable

The Dell Precision 5520 with Optimus disabled uses a non-standard DXGI routing compared to consumer laptops: the physical display is hardwired to the Intel P630, while GPU computation runs on the Quadro M1200. This creates a critical dependency on correct adapter negotiation at the DXGI level. Maxwell-family GPUs (GM107) use D3D11 initialization paths that have been progressively deprecated in recent Intel driver iterations, generating incompatibilities that go undetected before Cumulative Update distribution. The specific combination of an Optimus-disabled Dell Precision workstation, a Kaby Lake Intel iGPU, and a Maxwell-generation NVIDIA Quadro appears to fall through the cracks of standard driver compatibility testing.

4. Professional Impact

This workstation is used professionally for video and photographic content production with

Adobe Creative Suite 2023. The software in active use includes:

- Adobe Premiere Pro 2023 — video editing with CUDA rendering
- Adobe Photoshop 2023 — photographic retouching with GPU acceleration
- Adobe Lightroom Classic — photographic catalog management and development

Every monthly Windows Cumulative Update renders the machine completely unusable for professional work, requiring a full system restore from backup. This results in:

- Complete interruption of productive work for hours or days per incident
- Necessity to keep Windows Update permanently disabled
- Ongoing exposure to security vulnerabilities accumulating since the last stable update
- Inability to receive critical security patches without risking the functionality of the entire workstation

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5. Projected Evolution Over the Coming Months

The current situation is not sustainable long term. With Windows Update locked to the last stable build (December 2025), the following risks grow progressively over time:

5.1 Security Risks

- Each passing month accumulates unpatched CVE vulnerabilities on the operating system.
- Zero-day vulnerabilities in Windows 11 25H2 will remain open on this machine indefinitely.
- Brave browser receives independent security updates, but the underlying operating system remains exposed.
- Adobe applications, also locked via Windows Firewall rules to prevent auto-updates, do not receive security patches.

5.2 Compatibility Risks

- As months pass, the gap between the installed build and the current release widens, making future reinstallations increasingly complex.
- Dell drivers for the Kaby Lake/Maxwell platform are updated irregularly — version 2137 may eventually be removed from Dell's support portal.
- Future versions of Adobe Creative Suite may require Windows or DirectX versions incompatible with the locked build.

5.3 Worst-Case Scenario

If the pattern continues — meaning each monthly Microsoft Cumulative Update introduces the same DXGI regression on this hardware configuration — the only viable long-term alternatives will be:

- Hardware replacement with a machine supported by current driver versions
- Migration to an alternative operating system for the Adobe workflow
- Waiting for a targeted fix from Microsoft, Dell, or NVIDIA

It is specifically to facilitate the last option that this report is being submitted.

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6. Requests to Engineering Teams

To Microsoft — Windows Update Engineering / DXGI Team

5. Investigate why Cumulative Update KB5079473 (and predecessors KB5074109, KB5077181) updated the Intel HD Graphics P630 driver despite ExcludeWUDriversInQualityUpdate=1 being active in the registry at installation time.
6. Investigate the DXGI/D3D11 regression introduced by the combination of KB5079473 and Intel driver 31.0.101.2140 on dual-GPU configurations with Optimus disabled and Maxwell-generation NVIDIA GPUs.
7. Provide a reliable mechanism to block updates of specific driver versions via Windows Update without preventing receipt of operating system security patches.

To Dell Technologies — Driver Certification Engineering

8. Ensure that Intel HD Graphics P630 driver version 31.0.101.2137 (Dell package V9259) remains available as a stable download for the Precision 5520 (Service Tag JNR4RQ2) long term.
9. Investigate the compatibility of version 31.0.101.2140 with the Optimus-disabled configuration of the Precision 5520 and communicate whether a corrected certified version exists or is planned.
10. Provide official guidance on how to keep the operating system updated without encountering the DXGI regressions that are systematically affecting this hardware configuration.

To NVIDIA Corporation — Quadro Driver Compatibility

11. Verify the compatibility of Quadro M1200 Maxwell driver 32.0.15.8195 with updated versions of the Intel P630 driver (2140+) in dual-GPU configurations with Optimus disabled.
12. Communicate whether Maxwell architecture (GM107) will receive driver updates that mitigate DXGI conflicts in this Intel+NVIDIA display routing scenario.

13. Indicate whether a Quadro driver version for Maxwell exists or is planned that more robustly handles DXGI negotiation when the display controller is the Intel adapter.

7. Current System Status

Parameter	Current Value
Windows Build	26200.8037 (December 2025) — stable
Intel P630 Driver	31.0.101.2137 (Dell V9259) — stable
NVIDIA Quadro M1200 Driver	32.0.15.8195 — stable
HAGS	Disabled (HwSchMode = 1)
TDR Timeout	TdrDelay = 8s, TdrDdiDelay = 8s
Windows Update	Blocked (NoAutoUpdate = 1)
Drivers via WU	Blocked (ExcludeWUDriversInQualityUpdate = 1)
KB5079473	Explicitly blocked (DoNotAllowKBs registry key)
Active Backup	Macrium Reflect — E: — 09/03/2026 22:43
Adobe Premiere Pro 2023	Functional with CUDA — stable
Adobe Photoshop 2023	Functional with GPU acceleration — stable
Adobe Lightroom Classic	Functional with GPU acceleration — stable
Brave Browser	Functional — stable

The system is currently stable and fully functional for the professional Adobe Creative Suite workflow. Stability is maintained at the cost of permanently blocking Windows Update.

8. Contact Information

Field	Detail
Name	Marco
System	Dell Precision 5520
Dell Service Tag	JNR4RQ2
Report Date	March 2026
User Experience	30 years of professional Windows and Adobe Creative Suite usage

I am available to provide additional logs, memory dumps, PowerShell output or any other diagnostic information deemed useful by the engineering teams of the recipient companies.

This report is submitted in good faith in the interest of resolving a problem that, by its recurring and systematic nature, strongly suggests the existence of a structural bug in the Windows Update distribution process affecting dual-GPU configurations with Optimus disabled and Maxwell-generation GPU hardware.