ASUS Zenbook Pro Duo UX582LR

Windows BSOD Troubleshooting Log | October 7 – November 6, 2026 | **Trigger identified: KB5127648**

Finding: the crash is triggered by the **Windows 11 October 2026 security update, KB5127648 (build 26200.9711)**, on the **Samsung 990 EVO Plus 4TB** in this laptop. A fresh 25H2 install on that drive boots normally until KB5127648 is installed; every reboot after it crashes with 0x139. Windows builds that include it, such as 26H2 and the KB5127936 preview, are expected to fail the same way. The same laptop runs current Windows normally on a Samsung 980 PRO 2TB. Samsung found the 990 EVO Plus healthy, and RAM, BIOS, drivers, drive contents and the drive's Host Memory Buffer (HMB) have been ruled out. No fix exists on the user side; it needs a fix from Microsoft or Samsung.

1. Problem summary

The laptop crashed with **KERNEL_SECURITY_CHECK_FAILURE (0x139)** on every *fresh* Windows boot, while the existing Windows 11 installation ran normally day to day. The crash appeared during:

- The reboot after a Windows Update installed.
- A Windows reset or in-place upgrade started from inside Windows (Setup reported **0xC1900101 – 0x20017**: failed in the SAFE_OS phase during BOOT operation).
- Booting the Media Creation Tool USB installer (crashed while loading, before the drive-selection screen).
- First boot of a brand-new Windows install applied to a separate, clean partition — including in Safe Mode.

2. System details

Item	Value
Model	ASUS Zenbook Pro Duo 15 OLED, UX582LR (Intel 10th gen, NVIDIA RTX, soldered RAM, PCIe Gen3 M.2 slot)
BIOS	UX582LR.305 (appears to be the latest release for this model)
Problem SSD	Samsung 990 EVO Plus 4TB (PCIe 4.0 x4 / 5.0 x2, DRAM-less, uses Host Memory Buffer), BitLocker-encrypted
Working SSD	Samsung 980 Pro 2TB (PCIe Gen4, has its own DRAM cache), firmware 5B2QGXA7 (Magician: latest version, no reported compatibility issue); the drive the 990 EVO Plus replaced as a capacity upgrade
Original OS on 990 EVO Plus	Windows 11 Pro 25H2, OS Build 26200.9168 (ran normally, but could not update or reinstall)
Trigger update	KB5127648, 2026-10 Security Update for Windows 11 (build 26200.9711)
Current state	990 EVO Plus: fresh 25H2 with KB5127648 withheld and updates paused. 980 PRO 2TB: Windows 11 26H2 build 26300.9818 (includes KB5127648), runs normally.

3. Tests performed and results

#	Test	Result	What it tells us
1	Samsung Magician SSD health (990 EVO Plus)	Healthy	SMART health did not reveal the problem
2	Windows Memory Diagnostic (2 passes)	No errors	RAM probably fine
3	MemTest86 from USB (full passes)	Passed	RAM ruled out
4	Check for crash dumps (C:\Windows\Minidump)	None written	Crash occurred too early to write a dump
5	BIOS version check	305 (latest)	BIOS update not available as a fix
6	In-place install of an older Windows build	0xC1900101-0x20017	Inconclusive; setup environment likely included newer updates
7	Disabled NVIDIA GPU; removed all ASUS utilities	Same crash	Not caused by GPU driver or ASUS software
8	Hiren's BootCD PE (WinPE-based) from USB	Boots fine	Laptop can run a WinPE environment
9	Clean install via WinNTSetup to new partition	Crash on first boot	Not caused by the old installation
10	Injected working drivers into new install (DISM)	Same crash	Missing/generic drivers ruled out
11	winver on working install	25H2, 26200.9168	Old install predated the October update (see tests 25–26)
12	Boot logging (bootlog yes)	No ntbtlog.txt	Crash before log is saved to disk
13	On-screen driver display (sos on)	Nothing shown	Crash very early in kernel start-up
14	Matched BCD settings (hypervisor, flightsigning)	Same crash	Boot configuration not the difference
15	Safe Mode on new install	Logo + spinner, then crash	Drivers and software ruled out
16	Firmware check in Magician	980 Pro 2TB: 5B2QGXA7, latest	980 Pro is current and Samsung Authenticated; 990 EVO Plus firmware not yet checked
17	**Swapped in 980 Pro 2TB; booted USB installer**	**Reached setup screen**	**990 EVO Plus implicated**
18	**Fresh Windows 11 install on 980 Pro 2TB**	**Completed successfully**	**Confirms the 990 EVO Plus as the cause**
19	**Wiped all partitions on 990 EVO Plus; reinstalled; booted same USB**	**Same crash**	**Drive contents ruled out; the drive itself or its compatibility**
20	**Samsung warranty review of the 990 EVO Plus**	**Returned; good bill of health**	**Drive defect unlikely**
21	Samsung Magician test after return	No issues	Consistent with Samsung's finding
22	**Cloned working 980 PRO install to the 990 EVO Plus; booted**	**Same crash**	**Same Windows fails only on this drive: host/drive incompatibility**

#	Test	Result	What it tells us
23	**Fresh install from a 25H2 ISO on the 990 EVO Plus**	**Installed and booted**	**Older Windows works on this drive**
24	Let Windows install all updates	Crash on reboot; Windows recovery on the drive also crashed	A recent update is the trigger; recovered using the 25H2 USB
25	**Added updates one at a time**	**Crash only after KB5127648**	**Trigger: 2026-10 Security Update KB5127648 (26200.9711)**
26	Withheld KB5127648; tried 26H2 feature update	Boots normally; 26H2 crashes	26H2 likely contains the same change
27	**Set HmbAllocationPolicy = 0, then installed KB5127648**	**Same crash**	**HMB ruled out**
28	**Checked 980 PRO install offline (registry UBR)**	**26H2, build 26300.9818**	**980 PRO runs a build that includes KB5127648: the update fails only with the 990 EVO Plus**

4. Conclusion

The crash followed the **Samsung 990 EVO Plus**. Every fresh Windows boot failed with that drive installed, even though the drive passed SMART health checks. With the 980 Pro 2TB, the same laptop boots the installer and completes a clean install. Before the swap test, the evidence pointed to a firmware or motherboard fault; the swap test showed that conclusion was wrong.

With all partitions wiped, the 990 EVO Plus still crashes the installer, so the drive's contents are ruled out. Samsung then found the drive healthy, and an exact clone of the working 980 PRO install crashes on it. The same Windows runs on one drive and fails on the other, in the same laptop, so the cause is an **incompatibility between this drive and this laptop**, not a defect in either.

Adding updates one at a time pinned the trigger to **KB5127648**, the October 2026 security update (build 26200.9711, released for 24H2, 25H2 and 26H2). Before it, Windows 25H2 runs normally on the 990 EVO Plus; after it, every boot crashes with 0x139 before a dump or boot log can be written. This explains the whole history: the original install kept running because its updates kept failing, while every newer Windows (USB installer, fresh installs, the 980 PRO clone, 26H2) crashed.

The 990 EVO Plus is DRAM-less and uses the Host Memory Buffer (HMB). A Windows change to HMB handling caused similar crashes on other DRAM-less SSDs, but turning HMB off (HmbAllocationPolicy = 0) did not prevent this crash, so HMB is ruled out. The exact cause inside the update is unknown. KB5127648 is not on Microsoft's known-issues list. A similar unresolved report (0x139 after cumulative updates on an Intel 10th-gen laptop stuck on build 26200.9168) exists on Microsoft Q&A, but it does not name the SSD.

5. Recovery and housekeeping

If KB5127648 or a later update has been installed on the 990 EVO Plus and it will not boot, Windows' own recovery environment on the drive also crashes, so use the 25H2 USB: **Repair your computer** → **Troubleshoot** → **Command Prompt**. Unlock the drive with `manage-bde -unlock D: -RecoveryPassword <key>` if needed, then run (with the Windows drive's letter):

```
dism /image:D:\ /cleanup-image /revertpendingactions
```

System Restore from the same menu also works if a restore point exists. After recovery, keep updates paused.

The HMB test is finished, so remove the setting (it only slows the drive):

```
reg delete "HKLM\SYSTEM\CurrentControlSet\Control\StorPort" ^
    /v HmbAllocationPolicy /f
```

6. Options

Option	Notes
Use the 980 PRO 2TB in the laptop	Runs Windows 11 26H2 build 26300.9818, which includes KB5127648, normally. Simplest supported setup.
Buy a 4TB drive with its own DRAM	e.g., Samsung 990 PRO 4TB or WD Black SN850X 4TB, the closest match to the drive that works. Gen4 drives run fine in this Gen3 slot, at Gen3 speed.
Stay on the 990 EVO Plus without KB5127648	Temporary only: no security updates, and each new monthly update will include the same change. Test each one with a restore point ready.
Check for 990 EVO Plus firmware	In Samsung Magician. If an update is offered, install it and retest KB5127648.
Reuse the 990 EVO Plus elsewhere	Samsung found it healthy; it should work in a desktop or as an external drive.

7. Report summary (Microsoft Feedback Hub, Microsoft Q&A, Samsung)

After installing KB5127648 (2026-10 Security Update, build 26200.9711) on Windows 11 25H2, an ASUS Zenbook Pro Duo 15 UX582LR (Intel 10th gen, BIOS 305) with a Samsung 990 EVO Plus 4TB (MZ-V9S4T0) crashes on every boot with KERNEL_SECURITY_CHECK_FAILURE (0x139). No dump or boot log is written. The same 25H2 install boots normally without KB5127648, confirmed by adding updates one at a time. The 26H2 feature update and newer USB install media crash the same way. With a Samsung 980 PRO 2TB (MZ-V8P2T0B/AM, firmware 5B2QGXA7) in the same laptop, Windows 11 26H2 build 26300.9818 (KB5127936, which includes KB5127648) runs normally. Samsung's warranty review found the 990 EVO Plus healthy. Ruled out: RAM (MemTest86), BIOS (latest), drive contents (full wipe), drivers, Secure Boot, and HMB (HmbAllocationPolicy = 0 still crashes). Recovery works only from external 25H2 media using DISM /RevertPendingActions.

8. Samsung warranty review (completed)

Outcome: Samsung reviewed the drive under warranty and returned it with a good bill of health. A Samsung Magician test after its return also found no issues.

Drive reviewed

Field	Value (from drive label)
Product	Samsung 990 EVO Plus 4TB NVMe M.2 SSD
Model	MZ-V9S4T0
Part number (PN)	MZVL84T0HBLF
Serial number (SN)	S7U8NJ0Y602184V
EUI64	0025385651400F5B

Field	Value (from drive label)
Manufacture date	2025.06 (Product of Korea)
Rating	DC 3.3V, 1.9A

Comparison drive (works normally in the same laptop)

Field	Value (from Samsung Magician)
Product	Samsung SSD 980 PRO 2TB
Model	MZ-V8P2T0B/AM
Serial number	S6B0NJ0RB13541X (Samsung Authenticated)
Firmware	5B2QGXA7 (latest version; no reported compatibility issue)

Problem description submitted with the claim

> Host: ASUS Zenbook Pro Duo 15 OLED UX582LR, BIOS 305 (latest). With the 990 EVO Plus 4TB installed, every fresh Windows boot fails with stop code KERNEL_SECURITY_CHECK_FAILURE (0x139): booting the Windows 11 USB installer, Windows Update reboots, in-place upgrades (0xC1900101-0x20017, SAFE_OS phase), and a clean install, including in Safe Mode. The failure persists after deleting all partitions on the drive, so it is not caused by data on the drive. Swapping in a Samsung 980 PRO 2TB, with the same laptop and the same USB installer, the installer starts normally and a clean Windows 11 install and updates complete successfully. RAM (MemTest86) and the laptop's other hardware tested normally. SMART health on the 990 EVO Plus was reported as Good.

Drive label photo (PSID redacted; it is not needed for the claim)



Note: Samsung's finding fits the later clone test (test 22). The drive itself works; it fails only in this laptop.

9. Lessons learned

- A “healthy” SMART reading does not prove a drive is compatible or fault-free.
- When the installer crashes before it reaches the disk-selection screen, the drive can still be involved: the installer probes attached drives while it loads.
- Swapping in a known-good part is often the fastest definitive test. It would have been worth doing earlier in this case.

- A drive passing its maker's tests and warranty review shows the drive works on its own. It does not show the drive works with a particular laptop.
- Installing updates one at a time from a known-good baseline pinpointed the exact trigger when nothing else could.
- An install that runs fine but cannot update may be running only because it is stuck on an older build.