How to achieve purge level erasure on Lenovo devices with NVMe drives

Created date	Updated date	Affects version	Fix version
09 Aug 2018	29 May 2023	7.4.0 and older	7.5.0

There is an on-going issue with multiple Lenovo machines equipped with NVMe drives where the erasure fails due to failing firmware erasure commands. The root cause of this issue is a security feature enabled within Lenovo's firmware which prevents executing required erasure commands successfully. This being the case, the issue occurs in all versions of Blancco Drive Eraser and any erasure tools using the Purge Level Erasure Standard.

This issue has been identified for the following machines (with NVMe drives):

- Lenovo Thinkpad E14, E590, L480, L580, P51, P52, T14, T460s, T470, T470s, T480, T570, T580, X270, X280, X390
- Lenovo Yoga 370, L380, X380, X390
- Lenovo ThinkCentre M715q, M910
- Lenovo X1 Carbon
- Lenovo X1 Carbon Yoga

As this issue prevents Blancco from running the firmware erasure commands, Purge-level erasure cannot be achieved when erasing the drive on its original host machine, for example with NIST-Purge erasure standard. Clear-level erasure result can be achieved with the traditional overwriting, for example with NIST-Clear erasure standard. If Purge-level result is required, the NMVe drive should be erased by connecting it to another host machine which allows Blancco software to execute needed firmware based erasure commands.

As Blancco continues to work with Lenovo support, it is also recommended that our customers engage Lenovo directly to report such an issue if impacting production environments. If you are experiencing this issue, please submit a new support ticket with the details of the affected machines and issue reports f rom the machines, and we will continue to collect all customer reports.

Update May 2023:

Drive Eraser 7.7.0/7.7.1 and newer versions support the PSID Revert command. This command allows for drives manufactured by Samsung that are TCG Opal Lock Compliant or Enterprise Compliant to be erased using firmware commands when these locks are set. This feature allows such drives to be erased to a purge level standard.

Please note that Intel SSDPEKKF series NVMe drives are not fully TCG Opal compliant and remain unable to reach a purge level erasure.

Update April, 2023:

Drive Eraser 7.5.0 and newer versions support commands which are used for disabling locks from the drives which are locked by the machine BIOS.

Update May, 2021:

Drive Eraser 6.17.0 allows running Purge-level erasure on some of these Lenovo devices equipped with NVMe drive. Depending on the machine configuration Blancco SSD Erasure method or NIST 800-88 Purge should be capable of purging the drive.

In case both of the erasure methods fail on purging the drive, the Purge-level erasure result can still be achieved by connecting the drive to another host machine for erasure.

Update Dec 5, 2019:

Good news! We have found some alternatives allowing to purge successfully **some Lenovo models** with Blancco Drive Eraser. The list of models (non-exhaustive) is below:

- ThinkCentre M720t, M720s, M720q, M710q, M710t, M710s
- ThinkPad L470, T570, X270, Yoga 370, L480, L380, X280, X380 Yoga, 13

If your Lenovo model is identical or falls under the same family of machines, please contact your Blancco Support for additional information.

Update Nov 2, 2018:

Thus far, Lenovo has been unwilling to make changes to this feature. We still recommend customers to create a support case with Lenovo if possible.

Workarounds:

1. Remove the drive from the unit, then erase using NIST Purge Level
2. Erase using NIST Clear Level
3. BDE 6.6 will include a feature with fallback functionality specific to NIST. If NIST Purge fails, the customer can automate the workflow to subsequently run NIST Clear.