

NVMe Drives - Temperature indicator and thermal throttling

Non-Volatile Memory Express, or NVMe, is a logical device interface specification for accessing non-volatile storage media attached via a PCI Express (PCIe) bus. NVMe Express, as a logical device interface, has been designed to capitalize on the low latency and internal parallelism of flash-based storage devices. NVMe devices can be detected, reported and displayed in the UI as "NVMe".

Starting from the v6.1, Blancco Drive Eraser can detect and erase these devices. Since Blancco Drive Eraser fully erases all data on the disk, it causes a lot of activity on the device. If the device does not have an adequate cooling solution when being processed, it can lead to a buildup of heat which causes the device to throttle its performance to reduce heat. NVMe devices that cannot dissipate heat quickly enough will start thermal throttling (slowing down their read- and write-speeds) and may even overheat (device stops functioning).

To help detect whether poor performance of the device is caused by heat or by other issues, Blancco Drive Eraser displays the temperature of the device on the UI (Erasure-step, Advanced view). This can be used to monitor the device and pause the erasure if the temperature rises too high. The temperature indicator has a green background by default, however in case the NVMe temperature rises above a certain level and gets close to its Critical Composite Temperature Threshold, the user will be notified as follows:

- The temperature indicator turns yellow/red.
- Hovering the mouse on top of the temperature indicator displays a tooltip indicating that immediate measures need to be taken to mitigate the temperature rise.
- If the screensaver is enabled, it will start flashing with a yellow exclamation mark.

To alleviate the problem, the drive can be paused until the temperature of the device has fallen and once the temperature is at an acceptable level, the erasure can be resumed. Applying an external heat dissipation can also be considered.

Blancco recommends erasing NVMe drives with the "Blancco SSD Erasure" erasure standard.

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