PROTECTLI
TAKE BACK YOUR NETWORK

Technical Service Bulletin TSB-2026-002

VP6600 Series PECI Fan Control Issue on coreboot v0.9.2

Issue Date	April 2, 2026
Last Updated	April 2, 2026
Version	1.0.0
Severity	LOW
Affected Products	Protectli VP6630, VP6650, VP6670
Affected Firmware	coreboot v0.9.2
Affected Components	ITE SuperIO / PECI CPU Temperature Monitoring / Fan Control
Status	WORKAROUND AVAILABLE | FIX IN DEVELOPMENT

Changelog

Version	Date	Changes
1.0.0	April 2, 2026	Initial release

Executive Summary

VP6600 Series Vaults (VP6630, VP6650, and VP6670) running coreboot firmware v0.9.2 may experience an issue where the system's fan speed becomes fixed at a constant value after a reboot or after changing the fan control profile in the firmware settings. This occurs because the PECI (Platform Environment Control Interface), the mechanism the system uses to read CPU temperature, becomes unresponsive and reports a stale temperature reading. Without accurate temperature data, the fans can no longer adjust their speed dynamically.

This issue does not pose a risk of hardware damage. The fans continue to spin, but they do not modulate based on actual CPU temperature. The system remains stable and operational.

A permanent firmware fix is currently in development and will be included in an upcoming coreboot release. In the meantime, a kernel-level workaround is available for Linux-based systems that mitigates the issue,

though it has known limitations described below.

Affected Systems

Hardware

- **Models:** Protectli VP6630, VP6650, VP6670
- **Affected Firmware:** coreboot v0.9.2
- **Scope:** All VP6600 Series units running coreboot v0.9.2 are affected

Operating Systems

This issue affects any operating system that relies on the PECI interface for CPU temperature monitoring and fan control, including but not limited to:

- Linux distributions (Ubuntu, Debian, CentOS, etc.)
- FreeBSD-based systems (OPNsense, pfSense®)
- Other operating systems with PECI-dependent fan management

The OS-level workaround documented below has been confirmed on Ubuntu 24.04. It has not been tested on FreeBSD-based systems such as OPNsense or pfSense® at this time.

Problem Description

Technical Background

The VP6600 Series uses an ITE SuperIO chip to monitor CPU temperature via PECI and to control fan speed accordingly. Under normal operation, the SuperIO chip reads the CPU temperature through PECI and adjusts fan speed based on the active fan profile (e.g., Silent, Performance).

In coreboot v0.9.2, the ITE SuperIO chip is not fully re-initialized during a warm reboot. While the chip is set up correctly during a cold start (initial power-on), the PECI interface is not properly cleared and re-established when the system reboots. This causes PECI to enter an undefined state, resulting in the SuperIO chip reporting a stale (unchanging) CPU temperature value. Because the fan controller relies on this temperature reading to modulate fan speed, the fans become locked at a constant speed.

The same behavior occurs when changing the fan control profile in the firmware settings, as this triggers a reboot that re-initializes the SuperIO chip without properly resetting the PECI state.

Symptoms

Users experiencing this issue may observe one or more of the following:

- **Fans running at a constant speed:** Fan speed does not change in response to CPU load or temperature changes, and fans may run noticeably faster or slower than expected for the current workload

- **Issue appears after reboot:** The system operates normally after a cold start (full power cycle), but the issue manifests after a warm reboot
- **Issue appears after changing fan profile:** Changing the fan control profile in the firmware settings (e.g., from Silent to Performance) triggers the issue, as this requires a reboot

---

Workaround — Linux Systems (Ubuntu)

The following workaround has been confirmed on Ubuntu 24.04. It forces the system to use the PCI reboot method, which allows the ITE SuperIO chip to re-initialize more cleanly across reboots.

How to Apply

1. Edit the GRUB configuration file:

   ```
   sudo nano /etc/default/grub
   ```

2. Locate the line beginning with `GRUB_CMDLINE_LINUX_DEFAULT`
3. Add `reboot=pci` to the kernel parameters:

   ```
   GRUB_CMDLINE_LINUX_DEFAULT="quiet splash reboot=pci"
   ```

4. Save the file and update GRUB:

   ```
   sudo update-grub
   ```

5. Reboot the system for changes to take effect

Known Limitations

> **Note:** This workaround has the following known limitations. Please read carefully before applying.
>
> - **Multiple reboots may be required:** After applying the workaround and rebooting for the first time, the PECI may still report a stale temperature. A second reboot is typically required before fan control begins operating correctly. Once working, subsequent reboots should not re-trigger the issue.
> - **Changing fan profiles re-triggers the issue:** If you change the fan control profile in the firmware settings (e.g., from Silent to Performance), the PECI will become stuck again. An additional reboot after the profile change is required to restore normal fan control.
> - **Not tested on FreeBSD-based systems:** This workaround has not been verified on OPNsense, pfSense®, or other FreeBSD-based systems.

How to Remove the Workaround

Once a permanent firmware fix is available and applied, the workaround is no longer needed. To remove it:

1. Edit the GRUB configuration file:

```
sudo nano /etc/default/grub
```

2. Remove `reboot=pci` from the `GRUB_CMDLINE_LINUX_DEFAULT` line
3. Save the file and update GRUB:

```
sudo update-grub
```

4. Reboot the system

Permanent Resolution

Protectli has identified the root cause and a firmware fix has been developed that corrects the ITE SuperIO chip initialization, allowing PECI to re-initialize properly across reboots. This fix will be included in an upcoming coreboot release for the VP6600 Series.

Customers can stay informed about the upcoming fix through the following channels:

- The News section of the Protectli website
- Updates via the Flashli GitHub repository

We recommend monitoring the Flashli GitHub repository to stay informed about upcoming firmware releases.

Impact on System Operation

- **Fan control:** Fans operate at a fixed speed and do not modulate based on CPU temperature while the issue is active
- **Thermal safety:** The CPU's built-in thermal protections (throttling and emergency shutdown) remain fully functional and are independent of the fan controller
- **System stability:** No crashes, freezes, or instability are caused by this issue
- **Other functionality:** All other system functions, including network interfaces, storage, and boot, operate normally

---

Frequently Asked Questions

Q: Can this issue damage my hardware?

A: No. The fans continue to spin while this issue is active and do not stop. They simply do not adjust speed based on CPU temperature. Additionally, the CPU has its own built-in thermal protections that will throttle performance or shut down the system if a critical temperature is reached, regardless of the fan controller's behavior.

Q: Does this issue affect all VP6600 Series models?

A: Yes. The VP6630, VP6650, and VP6670 are all affected when running coreboot v0.9.2.

Q: Does this happen every time I reboot?

A: The issue is triggered by warm reboots. A full power cycle (cold start) initializes the chip correctly. With the `reboot=pci` workaround applied, subsequent reboots should not re-trigger the issue after an initial settling period of one to two reboots.

Q: I changed my fan profile and now the fans are stuck again. Is that expected?

A: Yes. Changing the fan control profile in the firmware settings triggers a reboot, which can re-trigger the PECI issue. An additional reboot after the profile change should restore normal fan control.

Q: Does the workaround work on OPNsense or pfSense?

A: The workaround has only been tested on Ubuntu 24.04 at this time. It has not been verified on FreeBSD-based systems such as OPNsense or pfSense®.

Q: When will the firmware fix be available?

A: A fix has been developed and is currently undergoing testing. It will be included in an upcoming coreboot release for the VP6600 Series. We will notify customers when the update is available.

Support and Contact Information

If you have questions about this issue, need assistance applying the workaround, or wish to report related symptoms:

- **Email Support:** support@protectli.com
- **Support Portal:** Open a ticket through your Protectli account
- **Additional Contact Options:** https://protectli.com/contact/

Please report your experience even if the workaround resolves your issue, to help us track the scope and ensure you receive notification when the firmware fix is available.

Document Information

TSB Number	TSB-2026-002
Issue Date	April 2, 2026
Last Updated	April 2, 2026
Version	1.0.0