



Laptop Health Monitoring: Why it's needed and how it works

Introduction: Avoiding surprises

Laptop failures in mission-critical business systems are more than merely an inconvenience. Many mobile professionals would be at a major loss if their machines suddenly failed. Indeed, many small-business workers rely on their machines to run their schedules, communicate with clients and colleagues, produce documents and reports, conduct business operations such as accounting and billing, and generally enable their business processes.

Without this capability (which we often take for granted), business functions would be severely impacted and might even cease altogether. It is no surprise, then, that the laptop computer has assumed a crucial position in our everyday lives. For the many users who have come to rely on them, failure is not an option!

In medicine, regular checkups can help detect problems early, which is the best way to combat disease. In automotive care, too, regular maintenance ensures smooth operations and helps prevent sudden breakdowns. It follows that laptops—especially business machines—would also benefit from early detection and maintenance tools. In fact, predicting potential problems before they become full-blown system failures should be a requirement of any business-class laptop.

What needs monitoring?

There are a number of important laptop components and functions that benefit from continuous checking while in use, especially if the health of the system is at stake. Items to be monitored include:

- **Cooling** - Efficient cooling is required to diffuse excess heat generated by the CPU. Overheating can prematurely and/or permanently damage critical components like the CPU, memory, and other critical portions of the chipset.
- **Battery power** - It's also extremely important to evaluate how well the battery is functioning, both in terms of keeping the battery charged and maintaining its long-term capacity to power the device at peak efficiency. An inadequately charged system or

reduced battery capacity could result in lost data and substantially reduced productivity while out of the office or traveling.

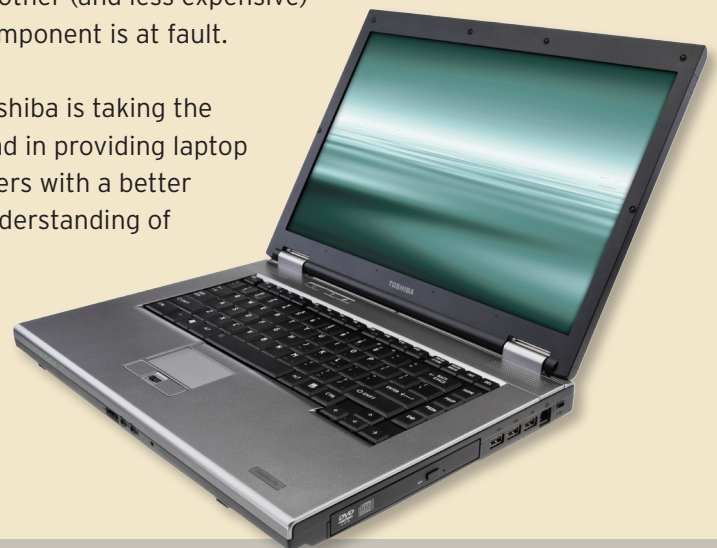
- **Hard drive** - Hard drives are sensitive mechanical devices that undergo a good deal of jostling and shaking as part of normal laptop usage. Given that sensitivity, bumps and drops could result in damaged mechanical parts, data loss or even complete failures. At worst, this could put the entire laptop out of commission. Protecting against such failures should be considered mission-critical.

Proactive maintenance and early detection can reduce downtime, reduce failure rates, and substantially lower the overall cost of ownership. This is precisely why Toshiba offers PC Health Monitor on many of its business laptops.

The need for PC Health Monitor

It is impossible to predict 100 percent of fault conditions, but it is also true that many common fault processes have been tracked and analyzed over the years. Through its monitoring and analysis of system failures, Toshiba has discovered a number of common contributing factors. In fact, Toshiba engineers report that some 40 percent of reported hard drive failures are avoidable or misdiagnosed. In some cases, the IT department replaces the hard drive when, in reality, another (and less expensive) component is at fault.

Toshiba is taking the lead in providing laptop users with a better understanding of



what could go wrong, and how to fix it. With PC Health Monitor, Toshiba tracks these maintenance measures and helps users avoid or mitigate potential failures.

PC Health Monitor is Toshiba's comprehensive monitoring solution for business-class laptops. While capabilities will be extended over time, the current implementation continuously watches the key areas we mentioned—CPU temperature and system cooling, battery life and capacity, and hard drive shock and drop.

PC Health Monitor presents its findings in an enhanced graphical dashboard that enables users to continuously view the parameters being monitored and to check laptop status.

Managing risk through PC Health Monitor

PC Health Monitor is part of the fourth generation of Toshiba's EasyGuard® initiative, which is a set of features designed to maximize reliability and durability for business-critical mobile systems.

The value of PC Health Monitor comes from its comprehensive alerting system. If the temperature rises, or the battery is not operating optimally, the user is alerted to the potential problem, so he or she can take important preventive measures to avoid system failures.

PC Health Monitor is the first application to monitor systems at the hardware level and not just at the software and firmware level. Toshiba has added unique sensors to monitor CPU temperature, for example, and EasyGuard already includes a 3D accelerometer system that detects rapid motion of the hard drive and retracts the read-write heads in case of shock. The accelerometer can now be toggled from the PC Health Monitor dashboard.

These additions enhance Toshiba's already optimized component designs, which help provide significant improvements in reliability, durability, and low TCO.

About EasyGuard

Toshiba's EasyGuard® is a feature-rich set of hardware and software components that provide exceptional

user support in four key areas: *Protect and Fix*, *Secure*, *Connect*, and *Manage*. Through a combination of software utilities that monitor system health and take corrective actions where warranted, and a notification system to tell users that problems exist and what to do about them, EasyGuard has become an indispensable aid to keeping machines up and running in almost any usage scenario and through all kinds of potential problems.

Since being launched in 2005, EasyGuard has been incrementally adding more and improved features to provide more value to the end user. As we mentioned, Toshiba engineers and builds its own products, testing and analyzing components extensively before including them in its business systems. Combined with the enhanced system components, EasyGuard and PC Health Monitor provide an unprecedented ability for users to maximize their laptop reliability and avoid costly failures.

Conclusion

Users of business-critical laptops can not afford the luxury of system failures or machines that do not function at peak performance. Safeguarding laptops from unnecessary failures and performance degradations is one of the primary drivers behind Toshiba's commitment to building the most reliable and robust business-class systems for use worldwide.

Since its launch in 2005, EasyGuard has been adding more and improved features incrementally to provide more value to the end user. Now in its fourth generation of EasyGuard, Toshiba added its latest innovation, PC Health Monitor.

PC Health Monitor, a key component of Toshiba's EasyGuard initiative, represents a significant step forward in providing users with an extra level of system reliability that will set the standard for business-class machines in the future.

For more information, visit <http://explore.toshiba.com>.

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