Success Story - They Chose Apacer

Challenges

· Needs to have extremely high stability to cope with 24-hour non-stop operation
· Cost-effectively upgrade existing mSATA (MO-300) SSDs to PCIe SSDs

Solutions

· PV170-mPCIe

Value-added technologies

· Firmware: Over-Provisioning,
  firmware customization

The Customer and the Application: Network Video Recorder (NVR)

Apacer was approached by a Taiwan-based manufacturer of network video recorders for assistance with a product under development. They were looking for the most reliable industrial-grade SSDs on the market, and had heard of Apacer's reputation in this area.

The client's newest innovation was a network video recorder (NVR) optimized for extremely heavy workloads. The NVR Network Video Recorder uses network signal transmission to provide digital video quality superior to analog cameras and supports high-definition surveillance cameras. Its main function is to receive IP camera feeds, store the image data transmitted and allow centralized remote video management.

This NVR stores an OS (operating system) or surveillance-specific image intermediary software on an SSD. It is mainly used in banks and airport terminals, and supports 24-hour reliable and efficient operation. Stability is crucial to ensure the safety of major assets and people.

Challenges

The client knew this NVR would need to be extremely stable, since 24-hour operation would be expected. In order to cope with the demand for intelligent and high-resolution video analysis, they also wished to upgrade from mSATA SSDs to PCIe SSDs because of the advantages in processing speed, but they needed to do this in a very cost-effective way. Prototypes using middle-grade mSATA SSDs had led to problems with stop errors (also known as Blue Screens of Death) and other malfunctions.

On the other hand, the customer also hoped to use 3D NAND products, but because of the often-heard 3D NAND secondary product flow in the market, they held many doubts about whether 3D NAND products should be adopted directly.

With all the information at hand, Apacer's design team stepped in.

Solutions and Technologies

The Apacer technical team recommended Apacer's PV170-mPCIe SSD. Its Mini PCIe interface design is fully compatible with the existing mSATA (MO-300) interface, allowing customers to minimize costs and leverage a cost-effective way to upgrade the SSD interface. In addition, considering that the customer's system needs extremely stable operation over a long period of time, this SSD incorporates Toshiba's original 3D NAND Flash from Japan to provide a guaranteed 3,000 P/E cycles.

Our technical team also recommended the adoption of over-provisioning firmware technology. Over-Provisioning firmware technology reserves at least 7% of the drive space. When SSD write/erase times increase and a Later Bad Block (LBB) is generated, the Over-Provisioning technology can help. The blocks in the free space are replaced, and the 3D NAND Flash operation is continuously stabilized. This effectively solves the problems of disc drop and system crashes, and greatly improves the durability and reliability of the product.

Finally, in response to customer board-side design restrictions, the technical team also customized the firmware to lock the system into a specific mode according to customer needs to ensure the best performance of PCIe products.

Results and Benefits

The SSD recommended by Apacer not only successfully assisted this customer with upgrading to PCIe technology in a painless way, but also avoided any issues related to motherboard redesign. The customer's total cost of ownership (TCO) was therefore significantly reduced. And the incorporation of only top-quality industrial-grade original ICs from Toshiba ensured the client's NVR would have a competitive edge in the market. The customer promised to return to Apacer again the next time they needed guidance on how to seamlessly upgrade to a superior storage technology.

Additional Support

Longevity

Fixed BOM solution,
EOL & LTB notice

Strong customization capabilities

Strong HW/FW
engineering know-how

Service

Real-time and responsive
after-sales service