

China-Based Power Company

Preventing Data Loss with Intel® Data Center Manager

A Proactive Approach to SSD Lifespan Limitation Management

Business

China's leading state-owned power company offers a comprehensive range of power solutions and services, including procurement and transmission, distribution, equipment installation and maintenance, as well as cutting-edge power technology services.

Challenges

- Avoiding the loss of critical data due to SSD failures
- Gaining deeper insights into server health
- Improving server health monitoring

Solution

- Intel® Data Center Manager (Intel® DCM)

Executive Summary

The power company deployed Intel® Data Center Manager to manage 1,300 servers in their data centers. The company's IT administrators were especially concerned about data loss caused by solid-state drive (SSD) failures due to their lifespan limitations. Intel® DCM's SSD lifespan estimation feature automatically collected write cycle data from each SSD and estimated their remaining lifespan. Armed with this information, IT administrators could preemptively replace SSDs when needed to prevent data loss and consequently having to spend millions of dollars.

Background

SSDs have faster boot-up times, faster read and write operations, and better power efficiency compared to traditional hard disk drives (HDDs). However, the drawback of using SSDs is that their memory chips have a limited number of write cycles. The write cycle is the metric used to determine the lifespan for an SSD, which involves the repeated writing and erasing of data in a multi-level cell (MLC) NAND chip. Over time, the repeated use of the chip degrades it to the point of failure, resulting in potential data loss.

IT professionals are understandably concerned about potential SSD failures due their lifespan limitations. However, most IT staff lack the expertise to accurately measure their remaining lifespan and write cycles.

Intel® DCM's SSD Lifespan Estimation Feature

Intel® DCM has a SSD lifespan estimation feature which automatically collects write cycle data from each SSD and calculates its estimated remaining lifespan. This analysis provides IT personnel with valuable insights into the health of their SSDs, allowing them to proactively replace drives that are approaching their write cycle limits. By using Intel® DCM, IT staff can not only prevent potential data loss, but also avoid the significant associated financial consequences. In other words, Intel® DCM provides IT administrators with the tools they need to keep their data center running smoothly, avoiding downtime, and protecting valuable information.

Intel® DCM Deployment

Intel® DCM was deployed to manage 1,300 servers in the power company's data centers and IT administrators leveraged Intel® DCM's easy-to-use SSD lifespan estimation feature through the Intel® DCM Console (see Figure 1). The resulting analysis revealed that some of the SSDs had only a little over one year left. This enabled Data center administrators to take proactive measures and replace those SSDs before they reach their lifespan limits, thereby avoiding the risk of losing valuable data.

The company also used Intel® DCM to manage their distribution storage systems which store their most business-critical data. The loss of data from these servers could have a substantial financial impact, potentially reaching millions of dollars. However, with Intel® DCM, they reduced this risk and ensured the security of their critical data.

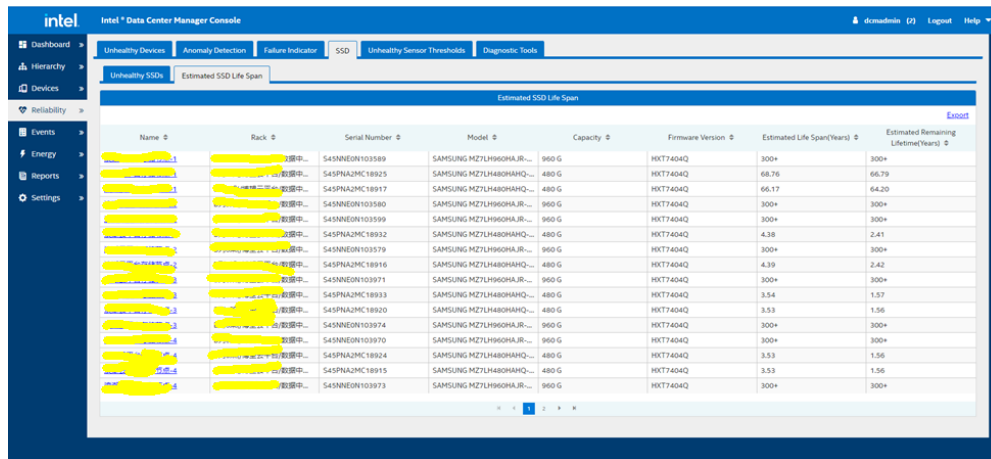


Figure 1. Intel® DCM Console and Estimated SSD Life Span Function

Results

Using Intel® DCM's SSD lifespan estimation feature, the data center IT administrators were able to make informed decisions on SSD replacement, preventing the risk of SSD failure and the associated consequences of data loss and financial liability to the organization.

About Intel® Data Center Manager

Intel® DCM offers unparalleled, real-time monitoring and management of power, thermal, and health data for individual servers, groups of servers, racks, and IT equipment in data centers. Intel® DCM allows IT and facility administrators to increase data center efficiency and ensure maximum uptime.

Where to Get More Information

For more information on Intel® Data Center Manager, visit intel.com/dcm or contact dcmsales@intel.com



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