

SSD PERFORMANCE AND PRODUCTIVITY REVITALIZE NOTEBOOK ASSETS

Summary

- Kingston SSDNowV+ 128GB upgrades breathe new life into Qualcomm's notebooks, allowing them to defer approximately \$3.6 million in hardware refresh costs.
- "Instant on" SSD performance accelerates boot times for thousands of employees saving them at least 10 minutes every day.
- Supercharged notebook performance, functionality and extended lifecycles turn Qualcomm's IT department into heroes.

Business challenge

Qualcomm is the world leader in developing next-generation mobile technologies. For 25 years, Qualcomm ideas and inventions have driven the evolution of wireless communications, connecting people more closely to information, entertainment and one another. Today, Qualcomm technologies are powering the convergence of mobile communications and consumer electronics, making wireless devices and services more personal, affordable and accessible to people everywhere.

At the end of 2009, the Qualcomm IT team was tasked with accomplishing three goals — reduce unacceptable client boot times, reduce helpdesk calls and roll out new software-based whole hard disk encryption.

The IT team identified the need to improve notebook performance, while maximizing return on investment. With the sheer amount of data and enterprise applications in the organization, performance of even the newest systems were impacted. This resulted in slow boot up times and overall slow machine performance, generating frustrated users who then called the IT help desk. In addition to the reduction in helpdesk calls due to poor performance, Qualcomm IT has also experienced a dramatic reduction of downtimes caused by hard disk failures.

Finally, part of Qualcomm's security strategy is to encrypt notebooks. Utilizing solid state disks helps mitigate the performance issues that may be encountered. Encryption programs tend to have a performance overhead on systems and Qualcomm was able to obfuscate their impact.

Technology solution

Among other technologies, Qualcomm considered SSDs for this project. After testing multiple vendors internally on a Windows 7 based system, they tested the throughput using a variety of methods that included random reads and writes, staggered I/O, and sequential performance for files ranging from 1KB to 8GB in size. Linux was used to force the drive to read as empty, resetting the wear balancing algorithms.

In the end, Kingston Technology's SSDNowV+ 128GB drive emerged as the clear winner; demonstrating significant performance increases and significant hard and soft cost savings for some 3,000 users whose notebooks were upgraded with Kingston SSDNow.

"To deliver the most innovative and effective solutions to our customers, we need to empower our staff in 146 locations worldwide," said Qualcomm's [Kevin Workman, an IT Architect]. "We set trends rather than follow them, and the only requirements set in stone are our demands for performance, functionality and ROI."



Michael Doose, IT Architect says, "In providing improved performance with fewer maintenance issues and at a lower total cost of ownership, SSDNow is making IT staff the heroes of Qualcomm."

Kevin Workman, IT Architect says, "SSDNow has easily answered the tough questions we asked of it and increased the ROI of our original notebook investment. It is helping us to work faster, better and more efficiently as Qualcomm continues to innovate."

In order to present this solution to upper management, the Qualcomm team created a simple short video that compared a five-month-old HDD-equipped Lenovo T400 ThinkPad to a 40-month-old Lenovo T61 ThinkPad upgraded to SSD. Both were loaded with identical software-based encryption and the corporate standard XP images, and then boot times were measured. The team also upgraded the CIO's laptop to provide him with first-hand experience with the performance power of SSDs.

[Kevin Workman] continues, "Incredibly, the 40-month-old SSD-equipped T61 outperformed its much younger rival, delivering an average boot time of just 1.4 minutes as opposed to 5.5 minutes. Once our CIO had experienced the difference with his own SSD upgraded notebook, the project was approved and it was my easiest soft cost sell to the CIO ever."

Business results

Qualcomm is harnessing impressive benefits from its SSD upgrades; not least in delaying the need for a complete notebook system refresh. It is anticipated that this will yield a multimillion dollar hard cost savings over the next two years.

Upgrading the notebooks is an ongoing process, with the IT team getting approximately 400 a month upgraded. One result has shown that the notebooks' previously sluggish performance was an HDD problem, not a CPU one. With SSDNow taking the HDD bottleneck out of the equation, some users have seen boot times (defined as the time it takes from power-on to being able to send an email) fall from 20 minutes to just 1.4 minutes. Qualcomm estimates that the 3,000 employees that are now using SSDNow equipped notebooks are saving an average of 10 minutes per day.

The decreased boot up times and ability to work faster means users are able to get more done and be more efficient. The users are experiencing the same instant-on behavior when waking from sleep with their notebooks as they have come to expect with the various other technical devices they use such as mobile phones and Tablet PCs. The implementation of SSDs has not only improved this experience for them but has also positively impacted the perception of Qualcomm IT. SSD users see IT as an enabler changing the way they work, saving time. This provides the IT department some great internal PR that it is extending all the way up the management chain.

Before SSD, the use of encryption software had a noticeable impact on disk performance frustrating users and increasing support demand from IT, as they worked to address performance problems. In stark contrast, SSD-equipped PCs have implemented the latest encryption protocol without any noticeable degradation of performance, and usually resulting in a net performance gain. This, combined with the greatly improved reliability and endurance of SSDNow, has seen a significant fall in calls to IT support.

Michael Doose, IT Architect says, "In addition to standardizing on Windows 7 64bit, SSDNow is part of our next generation hardware standards, allowing us to deliver business notebooks with the same high performance experience that users get from their consumer devices. In providing improved performance with fewer maintenance issues and at a lower total cost of ownership, SSDNow is making IT staff the heroes of Qualcomm."

Kevin Workman concludes, "Kingston's SSDNow is helping to breathe new life into Qualcomm's notebook assets. Performance increases are in-line with those we would expect from a full system refresh, but at a fraction of the cost and user disruption. Alongside enhanced productivity comes improved functionality and reduced demand for IT support. SSDNow has easily answered the tough questions we asked of it and increased the ROI of our original notebook investment. It is helping us to work faster, better and more efficiently as Qualcomm continues to innovate."



To find out how SSDNow from Kingston Technology can help your organization, visit www.kingston.com



Please note: Some of the listed capacity on a Flash storage device is used for formatting and other functions and thus is not available for data storage. As such, the actual available capacity for data storage is less than what is listed on the products. For more information, go to Kingston's Flash Memory Guide at kingston.com/flash_memory_guide.

©2010 Kingston Technology Corporation, 17600 Newhope Street, Fountain Valley, CA 92708 USA. All rights reserved. All trademarks and registered trademarks are the property of their respective owners. Printed in the USA MKF-357