SOLUTION BRIEF

CompuCom

Unlocking the Hidden Benefits in your PC Refresh

Executive summary

As demands on IT increase and shift, many IT decision makers struggle to get the most out of their organizations' PCs while still keeping pace with evolving end user needs. At the same time, many IT administrators are realizing inefficiencies in their model, but do not recognize how they can reduce daily operational complexity like maintenance refreshes and overall manageability. An opportune time to address these challenges comes when planning the next PC refresh, however refreshing with technologies that empower both end users and administrators is key to long-term success.

With over 25 years of IT consulting and services experience throughout North America, Latin America, and India, CompuCom* offers a depth of expertise to enterprises, including services from software application development to technology outsourcing. When it comes to PC refreshes, CompuCom recommends making end user success your barometer for organizational success. "We focus on the end user experience," says Andy Deltuvia, Director of Infrastructure Solutions Consulting, who runs the Microsoft* practice at CompuCom. "Anything we can do to reduce the time, impact, and interruption to the end user is critical to the overall success of an upgrade or refresh project."

Selecting the right PCs for your organization starts with identifying trusted hardware that delivers optimal end user experiences for diverse, demanding workloads and simplifies maintenance and security for administrators. Intel® Solid State Drives (SSDs) are one critical component to such a solution. Intel SSDs are a mature enterprise solution offering high reliability and performance with low Total Cost of Ownership (TCO) compared to most hard disk drives (HDDs). While many IT decision makers are familiar with the obvious performance and reliability aspects of Intel SSDs, there are many less obvious benefits that can add to the overall success of your PC refresh implementation.

Whether your users and IT staff are struggling to make do with bargain PCs, or your PC fleet is at or nearing the three-year mark, consider the advantages of refreshing with professional-grade PC solutions. Deploying Intel SSDs as part of your PC refresh can unlock the full potential of your investment, accelerating your business through:

- Excellent computing experiences from boot time to application launch and task completion; leading to higher productivity for end users.
- Strong security through integrated hardware encryption, simplified time-intensive operations for IT, and reduced risk to business.
- Low overall TCO throughout the PC lifecycle through hard and soft savings for your IT department.

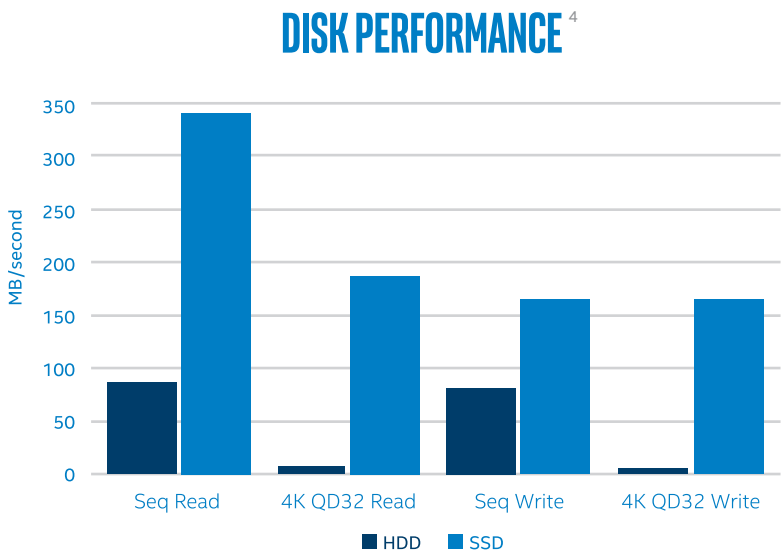
Making your PCs an asset to your business, not a liability

Companies who opt for bargain PC solutions in their refresh may initially save money. However, the upfront savings in capital expenditures (CapEx) is typically eclipsed by higher operational expenditures (OpEx), as well as additional CapEx. The additional expenditures are due to increased maintenance time and costs for IT, longer downtime, and collectively diminished organizational performance over time.[1] For growing enterprises with diverse, business-critical computing needs, deploying high-quality PC solutions with professional-grade components such as Intel SSDs can deliver immediate value with a continued Return On Investment (ROI) throughout the life of their PCs.

How much difference does using a modern PC with an Intel SSD really make?

Newer PCs are designed to meet the contemporary needs of users with better drive performance, better encryption capabilities, and faster wake-up and application launch times.[2] Compared to a five-year-old PC, a new PC leveraging the Intel SSD Professional Family and Windows* 10 can support up to two and a half times better productivity,[3] three times longer battery life, and 30 times better graphics. "These types of gains can have a significant impact on the user's overall experience – these improvements are more than subtle and can drive the users' satisfaction level and overall computing experience," said Andy Deltuvia.

CompuCom conducted a series of benchmark tests to compare the performance of a new, enterprise-grade PC containing an Intel SSD against an older PC with a hard disk drive (HDD).[4] Comparison tests included disk performance, disk encryption, power on, OS deployment, and application load. The benchmark results combined with CompuCom's experience and analysis speak to how the newer, Intel SSD-enabled PCs that CompuCom tested offer better computing experiences for users, stronger and more-manageable security for IT, and lower TCO over the life of each asset. While improved test results may be generally expected, the long-term impact of the results may contribute to a much stronger TCO reduction than initially understood. "We expected to see some gains but the combination of performance factors in our benchmark testing really highlighted what we expected with results that speak for themselves. As I share these results with our clients the conceptual becomes tangible," said Deltuvia.



What makes Intel SSDs an advantageous choice for your PC fleet?

PCs that use Intel SSDs can contribute to a significantly better user experience and reduced demands on IT compared to PCs that use hard disk drives (HDDs). Some of the many benefits are:

Fast responsiveness
and performance due to no drive spin-up time, no mechanical arm movement, and minimal latency

Consistent performance
over the life of the drive due to advanced drive controller algorithms

Long battery life and cool running PCs due to
Low energy consumption

Self-encrypting drives
through hardware-based encryption can offer near-instant encryption/decryption, which supports fast performance for users and simplified IT management

Highly durable
because there are no moving parts, and resistant to damage caused by occasional bumps and drops experienced by mobile users

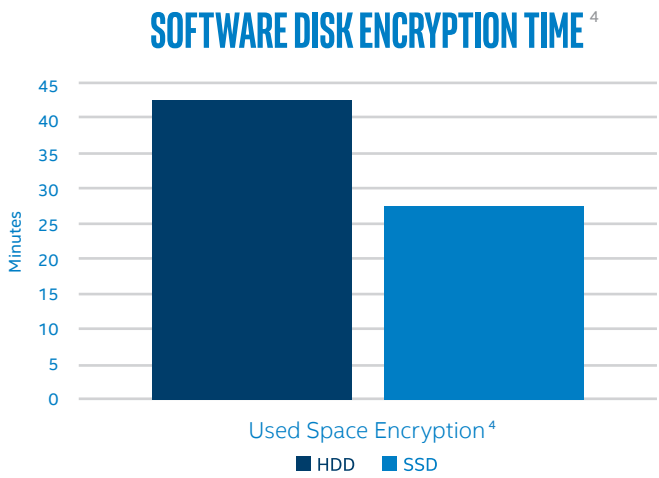
Dramatically increased performance, better user experience

Better sequential performance is often touted as a strength of SSDs when compared to HDDs. This is true, but the dramatically improved random performance is also a major contributor to the improved user experience through reduced wait times and improved multitasking support.

Application startup time decreased by an average of 19%, from 114 milliseconds in the older HDD-based PC down to 93 milliseconds in the new SSD-based PC.[4] The 21 milliseconds that are saved launching an application helps to present the user a responsive interface with a productivity boost over the long term.

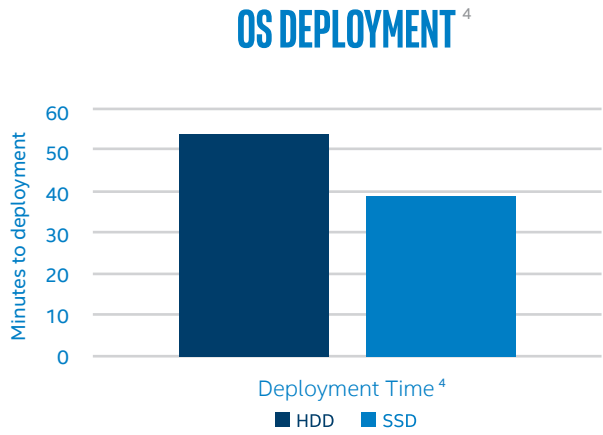
Boot-up time improved by an average of 44%, from 23 seconds[4] in the older model down to only 13 seconds in the new SSD-based PC. Considering the average business user turns on their PC hundreds of times per year, this 10-second difference adds up to significant time savings for the users. For an enterprise with 10,000 users, where each user powers up their PC an average of once daily, the organization would gain back about 27 hours of productivity each day.

We've touched on the performance benefits to the end user, now let's look at how the performance benefits of Intel SSDs impact the operational costs of the IT organization.



Lower encryption time, lower bench time, lower billing

Measuring software encryption time specifically, the new PC performed used-space encryption 35% faster than the older HDD-based model that CompuCom tested.[4] For an enterprise with 10,000 users, saving approximately 20 minutes per machine per encryption refunds nearly 139 24-hour days back to IT. Enterprises with constrained IT resources can save even more time by implementing hardware-based encryption, which can virtually eliminate the time required to activate encryption. Hardware-based encryption solutions manage user authentication and management in the same manner as software encryption, but leverage the self-encryption capabilities of the SSD so no initial time-consuming encryption process is required.



Reduce OS deployment time by 25%

In performing an operating system deployment, the new SSD-based PC model was 25% faster than the older HDD-based model[4] that CompuCom tested over the course of four test runs. For an enterprise considering a 10,000 PC deployment, selecting new SSD-based PCs can result in up to 13 minutes saved per PC—ultimately freeing up a staggering 2,166 hours for IT during the course of deployment.

Security considerations for your PC refresh

For enterprises looking to reduce their PC management complexity even further and satisfy increasingly-stringent compliance requirements without performance degradation for users, hardware-based encryption is a sensible next step. In terms of the disk encryption time saved using new Intel SSD-based PCs as measured in CompuCom's testing, replacing the encryption software with a hardware-based alternative can deliver near-instant encryption and decryption, resulting in faster deployment and support actions. Also, with software-encryption, the initial encryption process can be interrupted leaving the drive partially encrypted and user data at risk. Because with a hardware-based encryption solution the data is always encrypted, the possibility of a partially-encrypted drive is eliminated.

"For one of our clients in the financial sector, their users are seeing the same security benefits of hardware encryption using Intel SSDs versus their old mechanical drives—not just in time-to-task, but also the ability to securely erase them once they come back in for refresh, for break/fix scenarios, or for remarketing," says Jeff Williams, Systems Integration Specialist at CompuCom. "These SSDs increase the value of each asset upon refresh, making each asset a better long-term investment."

Whether done in-house or through a service provider, this reduction in time delivers real cost savings. Would you like to save even more? The low failure rate of Intel SSDs compared to HDDs means fewer failed systems in your environment, potentially reducing the number of rebuilds that you'll need to perform.

Lower long-term costs to the business

These two examples, OS deployment and software encryption time, help to demonstrate the real benefits to IT of modern PCs with Intel SSDs. "Based on how we might price this for our clients, this could save an organization nearly 16% on the price per asset, per order," says Williams. "And those are just the initial savings over the life of that asset. You're likely to gain more savings from user productivity, resale and remarketing value, and other factors."

A key factor in getting the most value from your PCs is choosing the right time to refresh. The industry-acknowledged "sweet spot" for PC refreshes is approximately every three years and this cadence makes sense for a number of reasons, including lower support costs, reduced security risk, and improved employee productivity. In terms of TCO for a PC refresh, the lowest impact on cash flow typically occurs at or near the three-year mark.[1]

Not taking action beyond the three-year mark, however, can create frustrating challenges like slower machines, reduced storage space, incompatible or outdated applications, and increased failure rates—factors which contribute to decreased user productivity and increased downtime. Of course, users' computing needs and daily responsibilities don't decrease when their PCs slow down, and this can lead users to resort to finding workarounds with or without IT support. This can result in higher support costs and security risk, as well as lower employee productivity and increased strain on IT resources.

Conclusion

"Focusing solely on the cost [of the PC itself] is an old way of thinking," says Williams. "What's important is looking at the big picture of TCO, and how new capabilities in higher quality PCs can support desired outcomes when considering a PC refresh investment."

Developing the right PC refresh cadence starts with gaining mindshare from both users and administrators to better understand what is most important for your organization and better visualize what comes next. Additionally, gaining a third-party IT services perspective can introduce your team to lessons and best practices learned in other scenarios or incorporate new innovations that have worked in scenarios similar to those you are facing.

By seeking out modern PC solutions powered by trusted, high-quality technologies including Intel SSDs, you can optimize your PC refresh investment, in turn accelerating your business through better user experience, productivity, security, and resulting in lower total cost of ownership.

Learn More

To learn more about CompuCom, visit compucom.com.

To learn more about Intel Solid State Drives, visit intel.com/ssd.

1 "Client Device Fleet Management: PC Refresh Strategy." Intel. intel.com/content/www/us/en/it-management/intel-it-best-practices/pc-refresh-strategy-video.html

2 Instant wake-up compared to a 5-year-old PC. Faster-resume workload consists of time to resume from standby based on OEM implementation of Windows 10 Modern Standby on a 6th gen Intel® Core™ processor.

3 Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. Learn more at intel.com/performance.

4 New PC models: Lenovo* T540p running Intel® Core™ i5-4300M processor and Intel® SSD Pro 2500 Series (180GB); Hewlett-Packard 840 G2* running Intel® Core™ i5-5300M processor and Intel® SSD Pro 2500 Series (180GB). Older PC models: Lenovo* X220 running Intel® Core™ i5-2520M processor and HGST* Travelstar Internal* HDD (320GB); Hewlett-Packard 8460p* running Intel® Core™ i5-2540M processor and HGST Travelstar Internal HDD (320GB).