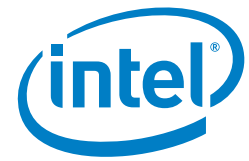


ROI Analysis

Intel® Core™2 Processor with vPro™ Technology

Healthcare



Improving Productivity and Reducing Energy Costs and Consumption with Intel® vPro™ Technology

Cleveland Clinic, located in Cleveland, Ohio, is a non-profit, multi-specialty academic medical center that integrates clinical and hospital care with research and education. Founded in 1921, today, Cleveland Clinic is one of the largest and most respected healthcare systems in the country.

Cleveland Clinic (the Clinic) has recently changed their asset management approach to a lease vs. buy program across their main campus. As part of their refresh plan, they are acquiring PCs with Intel® Core™2 processor with vPro™ technology over a four-year period. Now more than ever, accurate asset management is important as the Clinic is responsible for returning each machine at the end of the lease cycle. Through discussions with the Clinic's senior executive for information technology and its Lifecycle team we were able to address how Intel® vPro™ technology can help reduce their current issues such as: mitigating missing assets; supporting the Clinic's Healthy Environment energy policy, and providing better manageability – while increasing productivity of the Clinic's staff.

TCO/ROI Investigation

This total cost of ownership (TCO)/return on investment (ROI) investigation is based on the Clinic Lifecycle team's current support base of approximately 19,000 systems, of which approximately 5,500 (29%) are Intel vPro technology. The number of Intel vPro PCs is expected to grow through the Clinic's normal refresh plan by 4,500 a year for the next three years.

The Clinic's ROI study was calculated conservatively based on projections over a four-year period and encompassing the specific use cases of: asset management, end user and IT support productivity, as well as power consumption – "Green."

One of the Lifecycle team's biggest concerns was the amount of time spent uncovering "lost" systems which were either powered off for extended periods of times, or were moved to different locations. With Intel vPro technology, systems connected to the network and the Clinic's systems management service (Altiris) can be powered on and inventoried for hardware and software configurations and kept up to date with the latest software, patches and policies. With Intel vPro technology, the system is still accessible from the network even when powered off as long as it is connected to power and network cables – even if the operating system is not functional. Therefore, with Intel vPro technology, the Clinic's systems can remain current and be more easily inventoried thus saving approximately **671 IT support man-hours** by year 4 in researching lost systems.

Productivity of the IT staff is another key concern for the Clinic. Currently, systems are reimaged by system administrators (SAs) with a projected travel time of 30 minutes to initiate an onsite visit to reimage a system. PCs with Intel vPro technology have powerful remote-management capabilities that can allow the SAs to reimage machines remotely – virtually eliminating costly and time-consuming site visits, while allowing them to attend to other support issues simultaneously. It is estimated that the Clinic could potentially save **4,900 IT support man-hours** in travel time by year 4 in onsite software reimaging and repair.

As part of Cleveland Clinic's Healthy Environment initiative, the Clinic is in the process of developing a customized energy policy to allow PC users the ability to select a shut down schedule that coincides with their work schedules. By initiating this policy, it is estimated that the Clinic can save approximately **110 hours** a week of PC power by powering off 50% of their PC fleet during non-working hours. While this saves power consumption and carbon emissions it also impacts the ability to patch systems and deliver software after hours.

Key Findings from ROI Analysis

- Positive ROI of \$442,000 in net power savings over 4 years by deploying PCs with Intel® vPro™ technology with a break-even point achieved in 25.5 months.
- Savings of over 29,000 IT support man-hours by year 4 through improved asset management and reduced deskside visits, remote patch management and reimaging and repair.

As a result, the Clinic completes much of its patching during working hours. This has a potential negative impact on personnel productivity due to slow system response time during the actual patch and software deployment time. In addition, patching during working hours introduces the risk of wide spread outages due to “zero-day” attacks on unpatched systems. Deployment during working hours also delays the reboot process needed to complete many security patches or software package deployments. Without a scheduled reboot, this prevents successful deployment completion.

With Intel vPro technology deployed, patching after business hours can occur regardless if the machine is powered off, as Intel vPro technology allows wake on command. The results are three-fold: the machines can be awakened during non-business hours,

updated in a timely manner, and then powered off again with no impact to end users. We estimate that patch management after business hours with Intel vPro technology can return **23,520 IT man-hours** by year 4 as a result of less time required to mitigate unpatched systems.

Positive ROI results

Through our findings, it is concluded that with vPro technology, the Clinic can realize a positive ROI of **29,091 IT support man-hours** returned which encompass reduced research time for lost systems, more efficient patch management, and reduction of travel time for reimaging systems. Additionally, the implementation of Intel vPro technology is projected to net the Clinic over **\$442,000** in power savings over four years with a break-even point in **25.5 months**.

Use Case	Without Intel® vPro™ technology	When upgrading to PCs with Intel® vPro™ technology				Estimated savings with 100% PCs with Intel® vPro™ technology
	Year 0	Year 1	Year 2	Year 3	Year 4	
Implementation Hours Spent ^{1,2}	1228	5,500 (29%)	10,000 (52%)	14,500 (76%)	19,000 (100%)	671 saved research hours 4,900 saved support hours 23,520 saved IT production hours
Mitigating Missing Assets ²	520 research hours	445 research hours	383 research hours	322 research hours	260 research hours	
Reimaging Travel Time ³	1,900 support hours	1,350 support hours	900 support hours	450 support hours	0 support hours	
Patch Management/Software Delivery Production Impact ⁴	18,240 IT production hours	15,600 IT production hours	13,440 IT production hours	11,280 IT production hours	9,120 IT production hours	Cumulative 4-year hours recouped: 29,091
Incremental Cost of vPro PCs ^{1,2}		(\$192,500)	(\$157,500)	(\$157,500)	(\$157,500)	Cumulative 4-year savings: 34% Breakeven point: 25 ½ months
PC Power Costs ⁵	\$819,289	\$742,210	\$602,066	\$475,937	\$349,807	
Annual Power Savings		\$77,079	\$217,222	\$343,352	\$469,481	
		9% power savings	27% power savings	42% power savings	57% power savings	
Total Hours Recouped	29,091					
Total Implementation Hours Spent	(5288)					
Net Hours Returned ^{6,7}	23,863					
Overall Savings	\$1,107,136					
Total Implementation Costs	(\$665,000)					
Net Savings ^{6,7}	\$442,136					

¹PCs with Intel® Core™2 processor with vPro™ technology include powerful Intel® Active Management Technology (Intel® AMT). Intel AMT requires the computer system to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt/.

²Implementation hours and costs provided by Cleveland Clinic Lifestyle Team (CCLT) staff.

³Source: Based on estimate of 10% system reimaging per year and one hour travel time per pc (travel time based on CCLT staff information).

⁴Source: Hours spent based on one hour per month patch and software deployment per system during working hours. Return of IT production hours by patching during non-working hours, assuming only 50% are regularly powered off due to working hour requirements.

⁵Initial cost based on 135w power supply, always on with flash screen saver, 484.5 KWH per year, at \$.089 per KWH (Ohio Average per energystar.gov). Savings computed on powering off 50% of Intel vPro systems only for 110 hours per week (based on CCLT staff information).

⁶Return on investment (ROI) calculations are based on the company's annual refresh rate for PCs, and calculated based on the difference between the company's typical PC and a PC with Intel® vPro™ technology. Costs for PCs purchased over and above the typical annual refresh rate are based on the full cost of the additional PCs with Intel vPro technology.

⁷Return on investment (ROI) results and projections do not include savings from improved user uptime or productivity.

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