

Intel® vPro™ Technology and Verdiem SURVEYOR*

Maximizing energy savings, energy efficiency and manageability

“Going green” is more than a catch phrase for many IT departments; it is rapidly becoming an IT initiative that is impossible to ignore.

Unmanaged PC desktops are known to waste significant amounts of energy, making them an easy target and first step towards reducing a company’s power consumption. Taking steps to save energy can appear simple; however, actually achieving the expected savings – in both kilowatts and dollars – often proves elusive.

Verdiem and Intel have created an innovative solution that uses Intel® vPro™ technology and Verdiem SURVEYOR* power management software to maximize PC energy savings and manageability.



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Energy Costs Add Up

The facts are staggering. The average desktop PC and monitor use a combined 506 kilowatt-hours¹ of electricity per year. The U.S. Environmental Protection Agency estimates that two thirds of that energy is wasted. Depending on your regional energy costs, the electricity wasted as a result of leaving PCs running can translate into potential cost of \$20–\$60 per desktop PC. Multiply the savings by the number of desktops in your organization, and the dollars quickly add up.

The impact can be measured in other ways, too. For example, the information technology and communications sector is estimated to constitute approximately 2 percent of the global energy demand. This means that the impact of IT on the environment is about 1 billion tons of CO₂, or about the same carbon footprint as the entire airline industry.²

Saving Energy Requires a Plan

Reducing PC energy consumption doesn't just happen, especially when an estimated 80 percent of PC users disable their machines' power management settings.³ Lawrence Livermore National Laboratory also estimates that 60 percent of corporate desktop computers are left on after hours. These computers consume energy as though they are actually being used, when they clearly should be powered down.

In order to avoid waste, IT organizations must develop and implement strategies that reduce energy without disrupting users or sacrificing enterprise desktop management.

To be effective, power management solutions must integrate seamlessly with existing IT infrastructure and processes, such as patch management.

Verdiem SURVEYOR* – Power Management Done Right

Saving energy without impacting IT and end-user productivity is a complex task. In other words, it's not a do-it-yourself project. PC energy management in the enterprise requires a robust architecture to be done properly.

The good news is Verdiem has focused on PC power management since 2001, delivering best-of-breed solutions for global businesses to minimize PC energy use. SURVEYOR* allows organizations to dramatically reduce PC energy consumption, without losing the ability to manage desktop systems.

IT administrators can create customized power management policies for as many groups or even individual machines in their organization as necessary. The highly granular power management policies are controlled from a central management console. The software works on both desktops and laptops, and can automatically wake up PCs to accept upgrades and patches at specified times.

SURVEYOR provides detailed energy usage reports, which track and report tangible savings over time. Typical per-PC savings lie between \$20 and \$60 annually, giving SURVEYOR a 6-12 month ROI in most installations.

Intel® vPro™ Technology – Energy Efficient and Manageable

Intel® vPro™ technology was designed from the ground up to address the needs of IT. By combining the energy-efficient performance of the Intel® Core™2 Duo processor with hardware-enhanced management features, PCs with Intel vPro technology provide IT with a new level of control to help better manage and secure their PC fleet.

The same hardware-enhanced management features enabled by Intel vPro technology can be used to improve PC power management.

One of the challenges to powering PCs off at night is the inability to securely and reliably wake up PCs again for after-hours maintenance. Intel vPro technology addresses this challenge with its out-of-band management capability, which enables IT to securely and reliably wake any PC that's been powered down. As a result, organizations are now able to power PCs completely down, knowing they can access them again at any time for patches or updates.

SURVEYOR and Intel vPro Technology Working Together

Verdiem SURVEYOR integrates with Intel vPro technology to provide IT managers with additional fine-grained capabilities to boost energy savings.

IT managers want to maximize power savings, but they also need to reliably perform patch management and maintenance tasks. Simply put, the need to turn off machines to save money can conflict with the need to wake those same machines after hours for software distribution, patch management and routine maintenance.

SURVEYOR and Intel vPro technology deliver a complete solution, providing maximum power savings while still allowing IT managers to wake desktop systems for after-hours maintenance.

Integrating Power Management with Patch Management

In order to achieve energy savings and at the same time be able to reliably perform routine IT management tasks, two things need to be in place. First, PCs need to be able to be put into a low-power state to save energy; but just as important, PCs scheduled for IT management tasks also need to be able to be woken up so those tasks can be performed before the PCs go back into a power-saving state.

Out of the box, SURVEYOR provides a reliable method called Wake-on-WAN to wake computers from an off state. It leverages Wake-on-LAN functionality present in most modern PCs by sending a special data packet (Magic Packet) over the network to wake up a PC. Most organizations will not allow Magic Packets to be routed across network segments to prevent potential broadcast storms. SURVEYOR solves this problem by electing two PCs as proxies on each subnet to reliably and safely wake up PCs in a routed network (see Figure 1).

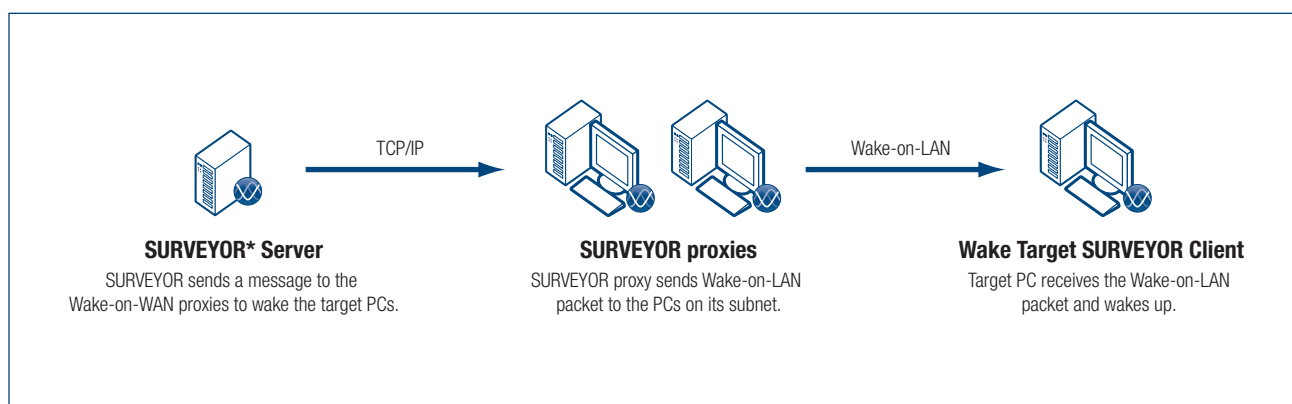


Figure 1. Stage 1 – SURVEYOR power management.

Using Intel vPro Technology with SURVEYOR

Introducing Intel vPro technology-based PCs into your network will reap additional benefits in terms of power savings, reliability, and security when waking PCs across the network.

Adding Intel vPro technology-enabled clients on each subnet of your network provides the following benefits:

- **Additional savings:** When SURVEYOR uses non-Intel vPro technology-based PCs as proxies, those PCs need to be powered on at all times to be ready to receive requests to wake up machines from a low-power state. Using PCs with Intel vPro technology as proxies removes this limitation; the proxies can be completely powered down, resulting in additional energy savings. SURVEYOR takes advantage of Intel vPro technology's out-of-band management capability to wake up the proxy machines, which then wake up target systems using Wake-on-LAN. To make this as easy as possible for an IT administrator to implement, SURVEYOR automatically detects all PCs with Intel vPro technology and elects them as proxies over any other systems on the network.

Another benefit of Intel vPro technology's secure out-of-band protocol is to provide remote management of hardware, even when it is turned off or the operating system refuses to load. This significantly reduces the need for IT to travel to provide support and allows machines to be remotely reimaged and recovered as needed.

- **Secure and reliable:** SURVEYOR fully integrates the enterprise-level security features of Intel vPro technology supporting transparent layer security (TLS) encryption and certificate-based authentication. Using TLS provides a secure transport mechanism between SURVEYOR Server and Intel vPro technology-enabled PCs.
- **Direct, faster wake up:** As you add additional Intel vPro technology-based PCs to your network, SURVEYOR will directly wake these systems from a low-power state using the out-of-band capability of Intel vPro technology. The wake message from SURVEYOR is not required to pass through designated proxies, resulting in faster wake times.
- **Works in heterogeneous environment:** SURVEYOR can be simultaneously installed on PCs with or without Intel vPro technology, providing power management before, during, and after an organization's adoption and installation of Intel vPro technology-based PCs.
- **Wake-on-Web:** SURVEYOR Wake-on-Web allows users to wake up their PCs remotely using a simple web interface. The benefits of Intel vPro technology extend to the Wake-on-Web functionality, to provide a more reliable and secure method than the Wake-on-LAN approach described earlier.

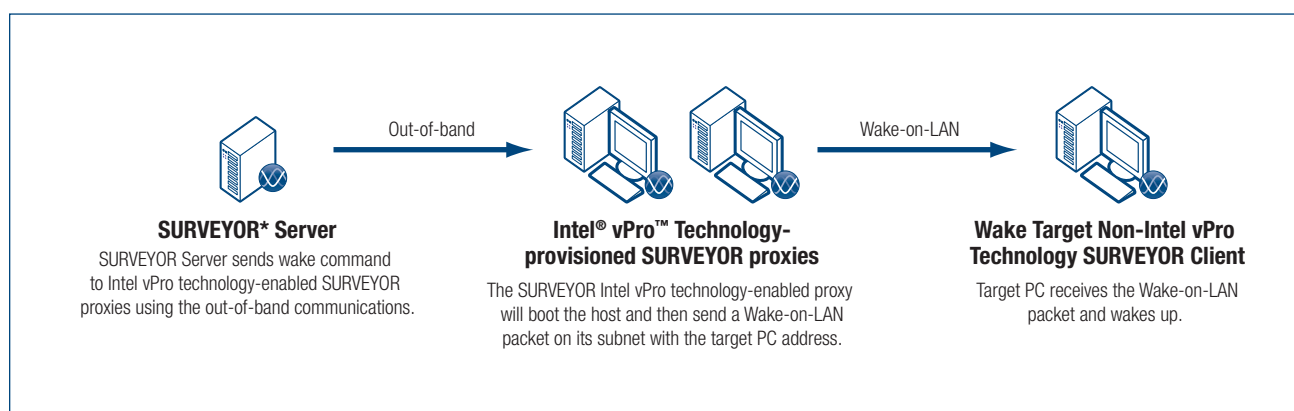


Figure 2. Stage 2 – SURVEYOR with Intel vPro technology on each subnet.

Bringing Intel vPro Technology to Your Company

What is the best way to take full advantage of SURVEYOR and Intel vPro technology?

The roadmap starts with an environment where Intel vPro technology may be present on only a small number of PCs and progresses to a full deployment. SURVEYOR first bridges the power management gap – with or without Intel vPro technology – then seamlessly transitions to an environment where all machines are based on Intel vPro technology.

The plan includes three stages and proceeds at a pace determined by the customer's migration to Intel vPro technology hardware.

Stage 1: Customer deploys SURVEYOR to 100 percent of their PCs and prioritizes deployment of Intel vPro technology PCs on each subnet. The primary benefits of this approach are the ability to power down 100 percent of PCs and reliably wake up machines for IT maintenance tasks and patch management.

Stage 2: Customer targets an Intel vPro technology refresh to specific remote locations with the highest ROI. This implementation could include mission-critical locations, difficult-to-access remote sites, or sites experiencing a higher cost of support.

SURVEYOR seamlessly adjusts to work with Intel vPro technology as more machines are added. The customer benefits from maximizing energy savings with power management and the increased energy efficiency of newer PCs. In addition, IT administrators can now take advantage of Intel vPro technology remote remediation and repair capability at locations with the highest ROI.

Stage 3: Customer achieves 100 percent PC refresh with Intel vPro technology hardware. SURVEYOR automatically detects the additional Intel vPro technology-based PCs and communicates with them using the out-of-band management channel, taking advantage of all aspects of the combined SURVEYOR and Intel vPro technology solution (see Figure 3).

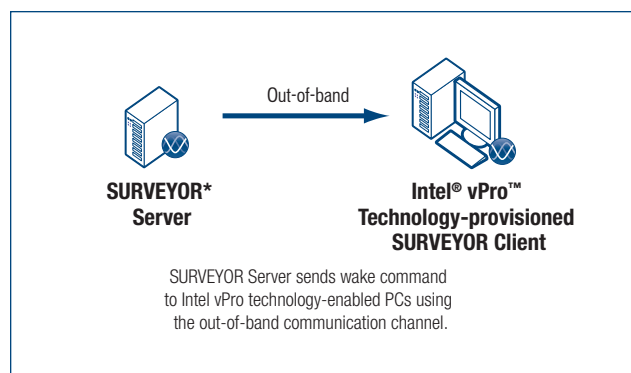


Figure 3. Stage 3 – SURVEYOR with Intel vPro technology across all locations.

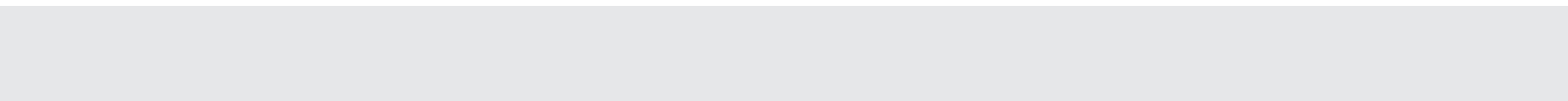
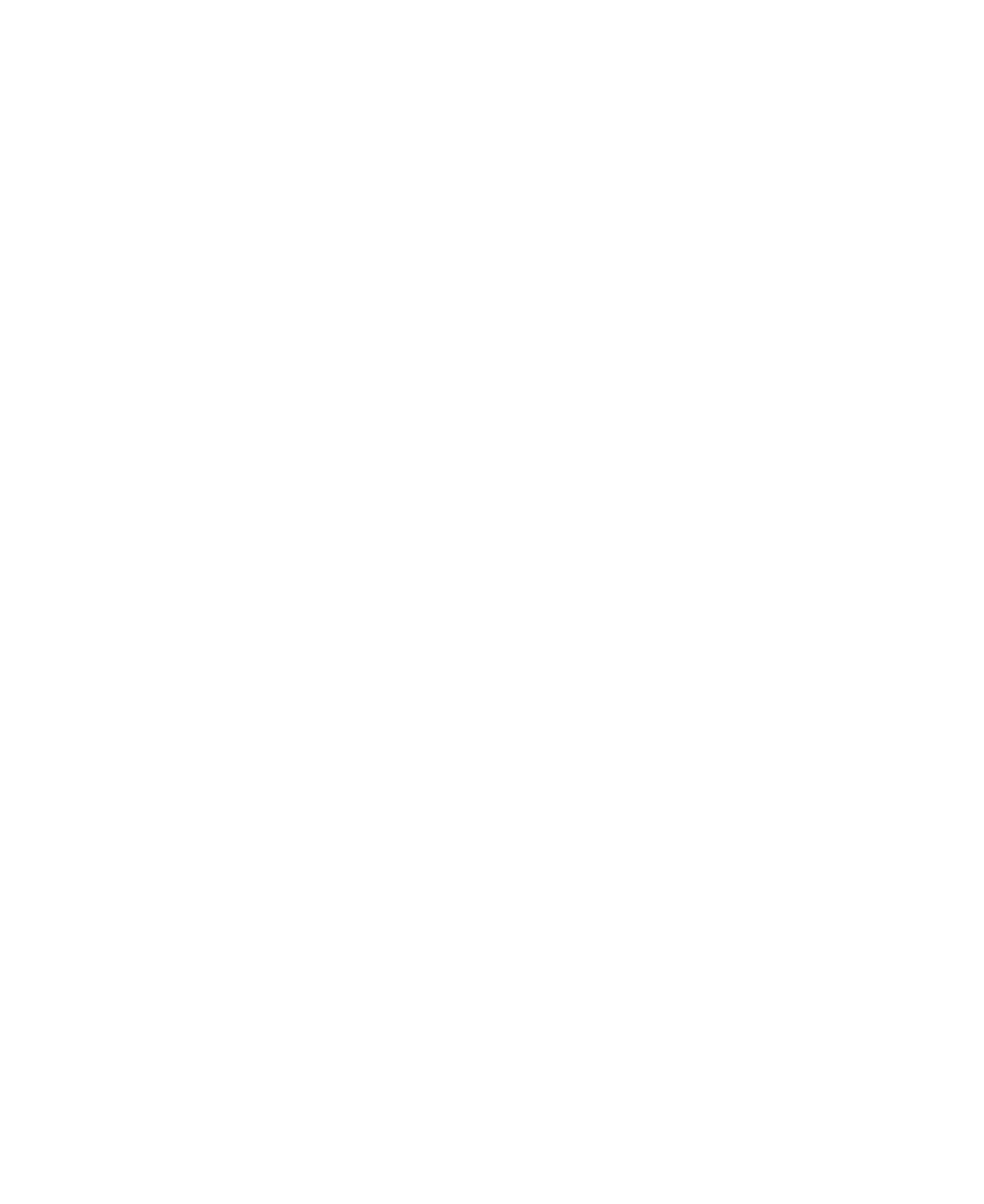
Conclusion

SURVEYOR and Intel vPro technology offer management capabilities that neither offers alone, providing the best combination to maximize power savings, energy efficiency, and remote manageability.

SURVEYOR supports the entire Intel vPro technology adoption cycle – from an enterprise with no Intel vPro technology hardware to a 100 percent Intel vPro environment, and all stages in-between.

To learn more how Verdiem SURVEYOR can significantly reduce your energy consumption without impacting IT and end-user productivity, visit www.verdiem.com/surveyor.aspx.

For more information about the built-in manageability and security capabilities of PCs with Intel vPro technology, visit www.intel.com/business/business-pc.





¹ Environmental Protection Agency.

² Smart2020 Report, Global eSustainability Initiative, 2008.

³ Lawrence Livermore National Laboratory.

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