



Unlocking Business Value with Intel vPro® Technology: Your Implementation Guide

AUTHORS

Cameron Moccari Operations & Project Management Director | Signal65

Ryan Shrout President/GM | Signal65 **IN PARTNERSHIP WITH**



JUNE 2025

Why Intel vPro Matters in Today's Business Environment

Your remote workforce is growing, security threats are evolving daily, and new AI-powered applications are transforming how your employees work. This is the reality for IT teams everywhere, and it's exactly why Intel developed the Intel vPro technology platform.

In the fast-paced world of modern business, your technology infrastructure can't just stay static—strategic investments will drive future business success. **Intel vPro stands out as the industry's most comprehensive solution for commercial PC management,** offering an integrated set of hardware, firmware, and software capabilities that deliver real business value. No other silicon provider matches Intel's end-to-end approach to enterprise computing—an approach that is commercial device first vs. other solutions that lead with consumer devices.

Think of Intel vPro as your IT department's secret weapon, a platform that works silently behind the scenes to boost productivity, strengthen security, and simplify management across your entire fleet. Whether your employees are working from home, in the office, or somewhere in between, Intel vPro gives you the tools to support them effectively.



When Disaster Strikes: The Real Value of Digital Resilience

July 2024 served as a powerful example as nearly the entire airline industry ground to a halt. What began as a routine software update led to significant system challenges across multiple industries: flight delays, healthcare system interruptions, and businesses facing unexpected downtime. This incident illustrated that even well-designed software solutions can experience issues, and how closely technology resilience is tied to business continuity and your bottom line.

Our recent study (Signal65, 2025) examined what happens when organizations face similar hypothetical system-wide failures. The findings were eye-opening: businesses utilizing the full Intel vPro technology feature set including Intel Active Management Technology (Intel AMT) could recover in just 48 hours, compared to two weeks for those without it. Flight cancellations could be reduced from 5% to just 1%, and costly on-site technician visits ("truck rolls") could be virtually eliminated.

How is this possible? The secret lies in Intel AMT and its hardware-based management capabilities. When software agents crash or operating systems freeze, having Intel AMT activated on all endpoint devices gives your IT team a lifeline—remote access to the affected devices regardless of their OS state. This means faster recovery, minimal business disruption, and significant cost savings when problems inevitably arise.



1

Your Roadmap to vPro Implementation: Turning Features into Benefits

In today's enterprise environment, IT leaders are being asked to do more with less: secure a growing fleet of hybrid endpoints, ensure performance at scale, reduce downtime, and prepare for emerging AI-driven workloads. While many vendors promise solutions, few provide concrete, step-by-step guidance for turning platform capabilities into operational outcomes.

That's where the new Intel vPro commercial implementation guide stands apart.

Rather than only offering a high-level marketing overview, the guide delivers detailed, technical activation steps that bridge the gap between potential and practice. From processor power management tuning to below-the-OS threat detection verification and multi-mode manageability setup, the guide gives IT professionals what they need most: **a trusted roadmap for realizing the full business value of Intel vPro.**

No other silicon vendor provides this level of deployment transparency or commitment to enabling enterprise IT. It's a clear signal that Intel isn't just designing features; it's investing in real-world implementation and IT success.

This paper provides our analysis of that approach and how it changes the game for IT decision-makers, why it reinforces Intel's unique role in the PC ecosystem, and how organizations can turn this guide into a strategic advantage.



What Makes this Guide Different

Most platform enablement materials skim the surface. They highlight benefits, list features, and leave the real work to the IT teams who must integrate and manage those technologies across distributed fleets. Intel's vPro Implementation Guide takes a different approach. It delivers clarity, specificity, and operational depth across every critical dimension of enterprise client computing.

This isn't just documentation, it is validation support. It reflects a commitment to help IT administrators not only adopt the vPro platform but fully activate and verify its most valuable capabilities. That distinction matters because implementation gaps create risk. Misconfigured power profiles, missing drivers, and disabled security features can all undermine carefully calculated ROI. The guide anticipates those gaps and provides the tools to close them.

What sets this guide apart?

Detailed, Prescriptive Activation Steps: Whether it's tuning processor power management for better energy efficiency or enabling Secure-Core PC features at the firmware level, the guide goes deep into configuration and diagnostic workflows. It explains not just what to do, but why each step matters.

Coverage Across the Full Stack: Intel doesn't focus narrowly on a single capability. The guide addresses power, security, manageability, connectivity, and AI, all with technical specificity. It explains how to enable features, validate functionality, and adapt to different deployment modes.

Practical Troubleshooting and Verification: From the Intel Battery Life Diagnostic Tool to command-line methods for confirming Threat Detection Technology status, the guide offers practical instructions that IT teams can act on immediately. These aren't marketing claims, they're operational best practices.

Support for Real-World Environments: The guidance acknowledges multi-vendor environments, corporate imaging processes, and common deployment challenges. It reflects an understanding of how enterprise IT actually operates, and it is structured to support that complexity.

Tools for Rapid Rollout and Fleet Scaling: Whether through Intel EMA or the more streamlined vPro Fleet Services, the guide helps IT teams go from hardware asset to managed endpoint quickly and with confidence. It gives organizations the flexibility to choose the method that best fits their infrastructure and staffing model.

In short, this guide provides more than just enablement, it helps ensure that every vPro-based device delivers on the platform's full promise. And it does so in a way that respects the time and responsibility of the IT teams who manage the enterprise edge.

Let's break down what this means for your organization:

Power and Performance: Productivity That Pays Off



What you get: Intel vPro platforms built on Intel® Core™ Ultra 200V series processors introduce advanced Processor Power Management (PPM) and out-of-the-box optimization for energy use and workload responsiveness. Tools like the Intel Battery Life Diagnostic Tool provide IT with insight into configuration and software-level impacts on power consumption and system behavior.



Business impact: Power efficiency is more than a battery life metric: it directly affects user satisfaction, support costs, and IT image quality. With tuned PPM settings and diagnostics in place, users experience longer device uptime between charges and fewer performance bottlenecks. This reduces help desk calls related to system

sluggishness or overheating and extends the practical lifespan of deployed devices.

In large-scale deployments, the impact compounds. A 10% improvement in battery life across thousands of devices translates to fewer device swaps during workdays, less downtime for mobile workers, and measurable energy savings. These benefits are especially valuable in hybrid work environments, where IT cannot easily intervene to diagnose or resolve performance complaints.



Implementation tip: To enable power and performance tuning, IT teams must ensure the correct Intel Platform Framework (IPF) and PPM drivers are installed, particularly for Core Ultra 200V systems. The guide specifies using IPF version 2.2.10003.3 or newer to expose the PPM provisioning device (p. 9). Without it, devices may default to less efficient power profiles.



Driver installation can be done via **pnputil** or manual right-click using the **ipf_acpi.inf**, **ipf_cpu.inf**, and **ipfppm_sw.inf** files. In environments with corporate images, care must be taken to avoid overwriting platform-specific drivers during deployment.

The Intel Battery Life Diagnostic Tool (p. 11) is also recommended for validating power state behavior and identifying background processes that degrade efficiency. Using it during image creation or troubleshooting helps optimize both performance and battery life.

Security: Protection That Goes Beyond Software

What you get: Intel vPro includes a multilayer hardware-based security architecture designed to protect endpoints above and below the OS. Key capabilities include Intel Boot Guard, Total Memory Encryption, Trusted Execution Technology, and Intel Threat Detection Technology (TDT), which integrates with endpoint

protection software to offload AI-based threat detection to the GPU. These features are enabled by default on Intel vPro Enterprise devices and align with Microsoft Secured-core PC requirements.



Business impact: Security breaches that exploit firmware or pre-boot vulnerabilities can bypass traditional software defenses entirely. Intel's below-the-OS protections help close this gap. By anchoring trust in hardware, organizations reduce their risk exposure from advanced persistent threats, rootkits, and

credential harvesting attacks. This is particularly critical for enterprises operating in regulated industries, handling sensitive customer data, or managing a distributed workforce.

The integration of Intel TDT with tools like Microsoft Defender adds another layer of proactive defense without degrading device performance. Offloading scanning workloads to the Intel Iris® Xe2® integrated GPU keeps endpoint responsiveness high and reduces user friction, a key factor in maintaining endpoint protection compliance across the organization.

Security also plays a role in audit readiness and insurance. Verified Secured-core compliance, available only on certain vPro-enabled devices, can support claims of due diligence and policy enforcement in the event of an incident or regulatory review.



Implementation tip: The guide provides step-by-step instructions for verifying that critical security features are enabled. "To confirm your Windows Secured-core PC compliance, simply navigate to Settings > Privacy & Security > Windows Security > Device Security," explains the guide (p. 19). This allows you to verify that core protections like Intel Virtualization Technology, Trusted Execution Technology, and System Resources Defense are

active and functioning.

For IT administrators wanting to check if Intel's advanced Threat Detection Technology is working with Microsoft Defender, the guide offers a practical command-line approach: "Open a command prompt as Administrator and run C:\Program Files\Windows Defender\MpCmdRun.exe -GetFiles to generate logs that confirm Accelerated Memory Scanning is enabled" (p. 23).

Manageability: Remote Control When It Matters Most



What you get: Intel vPro includes Intel Active Management Technology (AMT), providing hardware-level remote access and control, independent of OS state. IT can power on devices, boot to BIOS, reimage systems, or initiate KVM sessions, even when the OS is unresponsive. These capabilities can be accessed via Intel Endpoint Management Assistant (EMA) for on-premises control or Intel vPro Fleet Services for a cloudhosted, lightweight alternative.



Business impact: Traditional endpoint management tools depend on the OS and installed agents. When those fail, IT must resort to manual recovery often requiring physical access or full device replacement. Intel AMT eliminates this bottleneck, allowing faster remediation, reduced downtime, and lower support costs.

This matters even more in distributed environments, where hybrid or remote employees may not have timely access to IT staff or depot services. Instead of shipping a device or dispatching a technician, IT can resolve issues remotely, keeping users productive and avoiding expensive "truck rolls." In the aforementioned outage, IT-managed devices using Intel vPro with Intel AMT activated enabled faster system recovery by IT administrators regardless of fleet size.

The guide also notes that cloud-native manageability can be achieved in as few as six steps using Intel vPro Fleet Services (p. 28), making it easier for organizations without complex infrastructure to gain the benefits of hardwarebased control.



Implementation tip: The guide presents multiple software options for implementing Intel AMT, helping you choose the approach that best fits your IT environment. For organizations seeking rapid deployment, Intel vPro Fleet Services emerges as the clear winner: "Instead of the average twenty-four steps required when setting up Intel EMA, Intel vPro Fleet Services can have you managing your vPro platform in just six steps," notes the

guide (p. 28).

The guide also clarifies the difference between Client Control Mode and Admin Control Mode, helping IT leaders make the right choice for their security and operational needs: "Client control mode is ideal for worker devices as user consent ensures privacy and security, while Admin control mode is better suited for digital signage or appliances where users may not be available" (p. 30-32).

Connectivity: Performance That Keeps Pace with Modern Work

What you get: Intel vPro platforms feature integrated Wi-Fi 7 (5 Gig), Bluetooth[®] LE Audio, and Thunderbolt™ 4 or 5 support, along with Intel's Connectivity Performance Suite. These technologies provide higher throughput, lower latency, and better connection stability. Al-based optimizations actively manage network performance in real time and prioritize business-critical traffic.



Business impact: Connectivity is now a foundational element of employee productivity, especially in hybrid work models. Poor wireless performance or dropped connections can derail meetings, disrupt collaboration, and increase user frustration. Intel's advanced wireless stack helps mitigate these issues with faster file transfers, smarter access point selection, and up to 60% lower latency compared to Wi-Fi 6 (p. 37).

For IT, the impact is equally important. Better connectivity means fewer support tickets related to call quality or sync failures. Features like MAC address pass-through on Thunderbolt docks also simplify network policy enforcement for mobile workers. These enhancements reduce friction for both users and IT support, driving better outcomes across remote and in-office environments.





Implementation tip: The guide highlights Intel's Connectivity Performance Suite as a valuable tool for optimizing wireless performance: "The suite provides a way for IT to control priorities and bandwidth and configure key parameters. It continuously scores key metrics across all available connections and provides near-instant switching to a higher-scoring Wi-Fi band" (p. 38).

For organizations deploying ultralight laptops without built-in Ethernet ports, the guide explains how to extend Intel AMT manageability through Thunderbolt docks: "Thunderbolt docks supporting wired Intel AMT over Thunderbolt are validated with compatible Intel vPro-based laptops, enabling thin and light devices without Ethernet to be managed over Ethernet when connected to a dock" (p. 40).

AI PC: The Intelligence Advantage

What you get: Intel vPro devices based on Intel Core Ultra processors include dedicated AI acceleration across three compute engines: CPU, GPU, and NPU. This architecture enables AI-enhanced features such as Windows Studio Effects, AI-assisted security, and productivity tools that offload workloads to the most efficient engine.



Business impact: The AI PC is more than a marketing label. For enterprise IT, it represents a shift toward local intelligence that improves user experience and reduces dependency on cloud-based inference. Tasks like video background blur, real-time noise suppression, and on-device transcription can be handled efficiently by the

NPU, freeing CPU cycles for other tasks and extending battery life (p. 48).

This translates directly into business outcomes. Knowledge workers gain smoother video conferencing, faster document summarization, and reduced lag in creative workflows, all without sacrificing system responsiveness or privacy. In highcompliance industries, local processing also helps avoid concerns around transmitting sensitive data to the cloud.

Intel's broad software ecosystem is a differentiator here. With over 99% of tested AI features working across vPro systems (p. 53), organizations can adopt new tools without worrying about compatibility gaps or vendor lock-in. As Al continues to shape productivity expectations, Intel vPro ensures that enterprises can evolve without rearchitecting their device strategy.



Implementation tip: The guide explains how Intel's multi-engine AI approach distributes workloads optimally across CPU, GPU, and NPU components: "With a new architecture that supports AI workloads and new tools to empower IT, Intel Core Ultra processors and Intel vPro are bringing the AI PC to business. Users get the performance they need to tackle new workloads, while IT can simplify thanks to improved security features and sweeping remote management capabilities" (p. 46).

For IT leaders considering AI PC deployments, the guide showcases real-world business applications: "Knowledge workers can remove distractions throughout the day to focus more on what matters most. Windows Studio Effects like background blur and noise reduction are offloaded to the NPU, improving both user experience and power efficiency compared to non-AI PCs" (p. 48).

The guide also highlights Intel's unmatched AI ecosystem compatibility: "Tests show 99% of AI features work seamlessly on Intel platforms, with workloads intelligently distributed across CPU (30%), NPU (30%), and GPU (40%) to maximize performance and efficiency" (p. 49).



Why Intel is the Only Vendor Doing This

While other silicon providers promote some similar features, none offer the same level of practical enablement and deployment support that Intel does with vPro. The activation guide is not just a sales tool; it is a blueprint. It provides IT decision-makers with depth and specificity needed to confidently deploy and verify advanced features that go well beyond the operating system.

Intel's inclusion of tools like EMA and vPro Fleet Services, detailed instructions for driver and firmware setup, and support for diverse management modes all point to a broader strategy: to reduce friction in enterprise IT environments. By focusing on real deployment paths, Intel ensures that vPro technologies do more than exist—they deliver.

Intel offers the most comprehensive set of features across performance, security, manageability, and AI, while also providing step-by-step activation and troubleshooting workflows. This level of involvement signals a long-term commitment to the IT function itself, not just to the hardware it deploys.

For IT leaders, this creates a key point of differentiation. Intel is not only building the PC foundation, but also helping teams unlock its full value.

Making the Business Case: vPro as a Strategic Investment

Intel vPro isn't just another technical specification, it's a strategic investment that delivers measurable business value. As our assessment of this guide demonstrates, vPro's integrated approach yields benefits across multiple dimensions of IT operations:

- **Reduced downtime:** Remote management capabilities get employees back to work faster when issues arise.
- **Enhanced security posture:** Multi-layered protections defend against sophisticated threats that target the hardware and firmware layers.
- **Improved employee experience:** Better performance, reliable connectivity, and AI enhancements boost productivity and satisfaction.
- Lower operational costs: Fewer on-site support visits and more efficient IT management translate to direct cost savings.
- **Sustainability benefits:** Remote management reduces technician travel, lowering your organization's carbon footprint.

The vPro Implementation Guide sets a new benchmark for what enterprise IT should expect from a platform provider. It translates complexity into clarity, and capabilities into confidence. For IT decision-makers tasked with managing scale, reducing risk, and enabling productivity in an AI-powered workplace, this guide offers more than best practices—it delivers a practical path forward. And for Intel, it affirms a unique role in shaping the enterprise PC experience not just as a technology provider, but as an operational partner. For enterprise IT leaders focused on delivering business value while controlling costs, that's a compelling proposition.



Intel vPro Platform

Complete Enterprise Feature Set

The only platform to exceed standards accross all enterprise requirements.

Feature	Intel vPro	x86 Alternative	Arm Alternative
Windows 11 Secured-core PC Security Level 3 and ability to query BKC status	Exceeds	Meets	Meets
Al threat detection assist Boost security software efficacy using hardware telemetry and XPU acceleration	~	×	×
Security assurance Industry-leading product security practices, platform vulnerability closures ¹	#1	#3	#2
Hardware mapping to security frameworks Mapped to 150 mitigations in the MITRE ATT&CK framework ²	 Image: A second s	×	×
Predetermined silicon manufacturing flow Intel Assured Supply Chain	 Image: A second s	×	×
Out-of-band management With remote keyboard, video, mouse (KVM)	 Image: A second s	Partial	×
Out-of-band management over three interfaces Ethernet, Wi-Fi, Intel Thunderbolt technology	 Image: A second s	×	×
Modern activation, scale, and choice Intel vPro Fleet Services, vendor ecosystem, OEM devices	Yes	Partial	Partial
All day battery life for all-day productivity Up to 23 hours of battery to support video calls and productivity software suites ³	Up to 20.3	Up to 13.5	Up to 17.9
Wi-Fi 7 Next-gen connectivity standards	Yes	Third Party	Yes
Low-energy Bluetooth audio Advanced connectivity with power efficiency	Yes	Add-in card required	Yes
Thunderbolt 5 technology Ultra-high bandwidth connectivity	Yes	Add-in card required	No
Device manageability over Ethernet via Thunderbolt Comprehensive remote management capabilities	Yes	No	No

Intel vPro - The complete enterprise solution that exceeds all standards

¹ Visit https://www.intel.com/content/www/us/en/content-details/846149/2024-intel-product-security-report.html for more information.

² Visit https://www.crowdstrike.com/en-us/global-threat-report/ for more information.

³ Visit https://edc.intel.com/content/www/us/en/products/performance/benchmarks/intel-core-ultra-processors-series-2/ for more information.



Important Information About this Report

NOTICES & DISCLAIMERS

Signal65 Notice: This white paper was produced as part of an Intel engagement with Signal65. Intel provided product information, demonstrations, and customer case studies. The analysis and writing contained herein were developed independently by Signal65. Intel reviewed the white paper for product, brand, and registration mark accuracy.

Hypothetical scenarios are fictional and depicted here for illustrative purposes only.

All versions of the Intel vPro® platform require an eligible Intel processor, a supported operating system, Intel LAN and/ or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance and stability that define the platform. See intel. com/performance-vpro for details.

Remote management requires a network connection; must be a known network for Wi-Fi out-of-band management. See www.intel. com/Performance-vPro for details. Results may vary.

Performance varies by use, configuration, and other factors. Learn more at intel.com/ performanceindex.

No product or component can be absolutely secure.

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

CONTRIBUTORS

Cameron Moccari

Operations and Project Management Director Signal65

PUBLISHER

Ryan Shrout President and GM | Signal65

INQUIRIES

Contact us if you would like to discuss this report and Signal65 will respond promptly.

CITATIONS

This paper can be cited by accredited press and analysts, but must be cited in-context, displaying author's name, author's title, and "Signal65." Non-press and non-analysts must receive prior written permission by Signal65 for any citations.

LICENSING

This document, including any supporting materials, is owned by Signal65. This publication may not be reproduced, distributed, or shared in any form without the prior written permission of Signal65.

DISCLOSURES

Signal65 provides research, analysis, advising, and consulting to many high-tech companies, including those mentioned in this paper. No employees at the firm hold any equity positions with any companies cited in this document.

intel

ABOUT INTEL

Intel creates world-changing technology that improves the life of every person on the planet. They put the silicon in Silicon Valley. For more than 50 years, Intel and their people have had a profound influence on the world, driving business and society forward by creating radical innovation that revolutionizes the way we live. Today they are applying their reach, scale, and resources to enable their customers to capitalize more fully on the power of digital technology. Inspired by Moore's Law, they continuously work to advance the design and manufacturing of semiconductors to help address their customers' greatest challenges.



ABOUT SIGNAL65

Signal65 is an independent research, analysis, and advisory firm, focused on digital innovation and marketdisrupting technologies and trends. Every day our analysts, researchers, and advisors help business leaders from around the world anticipate tectonic shifts in their industries and leverage disruptive innovation to either gain or maintain a competitive advantage in their markets.



CONTACT INFORMATION

Signal65 I signal65.com