Principled Technologies®

Options for reducing manageability costs

Enterprises seeking to reduce manageability costs are considering multiple computing models available today. This Intel®-commissioned white paper examines two current models—Intel® vPro™ processor technology and Intel® Centrino™ Pro processor technology clients and server-based computing—that can help achieve this goal. We pay particular attention to the biggest management cost factors: asset management, down time, desk-side visits, and regulatory compliance.

How manageability issues cost corporations

- 30 percent to 50 percent of desktops and notebooks may be invisible to IT in an unmanaged environment.[1] (Wake-on-LAN and other in-band technologies increase visibility to 90 percent to 95 percent.)[2]

- Failure to patch clients can lead to virus infection.

  - On average, 11 percent of PCs become infected each month.[3]
  - Average cost to recover from a single virus disaster exceeds $130K.[4]

- Diagnosis and repair for manually managed PCs typically involve at least one IT desk-side visit[5] (cost: $150+ per visit).[6]

- User down time for hardware-related problems at remote sites can take one or more days.[7]

- IT costs for unmanaged rich clients are high because IT is unable to accurately locate assets and diagnose and repair problems.

Managed and consolidated IT with maximum automation can cut the total cost of ownership (TCO) of an unmanaged PC by as much as 40 percent per year, according to one Microsoft study (Infrastructure Optimization Journey PPT, available from Microsoft.com).[8]

How Intel® vPro™ processor technology and Intel® Centrino™ Pro processor technology reduce manageability costs

Intel® vPro™ processor technology, in consort with third-party management tools and automated processes, enables IT to remotely detect, protect, and heal PCs and lower the cost of ownership of rich clients while still enjoying the flexibility, future proofing, and mobility that these clients provide.

- *Inventory nearly 100 percent of PCs*.[9] A secure, hardware-based communication channel enables IT to poll and manage PCs regardless of the PC power state or health of the OS. PCs with Intel® vPro™ processor technology can store hardware and software asset information in the PC's secure, nonvolatile memory, ensuring accurate inventories any time. IT can access software version information any time to insure that applications are up to date and the PC is in compliance before allowing it to access the network.

- *Achieve near 100 percent patch and update penetration quickly*,[10] enabling software version compliance and improving protection from viruses. Secure remote power-up and communication channels let IT quickly push updates remotely and off hours, even if PC power is off at the start of the scheduled maintenance.

- *Reduce desk-side visits and resolve more problems with first-line support*. PCs with Intel® vPro™ processor technology include remote boot, diagnosis, and restore capabilities even if the system is off, down, or otherwise not working properly, enabling IT to achieve fast, efficient troubleshooting, problem resolution, and disaster recovery for both software and hardware problems. Additionally, alerts about platform problems help IT schedule repairs and eliminate many desk-side visits.

- *Prevent sending or receiving of virus infections*. IT can automatically filter inbound and outbound network traffic for viruses, worms, and other threats.
- *Quarantine compromised PCs quickly*. Hardware-based defenses can quickly isolate compromised systems from the network.

How server-based computing with thin clients reduces manageability costs
Server-based computing can help organizations improve manageability by having no software and simpler hardware running on each client desktop. Key manageability cost factors include the following:

- Minimal software on each client, with centralized data and applications and locked-down, move problems and solutions off the clients and into the data center, which IT can more easily control.
- Minimal desktop hardware leaves little to break down and repair, reducing desk-side visits and increasing user uptime.
- IT managers often lock down servers tightly, leaving only certain services, protocols, and ports enabled.
- Locked-down clients give individual users access to only specific programs and files, preventing them from making changes or installing new software.
- Ability to remote-boot, power-on, and power-off clients gives IT flexibility to push patches and updates to clients and to repair them off hours without causing user down time.

Manageability issues

	Intel® vPro™ processor technology and Intel® Centrino™ Pro processor technology	Server-based computing with thin clients
Software patches and updates Remote patching solutions differ in effectiveness and cost. Slow patching or missed patches can result in infection, lost data, and lost productivity.	• **Easy to patch** – Intel® Active Management Technology (AMT) provides remote polling, power-on, and patch update via hardware and firmware that enables third-party management software IT can use to distribute patches off hours. This yields higher patch penetration than software-only patching solutions, patching even systems users have powered off and those with compromised operating systems.	• **Easy to patch** – Remote patching of servers and client browsers and operating systems yields high patch penetration off hours.
Help desk support and services Management software provides remote, hands-free support for clients and servers, resulting in swifter problem resolution, lower support costs, and increased user productivity.	• **Remote troubleshooting and repair solves more problems** – Intel® AMT helps accurately diagnose hardware problems and troubleshoot and resolve more software and OS problems remotely. • **Client issues cause minimal down time** – Tools help reduce help desk calls, desk-side visits for repairs, and client down time. • **Tamper-resistant manageability prevents users from removing the manageability features.**	• **Remote, hands-free support solves most problems** – IT can solve most problems with reboot or hardware swap. • **Client issues cause minimal down time** – Low help desk call volume, few desk-side support visits, and lower user down time due to support problems.
Asset inventory Asset management solutions help save money and ensure compliance with software license agreements (SLAs) and various regulations.	• **Remote asset inventories simpler** – Intel® AMT enables remote hardware and software inventory, even on powered-off or non-operational networked systems. IT, using remote management software, can capture inventory information without turning on system. • **IT control strong but flexible** – IT can monitor all assets centrally but also be flexible in response to user needs to install and configure some local software and move hardware assets.	• **Remote asset inventories simpler** – Client simplicity simplifies asset capture. • **IT control strong** – IT installs and monitors all assets centrally.
Move, Add, Delete (MAD) Management software enables enterprises to remotely distribute image and applications software to clients.	• **Remote imaging reduces on-site IT effort** – Intel® AMT lets IT fully reimage a disk remotely and off hours, even if the client is off line or its OS is unresponsive.	• **Simple** – MAD may require little more than setting up client devices and creating user accounts.
Compliance Sarbanes-Oxley, HIPAA, and other regulations detail data security, confidentiality, integrity, and access requirements and penalize non-compliance.	• **Compliance easier** – SLA and regulatory compliance benefit from easier asset capture. • **Third-party management software backing up data enforces data handling and protection requirements.**	• **Compliance easier** – SLA and regulatory compliance benefit from easier asset capture. • **Enables data handling and protection compliance** – IT can manage, store, protect, and back up centralized data and applications.

	Intel® vPro™ processor technology and Intel® Centrino™ Pro processor technology	Server-based computing with thin clients
Security Fast response to infection via remote management software can stop the spread of infection, minimize IT remediation efforts, and reduce user down time from attacks.	• **Low security risk via virus containment** – IT can identify and isolate infected PCs before they can infect other systems. • **Effective remote remediation** – Intel® AMT helps remotely identify viruses, worms, and other threats faster and stop those threats more effectively. • **Minimal client user down time due to ease of addressing malicious attacks.** • **Remotely-managed, automated backup practices protect local data.** • **IT can customize policy enforcement controls to need and risk** – IT can lock down applications and data, encrypt data, and add biometric user authentication as needed.	• **Low security risk** – Patches prevent most infection. • **Simple remediation** – Rebooting removes rare client viruses. • **Minimal client down time due to ease of addressing malicious attacks.** • **Low level of data risk** – Risk of data loss, theft, or corruption is low because little data is stored locally. • **Tight policy enforcement controls.**

See the Manageability cost calculator we provide separately for details on the costs of each type of manageability issue.

Sources

[1] Sources site a wide range of inventory failure rates for systems without Intel® vPro™ technology. A technical evaluation case study for Bangkok General finds that 50 percent of the PCs are powered off when they should not be. (Intel® Technology gets Clean Bill of Health,Copyright 2006, Intel Corporation.). *Case Studies with Intel® vPro™ Processor Technology: An Analysis of Early Testing of Intel® vPro™processor Technology in Large IT Departments* (Charles Le Grand and Mark Salamasick, March 2007) gives a range of 70 percent to 95 percent for system availability without Intel® vPro™ technology.

[2] PT estimate.

[3] ICSA Labs' Tenth Annual Virus Prevalence Survey. Case studies with Intel® vPro™ processor technology: An analysis of early testing of Intel® vPro™processor technology in large IT departments (Charles Le Grand and Mark Salamasick March 2007) gives a range of 70%-95% for system availability without Intel vPro technology.

[4] Ibid.

[5] *Case Studies with Intel® vPro™ Processor Technology: An Analysis of Early Testing of Intel® vPro™processor Technology in Large IT Departments* and other case studies comparing manageability costs for PCs with and without Intel® vPro™ processor technology.

[6] PT estimate based on WM-data Services and PCs with Intel® vPro™ Technology (Copyright 2006, Intel Corporation) and other case studies comparing manageability costs for PCs with and without Intel® vPro™ processor technology. Actual costs will vary depending on whether support staff are on site and whether they provide support during or after work hours.

[7] *Case Studies with Intel® vPro™ Processor Technology: An Analysis of Early Testing of Intel® vPro™processor Technology in Large IT Departments* and other case studies comparing manageability costs for PCs with and without Intel® vPro™ processor technology.

[8] Infrastructure Optimization Journey PPT, available from Microsoft.com.

[9] *Case Studies with Intel® vPro™ Processor Technology: An Analysis of Early Testing of Intel® vPro™processor Technology in Large IT Departments* and other case studies comparing manageability costs for PCs with and without Intel® vPro™ processor technology

[10] Ibid.

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