INTEL® ACTIVE MANAGEMENT TECHNOLOGY (INTEL® AMT)

LEGAL NOTICES AND DISCLAIMERS

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com/AMT.

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

Intel® Active Management Technology (Intel® AMT) requires activation and a system with a corporate network connection, an Intel AMT-enabled chipset, and network hardware and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. Results dependent upon hardware, setup, and configuration. For more information, visit intel.com/AMT.

KVM Remote Control (Keyboard Video Mouse) is only available with dual-core Intel® Core™ i5 vPro™ and Core™ i7 vPro™ processors with active integrated graphics. Discrete graphics are not supported

Intel does not control or audit third-party benchmark data or the websites referenced in this document. You should visit the referenced website and confirm whether referenced data are accurate.

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

Intel, the Intel logo, Intel Core, and Intel vPro are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

MORE DEMANDS ON DEVICE MANAGEMENT

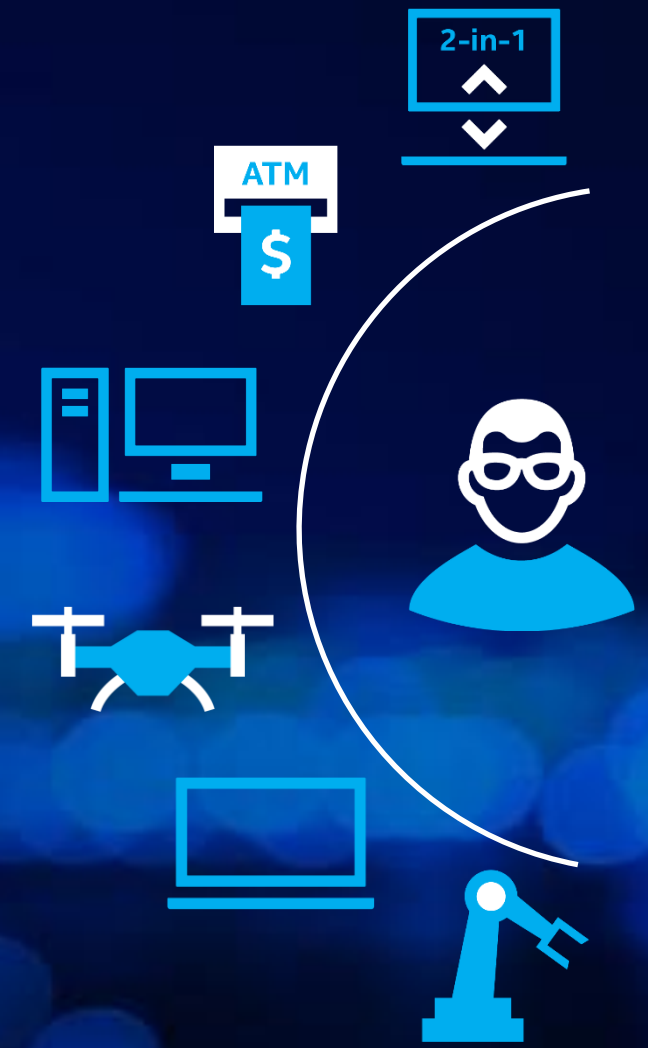
More remote workers
Employees are away from their desks 50-60% of the time.[1]

More devices
Gartner predicts more than 20 billion connected devices by 2020.[2]

More tasks
Digital transformation will be at the center of corporate strategies for two-thirds of Global 2000 Enterprise CEOs.[3]

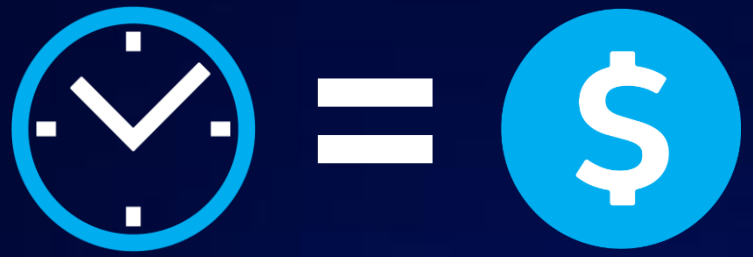
More demand for efficiency
Repairing a 4-year-old PC can waste up to 42 hours of productive work time each year.[4]

More complex decisions
Businesses have more decisions to make in how operating system updates are delivered.[5]



1. Global Workplace Analytics, 2016
2. "Gartner Says 6.4 Billion Connected 'Things' Will Be in Use in 2016, Up 30 Percent From 2015." Gartner, November 2015.
3. "IDC FutureScape: Worldwide Digital Transformation 2016 Predictions." IDC, 2015.
4. "The Ageing PC Effect—Exposing Financial Impact for Small Business." Techaisle, 2013.
5. "Windows 10 for Enterprise: More secure and up to date." Microsoft, 2015.

INTEL® AMT SAVES TIME AND SIMPLIFIES MANAGEMENT



MANAGE GROWING NUMBER OF DEVICES

Discover, repair, and help protect networked computing assets even when the system is off

REDUCE OPERATING COSTS AND COMPLEXITY

Cut the cost of an IT service call from $187 to $60 with out-of-band remote diagnosis[1]

EASE PLATFORM LIFECYCLE MANAGEMENT

Remotely monitor installations and upgrades with out-of-band management capabilities

1. Sources: 2014 CompuCom whitepaper, Intel® vPro™ IT customer data, and 2013 Gartner benchmarking hardware support costs.

INTEL® AMT: TAKE CONTROL OF YOUR COMPANY'S DEVICES

REMOTE POWER CONTROL

Manage your entire PC fleet with remote power-on

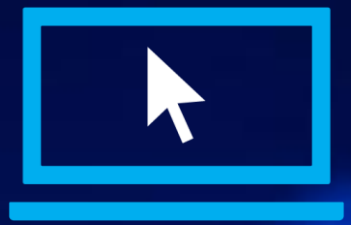
Power on a single system—or multiple systems across every work site—for remediation or patching.

HARDWARE ALARM CLOCK

Set wake-up times and schedule updates

Save energy by powering devices during business hours only. Ensure maintenance happens even when users aren't in front of devices.

HARDWARE KVM



See it remotely—even when it's down

Keyboard-video-mouse (KVM) provides visibility and control of the device, even during an OS failure, as if you were sitting in front of the system.

REMOTE ACCESS

Recover faulty systems without sending a tech

Repair devices that are far away or difficult to access, like hard-to-reach digital signage. Remotely control and reimage devices, at scale.

COST AND TIME SAVINGS WITH INTEL® AMT

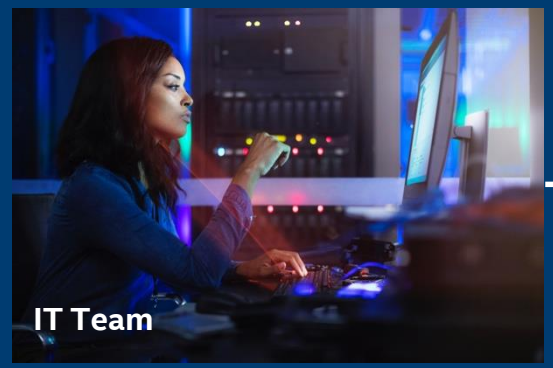
Dramatically reduce the cost and travel time for an IT service call with remote remediation

Without Intel AMT

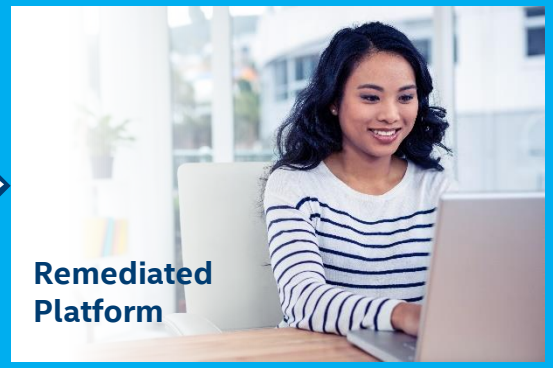
Schedule Visit → Travel and Traffic → Remediate

vs.

With Intel AMT



Wi-Fi/LAN → Remediate → HW KVM, BIOS Reconfiguration, Restore OS → Reboot to BIOS



INTEL® AMT COMPONENTS

- Intel is a trusted leader in enterprise with deep manageability expertise
- Ecosystem partners offer solutions to support large-scale implementations

HARDWARE

Intel® Core™ vPro™ processor
Intel® Xeon® processor

+

SOFTWARE

Intel® Setup and Configuration Software (Intel® SCS)
Intel® Manageability Commander

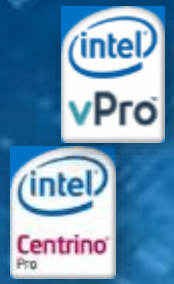
+

NETWORK

Intel® LAN controller
Intel® Wi-Fi controller

CELEBRATING 10+ YEARS OF INTEL® VPRO™ W/ INTEL® AMT

2006–2007



Enterprise remote management

+ Wireless remote management

2008

+ Reach and manage beyond firewall

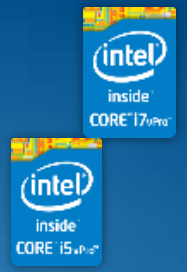
2010–2012

+ Hardware KVM remote control

+ Host-based configuration

+ KVM resolution enhancements (1920x1200, three displays)

2013



+ KVM resolution enhancements (2560x1600)

+ Graceful OS shutdown

2015

+ Remote provisioning for wireless platforms

+ Remote screen blank

+ Microsoft InstantGo* support

2016

+ KVM resolution enhancements (4096×2160@8bpp)

+ Intel® Remote Secure Erase with Intel® SSD Pro

+ USB-R storage redirection

2017–2018

+ Intel® Manageability Commander

+ Intel AMT location for Intel® Authenticate

+ Support for KVM headless devices

+ Web app hosting in Intel® AMT firmware

Intel® vPro™ platform extensibility


Desktops


Laptops


2 in 1s


AIOs


Point of sale devices


Digital signage


Workstations


Vending machines

*Other names and brands may be claimed as the property of others.

ENTERPRISE CUSTOMERS REALIZE SAVINGS WITH INTEL® AMT

accenture

New PC image, re-image, and OS migration using Intel AMT

Out-of-band remote access and automation

OS imaging with Intel AMT results in a 34% cost savings[1]

CompuCom

Projected return on investment for Intel AMT activation[2]:

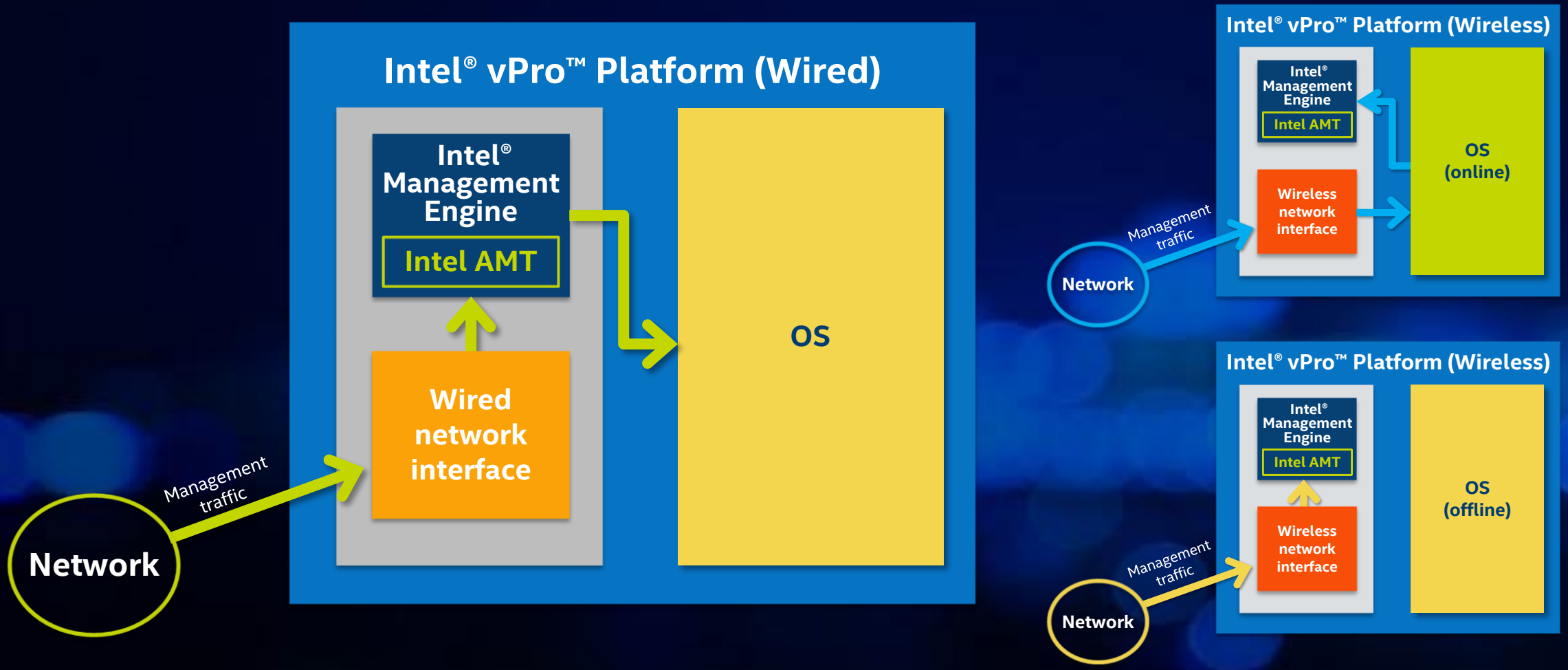
- Desk-side visit: $187
- Out-of-band remote repair: $60

1. Gartner benchmarking hardware support costs, December 2013
2. Sources: 2014 CompuCom whitepaper, Intel® vPro™ IT customer data, and 2013 Gartner benchmarking hardware support costs.

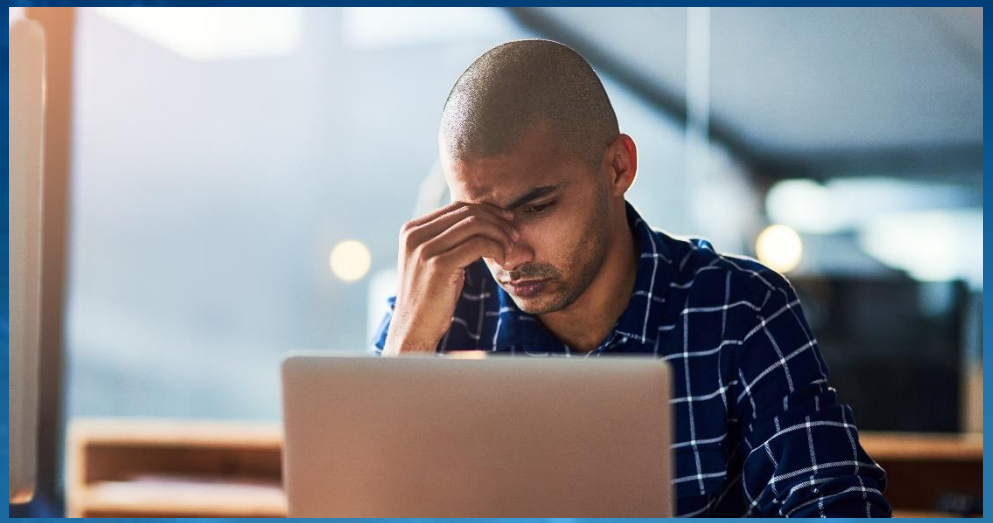
*Other names and brands may be claimed as the property of others.

OUT-OF-BAND MANAGEMENT WITH INTEL® AMT

Works via wired LAN network interface directly or wireless LAN routed from the host wireless driver

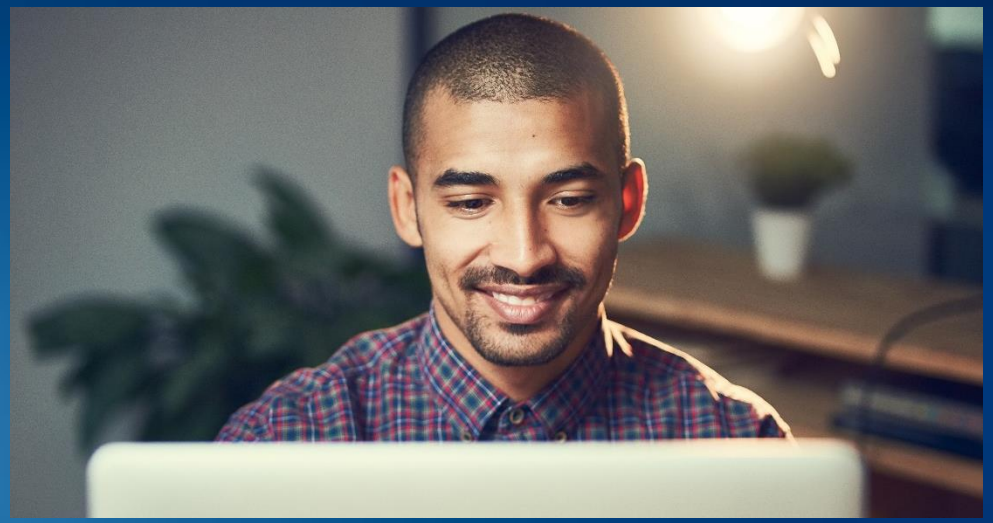


SOFTWARE-BASED VS. HARDWARE-BASED REMOTE MANAGEMENT



Software-based (traditional)

- Consoles communicate with devices using standard networking capability (an in-band link)
- When the OS cannot respond, the types of problems that can be fixed remotely is significantly reduced



Hardware-based (Intel® AMT)

Uses an out-of-band connection that operates independent of the OS and provides persistent connectivity

- Fix a wider range of systems issues, even when the OS is down
- Repair corrupted drivers, application software, or the OS for a nonresponsive system that won't run or boot
- Use KVM to monitor OS upgrades or boot to the system BIOS

INTEL® AMT SOFTWARE TOOLS

- Provide access to and use of Intel AMT features
- Can be integrated with manageability consoles
- Create custom scripts with the Intel® vPro™ module for Microsoft Windows PowerShell* for greater flexibility

Intel® Setup and Configuration Software (Intel® SCS)	Intel® Manageability Commander
Discover device capabilities, enable Intel AMT features, and configure policies for manageability on Intel® vPro™ platforms and Intel® Xeon®-based workstations	Remotely access activated Intel AMT PCs to utilize remote manageability features and recover faulty systems

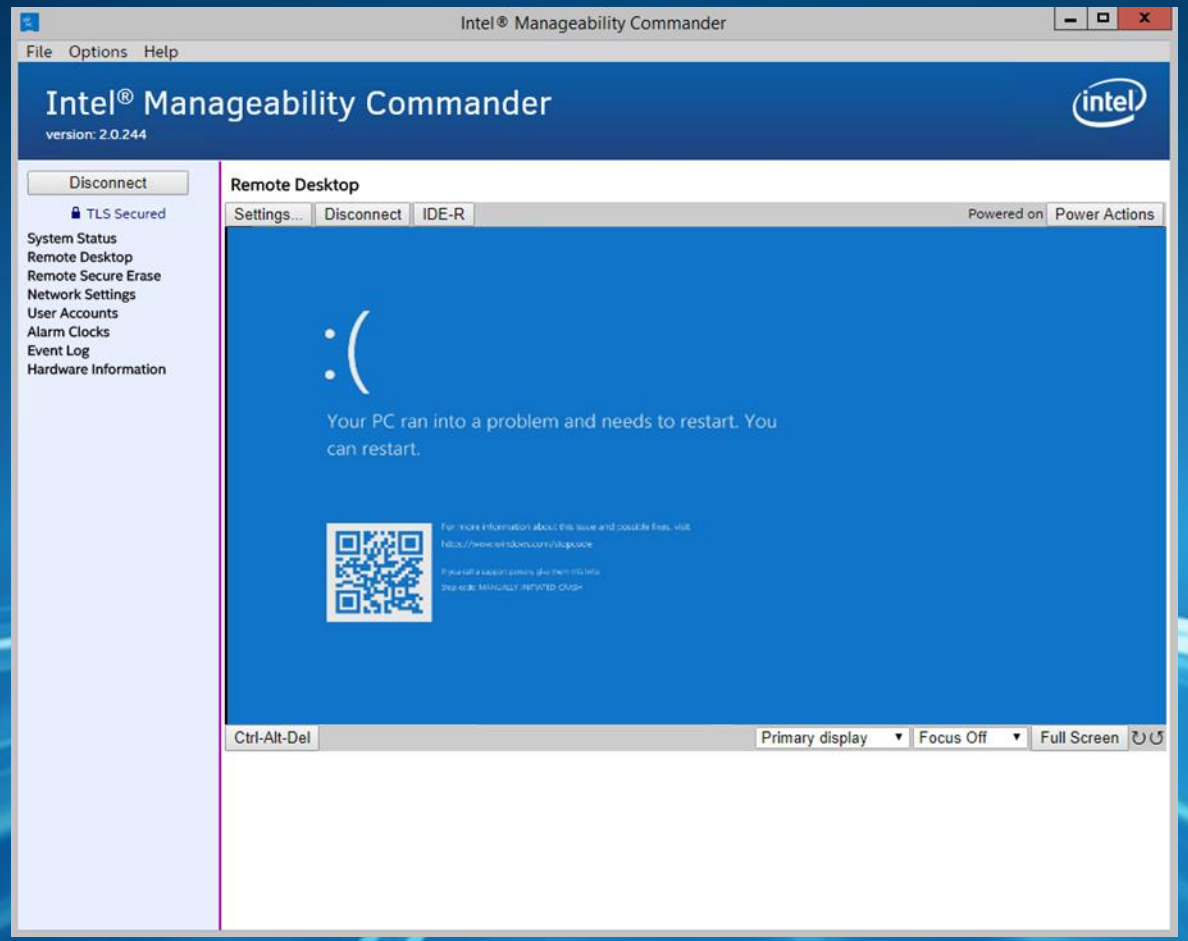
Microsoft System Center Configuration Manager* (SCCM*) integration for even greater control and productivity

*Other names and brands may be claimed as the property of others.

INTEL® MANAGEABILITY COMMANDER

Get more from Intel® AMT out-of-band hardware management

- Discover, diagnose, and manage Intel AMT-configured PCs remotely
- View and solve PC and OS issues via integrated KVM remote control
- **Integrate with Microsoft SCCM* current build 1511 and later**
  - Intel AMT remote power control for Microsoft SCCM deployments (i.e. task sequences, software distribution)
  - Launch from the Microsoft SCCM console UI to troubleshoot a system



*Other names and brands may be claimed as the property of others.

THANK YOU

BACKUP

INTEL® AMT CONFIGURATION PORTFOLIO

Click any topic to learn more:

802.1x Profile Configuration

Access Control List Management

Certificate Management

Endpoint Access Control

Environment Detection

Kerberos Settings

KVM Configuration

Network Administration

Power Packages

Redirection (SOL and IDER)

Time Synchronization

Transport Layer Security

Wi-Fi Port Configuration

Intel AMT is designed to operate in diverse network environments

INTEL® AMT FEATURES AT A GLANCE

Feature	Description
Access Monitor/Audit Log	Configurable list of auditable Intel AMT actions performed by users and administrators. Optional auditor user can be enabled for additional audit features.
Agent Presence	Intel AMT devices can monitor for the presence of software applications.
Alarm Clock	Set an alarm clock within Intel AMT to power on/wake up the Intel AMT-enabled device at predetermined dates and times.
Discovery	Determine platform version and Intel AMT capabilities.
Environment Detection	Intel AMT detects where the platform is inside or outside the enterprise and sets operational policies accordingly.
Event Manager	Create and manage event filters and alerts.
Fast Call for Help	User-initiated remote connection to IT support.
General Info	Get read-only platform info (such as host name, UUID).
Hardware Asset	Get hardware info (BIOS features, CPUs, memory, etc.).
Intel Remote Secure Erase	Remotely sanitize all data, including removing encryption keys from Intel® SSD Pro.
KVM	Full keyboard, video, and mouse remote control of endpoint. Manage the device as if sitting right in front of it, over a wired or wireless connection.
Redirection—Serial Over Lan (SOL)	Redirect serial communication over TCP.
Remote Access	Management console access to Intel AMT from outside the enterprise.
Remote Power Control	Remotely power on, wake, or reboot Intel AMT-enabled devices with options to change boot device.
Storage Administration and Operations	IT and ISV can store a web application in Intel AMT's locally managed non-volatile memory (NVM).
Storage Redirection—IDE-R/USB-R	Load .iso and .img disk images over TCP.
System Defense	Monitor and take action on network traffic packets, including limiting network access for a suspect system.
User Consent	Local user grants permission to admin for remote actions. Optional when Intel AMT is configured to Admin Control Mode.

FURTHER INFORMATION ON INTEL® AMT FEATURES

Click any topic to learn more:

Access Monitor/Audit Log†

Agent Presence†

Alarm Clock†

Discovery

Environment Detection

Event Manager

Fast Call for Help†

General Info

Hardware Asset

Intel Remote Secure Erase

KVM

Redirection—Serial Over Lan (SOL)

Remote Access†

Remote Power Control

Storage Administration and Operations†

Storage Redirection—IDE-R/USB-R

System Defense†

User Consent†

† Intel AMT unique features beyond those included in the DASH 1.0 specification

INTEL® SCS 12.0

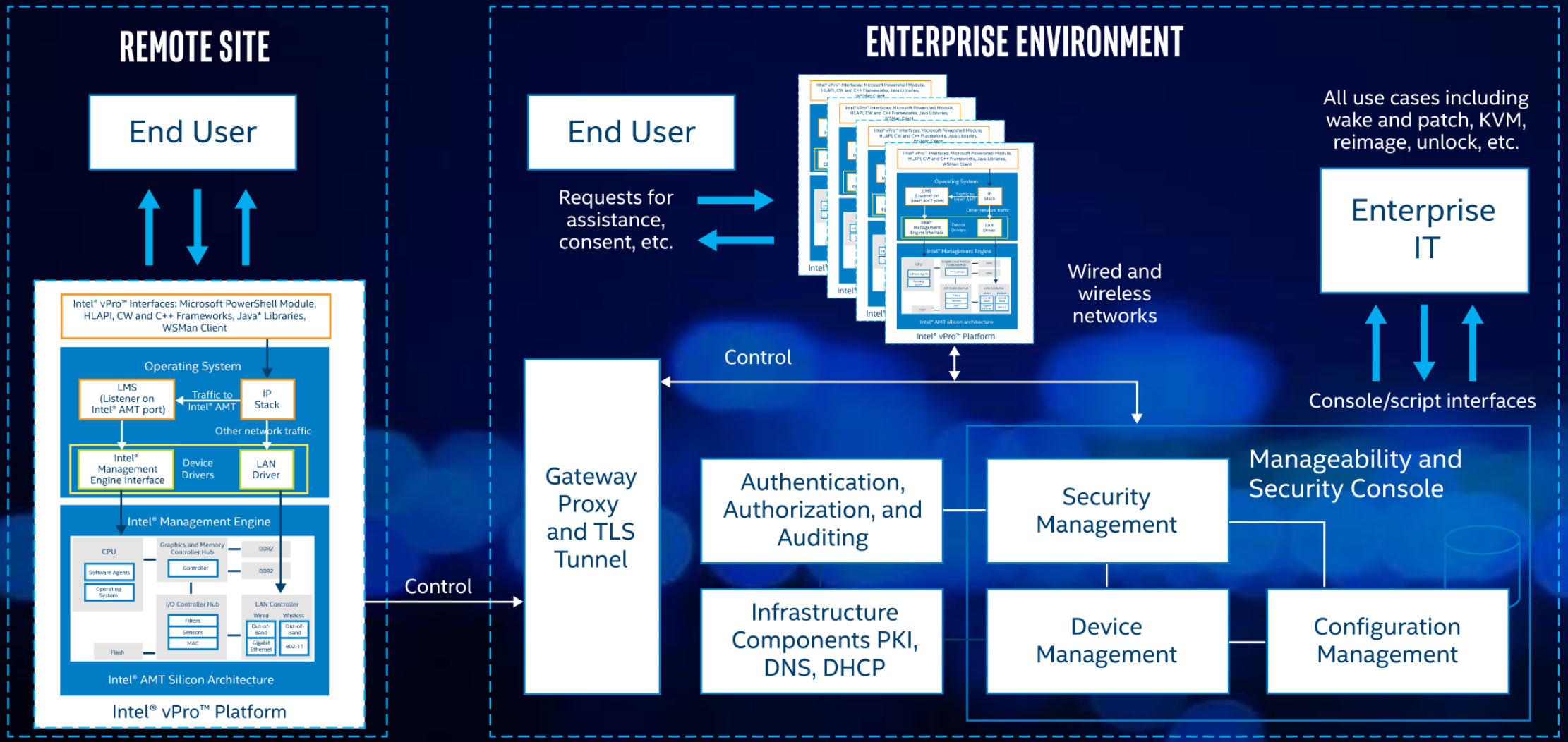
Intel® Setup and Configuration Software (Intel® SCS) is a free suite of tools that can be used to configure and activate Intel® AMT. It offers command line and GUI interfaces and can run on a physical or virtual server. A database back-end can optionally be used for configuration information, storing the profiles used for activation and information received about the devices.

Support for Intel® AMT 12.0

- Intel SCS 12.0 supports configuration of Intel AMT 12.0, including:
  - Changes to TLS protocol support used for encrypting network traffic during remote configuration of Intel AMT
    - Intel SCS 12.0 utilizes TLS 1.1 as the default protocol during remote configuration. Users can enable TLS 1.0 protocol support for backwards compatibility both during installation of the Remote Configuration Server (RCS) and after installation/upgrade of the RCS
- Added support for intermediate certificates (CAs) in addition to trusted root certificates for 802.1x setup, mutual TLS authentication, and remote access using a Management Presence Server (MPS)

Details of changes are included in the Intel SCS 12.0 release notes

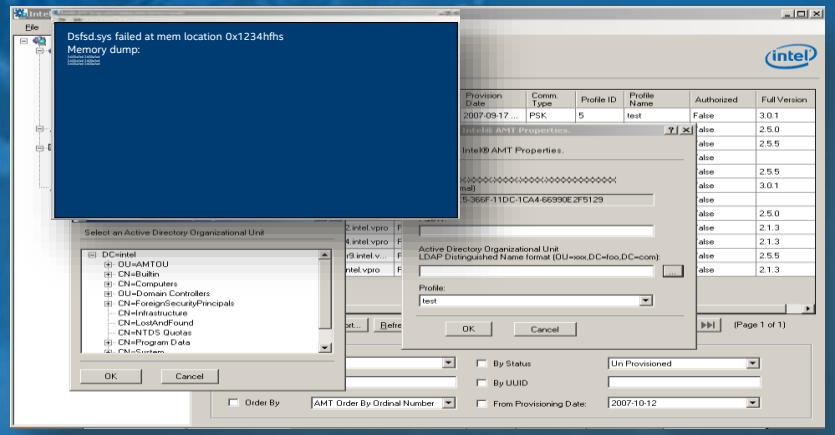
INTEL® AMT DEPLOYMENT OVERVIEW

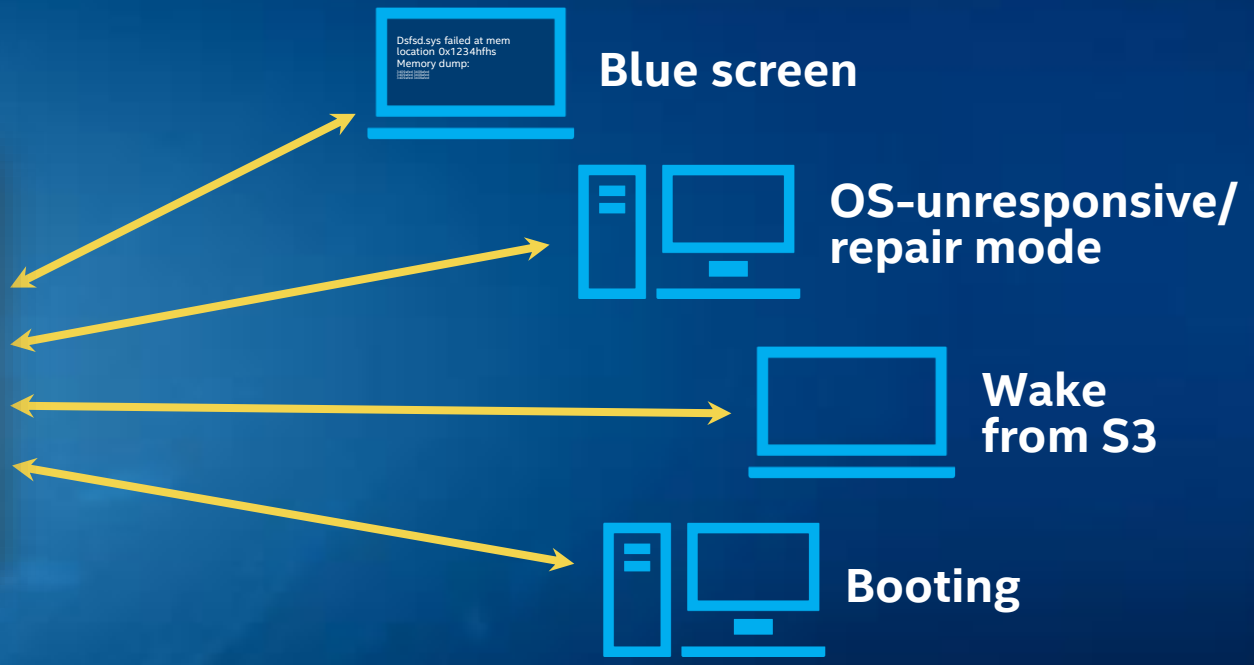


*Other names and brands may be claimed as the property of others.

HARDWARE KVM WITH INTEL® PROCESSOR GRAPHICS[1]

Remote management console

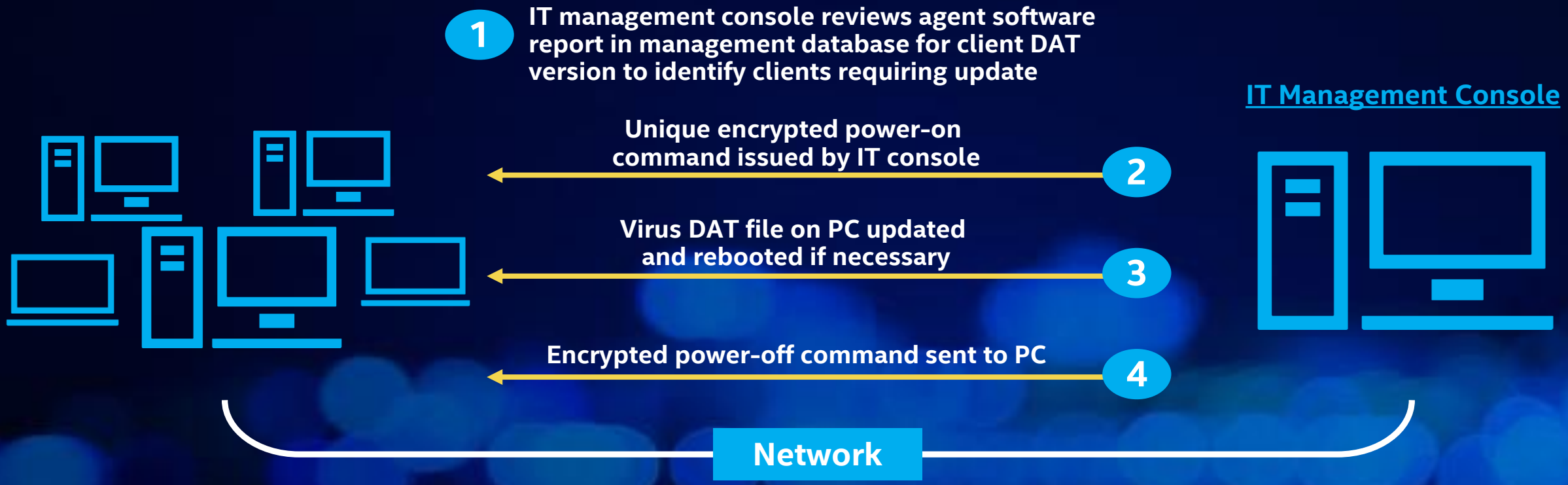




- KVM remote control session persists even during reboot
- Operates both on wired LAN and wireless LAN

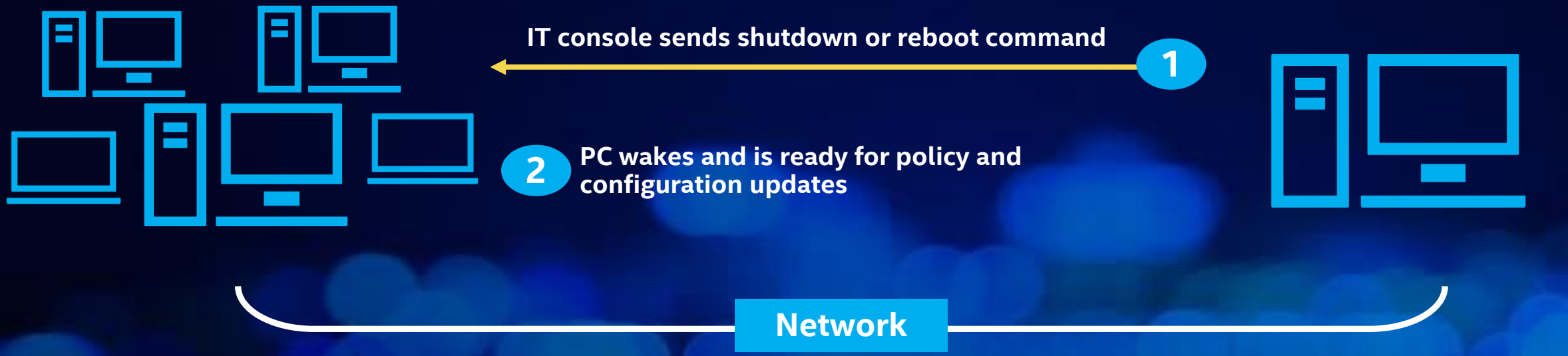
1. KVM remote control could work in a mux-less switchable graphics implementation where Intel® Processor Graphics is utilized during the KVM session. Switchable graphics capability is developed and delivered by 3rd party vendors, not Intel.

REMOTE POWER CONTROL



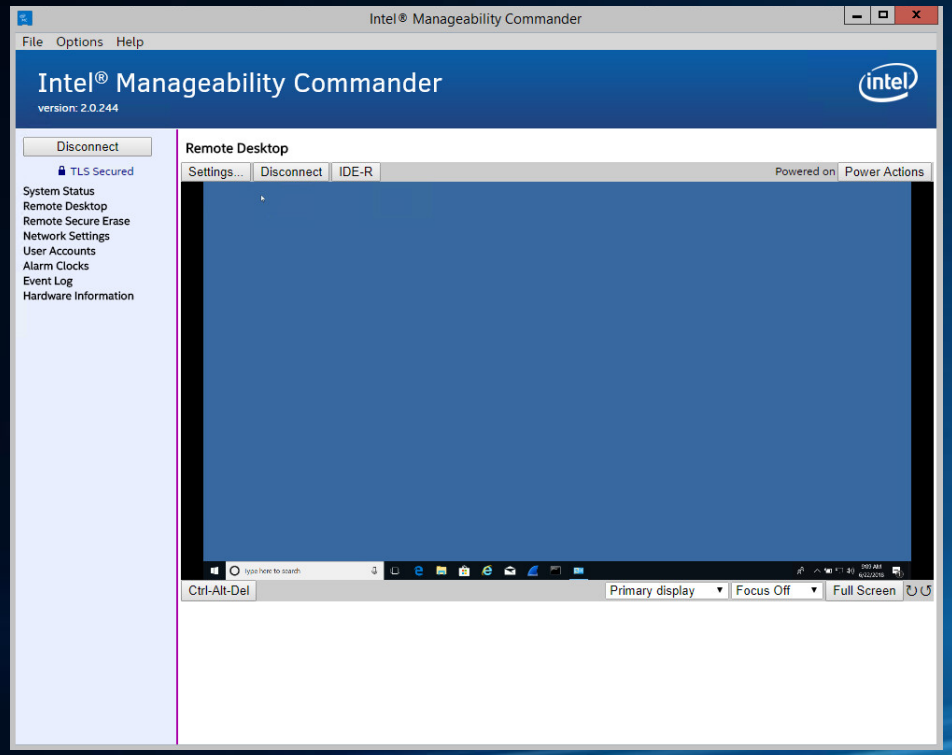
- Push security updates to client PCs even if they are powered off
- Encrypted remote deployment of patches without user interruption

HARDWARE ALARM CLOCK

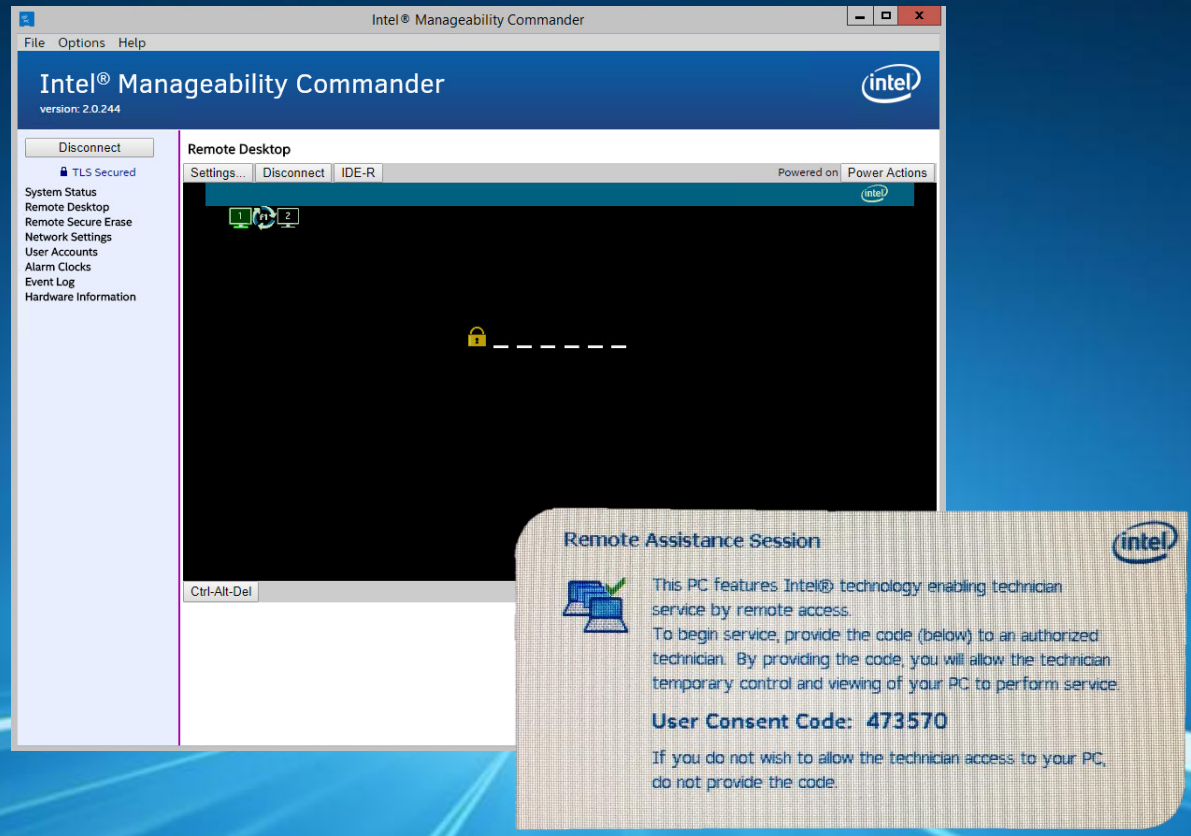


- Program your devices to remotely wake up and power on at predetermined dates and times
- No network load like WOL

TWO MODES OF INTEL® VPRO™ ACTIVATIONS



VS.



Admin mode: No user consent (ACM)

Client mode: User consent required (CCM)

INTEL® AMT FEATURES AT A GLANCE

Feature	Description	Feature differences in Client Control Mode (CCM)
Access Monitor/Audit Log	Configurable list of auditable Intel AMT actions performed by users and administrators. Optional auditor user can be enabled for additional audit features.	Auditor user credentials not required to unprovision Intel AMT in CCM
Agent Presence	Intel AMT devices can monitor for the presence of software applications.	Feature not available in CCM
Alarm Clock	Set an alarm clock within Intel AMT to power on/wake up the Intel AMT-enabled device at predetermined dates and times.	
Discovery	Determine platform version and Intel AMT capabilities.	
Environment Detection	Intel AMT detects where the platform is inside or outside the enterprise and sets operational policies accordingly.	
Event Manager	Create and manage event filters and alerts.	
Fast Call for Help	User-initiated remote connection to IT support.	
General Info	Get read-only platform info (such as host name, UUID).	
Hardware Asset	Get hardware info (BIOS features, CPUs, memory, etc.).	
Intel Remote Secure Erase	Remotely sanitize all data, including removing encryption keys from Intel® SSD Pro.	User consent required when initiating Intel Remote Secure Erase
KVM	Full keyboard, video, and mouse remote control of endpoint. Manage the device as if sitting right in front of it, over a wired or wireless connection.	User consent required for KVM session
Redirection—Serial Over Lan (SOL)	Redirect serial communication over TCP.	
Remote Access	Management console access to Intel AMT from outside the enterprise.	
Remote Power Control	Remotely power on, wake, or reboot Intel AMT-enabled devices with options to change boot device.	User consent required when changing boot device Graceful shutdown allowed with CCM Hard shutdown requires user consent
Storage Administration and Operations	IT and ISV can store a web application in Intel AMT's locally managed non-volatile memory (NVM).	
Storage Redirection—IDE-R/USB-R	Load .iso and .img disk images over TCP.	User consent required for IDE-R/USB-R actions
System Defense	Monitor and take action on network traffic packets, including limiting network access for a suspect system.	Feature not available in CCM


intel
experience
what's inside™