



By Travis Zhao
Brett Twiggs

ENHANCED REMOTE CLIENT CONTROL USING LANDesk MANAGEMENT SUITE

The combination of LANDesk® Management Suite with the Intel® vPro™ technology in Dell™ OptiPlex™ desktops and Dell Latitude™ laptops can provide a powerful, flexible way for administrators to remotely manage, troubleshoot, and secure client systems throughout their life cycle.

Desk-side visits from IT administrators can be both costly and time-consuming for many enterprises, making powerful, flexible tools for remote management a key way to both simplify IT and reduce ongoing costs. On their own, the remote management capabilities in LANDesk Management Suite can help significantly reduce the need for these visits—but that need is reduced even further when coupled with the out-of-band management features of Dell OptiPlex desktops and Latitude laptops with Intel vPro technology. LANDesk, Dell, and Intel have worked together to create a powerful vPro implementation that enables administrators to manage client systems at virtually anytime from virtually anywhere—even if the system's hard drive has failed, its OS does not respond, its software agents have been disabled, or the system is powered down.

LANDesk Management Suite 8.8 and Dell desktops and laptops with Intel vPro technology work together to not only help reduce the need for desk-side visits from IT administrators, but also to help automate system discovery and deployment; increase the flexibility of patch management processes to support green IT practices; enhance remote troubleshooting, including seamless transitions from out-of-band to in-band remote management; simplify hardware diagnostics; provide monitoring and alerting of critical management agents while extending the ability to block unwanted traffic at the client

system; and enhance overall life cycle management and remote decommissioning for client systems.

AUTOMATED SYSTEM DISCOVERY AND DEPLOYMENT

Intel vPro technology is supported in Dell OptiPlex 755, OptiPlex 760, and OptiPlex 960 desktops and in some models of new Dell Latitude E-Family laptops. When administrators first deploy these systems at a branch office or other remote location, they can take advantage of the internal vPro chipsets in conjunction with LANDesk Management Suite to remotely power up the systems, provision them with operating systems and applications, and configure them without having to use a Preboot Execution Environment (PXE) server or other technologies.

The vPro processor technology has its own management engine (ME) that runs independently of the OS and works in conjunction with Dell client systems' network interface cards to communicate over the network even if the systems are not powered up. As soon as these systems are connected to a power source and network, the vPro technology can immediately send out hello packets over the network. The LANDesk Management Suite core server then receives those packets, establishes an encrypted communication channel, automatically discovers and identifies each system, and lists them as unmanaged devices in the LANDesk management console.

Related Categories:

Dell Latitude laptops
Intel vPro
LANDesk
Mobility
Systems management

Visit DELL.COM/PowerSolutions
for the complete category index.

Once LANDesk Management Suite has discovered the systems, administrators can begin the provisioning process, taking advantage of prebuilt LANDesk templates that can automatically perform tasks such as deleting existing hard drive partitions, creating new partitions, and provisioning those partitions by pushing out a standard enterprise image to the appropriate systems. Although LANDesk Management Suite has its own image creation solution, it can also push out images created with most major imaging applications.

Administrators can also add another level of automation to the provisioning process if they know the Media Access Control (MAC) addresses of the Dell systems before deployment. They can then assign specific provisioning tasks and templates to these MAC addresses in LANDesk Management Suite, so that when the software first discovers those systems, it can initiate the provisioning process automatically without requiring administrator intervention.

To facilitate remote out-of-band management tasks using vPro technology, one of these provisioning tasks should include creating a diagnostics partition and provisioning it with the Windows Preinstallation Environment (WinPE), diagnostic tools, and the LANDesk Management Suite remote control agent. The prebuilt templates in LANDesk Management Suite include ones for creating and provisioning this diagnostic partition, but administrators can also create their own customized provisioning templates as needed.

FLEXIBLE PATCH MANAGEMENT TO SUPPORT GREEN IT

As organizations look for additional ways to go green, many have begun shutting down noncritical PCs after normal business hours—a practice that, by helping reduce power consumption, is typically both favorable to the environment and financially beneficial. However, this approach can interfere with standard patch management processes, creating difficulties for IT departments that want

to push out patches after normal business hours, but cannot do so because most of the systems have been powered down.

To help solve this problem, some organizations use Wake-on-LAN to power up systems that are not turned on. However, because Wake-on-LAN can have issues with security and reliability, many organizations refrain from using it to address this specific patching problem. Dell OptiPlex desktops and Latitude laptops with Intel vPro technology can offer a secure, reliable alternative when deployed in conjunction with the patch management capabilities of LANDesk Management Suite by using Wake-on-ME.

Wake-on-ME enables administrators to remotely power up Dell client systems by issuing a wake-up command to the vPro management engine. For example, if administrators schedule a patch to be deployed on affected computers at 2 A.M. through LANDesk Management Suite (see Figure 1), the software automatically checks the power status of the client systems, and if they are powered down, uses Wake-on-ME by default as the preferred method to power them up. If Wake-on-ME is not available, it can also automatically fall back to using Wake-on-LAN. Once the patch has successfully deployed, LANDesk Management Suite can then issue a command to power down the systems.

ENHANCED REMOTE TROUBLESHOOTING

When a desktop or laptop has a fatal error, becomes unresponsive, or will not boot, an administrator typically must make a desk-side visit to fix the problem. The out-of-band communication capabilities and IDE redirection (IDE-R) supported by Dell OptiPlex desktops and Latitude laptops with Intel vPro technology help minimize the need for such visits even in those circumstances.

IDE-R enables administrators to remotely change the boot device location of a client system and then reboot the system. From within the LANDesk console, administrators can right-click on the target device, bring up the Intel vPro AMT Boot Manager window, select “IDE-R boot” as the boot option, and then set the system to boot from a diagnostic CD or boot image (see Figure 2). Using console redirection in conjunction with IDE-R boot allows administrators to view the client system’s boot progress from within the console as the system loads the BIOS, drivers, and OS, helping them remotely identify problems or errors that occur during the boot process. From within the console, administrators can also scan for viruses, update BIOSs, clean up temporary files, restore user data, replace corrupted dynamic-link library (DLL) files, and

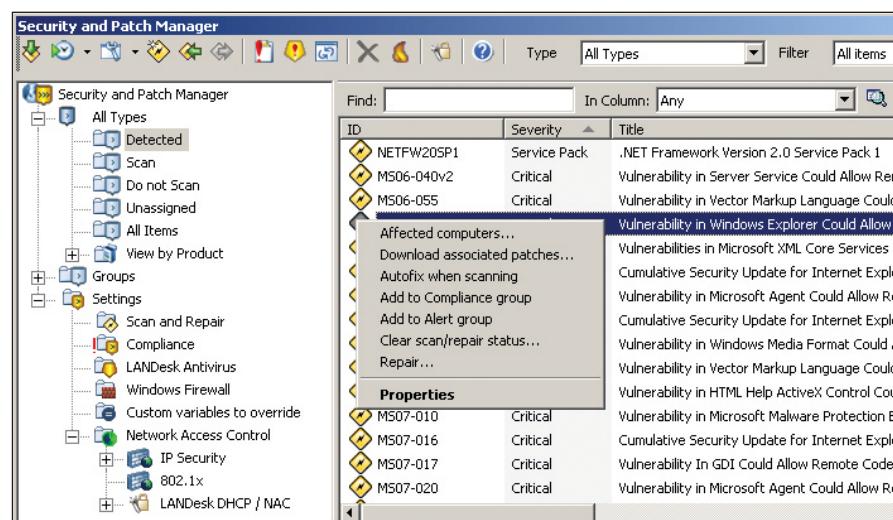


Figure 1. Wake-on-ME for Dell OptiPlex desktops and Latitude laptops in LANDesk Management Suite

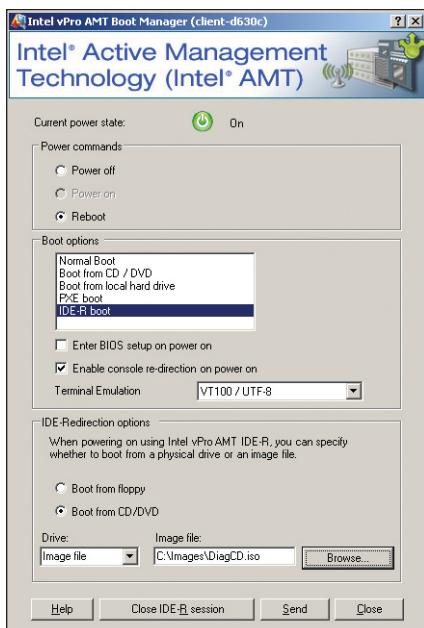


Figure 2. IDE redirection for Dell OptiPlex desktops and Latitude laptops in LANDesk Management Suite

perform a variety of other management tasks to help bring the system back to a working state.

One potential problem with IDE-R is that vPro uses Serial Over LAN for its out-of-band communication—meaning not only that pushing out the boot image and diagnostic tools from the console to the remote client system can be time-consuming, but also that the slow speeds typically limit administrators' remote management abilities to command-line functions. However, administrators can help speed up communications by using LANDesk Management Suite to transition from Intel out-of-band vPro communication to LANDesk in-band remote control, which is typically much faster than out-of-band communication.

This acceleration is the rationale behind provisioning Dell OptiPlex desktops or Latitude laptops with diagnostic partitions during the initial deployment. Administrators can launch the remote diagnostic process using Wake-on-ME and IDE-R and then, rather than booting from a diagnostic CD or boot image, boot from the local diagnostic partition provisioned with WinPE, diagnostic tools, and

the LANDesk Management Suite remote control agent. Not only does this approach help accelerate the boot process, but the increased network speeds enable administrators to use the full graphical user interface in the LANDesk Management Suite console. In most cases, they can then quickly control, troubleshoot, and fix the client system remotely, then return local control to the user without the need for costly, time-consuming desk-side visits.

SIMPLIFIED HARDWARE DIAGNOSTICS

Of course, when a hardware problem such as a drive failure causes a client system to become nonresponsive, desk-side visits are necessary to resolve the problem. Dell OptiPlex desktops and Latitude laptops with Intel vPro technology can work together with LANDesk Management Suite to help eliminate multiple trips, cut down on visit times, and allow low-level technicians or contractors to make the visit to replace the hard drive.

From within the LANDesk Management Suite console, administrators can take advantage of the vPro ME to perform a basic inventory scan of the remote client system, which provides information such as the device name, IP address, globally unique identifier (GUID), product name, manufacturer, serial number, BIOS version, memory size, and hard drives. If the system has a LANDesk Management Suite agent installed on it, administrators can also view additional detailed inventory information in the LANDesk console that would typically have already been collected during routine LANDesk inventory scans—for example, the exact

manufacturer, model number, and size of each hard drive in the system.

The ability to remotely view this inventory information enables administrators to send out an IT staff member or local technician with the appropriate replacement hard drive for that system. Once the failed drive has been replaced, administrators can launch an automated provisioning task from within the LANDesk console to remotely re-provision the new drive.

POWERFUL AGENT MONITORING AND SYSTEM DEFENSES

Dell OptiPlex desktops and Latitude laptops with Intel vPro technology can also work with LANDesk Management Suite to let administrators monitor client systems and help ensure that the security agents on these systems remain present and operational. Many organizations use serial polling to verify the presence of agents or other critical applications. However, polling client systems from a central server can consume valuable network bandwidth. In contrast, the agent presence monitoring in Dell client systems with vPro technology uses regular, programmable heartbeat checks to detect agents.

These heartbeat checks occur between the local vPro ME and the local agent or application, with the agent or application regularly checking in with the ME to verify that it is still active. (The local LANDesk Management Suite agent can also act as a “heartbeat proxy” for agents or applications that lack the ability to provide a heartbeat to the vPro ME.) Agent presence monitoring occurs at the hardware level rather than the OS level, which

“From within the LANDesk Management Suite console, administrators can take advantage of the vPro ME to perform a basic inventory scan of the remote client system.”

“By taking advantage of the key features of Intel vPro technology and LANDesk Management Suite, administrators can extend their management capabilities and help increase flexibility and mobility when managing Dell client systems throughout their life cycle.”

helps prevent users or malware from stopping or killing the monitoring program itself to try to get around restrictions or avoid detection.

If a heartbeat is missed, the vPro ME can immediately and automatically log an alert and notify the LANDesk console of the missed heartbeat. Based on the policies set by administrators, LANDesk Management Suite can automatically execute a variety of actions, including sending an e-mail to an administrator, restarting the agent or application, reinstalling the agent or application, isolating the client system from the network, or simply logging an alert at the core server.

In addition to its agent presence capabilities, the vPro ME has 32 inbound and 32 outbound programmable hardware filters that examine the behavior of network traffic at the client system to provide low-level defense capabilities. These filters examine packets before they are passed from the hardware to the OS, or before packets are passed from the software stack to the network. Because the filters are programmable, administrators can define policies in the LANDesk console to automatically trigger specific actions when certain packet behavior occurs.

For example, when the filters detect User Datagram Protocol (UDP) packets that exceed the packet rate of flow, indicating a denial-of-service attack, they can trigger a system defense alert. When the LANDesk core server receives that alert, it can follow an administrator-configured

policy to issue a command quarantining the client system from the network, stopping all traffic to and from the system except for vPro and LANDesk traffic necessary to resolve the problem.

EASY REMOTE DECOMMISSIONING

Even when client systems reach the end of their life cycle, they can require desk-side visits to verify that their hard drives have been wiped before the system is decommissioned. Once again, LANDesk Management Suite works in concert with the Intel vPro technology in Dell OptiPlex desktops and Latitude laptops to help eliminate the need for these visits. Using IDE-R and the remote boot manager from the LANDesk console, administrators can remotely boot a client system with a third-party ISO image or application designed to wipe hard drives according to enterprise standards. From the remote LANDesk console, administrators can manage and watch the process until it completes. When the process has finished, they can then remotely reboot the system to verify that it has been properly wiped.

EFFICIENT REMOTE CLIENT MANAGEMENT

The combination of Dell OptiPlex desktops and Latitude laptops, Intel vPro technology, and LANDesk Management Suite can help significantly simplify and enhance remote client management in enterprise

environments—reducing the need for desk-side visits from administrators and their associated costs while increasing defenses to help keep the systems secure and protected. By taking advantage of the key features and capabilities of Intel vPro technology and LANDesk Management Suite, administrators can extend their management capabilities and help increase flexibility and mobility when managing Dell client systems throughout their life cycle. 

Travis Zhao is a senior product manager in the Dell Product Group, where he is responsible for client systems management software. He has more than 20 years of experience in software engineering, consulting, and marketing, and before joining Dell was a product manager for Trilogy Software and BMC Software. Travis has a master's degree in Electrical Engineering from the University of Houston.

Brett Twiggs is the manager of strategic alliances at LANDesk, where he is responsible for the Intel relationship. He has more than 20 years of experience in IT engineering, consulting, and training. Brett has a bachelor's degree from Brigham Young University and is currently finishing an M.B.A. from the David Eccles School of Business at the University of Utah.



QUICK LINKS

LANDesk Management Suite:
[www.landesk.com/
solutionservices/product.
aspx?id=716](http://www.landesk.com/solutionservices/product.aspx?id=716)

Dell OptiPlex desktops:
DELL.COM/OptiPlex

Dell Latitude laptops:
DELL.COM/Latitude