Intel® vPro™ Technology Common-Use Guide

For Level Platforms Managed Workplace* 2012

White Paper

Intel® vPro™ Technology

Level Platforms Managed Workplace* 2012

Introduction

Common Uses for Level Platforms Managed Workplace* 2012 + Intel® vPro™ Technology

The Intel® Core™ vPro™ Processor Family extends the management capabilities of Level Platforms Managed Workplace 2012 to enable it to better discover, analyze, and monitor managed-service providers' (MSPs') customer desktops, even when they are powered off. These extended remote management capabilities translate into lower overhead for MSPs as well as a higher service level agreement (SLA) that MSPs can offer their current and potential customers.

This paper illustrates how to use Level Platforms' Managed Workplace remote management software with Intel vPro technology in several common scenarios. In doing so, this paper shows MSPs how to lower administrative overhead and increase the level of service they can offer their customers.

Table of Contents

Setup and Assumptions

Software	Level Platforms Managed Workplace 2012
Hardware	Motherboard with Intel® Active Management Technology (Intel® AMT) [1]
Basic Assumptions	1. You have configured the Intel AMT BIOS extensions of all client computer systems. 2. You have installed Onsite Manager on an existing Windows Device at each customer site. 3. You have installed the Service Center at your MSP site

Common Uses Covered in This Guide

- Improved device discovery and Intel vPro technology status
- Optimization of ongoing maintenance and management
- Remote diagnosis and repair of client systems

Use Case 1: Improved Device Discovery and Intel vPro Technology Status

The power-off computer-detection capabilities of Intel vPro technology allow for the most comprehensive remote view possible of MSP customer hardware. In addition, Intel Active Management Technology (Intel AMT) requires an administrator password that protects the SMB customer from unauthorized access to their network devices. This 24/7 access provides faster and more accurate discovery of MSP customer systems, resulting in fewer onsite visits and lower administrative overhead, and allows MSPs to serve more customers with existing staff.

Level Platforms Managed Workplace gives solution providers a complete, integrated solution to centrally monitor and manage SMB customers from a single, Web-based platform. Managed Workplace consists of two components:

- The **Onsite Manager** is a lightweight application that is installed on an existing Windows Device at each customer site or as an appliance, depending on the MSP business model. The Onsite Manager includes a Web console that is hosted on Microsoft IIS and uses Microsoft SQL Server on the back end.
- The **Service Center** is installed on a Windows Server located at the MSP site or at a hosting location. The Service Center Web console is hosted on Microsoft* IIS and also uses Microsoft SQL Server on the back end. You can integrate the Service Center with Microsoft Windows Server Update Services (WSUS) to provide patch management services.

Multiple Onsite Managers can connect to the Service Center using a secure SSL connection to provide SOAP/XML Web services over HTTPS.

1.1: Initial and Ongoing Client System Inventory

Whether you need the initial inventory for a new customer that establishes a baseline, or a regular monthly inventory to track changes, getting an accurate count of customer computers is a central component of managing customer contracts.

When combined with Intel vPro technology, Level Platforms Managed Workplace can monitor the availability of virtually any IP-enabled device, whether it is powered on or not. The ability to monitor both powered up and powered down machines helps to ensure inventory accuracy without an onsite visit. This remote accuracy also means that more frequent inventory assessments are possible without increased costs. The end result is a higher level of service at a lower cost.

This use case walks you through the steps required to discover customer assets, both initially and on an ongoing basis.

[1] Intel® Active Management Technology (Intel® AMT) requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt/.

Step 1: Intel Active Management Technology Automatic Discovery

1. Log on to the Managed Workplace Service Center console.

2. Expand **Status** in the left navigation bar, and then click **Central Dashboard**.

3. Click the site with which you want to work, and click on the cog icon at the end of the "**Site Installation**" line. Then select the **Network Discovery** tab.

4. Click **Modify**.

5. Under **Intel vPro Credentials**, click **Change Password** and enter the credentials that were used to configure Intel AMT.

6. Under **SNMP V1/V2 Community String**, click **Add** and enter the community string. If you have not changed the default in your network devices, enter "public" for the community string.

7. Under **Scan Settings**, click **Add**.

8. In the **Add or Modify Scan Settings** window, click **Range** and enter the range of IP addresses you want to scan.

9. Click **Save**.

10. Click **Save** on the **Modify Network Scan Settings**.

11. Click **Scan now**.

Managed Workplace 2012 discovers all devices in the network and lists them in the **Device Management** tab. It can take several minutes for information discovered during the scan to be displayed in the Managed Workplace Service Center console.

Step 2: View Intel AMT Status and Device Information

After you complete the device discovery procedure, Intel vPro technology lets you see detailed information about each device it is enabled on, even if the device is powered off.

1. Expand **Configuration** in the left navigation bar and click **Intel vPro** to see devices that have Intel vPro technology enabled.

   The Intel vPro Device Configuration page opens, showing all of the Intel vPro technology-enabled devices that belong to the network.

2. In the devices list, click the **Device name/Alias** of the device for which you want to see detailed information.

   The **Device Management** window opens and displays device information organized in tabs.

3. Click the **Intel AMT** link located under the "Monitoring" section on the right hand side.

   This page displays information about the device and the Intel AMT firmware installed on it. Under **Intel AMT Status**, you can power the device on or off, cycle the device's power, or power reset the device.

4. Click the **Hardware Inventory** tab. This tab displays detailed information about the device's hardware, including:

   - System information
   - Baseboard
   - BIOS
   - Processor Information
   - Memory Information
   - Disk Information

1.2: Initial and Ongoing System Analysis

Another core function of every MSP is to regularly monitor the attributes of the customer's computer systems. MSPs should be able to drill down into individual customer computers to see a detailed hardware profile, including processor, memory, video cards, and other types of hardware information. This drill-down capability should also apply to software, giving the MSP visibility into operating system type, version, and patch level, in addition to installed applications, such as antivirus software and Microsoft* Office suites. In addition, the security state of individual computers should be transparent so that configuration issues can be addressed.

A common challenge that MSPs face is keeping this asset information up to date given the fact that daily computer use and administration invariably lead to changes. By applying the capabilities of Intel vPro technology, Level Platforms Managed Workplace enables MSPs to gather customer computer asset information with real-time accuracy, even when managed computers are in low-power and powered-off states.

By continually monitoring these assets in real time, an MSP can increase the number of first-call resolutions. Furthermore, when onsite trips are necessary, such high-quality asset monitoring can reduce the cost of onsite visits by empowering the technician with complete and accurate information about the problem systems.

This visibility can be particularly helpful when planning for significant upgrades. For example, knowing the exact type and amount of memory in a customer computer would be very useful when planning an upgrade to Windows 7*. Arriving onsite with inaccurate memory information could result in a wasted onsite visit, adding to overhead and reducing service quality.

This use case walks you through the steps required to gather up-to-the-minute information from customer computers monitored with Managed Workplace. It is based on the assumption that you have completed the steps outlined in section 1.1 above to discover and import computer systems.

Step 1: Connect To Your Customer's Network

1. Log on to the Managed Workplace Service Center console.

2. Expand **Status** in the left navigation bar, and then click **Devices**.

Step 2: View Asset Details of a Computer

1. On the **Devices** page, a list of devices that belong to the site appears. If necessary, select the **Service Group** option and select a **Site Group** from the drop-down list.
2. Click on the name of the device you want to view.
3. The **Device Management** page displays detailed information about the device. Tabs on the page provide the following types of information:
   a. **Hardware:** CPUs, disk drives, NICs, video and sound cards, CD drives, and monitors
   b. **Software:** OS and version, installed software, and patch history
   c. **Windows Events:** Discovered Windows events that meet the parameters you specify in the drop down list boxes
   d. **Performance Counters:** Graphs for the performance counters that the Onsite Manager scan discovers on a device
   e. **Windows Services:** A list of Windows services discovered on the device
   f. **Network Services:** A list of network services being monitored on the discovered device
   g. **MBSA:** An overview of the results of the MBSA (Microsoft Baseline Security Analyzer) scan that the Onsite Manager performed on the device
   h. **Intel AMT:** A list of events, a detailed hardware inventory, and AMT status
      The Intel AMT tab is present for devices that contain Intel vPro technology. In the **Intel® AMT Status** section, you can power on, power off, and reset a device remotely. You can also see at a glance the BIOS-level events for any AMT-enabled device, such as Power Off and Reset events. In addition, the **Hardware Inventory** tab displays detailed information about the device's hardware profile.
   i. **Attributes:** Allows you to record information about a device that is not collected during the device scan

1.3: Alerts for Computers That Are Down or Missing from the Network

Level Platforms Managed Workplace uses Intel vPro technology to enable proactive inventory monitoring for all computer assets. Because Intel vPro technology can detect systems that are powered off or are in low-power states, it enables Managed Workplace to determine when a desktop or other stationary computer asset has been removed from the network. This capability can enable the MSP to respond to such situations the moment they happen, rather than discovering them later during a physical, onsite count.

This use case walks you through the steps required to set up automatic notification for computers that become disconnected from the network.

Step 1: Connect To Your Customer's Network

1. Log on to the Managed Workplace Service Center console.
2. Expand **Status** in the left navigation bar, and then click **Central Dashboard.**
3. Click the site with which you want to work.

Step 2: Create an AMT Monitoring and Alert Rule

1. Expand the **Configuration** section in the left navigation bar, and then click **Monitor & Alert Rules.**
2. Select the device you want to monitor from the **Device** drop-down list.
3. Click **Add Monitor.**
4. Select **AMT Events** from the **Choose the type of monitor to add** drop-down list, and then click **Add Monitor.**
5. Select the **Monitor** tab.
6. Enter a **Title** and **Description** in the **Monitoring Rule** section.
7. In the **AMT Event Rule** section:
   a. Select the **All** check box next to the "**Source**" section, unless you want to monitor events only from a specific source.
   b. Specify the level of severity that will trigger the rule from the **Severity** drop-down list.
   c. Enter a search string that is unique to that alert if you are monitoring for an explicit alert in the **Details Search Text** field.
8. Select the **Alerts** tab, and then click **Add Alert Configuration.**
9. Enter a **Title** and **Description**.
10. Click **Add Alert Rule.**
11. In the **AMT Event Alert Rule Parameter** dialog, select the source for the event, alert severity required, and/or a search string that is unique to that alert, if you are monitoring for an explicit alert, and then click **Save**.
12. Select **Alert when any rule conditions are met** or **Alert when all rule conditions are met.**
13. In the **Alert Categories, Actions and Notifications** section, select the notification options you prefer. Depending upon the options you select, you might need to configure additional parameters.
14. Click **Save**.
15. Click **Save** in the **Add AMT Events Monitor** window. The new monitoring and alert rule appears in the **Monitors** list.

Use Case 2: Optimization of Ongoing Maintenance and Management

The remote power-management functionality of Intel vPro technology allows MSPs to ensure that tasks requiring a reboot are completed and confirmed—all from remote locations, without a desk side visit. Using the remote power-on/power-off functionality of Intel vPro Technology, administrators can complete and confirm such tasks as software updates and patches, anti-virus and firewall definition updates, software installation, and any troubleshooting tasks that require a reboot. This functionality opens up new services that MSPs can offer customers (such as power management) and makes some tasks possible remotely (such as applying BIOS updates) that were previously only possible with an onsite visit.

2.1: Routine Maintenance of Desktops: Install Patches and Software without a Desk Side Visit

MSPs often need to deploy patches or software packages to computers on the customer's network. A common practice is to install these after normal business hours so that workers are not interrupted. In these scenarios, powered off computers can prevent MSPs from successfully completing the installations. By taking advantage of the power on and power off capabilities of Intel vPro technology, Level Platforms Managed Workplace can enable MSPs to remove this obstacle from patch and software installation tasks, ensuring that the task is completed the first time. This approach reduces overhead costs and increases customer satisfaction.

This use case walks you through the steps required to deploy a software package to all computers in a customer's network—even those that are powered off.

Step 1: Power On the Target Computer

1. Log on to the Managed Workplace Service Center console.
2. Expand **Status** in the left navigation bar, and then click **Central Dashboard.**
3. Click the site with which you want to work.
4. Under **Summary** in right hand navigation bar, click **Devices.**
5. Click on the device you wish to power on.
6. Click the **Intel AMT** link in the right hand navigation bar under the **Monitoring** section.
7. Click the **Power On** link under the **Intel AMT Status** section.

Step 2: Create a Patch Management Policy

To use the patch management functions of Managed Workplace, Windows Server Update Services must be installed and configured.

A patch management policy consists of four parts:

- Synchronization options
- Automatic approval options
- Windows update agent policies
- Approval groups

To modify synchronization options

1. Expand **Patch Management** in the left navigation bar, and then click **Settings.**
2. Click **Synchronization Options.**
3. Under **Products and Classifications,** click the **Change** button under the **Products** section.
4. Select only the products you want to patch manage, and then click **Save**.
5. Under **Classifications,** click the **Change** button.
6. Select only the classifications you want to patch manage, and then click **Save.**
7. Select the site you wish to configure from the **Site** drop-down list.
8. Select **Store patch files locally on the Onsite Manager**, or deselect if you do not want to store patch files locally.
9. Choose **Download updates in all languages, including new languages** or **Download updates only in the selected languages,** checking the corresponding checkbox for each language.

   Level Platforms, Inc. recommends specifying the subset of update languages your clients or organization uses, as downloading all updates in all languages will require a significantly greater disk space footprint.
10. Click **Save.**

To modify automatic approval options

1. Expand **Patch Management** in the left navigation bar, and then click **Settings.**
2. Click **Automatic Approval Options.**
3. In the **Approve for Installation** section, select **Automatically approve updates for installation by using the following rule,** or deselect to prevent automatic approval for installation.
4. Click **Add/Remove Classification.**
5. Check each patch classification to approve for installation, and then click **Save.**
6. Click **Add/Remove Computer Groups.**

7. Check each Approval Group for which installation will be automatically approved, and then click **Save.**
8. In the **Revisions of Patches** section, select **Automatically approve the latest revision of the patch (with the same approval of the initial patch)** or **Continue using the older revision and manually approve the new patch version.**
9. Select **Automatically decline patches when a new revision causes them to expire,** or deselect it to prevent automatically declining expired patches.
10. In the **WSUS Patches** section, select **Automatically approve WSUS patches for installation,** or deselect it to prevent automatic approval of WSUS patches.
11. Click **Save.**

To create a Windows update agent policy:

1. Expand **Patch Management** in the left navigation bar, and then click **Settings.**
2. Click **Windows Update Agent Policies.**
3. Click **Add Agent Policy.**
4. In the **Agent Policy Identification** section, enter a name and description for the policy, and then click **Save.**
5. Click the **Policy** tab.
6. In the **Detection Frequency** section, select how often the devices check for new patches.
7. In the **Automatic Updates Options** section:
   a. Select one of the following radio buttons:
      - **Notify for download and notify for install**
        Local users will be notified in the System Tray that updates are ready to be downloaded/installed.
      - **Auto Download and notify for install**
        Updates will be automatically downloaded and local users will be notified in the System Tray that updates are ready to be installed.
      - **Auto download and auto install**
        Updates will be automatically downloaded and installed based on the **Auto Install Settings.**
      - **Automatic updates options configurable on client**
        Local users may adjust the update settings in Windows.

   b. If you have selected **Auto download and auto install:**
      - In the **Auto Install Settings** section, use the drop-down lists to choose when installations occur.
      - Select **wait X minutes after the next system startup to install,** entering a value for X in minutes between 1 and 60, or select **wait until next scheduled time to install** to define how missed installations are handled.

   c. Select **Immediately install minor updates** to have updates installed immediately when they do not interrupt Windows services or require a restart.

   d. Select **Allow non-administrative users to approve/disapprove updates** to allow regular users to select which updates to install.
8. In the **Auto Reboot After Installation** section:
   a. Select **Auto reboot after installation** to cause a reboot prompt to appear on devices.

   b. Choose when the prompt will appear for the first time from the **Reboot prompt** drop-down list.

   c. Choose how often the prompt will appear thereafter from the **Consecutive prompts after** drop-down list.
9. In the **Enable Patch Management** section, select **Enable Patch Management** to enable the agent, or unselect it to disable the agent.
10. Click **Save.**
11. Select the **Apply Policy** tab.
12. To apply the Agent Policy to individual devices:
    a. Select the **Devices** tab and click **Apply to Other Devices.**

    b. Use the filters to narrow the choices as required, and check each device to which the Agent Policy should be applied. Click **Add.**
13. To apply the Agent Policy to groups of devices:
    a. Select the **Groups** tab and click **Apply to Other Groups.**

    b. Use the filters to narrow the choices as required, and check each group to which the Agent Policy should be applied. Click **Add.**

To create an approval group:

1. Expand **Patch Management** in the left navigation bar, and then click **Settings.**
2. Click **Approval Groups.**
3. Click **Add.** Enter a name for the Approval Group in the field that appears. Click **Add** to the right of the field.
4. Select **All Computers** from the **Approval Group** drop-down list to display all devices reporting into Patch Management (those added to the Windows Update Agents Policies that have been created).
5. Check each device to add to the Approval Group and click **Move selected devices.**
6. Choose the group from the drop-down list to move the devices into, and then click **OK.**

2.2: BIOS Edit

MSPs occasionally need to access and edit the BIOS settings on remote computers to diagnose, repair, or enable additional functionality in customer computers.

For example, Windows 7 can run legacy Windows XP applications from within its Start menu using Windows XP Mode. However, Windows XP Mode requires hardware-assisted virtualization, such as Intel Virtualization Technology (VT). Computers equipped with Intel vPro technology are capable of running Windows XP Mode, but Intel VT must first be enabled in the BIOS settings.

MSP support staff can remotely access BIOS settings and enable Intel VT from within Managed Workplace, allowing customers to take advantage of Windows XP Mode.

Step 1: Verify the BIOS Capabilities

First, confirm that the BIOS version of the computer you are running supports hardware-assisted virtualization.

1. Log into Managed Workplace Service Center.
2. In the left navigation bar, expand the **Status** section and click Central Dashboard. Select the customer site you wish to work in. Then click Devices under the Summary section in the right hand navigation bar
3. Click on the **Device Name** of the system whose BIOS settings you want to access.
4. Click on the **Intel AMT** link under the Monitoring section in the right hand navigation bar.
5. Click the **Hardware Inventory** tab confirm that the data is populated with valid information (This information can take 5-10 minutes to populate after discovering the client)

Step 2: Edit BIOS to Enable Intel Virtual Technology

Now you need to establish a remote connection with the computer so that you can edit its BIOS settings.

1. From the right hand channel bar, click on the **Remote Control** link under the **Management** section.
2. In the **Remote Services** section, select **Intel® AMT** under the **Service** drop down menu.
3. Under the **Intel AMT Configuration** section, select the **Emulation Type** that your client supports (refer to the BIOS is need be).
4. In the Intel AMT Configuration section, select **Boot to BIOS** and click **Connect.**
5. BIOS menus and navigation vary widely between manufacturers. Locate and enable the Intel VT setting. In our environment,
   we selected **Config > CPU Intel Virtualization Technology > Enabled.**
6. Save the changes and exit the BIOS Setup Utility.
7. The computer should power down and restart. If it does not, restart it manually. When the computer reboots, Intel VT will be enabled
   and ready for Windows XP Mode.

Use Case 3: Remote Diagnosis and Repair of Client Systems

An MSP's profitability is directly related to the efficiency of its support personnel. MSPs can best leverage support personnel by focusing on preventing support incidents from occurring in the first place. However, while this focus on preventative maintenance will reduce the number of support incidents, it will not eliminate them altogether. Support incidents will still occur, and when they do, the MSP can further improve efficiency by focusing on the percentage of support incidents that are handled remotely during the first call for support.

While Managed Workplace is designed to help MSPs achieve a high first-call resolution rate, by coupling Managed Workplace with the capabilities of Intel vPro technology, MSPs can dramatically improve first-call resolution rates, resulting in lower overhead and improved service levels.

The remote diagnostic and repair capabilities that Intel vPro technology adds to Managed Workplace, particularly for computers that are powered off or in low-power states, lets MSPs resolve more customer support issues remotely. Furthermore, when onsite visits are required, it enables MSP technicians to go prepared with the right tools and hardware to correct the problem. This approach can reduce the number of onsite visits required to solve the problem.

Managed Workplace provides several options for remote control; however, remotely controlling a customer computer that has not booted into Windows is only possible when the target computers are equipped with Intel vPro technology.

The following use case shows you how to take advantage of the remote diagnostic and repair capabilities of Intel vPro technology in situations commonly faced by MSPs today.

3.1: Use Remote Control to Troubleshoot a Problem

One scenario that front-line MSP support staff members commonly face is a Windows workstation that cannot boot. This condition can often be caused by a corrupt boot file. Remote control through Managed Workplace alone requires Windows to boot normally, which enables the Managed Workplace agent to run. Therefore, front- line support staff who face such situations without the benefits of Intel vPro technology cannot resolve this issue remotely. It must be promoted to a higher level of support, requiring an onsite visit.

However, if the MSP has successfully counseled the customer to acquire computer systems equipped with Intel vPro technology, Managed Workplace can interact with Intel vPro technology to let front-line support staff access a preboot environment for repair of this problem. This capability results in a first-call resolution for this common issue, reducing costs and increasing customer satisfaction.

This use case shows how Managed Workplace takes advantage of Intel vPro technology to provide first-call resolution for a customer reporting an "Operating System not found" or similar preboot error.

Step 1: Establish a Remote Connection

To repair the system on which Windows XP is broken or missing, you must first stage your preferred PE boot image within the SMB customer network. We are using Ultimate Boot CD for this example; you may use any pre-boot diagnostic tools that support a text based UI. Store your image on the LP Onsite Manager at each customer location in the folder called **C:\Program Files\Level Platforms\ Onsite Manager\IDER Boot Images\.**

1. Log into the Managed Workplace Service Center.
2. In the left navigation bar, expand the **Status** section and click **Devices**. Select the customer site from the drop-down list at the top of the main pane.
3. Click on the **Device Name** of the system that requires repair.
4. Click on the **Remote Control** link under **Management** in the right hand channel bar.
5. In the **Remote Services** section, select **Intel® AMT** for the **Service** drop down menu.
6. NOTE: this step is only required the first time you use Workplace Manager.
   a. In the AMT Configuration section, select "ANSI / Extended ASCII" for the Emulation type and "Normal Boot" so you can review the messages during POST, then click **Save.**
   b. In Internet Explorer:
      i. On the **Tools** menu, select **Internet options.**
      ii. Click the **Security** tab, and then click the **Custom Level** button.
      iii. Under **Downloads,** enable **Automatic Prompting for File Downloads,** and then click **OK** and **OK** again.
7. If you are running a recovery ISO, verify you can initiate the ISO and that the ISO kicks off and begins the recovery process.

Step 2: Confirm the Problem

If there is a serious issue with Windows XP, error messages will appear in the terminal window as they would if you were sitting at the PC and trying to boot to the OS.

1. Click the **Connect** button in the lower left corner.
2. A window briefly displays that says **Verifying Application Requirements, this may take a few moments.**
3. NOTE: The first time you click **Connect** the following steps are required:
   a. Click **Run** in the **LPI remote access framework client** dialogue box.
   b. A **Security Dialogue** box appears. Click **Install**, and then click**Run** for the **LP Workplace Tech Prep** tool.
4. In the **Remote Control Client** window, click **Yes** to allow a normal reboot.
5. In this example the Master Boot Record has been corrupted, so during boot, you should see the Windows error message such as **"Operating System not found."**

Step 3: Initiate Repair

The next step is to initiate a repair from a bootable image with repair utilities pre-installed. The image must be pre-deployed in the remote network, and it can be either a floppy image or CD image. The image file must be copied to the following folder on the computer hosting the Level Platforms Onsite Manager:

c:\Program Files\Level Platforms\Onsite Manager\IDER Boot Images

In this example, we are using Ultimate Boot CD with Ranish Partition Manager.

1. From within the **Intel AMT Configuration** section, put a check mark in the "**IDE-Redirection**" option
2. Click the "**Connect**" button.
3. An **IDER Image Selection** window appears. Select the **ISO** you wish to boot too. Then click on the "S**elect Image** button.
4. A dialog box asks, **Reboot Computer from CD Image?** Select **Yes.** Press the Enter key when prompted to boot from CD image.
5. Based on the ISO you are booting, verify you can navigate through the UI via the Keyboard.

Step 4: Confirm That Repair Was Successful

Once the repair has finished, you must reboot the PC.

1. Click **Remote Command** in the menu bar, and select **Normal Re-boot.**
2. The **Remote Control Client** window opens and displays the message, **Normal Reboot?**; click **Yes.** If the repair was successful, you should see the POST messages of a normal reboot (image below).

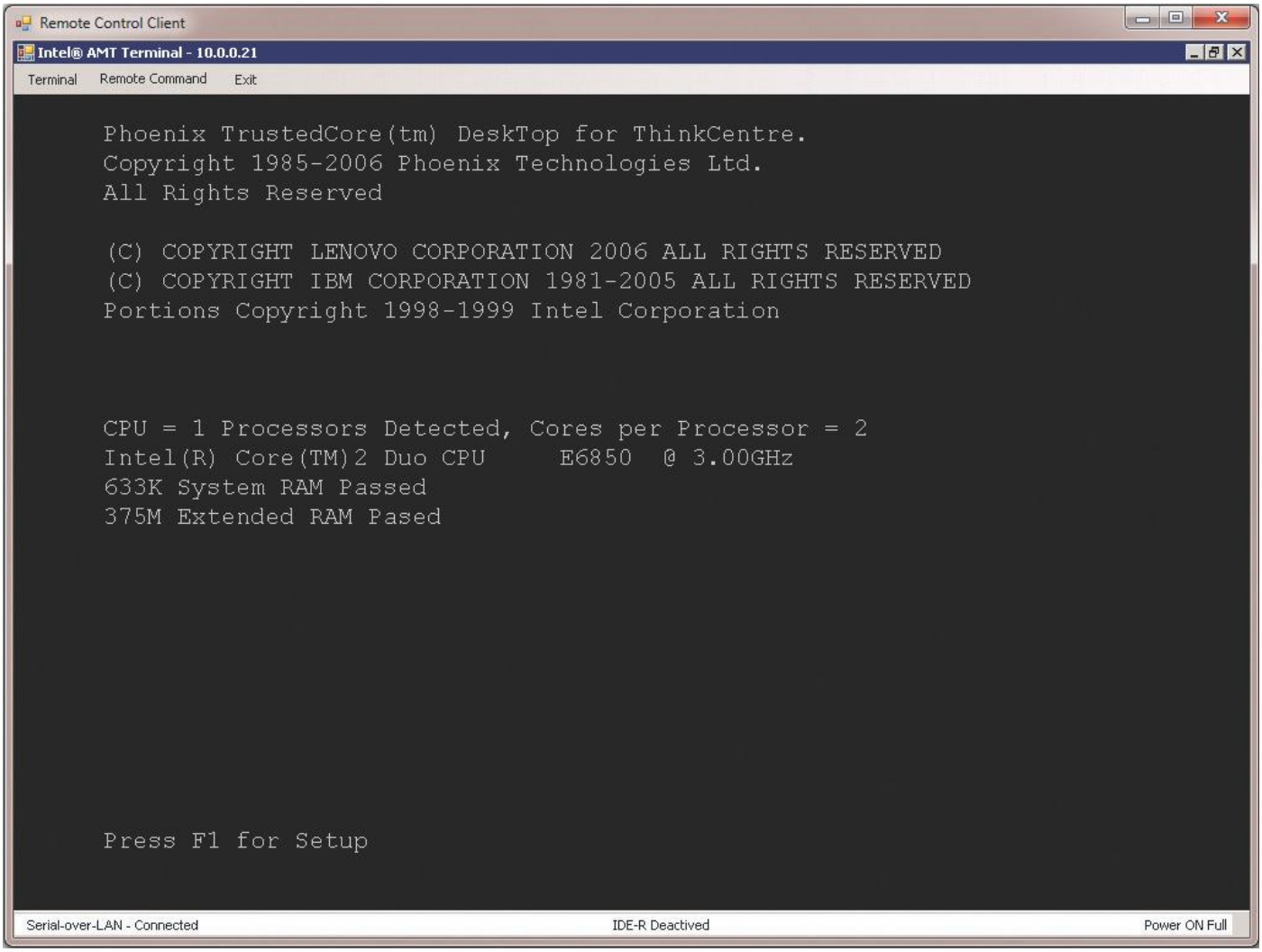
3.2: Remotely Diagnose a Problem before an Onsite Visit

Even with the best remote control functionality provided by Intel vPro technology, some problems simply cannot be resolved remotely. Hardware failure, such as a hard disk failure, is one of those problems. However, by making the best use of Intel vPro technology, Managed Workplace can provide the onsite support staff with critical diagnostic information that helps ensure that the problem is solved with only one onsite visit.

In this use case, we will diagnose a failed hard disk drive before technicians go onsite to fix it.

Step 1: Establish a Remote Connection

1. Log into the Managed Workplace Service Center.
2. Expand **Status** in the left navigation bar and click **Devices.** Select the customer site from the drop-down list at the top of the main pane.



3. Click on the **Device Name** of the system that requires repair.

4. Under the **Management** section in the right hand channel bar, click on **Remote Control**.

5. In the **Remote Services** section, select **Intel® AMT** for the **Service** drop down menu.

6. Click the **Connect** button in the lower left corner.

7. A window briefly displays that says **Verifying Application Requirements, this may take a few moments.**

8. The **Intel AMT Terminal** window displays the message, **Normal Reboot?** Click **Yes.**

9. In this example the HDD has had a catastrophic failure, so a Boot error message should display during POST: **1962: No Operating System Found, press F1 to repeat boot sequence.**

Step 2: Check HDD Info in the BIOS

1. In the **Intel AMT Configuration** section, select the **Boot to BIOS** option. Then click the **Connect** button.

2. A dialogue box asks: **Reboot computer to Remoted BIOS?** Click **Yes.**

3. Check the status of IDE Drive 0 in the BIOS System Summary menu. BIOS menus vary widely between manufacturers. In our environment, we used the arrow keys to select the **BIOS System Summary** menu and then pressed the Enter key. The menu shows **None** in the **IDE Drive** zero slot; this is where the OS is normally installed, so we have determined a catastrophic failure of the HDD and the technician can go to the site properly prepared.

3.3: Remotely Restore an OS Image from a Hidden Partition

Failure to boot is not always a failure of the hard disk or the MBR– the OS itself could become corrupt and fail to boot. This condition might normally require a desk side visit, but with Intel vPro technology and Managed Workplace, MSPs can remotely restore a default image stored in a hidden partition on the hard disk.

In this scenario, we will use Managed Workplace, Intel vPro technology, and TeraByte Image for DOS to replace a corrupt OS with a good image to restore the computer to working condition.

Step 1: Establish a Remote Connection

1. Log into the Managed Workplace Service Center.

2. Expand **Status** in the left navigation bar and click **Devices**. Select the customer site from the drop-down list at the top of the main pane.

3. Click on the **Device Name** of the system that requires repair.

4. Under the **Management** section in the right hand channel bar, click on "**Remote Control**.

5. In the **Remote Services** section, select **Intel® AMT** for the **Service** drop down menu.

6. Select the **IDE Redirection** option.

7. Select the Terabyte for DOS boot image and click **Yes** to reboot.

8. Press the Enter key when prompted.

Step 2: Restore a Backup Image

1. Select **Restore** from the Terabyte **Image for DOS** main menu, and then select **Next.**

2. Select **Automatic,** and then select **Next**.

3. Select **File (Direct),** and then select **Next**.

4. Select **BIOS (Direct),** and then select **Next**.

5. Select the hard drive that contains the backup image, and then select **Next**.

6. Select the partition that contains the backup image, and then select **Next**.

7. Select the backup image to restore from, and then select **Next**.

8. Select the partitions you want to restore, and then select **Next**.

9. Select **Yes** to confirm.

10. Select **Start** to begin the restore process.

11. When the restoration process completes, select **OK** and press **Enter**.

12. Access the Intel AMT console and reboot the computer.

Conclusion

Intel vPro technology extends the management capabilities of Level Platforms Managed Workplace. It enables Managed Workplace to better discover, analyze, maintain and manage computer systems, particularly in low-power and power-off states. For managed-service providers, this extended functionality translates into better discovery and inventory of customer computers, more effective resolution of customer computer problems with fewer onsite visits, and allows them to provide richer ongoing management and power optimization offerings to clients. As the use cases outlined in this document illustrate, upgrading customers to hardware running on Intel vPro technology-enabled processors can reduce MSP operating costs and open new, profitable venues of customer service.

Related Links

For more information about Intel Active Management Technology (Intel AMT), a feature of the all new 2012 Intel Core vPro Processor Family with cost-saving manageability, visit:
http://www.intel.com/content/www/us/en/architecture-and-technology/intel-active-management-technology.html

For more information about Level Platforms Managed Workplace, and to try it for free, visit:
http://www.levelplatforms.com.

For more information on how Level Platforms Managed Workplace leverages Intel vPro technology, visit:
http://www.levelplatforms.com/Product/Out-of-Band_Management.aspx.