



Guide to Common Uses

Remote PC Monitoring and Management using SyAM Software* System Area Manager alongside Intel® Centrino® with vPro™ Technology and Intel® Core™ 2 processors with vPro™ Technology.

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Introduction

Common Uses for SyAM Software™ System Area Manager + Intel® Centrino® with vPro™ Technology and Intel® Core™ 2 processors with vPro™ Technology.

Intel® vPro™ technology, available with select Intel® Core™ 2 processors and Intel® Centrino® processor technology, extends the remote management capabilities of SyAM Software*System Area Manager enabling it to better discover, analyze, and manage desktops and laptops, even in low-power and power-off states. These extended remote management capabilities translate into lower overhead for organizations, as well as a broader array of services that IT managers can offer their current users.

This paper illustrates how to use SyAM Software System Area Manager remote management software with desktops and laptops equipped with Intel vPro technology in several common scenarios. In doing so, this paper shows organizations how to lower administrative overhead and increase the level of service they can offer their users.

Setup and Assumptions

| | |
|--------------------------|---|
| Software | <ul style="list-style-type: none">• SyAM Software™ System Area Manager v3.40.00• SyAM Software™ System Client v3.40 |
| Hardware | <ul style="list-style-type: none">• Desktop computers with Intel® Core™ 2 processors with vPro™ technology• Laptop computers with Intel® Centrino® processor technology with vPro™ <p>NOTE: Intel® Active Management Technology requires the computer system to have an Intel(R) AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup of Intel AMT 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 or 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.</p> |
| Basic assumptions | <ol style="list-style-type: none">1. You have installed System Area Manager<ol style="list-style-type: none">a. The System Area Manager software can be installed on a desktop |

or server platform, it must have a Static IP Address on the LAN

- b. The System Area Manager console can be accessed through a web browser from any computer on the network using Internet Explorer or Firefox
 - c. The machine browsing to the System Area Manager console must have the Java run-time installed
2. You have scanned your network to discover clients running SyAM Software System Client software
 3. You have added clients by IP address
 4. You have configured the Intel AMT info in BIOS of your desktops and laptops equipped with Intel vPro technology [and configured wireless profiles]
 5. You have downloaded and installed SyAM Software* Management Utilities v4.x

Common Uses Covered in This Guide

- Patch Deployment
- BIOS Flashing
- BIOS Changes
- System Recovery from Corrupt NTLDR File
- Operating System Restore from System Image

Use Case 1: Patch Deployment

Routine updates are a necessary reality of managing a modern network environment. With security patches and operating system updates being an almost daily occurrence, streamlined management of this process is critical to keeping overhead costs down.

One roadblock to a streamlined management process has always been deploying patches and updates to computers that are powered off or in low-power states. In those cases, a desk-side visit has been unavoidable, as the computer must be returned to a powered-on state in order to deploy the patch or update.

By combining power management capabilities of Intel vPro technology with SyAM System Area Manager, this roadblock can now be removed, leading to the lowest possible overhead for patch and update deployment.

This use case walks you through the steps required to discover computers in the network that are powered off or in low-power states, and to bring them to full power states for patch or update deployment.

| | |
|--|---|
| Intel vPro technology Features Used | <ul style="list-style-type: none">• Remote control |
| Situation | The administrator has tested and is ready to deploy a Java patch to all client computers in the managed network. This patch requires a reboot. At least one of the target clients is turned off, requiring out-of-band management. |
| Use-case assumptions | <p>The target environment has client computers that have been turned off gracefully.</p> <p>The administrator user name and password are all the same on target clients.</p> <p>The desired patch has to be saved in the Utilities folder on the server where System Area Manager is installed.</p> |

Step 1: Establish System Area Manager Connections with the Target Computers

1. Browse to the SyAM System Area Manager Console.
2. Choose a target client from the left navigation, and select the **Remote Management** screen for it.
3. Click the **AMT** tab.
4. Ensure that the Intel AMT connection information is correct, and if not, enter the correct information:
 - a. Host name/IP Address.

- b. User name.
- c. Password.
- d. Click **Apply**.

Step 2: Turn On Powered-Off Computers

NOTE: When performing this step on notebook computers with Intel Centrino with vPro technology, these computers need to be connected to a local area network using the wired Ethernet connection.

1. Click **AMT Remote Control**:
 - a. Click **Establish AMT Connection**.
2. Select **Power On** and **Normal Boot**.
3. Click **Send Command** and confirm.
4. Repeat for all target clients in off states.

Step 3: Determine Which Computers Need the Update and Then Install It

1. Start SyAM Software Management Utility v4.x.
2. Choose to scan either by domain or network address and execute the scan.
3. Create a new installation list:
 - a. Click the drop-down box above the Installation List first and select **Create New**.
 - b. Name the list.
 - c. Select all target systems for that list.
 - d. Click **Add to Install List**.
4. Select the **SyAM Installation Settings** tab:
 - a. If populated; click **Clear** to remove the SyAM Client executable from the path to installation package field.
 - b. Check the **Agent with local interface** option.
5. Select the **Third Party Installation Settings** tab.
6. Indicate patches and updates to install:
 - a. Under the **Microsoft Update Scan** section, click **Scan**.
 - b. Review the Microsoft Update Scan Summary and click **Download Files**.
 - c. You may click the **Download Status** button to view the download progress.
 - d. Select the updates you would like to install by checking the boxes.
 - e. Click **Add to Install List**.
 - f. Check the box to copy file locally before installing.
7. Go to **Authentication** tab.
8. Check box for **Install as local system**.
9. Go to **Installation** tab.
10. Select your list.
11. Click **install**.
12. View results in the **Installation History** pane.
13. If reboot required, go to **Power Management** tab.
14. Select the appropriate list.

15. Select **Shut Down** from **Power Management Schedule Settings** and indicate the execute time.
16. Click **Send Power Scheduler Settings**.
17. Close the utility.

Step 4: Verify That the Patch Went Out

1. Return to the SyAM System Area Manager 3.40.00 console.
2. Select your target system(s).
3. Use **Software** page to verify that the patch installed.
4. Use **Remote Management** tab to return applicable computers to power off state using graceful power off.

End of Use Case 1

Use Case 2: BIOS Flash

A common support scenario faced by IT administrators is the need to upgrade, or flash, a computer's BIOS. This need may be driven by new hardware or operating system requirements. A common recent example is the need to update the computer's Advanced Configuration and Power interface (ACPI) to provide compliance with Windows Vista*.

This scenario is difficult to field remotely, as it requires operating the computer in a non-Windows* environment; typically requiring that the computer be booted from a boot disk. In such scenarios, the IT administrator is forced to make a desk-side visit, increasing the cost of support and issue resolution time.

By applying the remote control features of Intel vPro technology, SyAM System Area Manager can enable an IT administrator to boot the computer from a boot disk remotely. This eliminates the need for the desk-side visit, and keeps costs and resolution times low.

This use case walks you through the steps required to check and update a computer's BIOS.

| | |
|--|--|
| Intel vPro technology Features Used | <ul style="list-style-type: none">• Remote control• Serial over LAN (SOL)• IDE Redirect |
| Situation | The BIOS of a managed computer needs to be updated |
| Use-case assumptions | The target computer is in an off state (yet plugged in) The administrator is using a normal BIOS update with a same or newer BIOS version |

Step 1: Check BIOS

1. Browse to the SyAM System Area Manager3.40.00 console
2. Choose a target client from the left navigation, and select the System Icon for it
3. Scroll down the screen to System **Information** > **Board** > **BIOS** section.
4. Look at release date and version and see if the BIOS needs to be updated.

Step 2: Configure SyAM to Update BIOS

1. Return to the SyAM Software System Area Manager console.
2. Select the target system.
3. Mount boot disks and start the computer:

- a. Go to the **AMT Remote Control** tab.
- b. Click **Establish AMT Connection**.
- c. Select **Power On**.
- d. Select **Enable IDE Redirect**. (**Launch SOL Session** is a dependency that will auto-select)
- e. Under **Floppy Drive**, enter the path to the necessary floppy emulation **Image** (for example, **c:\bootdisk\win98sec.img**).
- f. Under **CD/DVD Drive**, enter the path to the necessary BIOS update ISO **Image** (for example, **c:\bootdisk\co5953p.iso**).
- g. Under **Select Boot Disk**, select **CD/DVD**.

Step 3: Initiate BIOS Update

1. On **AMT Remote Control** tab, click **Send Command**.
 - a. Click **Ok** to confirm.
2. Click on the SOL window to activate it (in browser—AMT Remote Control tab).
3. Wait for the boot screen start.
4. If prompted, push any key within time frame allotted to enter the BIOS setup.
5. Run the BIOS update utility for your particular motherboard.

Step 4: Confirm That the BIOS Update Was Successful

6. Confirm that the BIOS upgrade was successful.
7. Click **Close SOL session**.

End of Use Case 2

Use Case 3: BIOS Changes

Another common support scenario faced by IT administrators is the need to change a computer's BIOS settings. An example may be a user attempting to use a USB device on an older computer that does not have USB support enabled in the BIOS by default.

This scenario is difficult to field remotely, as it requires operating the computer in the BIOS—a non-Windows environment. In such scenarios, the IT administrator is forced to make a desk-side visit, increasing the cost of support and issue resolution time.

By using the remote control features of Intel vPro technology, SyAM System Area Manager can enable an IT administrator to boot the computer into the BIOS environment. This eliminates the need for the desk-side visit, and keeps costs and resolution times low.

This use case walks you through the steps required to change a computer's BIOS to enable USB support.

| | |
|--|---|
| Intel vPro technology Features Used | <ul style="list-style-type: none">• SOL• Power Reset |
| Situation | The administrator needs to make changes to the BIOS settings on a target computer |
| Use-case assumptions | None |

Step 1: Change the BIOS Settings on the Target Computer

1. Browse to the SyAM System Area Manager 3.40.00 console.
2. Choose a target client from the left navigation, and select the **Remote Management** screen for it.
3. Select the **AMT** tab.
4. Go to the **AMT Remote Control** tab:
 - a. Click **Establish AMT Connection**.
 - b. Select **Power On/Reset**.
 - c. Select **Enter BIOS Setup** (Launch SOL Session is a dependency that will auto-select).
5. On **AMT Remote Control** tab, click **Send Command**.
 - a. Click **Ok** to confirm.
6. Click on the SOL window to activate it.
7. On the BIOS screen make desired changes:
 - a. Look for USB Interface or a similar setting in the Advanced Setup, Peripheral Configuration, or another section of your computer BIOS settings.

- b. Follow the onscreen instructions or read the computer documentation to enable the USB port.
 - c. Follow the onscreen instructions to save the new settings and restart the computer.
8. Save BIOS changes and exit.
9. Click **Close SOL session**.

Step 2: Confirm That the BIOS Change Was Successful

1. Verify that the target computer has rebooted:
 - a. Open SyAM Web console.
 - b. Select updated system **Remote Management**.
 - c. View system state.
2. Verify that target computer recognizes a USB device.

End of Use Case 3

Use Case 4: System Recovery from Corrupt NTLDR File

IT department support costs are directly related to the percentage of support incidents that are handled remotely during the first call for support. While SyAM System Area Manager is designed to help organizations achieve a high first-call resolution rate, by coupling SyAM System Area Manager with the capabilities of desktops and laptops with Intel vPro technology, organizations can see first-call resolution rates climb dramatically, resulting in lower overhead and increased user satisfaction.

The remote diagnostic and repair capabilities that Intel vPro technology, available with select Intel Core 2 processors and Intel Centrino processor technology, adds to SyAM, particularly for computers that are powered off or in low-power states, lets organizations fix more support issues remotely. Furthermore, when desk-side visits are required, it empowers IT staff to go forearmed with an accurate diagnosis.

The following use cases show you how to take advantage of the remote diagnostic and repair capabilities of desktops and laptops with Intel vPro technology in situations commonly faced by IT organizations today.

| | |
|--|--|
| Intel vPro technology Features Used | <ul style="list-style-type: none">• SOL• IDE Redirect• Power Management |
| Situation | <p>The administrator is faced with a system that won't reboot; the screen "reads NTLDR is missing"</p> <p>In the real world, such a situation might arise from users opening a malicious e-mail that deletes or corrupts C:\NTLDR on their computers</p> |
| Use-case assumptions | The administrator has proper recovery tools (such as access to the NTLDR file) |

Step 1: Confirm the Boot Error

1. Browse to the SyAM System Area Manager 3.40.00 console.
2. Choose a target client from the left navigation, and select the **Remote Management** screen for it.
3. Go to the **AMT** tab.
4. Go to the **AMT Remote Control** tab:
 - a. Click **Establish AMT Connection**.
 - b. Select **Power Reset** and **Normal Boot**.
 - c. Select **Launch SOL Session**.
5. Click **Send Command**.

6. Click on the SOL window to activate it (in browser—AMT Remote Control tab).
7. Watch the target computer attempt to boot and confirm that NTLDR is missing (that is, replicate the issue).
8. Click **Close SOL session**.

Step 2: Replace NTLDR with Known Good Version

1. Determine the version of NTLDR required:
 - a. Look at the report archive or hardware audit records to determine this.
2. Mount boot disks and boot the computer:
 - a. Go to the **AMT Remote Control** tab.
 - b. Select **Power Reset**.
 - h. Select **IDE Redirect**. (**Launch SOL Session** is a dependency that will auto-select)
 - c. Under **Floppy Drive**, enter the path to the necessary floppy emulation **Image** (for example, `c:\bootdisk\win98sec.img`—this image provides NTFS drivers).
 - d. Under **CD/DVD Drive**, enter the path to the necessary recovery tools **Image** with the replacement boot loader image. (for example, `c:\bootdisk\itic\dos.iso`).
 - e. Under **Select Boot Disk**, select **CD/DVD**.
 - f. Click **Send Command**.
3. Click on the SOL window to activate it.
4. From the target computer command line, confirm that there is no NTLDR on the target computer (for example: `c:\>dir /ahr`).
5. From the target computer command line, copy NTLDR from mounted ISO to target computer (for example: `c:\>copy a:\ntldr c:\`).
6. Click **Close SOL session**

Note: An alternate method of resolving this issue is to use the mounted Windows image from Step 2 to run the Windows Repair function.

Step 3: Confirm that Windows Boots Normally

1. Reboot computer
2. Confirm that Windows starts normally.

End of Use Case 4

Use Case 5: Restoring the Operating System

Occasionally IT administrators face an operating system error that cannot be repaired. In these cases, restoring the operating system from an archived system image is the only option.

Since remote control via SyAM System Area Manager alone requires Windows to boot normally, front-line support staff who face such situations on yesterday's PCs cannot resolve this issue. It must be promoted to a higher level of support, requiring a desk-side visit.

However, if the environment is equipped with desktops or laptops with Intel vPro technology, SyAM System Area Manager can now enable front-line support staff to access a pre-boot environment, such as that provided by the popular system imaging software Norton Ghost*, for repair of this problem. This results in a first-call resolution for this common issue, reducing costs and increasing user satisfaction.

This use case shows how SyAM System Area Manager uses Intel vPro technology to restore the operating system from an archived Norton Ghost system image.

| Intel vPro technology Features Used | <ul style="list-style-type: none"> • Serial over LAN (SOL) • IDE Redirect • Power Management | | | | |
|--|---|---------|----------|--|--|
| Situation | <p>The administrator needs to restore a user's operating system after the user's system suffers a blue screen of death.</p> | | | | |
| Use-case assumptions | <p>The administrator has created an additional, FAT32-based primary partition on the target computer with Intel vPro technology that houses the bootable backup image of the operating system generated by the Ghost utility.</p> <p>To create the desired Ghost image with Ghost version 7.0, type the following on the command line of the target computer:</p> <pre>a:\ghost.exe -clone, mode=pdump, src=1:1, dst=c:\<name of image>.gho:1 -auto -span -sure</pre> <p>Note: The Ghost floppy disk contains an MS-DOS boot disk with Ghost version 7.0 on it. Because Ghost is GUI-based, you cannot view them through the Intel AMT SOL interface, you must provide the complete command to perform imaging in Ghost.</p> | | | | |
| | <table border="1"> <thead> <tr> <th data-bbox="488 1730 786 1791">Command</th> <th data-bbox="786 1730 1443 1791">Function</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table> | Command | Function | | |
| Command | Function | | | | |
| | | | | | |

| | |
|-------------------------------|---|
| mode=pdump | Performs the partition dump (this creates the image). |
| src=1:1 | The image source equals disk 1, partition 1. |
| dst=c:\<image filename>.gho:1 | The destination of the image file is the FAT32 data drive created. (Note: This is C:\ as opposed to the D:\ shown in the Computer Management GUI because DOS cannot see the NTFS partition. "1" specifies partition 1 of the image. |
| auto | Automatically name span images. |
| sure | Avoids prompts. |

Step 1: Boot the Target Computer from the Bootable Ghost Floppy Image

1. Browse to the SyAM System Area Manager 3.40.00 console.
2. Choose a target client from the left navigation, and select the **Remote Management** screen for it.
3. Connect through AMT and boot the system:
 - a. Click on the **AMT** tab and then go to the **AMT Remote Control** tab.
 - b. Click **Establish AMT Connection**.
 - c. Select **Power Reset**.
 - d. Select **Normal Boot**.
 - e. Select **Enable IDE Redirect**. (**Launch SOL Session** is a dependency that will auto-select)
 - f. Under **Floppy Drive**, enter the path to the necessary **Image** (for example, **c:\Ghost7.img**).
 - g. Under **CD/DVD Drive**, enter the path to the physical CDROM drive.
 - h. Under **Select Boot Disk**, select **Floppy Disk**.
 - i. Click **Send Command** and then click **OK**.
 - j. Click **on the SOL** window to activate it.

Step 2: Map a Drive To the Network Share Containing the Ghost Image

1. Follow the Ghost boot instructions.
2. At the command prompt type: **net use [drive letter]: [share name]** (for example, net use g:[\\server-share\ghostimages](#)).

Step 3: Execute the Ghost Command To Restore the Image

Note: The Ghost floppy disk contains an MS-DOS boot disk with Ghost version 7.0 on it. Because Ghost is GUI-based, you cannot view them through the Intel AMT SOL interface, you must provide the complete command to perform image restoration in Ghost.

1. To restore the Ghost image remotely, type the following on the DOS command prompt:
 - a. `a:\ghost.exe -clone, mode=pload, src=c:\<name of image>.gho:1, dst=1:1 -auto -span -sure` where mode=pload performs a partition load (this restores the image).
 - b. **Note:** While Ghost is restoring the image, you may not see an action taking place in the SOL session window.
2. Once the Ghost operation is complete you will get the A:\> prompt back in the SOL session window.
3. Click **Close SOL session** on System Area Manager.
4. Restart the target computer using the AMT Remote Power Reset to complete the restoration process.
 - a. Click on the **AMT** tab and the go to the **AMT Remote Control** tab.
 - b. Click **Establish AMT Connection**.
 - c. Select **Power Reset**.
 - d. Select **Normal Boot**.
 - e. Select **Launch SOL Session**.
5. Verify that the computer boots correctly with the recently applied Ghost Image.
6. Click **Close SOL session** on System Area Manager.

End of Use Case 5

Conclusion

Desktops and laptops with Intel vPro technology extend the remote management capabilities of SyAM Software System Area Manager and allow those who want to manage their network assets to better discover, analyze, and manage computer systems, particularly in low-power and power-off states. For managed-service providers this extended functionality translates into the ability to first better discover and enumerate customer computers and second deal with customer computer problems with fewer truck rolls. As the common use cases outline in this document illustrated, upgrading customers to desktops and laptops with Intel vPro technology can reduce MSP operating costs and open new, profitable venues of customer service.

Related Links

- For more information about Intel Centrino with vPro technology and Intel Core 2 processors with vPro technology, visit: http://www.intel.com/technology/platform-technology/intel-amt/index.htm?iid=tech_pt+body_iamt.
- For more information on Intel AMT Commander, as well as other developer tools, visit: <http://softwarecommunity.intel.com/articles/eng/1034.htm>.
- For more information about SyAM Software and System Area Manager, visit: <http://www.syamsoftware.com>.
- To download the SyAM Software products, visit: <http://www.syamsoftware.com/downloads>
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