



# **Intel<sup>®</sup> LANDesk<sup>®</sup> Client Manager 6.3**

*Administrator's Guide*

**Copyright © 2002, Intel Corporation. All rights reserved.**

Intel Corporation  
5200 N. E. Elam Young Parkway  
Hillsboro, Oregon 97124-6497

Intel Corporation assumes no responsibility for errors or omissions in this document. Nor does Intel make any commitment to update the information contained herein.

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications.

Intel, LANDesk, Pentium, Celeron, Xeon, and InBusiness are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Alert on LAN technology is a result of the Intel-IBM Advanced Manageability Alliance and is a trademark of International Business Machines Corporation.

Wake on LAN is a trademark of International Business Machines Corporation.

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

# Contents

---

Introducing Client Manager 6.3.....	5
About Intel® LANDesk® Client Manager 6.3 (administrator version).....	5
What's new in Client Manager 6.3.....	6
Total Cost of Ownership (TCO).....	6
Client Manager documentation.....	7
System requirements.....	8
Running Client Manager Setup.....	8
Managing computers.....	11
Selecting a computer to manage.....	11
Discovering new computers.....	11
Adding new computers.....	12
Removing a computer from the list.....	13
Toolbar icons.....	13
Computer status icons.....	14
Refreshing the computer list.....	15
Displaying computer properties.....	15
Filtering the display list.....	16
Connecting to a computer from any browser.....	17
Transferring files to computers.....	18
Downloading and installing packages.....	18
Remotely flashing a managed computer's BIOS.....	19
Managing a computer that uses an older Client Manager version.....	20
Using the inventory.....	21
Using inventory data.....	21
Viewing inventory data.....	22
Exporting inventory data.....	22
Using inventory reports.....	23
Viewing CIM information.....	25
Viewing DMI information.....	26
Installed Applications.....	27
Asset Management.....	28
Mobile battery.....	29
BIOS.....	30
Computer Summary.....	30
Drives.....	31
Fans.....	32
Keyboard/Mouse.....	33
Memory.....	34
Motherboard.....	35
Multimedia.....	36
Network.....	37
Operating System.....	38
I/O Ports.....	39
Voltages.....	40
Processor.....	41
System Resources.....	42
Video/Monitor.....	42
Monitoring computer health.....	45
Monitoring health.....	45

Using the Client Manager taskbar icon .....	46
Configuring and viewing alerts.....	47
Configuring alerts.....	47
Viewing the notification log.....	50
Using the notification monitor .....	51
Monitoring configuration changes.....	52
Using SNMP .....	53
Using Alert Management System <sup>2</sup> .....	54
Using Alert on LAN .....	54
Configuring Alert on LAN events .....	56
Performing Alert on LAN actions .....	57
Power management.....	59
Remotely rebooting a computer .....	59
Remotely powering off a computer.....	60
Remotely powering on a computer.....	60
Client Manager accounts .....	63
Adding new user accounts .....	63
Editing, deleting, or disabling user accounts .....	64
Displaying user properties .....	64
Reference information.....	67
Converting Celsius to Fahrenheit .....	67
Client Manager error messages .....	68
Glossary.....	72
Installing SNMP on Windows NT.....	81
Installing SNMP on Windows 2000 or XP .....	81
Installing SNMP on Windows 98 Second Edition .....	82
Integrating Client Manager with MMC .....	82
Manually removing Client Manager from Windows 98/Me/NT/2000/XP .....	83
Windows services .....	85
Release notes .....	87
Client Manager 6.3 release notes.....	87

# Introducing Client Manager 6.3

---

## About Intel® LANDesk® Client Manager 6.3 (administrator version)

With the growth of the computer industry, computer systems have become more complex and difficult to manage. The time spent maintaining and repairing a computer over its years of operation can increase its [Total Cost of Ownership \(TCO\)](#) beyond the initial purchase price.

Intel® LANDesk® Client Manager can help reduce TCO by making it easier to manage a computer and troubleshoot common computer problems. Use Client Manager to:

- [View system inventory](#)—Client Manager provides extensive information about the computer's hardware and software configuration.
- [Monitor a computer's health](#)—Client Manager reports when the computer is in a warning or critical health state based on several health contributors such as temperature, voltage, free memory, and disk space.
- [Receive alerts for system events](#)—Client Manager uses up to four alert methods to notify you of problems.
- [Remotely power off, power on, and reboot client computers](#)—Client Manager enables remote power management from the administrator console.
- [Monitor configuration changes](#)—Client Manager can generate alerts if a computer's hardware or software configuration changes. For example, you might want to know if memory is removed from a computer or if a certain application is installed.

### Client vs. administrator versions

Client Manager has two different management consoles that you can install: a client (single, end-user) console and an administrator (multi-node manager) console.

- **Client**—The client version enables an end user to view information and manage alerts for a local computer. This version doesn't permit a user to select and view remote computers, or power on/off other computers.
- **Administrator**—The administrator version enables you to manage remote client computers on the network. This means you can view information, generate reports, receive alerts, and power on/off other computers remotely. To remotely reboot, power off, or power on client computers, the administrator version must be installed on at least one computer that is attached to the network. The administrator console is not designed to be a mobile management console. If its IP address changes (because it has been moved to another subnet on the network), you must refresh the Select Computer list to continue using the administrator console to manage client computers. The best way to manage client computers from multiple locations is to connect to your administrator console via [Internet Explorer 5.5 from various computers on your network](#).

If you want to manage your own computer as well as other computers, you can install both the client and administrator versions on your computer at the same time by choosing the "Full" option during installation.

**Note**—Because Client Manager 6.3 runs in Internet Explorer, TCP/IP must be installed on your computer.

## What's new in Client Manager 6.3

Some of the more significant changes added to the Client Manager 6.3 release are:

- **Support for the Fast-User Switching feature of Windows XP**—If a Fast-User-Switching-enabled client computer is being remotely rebooted or shut down, all users currently logged on will receive notification that the administrator wants to perform an action on the computer.
- **Support for additional hardware**—Client Manager now supports Heceta 6-compliant ASICs by adding integrated, hardware-based fan control and fan monitoring. Client Manager 6.3 also supports fan speed monitoring for Super I/O chips.
- **Ability to monitor configuration changes**—Client Manager can generate alerts if a client computer's hardware or software configuration changes. By monitoring vital pieces of the computer, Client Manager can help you reduce total cost of ownership (TCO).
- **Ability to run inventory reports on selected computers and then perform actions**—Use Client Manager to generate inventory reports for selected computers. With the Copy Selection feature, you can then use Client Manager to immediately perform actions on the computers in the report.
- **Ability to remotely flash a BIOS**—Use Client Manager's Install Package feature to remotely update the BIOS on your managed computers. Client Manager uses the Intel Bootstrap Agent (BSA) and an Intel signed package to copy the new BIOS to the client. (BSA is installed automatically with the Client Manager client.)

## Total Cost of Ownership (TCO)

Client Manager helps reduce the total cost of owning a computer by providing basic management technologies in three key areas: computer health, alerting, and remote computer management.

### Computer health

Improper maintenance of computers can lead to emergency repairs. This tends to increase TCO by:

- Creating down time for computer users
- Creating emergency situations that require immediate attention

Use Client Manager's health feature to anticipate and schedule certain maintenance tasks so they don't result in down time or interfere with other time-sensitive work.

Client Manager uses a simple three-icon health meter to indicate the computer's health status:

 Normal

 Warning

 Critical

Client Manager determines a computer's health by monitoring critical operating functions, such as available hard drive space, available memory, temperature, and voltage. When a health event occurs (such as low disk space), the health status changes to reflect the severity of the event. A Notification Monitor in the bottom right corner of your screen warns you of the event. A notification log also keeps track of notifications from Client Manager. This early warning system can notify you of needed maintenance tasks before they become emergencies.

## Alerting

Alerting plays an important role in helping to reduce TCO. The early warnings provided by Client Manager enable you to resolve problems as soon as they arise, or even before they arise.

When a problem or other event occurs on a computer (for example, it's running low on disk space or the case has been opened), Client Manager can notify you of the event by performing one or more [alert actions](#).

Client Manager can also generate alerts if a computer's hardware or software configuration changes. For example, you might want to know if memory is removed from a computer or if a certain application is installed.

## Remote computer management

Client Manager also helps reduce TCO by eliminating much of the travel time walking to remote computers. Depending on the layout of your network and organization, you can spend considerable time walking to computers before learning the nature of the problem or the computer's hardware and software configuration.

Client Manager eliminates much of the walking around by enabling you to view detailed [inventory information](#) or create reports, [transfer files](#) such as new device drivers, and remotely [reboot](#), [power off](#), and [power on](#) the computer.

## Client Manager documentation

Intel® LANDesk® Client Manager documentation is available in three formats. Choose the format that is most convenient for you. The information is the same in each format.

- **HTML online help**—The online help (and the Client Manager product) requires TCP/IP and Internet Explorer 5.5 or later. You can print selected topics from the online help by displaying the topic and clicking **File | Print**. If you want to print all of the documentation as a book, use one of the formats listed below.
- **Microsoft Word 97 or later**—This is an electronic printable format that requires Microsoft Word\* 97 or later. The User's Guide is named **enuLDCMc.doc** and covers the client-only installation. The Administrator's Guide is named **enuLDCMa.doc** and covers both client and administrator installations. Depending on the type of installation you perform (client, administrator, or full), the appropriate .DOC file is installed in the Program Files\Intel\Ldcm\wwwRoot\Help directory.
- **Adobe Acrobat .PDF format**—This is an electronic printable format that requires Adobe Acrobat\* Reader. (The latest free version of Adobe Acrobat Reader can be downloaded from <http://www.adobe.com>.) If Adobe Acrobat Reader is installed, you can access the guide from the Windows Start menu by clicking **Programs | Intel LANDesk Management | Client Manager | User's Guide** (or **Administrator's Guide**). The User's Guide is named **enuLDCMc.PDF**. The Administrator's Guide is named **enuLDCMa.PDF**.

Depending on the type of installation you perform (client, administrator, or full), the appropriate .PDF file is installed in the Program Files\Intel\Ldcm\wwwRoot\Help directory.

## System requirements

To run Client Manager on your network, the administrator and client computers must comply with these system requirements.

### Administrator computers

- Windows\* 2000 or Windows XP for the administrator console
- 64 MB of RAM for Windows 2000, 128 MB of RAM for Windows XP

### Client computers

- Windows 98 Second Edition, Windows Me, Windows NT\* 4.x (Service Pack 6a or later), Windows 2000, or Windows XP for the client console
- 24 MB of RAM for Windows 98 Second Edition, 32 MB of RAM for Windows Me or Windows NT, 64 MB of RAM for Windows 2000, 128 MB of RAM for Windows XP

### Administrator and client computers

- Intel® Pentium® microprocessor or higher
- 100 MB of available hard disk space to install
- 40-100 MB of available hard disk space to run (depending on cluster size)
- TCP/IP
- A network adapter or modem connection
- Internet Explorer 5.5 or later
- A monitor resolution of 1024x768, 256 colors or greater is recommended

## Running Client Manager Setup

Using a single Client Manager Setup program, you can install the client software, the administrator software, or both. If you want to install both the client and administrator versions, the best solution is to perform one installation and select Full on the Setup Type screen. Alternatively, you can install the client version and then install the administrator version at a later time (without uninstalling the client version).

**Note**—Client Manager Setup does not support installing the client-only version on a computer after an administrator version has been installed.

### About the administrator version

Client Manager clients are configured to acknowledge no more than five administrator computers. If a new administrator computer discovers the client computer after this maximum has been reached, the oldest administrator to register with the client is removed from the list, and the new administrator is added.



Because you can connect to any administrator computer [from any browser on the network](#), it isn't likely that you'll need to set up more than five administrator consoles on your network.

## Running Setup

During Setup, Client Manager attempts to auto-detect the hardware configuration of the computer and install the appropriate hardware configuration file from the \ASICCfg directory. If Setup is unable to detect a hardware configuration but only one configuration file is present, Client Manager automatically installs the hardware configuration file present in the \ASICCfg directory. If Setup is unable to detect a hardware configuration and multiple configuration files are present, you will be asked to select the hardware configuration you want to use.

**Note**—If your network uses a proxy server to connect to the Internet, Client Manager must be able to bypass the network's proxy server for local (intranet) communication. To set this up: in Internet Explorer 5.5, click **Tools | Internet Options** and the **Connections** tab. Click **LAN Settings**. If "Use a proxy server" is selected, you must also select **Bypass proxy server for local addresses**..

### To run Client Manager Setup

1. Log on as Administrator or equivalent (if installing on Windows NT).
2. From the Client Manager CD, run **SETUP.EXE** and follow the instructions on your monitor.

## Hiding the client interface (stealth installation)

A stealth installation disables or "hides" the client user interface. This type of installation enables the Client Manager administrator to manage the client computer without providing the management interface on the client.

### To perform a "stealth" installation of Client Manager

1. At the client computer, log on as Administrator or equivalent (if installing on Windows NT).
2. From a command prompt, type **SETUP.EXE STEALTH** in the directory where the client installation is located.
3. Complete the Client Manager installation.

## Uninstalling Client Manager

1. On the Windows Start menu, click **Settings | Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **Intel LANDesk Client Manager 6.3** and click **Add/Remove**.
4. When prompted, click **Yes**.
5. When Uninstall is finished, reboot the computer.



# Managing computers

---

## Selecting a computer to manage

The Select Computer page features a list of Client Manager computers on the network and a [toolbar](#) you can use for managing those computers. The first time you run the Client Manager administrator, it searches your network for computers running the Client Manager client software (version 6.0 and above). Client Manager creates a list of the computers it finds and saves the list. (The recommendation is no more than 200 computers in any one list.) From this point on, when you run Client Manager or open the Select Computer page, Client Manager checks to see if these computers are available and healthy.

**Important note**—The administrator console is not designed to be a mobile management console. If its IP address changes (because it has been moved to another subnet on the network), you must refresh the Select Computer list to continue using the administrator console to manage client computers. The best way to manage client computers from multiple locations is to connect to your administrator console via [an Internet Explorer browser from various computers on your network](#).

The Select Computer list includes the following information about each computer:

- **Computer name**—The Windows computer name.
- **Status**—The health and availability [status](#) of the computer. This can be normal, warning, critical, unknown, unavailable, or wake pending.
- **Startup time**—The time the computer booted.
- **Version**—The version of Client Manager that the computer is running.

You can sort the Select Computer list by clicking the column heading for the category you want to sort by.

### To select a computer to manage

1. From the main Client Manager page, click **Select Computer**.
2. In the Select Computer list, click the computer you want to manage. Click the plus (+) sign next to the computer name to view properties specific to that computer.


## Discovering new computers

The list of computers discovered on the network can become outdated as computers are added and removed from the network. Use Client Manager to update this list by performing another discovery of computers on the network. If you find that discovery isn't working as expected, ensure that your [routers are correctly configured](#) for this feature.


The Select Computer list can discover and display a maximum of 512 computers. (Depending on network bandwidth and the administrator computer's OS and available memory, this number may exceed practical limits. The recommendation is no more than 200 computers per administrator console.)

**Note**—The IP address 255.255.255.255 is a general network broadcast address used for your local network and is provided to simplify the task of local network discovery. If you prefer, you can delete it and replace it with the actual broadcast address for your local network.

### To discover new computers

1. From the main Client Manager page, click **Select Computer**.
2. Click **Discover**  on the toolbar.
3. In the **Enter a Broadcast Address** field, type an IP broadcast address (for example, 192.125.125.255) for the network where you want to discover computers.
4. Click **Add** to add the network address to the **Select broadcast addresses** list box.
5. Repeat these steps to add other network addresses to the list.
6. Select the network(s) where you want to discover computers. (Press the Ctrl key while clicking to select multiple networks.)
7. Click **Discover** to begin the discovery of computers on the networks listed.
8. If you want to save the network broadcast addresses so they're available the next time you run Client Manager, highlight the ones to save and click **Save**.
9. To close the Discover Computers page, click **Close**.

### To delete networks from the Discovery list

1. From the main Client Manager page, click **Select Computer**.
2. Click **Discover**  on the toolbar.
3. In the **Select broadcast addresses** list box, select the network address you want to remove from the list. (Press the Ctrl key while selecting to delete multiple network addresses.)
4. Click **Delete** to delete the network addresses.
5. Click **Save** to permanently remove the network address from the discovery list, the click **Close**.

**Note**—This action only removes networks from the Discovery list. Computers on those networks are not deleted from the Select Computer list (even if you click Discover after removing network addresses). To delete computers, select them in the Select Computer list and click **Delete**.


## Configuring your routers for discovery

If your network subnets are connected with routers, ensure that the routers are configured to handle directed UDP broadcasts. Otherwise, Client Manager's discovery will not work. On your routers, ensure that UDP port 9595 is available for broadcast discovery. For more information, review your router documentation.

## Adding new computers

In addition to the computers Client Manager discovers on entire network segments, you can add and manage specific computers on other networks. This is useful if you're assigned to manage one or two additional computers on a remote network, but you don't want to discover all of the computers on that network.


## To add new computers

1. From the main Client Manager page, click **Select Computer**.
2. Click **Add a computer**  on the toolbar.
3. In the Enter a Computer Address field, type the full [IP address](#) (for example, 192.125.125.15) of the computer you want to add.
4. Click **Add** to add the computer to the Select Computer list.

## Removing a computer from the list

When you remove a computer from the network, the name of that computer is not automatically removed from the Select Computer list.








### To remove a computer from the list











1. From the main Client Manager page, click **Select Computer**.
2. Click the checkbox next to the computer(s) you want to remove from the list.
3. Click **Delete**  on the toolbar.

**Note**—If you rediscover computers on a network after removing a computer from the list, that computer may be rediscovered.

## Toolbar icons

From the administrator console's Select Computer page, you can click any of the following toolbar icons to access Client Manager features.





Icon	Description
	<a href="#">Discovers</a> computers on the specified network.
	<a href="#">Adds a computer</a> to the list of computers on the network.
	<a href="#">Refreshes</a> the health status of known computers. If the status of computers in the list changes (for example from normal to warning, or warning to critical), click Refresh to update the computer information.
	* <a href="#">Removes</a> the selected computer(s) from the list of discovered computers.
	<a href="#">Generates predefined reports</a> from inventory data
	* <a href="#">Exports</a> inventory information in .CSV or HTML format for the selected computer(s).
	* <a href="#">Reboots</a> the selected computer(s).



	* <a href="#">Powers off</a> the selected computer(s).
	* <a href="#">Powers on</a> the selected computer(s).
	* <a href="#">Configures Alert on LAN</a> options for the selected computer(s).
	Enables you to perform corrective <a href="#">Alert on LAN actions</a> .
	*Connects to the selected computer(s) using <a href="#">Windows Explorer</a> .
	<a href="#">Downloads a package</a> to be installed on a computer.
	<a href="#">Installs a package</a> to a computer.
	<a href="#">Shows all</a> discovered computers.
	<a href="#">Shows only available</a> computers.
	<a href="#">Shows only unhealthy</a> computers.

\*Before you can click these options (marked with an asterisk), you must select at least one computer in the list to perform the action on.

## Computer status icons

On the Select Computer page, each computer in the list displays an icon indicating its current status. The table below describes the six states a computer can be in.

Icon	Description
	<b>Unavailable</b> —The computer is currently in a powered-off state or is disconnected from the network. (Unavailable computers remain in the Select Computer list until they are manually deleted.)
	<b>Wakeable</b> —The computer is currently in a powered-off state but supports <a href="#">Wake on LAN</a> technology.
	<b>Normal</b> —The computer is operating within normal tolerances.
	<b>Warning</b> —A computer that has exceeded a warning tolerance level. For example, if a hard disk is running low on available space, Client Manager displays a Warning icon. Some health contributors (such as disk space and memory) have thresholds that you can set.

	<p><b>Critical</b>—A computer that has exceeded a critical tolerance level. For example, if the hard disk is running critically low on available space, Client Manager displays a Critical icon. Some health contributors (such as disk space and memory) have thresholds that you can set.</p>
	<p><b>Unknown</b>—A computer that is powered on, but the health status (Normal, Warning, or Critical) is not known.</p>

The Wakeable status only occurs for computers that support Wake on LAN\* technology and have been manually configured to display a status of Wakeable when powered off. Unless specifically configured to [display the Wakeable status](#), all computers display a status of Unavailable when powered off.

## Refreshing the computer list




You can refresh the computer list on the Select Computer page in one of three ways:

- **Select Computer link**—Client Manager automatically takes a snapshot of your network every 15 minutes. By clicking the Select Computer link, you get the latest information from the snapshot, including the computer's properties and health status. This is the quickest way to update the computer list.
- **Discovery, Add, or Delete icons**—By performing one of these actions, the computer list is updated from the snapshot that Client Manager automatically takes of your network every 15 minutes.
- **Refresh icon**—If you need up-to-the-minute computer information, including changes to properties and health status, click the Refresh icon. This refresh method can take several minutes, depending on the number of client computers in the list. By clicking Refresh, Client Manager pings the network for all changes to computers in the list since the last snapshot. (When you manually refresh the list, this action also updates the computer's Startup time and version information if that has changed.)

### To refresh the computer list

- From the main Client Manager page, click **Select Computer**.

or

- Click **Discovery** , **Add** , or **Delete**  on the toolbar and complete the related action. Once you go back to the Selected Computer page, the computer list is updated.

or

- Click **Refresh**  on the toolbar.

## Displaying computer properties

You can quickly access basic information about a Client Manager computer by displaying its properties page. The properties information includes the following:

## General

- **Version**—The Client Manager version in this format: Major version.Minor version.Patch.Build number
- **Installed components**—The Client Manager components installed on the computer. "Client" refers to the software that displays and manages the local computer. "Administrator" refers to the software that displays and manages other computers on the network.

## Network

- **IP address**—The [IP address](#) of the selected computer.
- **IP broadcast address**—The IP address used by the selected computer for network broadcasts.
- **MAC address**—The hardware address of the selected computer's network adapter.
- **Management HTTP port**—The port address the [HTTP server](#) uses to access Client Manager. This number is automatically set during Client Manager installation, and is usually 6787. If another application is already using port 6787, a different port number is assigned during installation. The port number is useful when you want to connect to Client Manager computers [from any Internet Explorer 5.5 browser on the network](#).

## Operating System

- **Type**—The type of operating system installed on the selected computer (Windows 98 Second Edition, Windows Me, Windows NT, Windows 2000, and Windows XP are supported).
- **Version**—The operating system's version and service pack information.

### To display the properties of a client computer


1. From the main Client Manager page, click **Select Computer**.
2. Click the + icon to the left of the computer's name.

### To hide the properties of a client computer



1. From the main Client Manager page, click **Select Computer**.
2. Click the - icon to the left of the computer's name.

## Filtering the display list

The Select Computer page has filter icons you can use to determine which computers appear in the list.

Icon	Description
	<b>Show all computers</b> —Use this filter to view all computers that have been discovered on the network. This filter is useful when you want to see a list of all managed computers, or remotely power on computers that are unavailable.



	<b>Show only the available computers</b> —Use this filter to view all computers that are powered on. This filter is useful when you want to power down computers that are currently powered up, or manage only those computers that are already available.
	<b>Show only the unhealthy computers</b> —Use this filter to view computers that are currently unhealthy. This filter is useful when you want to resolve the problems reported by unhealthy computers.

## Connecting to a computer from any browser

You can manage and view information about Client Manager computers using a browser on any computer, even if that computer doesn't have Client Manager administrator installed. In order to do this, however, the following conditions must be met:

- The remote computer must have the Client Manager client software installed on it.
- The remote computer must be powered on and connected to the network.
- You must use a valid account that exists on the remote computer to connect to it.
- You must use Internet Explorer 5.5 (or later) on the computer where you are attempting to connect from.
- When connecting directly to a computer in this manner, you can only view the inventory information. You can't power on/off or reboot the computer, or access some of the other management functions. You can, however, connect to an administrator computer and use it to manage and power on/off the remote computer. To do this, you need a valid [account](#) on both the remote client and remote administrator computers.

### To connect to a client computer from a browser on the network

1. Open **Internet Explorer**.
2. In the Address window, type:

```
http://[computer name]:[port number]/index.tpc
```

The **[computer name]** is generally the Windows computer name. If you're using a [proxy server](#) to access the Internet, you may need to enter the full domain name, which you can find by right-clicking the Internet Explorer icon, clicking Properties, and then clicking the Connections tab.

The **[port number]** refers to the port number your browser uses to access Client Manager. Client Manager generally uses 6787. If this port number doesn't work, you may need to first determine the port number for the remote computer. (To do this, go to the remote computer, run Client Manager, and display the properties for the computer by clicking the + sign next to the computer name. Under Network, you'll find the Management HTTP Port.)

Here's an example of what you'd type if the computer name was MYCOMPUTER and the port was 6787:

```
http://MYCOMPUTER:6787/index.tpc
```

If you receive an error message "Internet Explorer cannot open the Internet site at http://**[computer name]:[port number]**/index.tpc," then either the computer name or port information is incorrect.

If you receive an error message "404 NOT FOUND -- The requested object was not found on this server," you may have mistyped the index.tpc portion of the address or there may be a problem with the remote installation of Client Manager.

### To connect to an administrator computer from a browser on the network


1. Open **Internet Explorer**.
2. In the Address window, type:

`http:// [computer name] : [port number] /index.tpc?ADMIN=1`

## Transferring files to computers

As you manage computers on the network, you may need to transfer (copy) files, such as updated device drivers, onto remote computers. Client Manager simplifies this task by launching the Windows Explorer and connecting to the remote computer you specify. Before you connect through Windows Explorer, make sure the drives or directories you want to access on that computer are shared. (Attempting to access a computer where no shares are created may delay Client Manager for several seconds while it searches for a share that doesn't exist.)

### To transfer a file through Windows Explorer

1. From the Client Manager main page, click **Select Computer**.
2. Click the checkbox next to the computer you want to connect to.
3. Click **Explore the selected computers**  on the toolbar.

## Downloading and installing packages

When downloading and installing packages to target computers, you can complete the package download and installation in one procedure, or you can download the package to the administrator computer, then install it on clients at a later date.


- [To download and install packages](#)
- [To download packages for installation at a later date](#)
- [To install packages at a later date](#)

## Overview


Use the Download Package page to download packages from an HTTP or HTTPS server onto the administrator computer. You can then install these packages to computers that have the Intel Bootstrap Agent (BSA) installed. BSA is installed with the Client Manager client software. Packages typically contain BIOS or driver updates and are digitally signed by Intel for security. Contact your manufacturer for digitally-signed packages.

Use the Install Package page to install a package on target computers selected from the Select Computer list. The list of packages you previously downloaded for installation onto clients is stored on the administrator computer.


## To download and install packages onto client computers

1. From the main Client Manager page, click **Select Computer**.
2. From the Select Computer list, click the check box next to each computer you want to download a package to.
3. Click **Download Packages**  on the toolbar.
4. Packages are stored on your manufacturer's HTTP or HTTPS Web site. Enter the URL to the .MFS file of the package you want to download. (Obtain this URL from your manufacturer.)
5. If your network uses a proxy server, click **Enable proxy**. Enter the proxy server information and any addresses that do not need to be accessed through a proxy server.
6. Click **Apply** to download the package and open the Install Package page.
7. On the Install Package page, select the package, then click **Apply** to begin installing it onto the targeted computers.

## To download packages for installation at a later date

1. Click **Download Packages**  on the toolbar.
2. Packages are stored on a URL. Enter the URL to the .MFS file of the package you want to download.
3. If your network uses a proxy server, click **Enable proxy**. Enter the proxy server information and any addresses that do not need to be accessed through a proxy server.
4. Click **Apply**.
5. On the Install Packages page, click **Close** to download the package to the administrator computer for future installation onto target computers.

## To install packages at a later date

1. From the main Client Manager page, click **Select Computer**.
2. From the Select Computer list, click the check box next to each computer you want to install the downloaded package to.
3. Click **Install Packages**  on the toolbar.
4. Select the package, then click **Apply** to begin installing it onto the targeted computers. Or, click **Close** to exit the window without installing the package onto client computers.

# Remotely flashing a managed computer's BIOS

You can use Client Manager's Install Package feature to update the BIOS on your managed computers. Client Manager uses the Intel Bootstrap Agent (BSA) to copy the BIOS update package to the client. (BSA is installed automatically with the Client Manager client.)

Once the client begins to install the BIOS update package, the package installation begins. The target client computers reboot into a special DOS mode that is part of the BIOS update package, the BIOS is flashed, and the clients are rebooted to start the normal operating system.

The BIOS update package must be created and digitally signed by Intel for this feature to work. To get a digitally signed BIOS flash package for the motherboard/BIOS revision you want, contact Intel or your OEM.


Exercise caution when flashing computer BIOSes:

- The BIOS is unique to a motherboard model, and sometimes specific revisions within a model. Be very careful that you flash the correct BIOS to the correct motherboard and motherboard revision.
- Some manufacturer's BIOS upgrades require a specific prior BIOS version. Skipping directly from one BIOS version to another can cause problems.
- Make sure the computer isn't in use when the BIOS upgrade is happening. The BIOS upgrade reboots the computer.
- If the BIOS flash is interrupted, either by a user or by something else such as a power failure, the computer being flashed might be rendered unusable.


Before flashing the BIOS, you should enter the CMOS/BIOS setup for the computers you are flashing and record the settings. Flashing the BIOS will often clear these settings.

After flashing the BIOS, if the motherboard manufacturer recommends re-entering the CMOS/BIOS setup and loading the CMOS/BIOS defaults, go ahead and do this. Once you've loaded the CMOS/BIOS defaults, apply the CMOS/BIOS settings you recorded earlier.

### To identify computers needing a BIOS update

1. Click **Run Report**  on the toolbar.
2. Select the computers you want to run the BIOS report on.
3. Select the BIOS report and click **Run**.
4. From the report, sort the results by the column header "BIOS Version" and select the computers with a motherboard manufacturer, BIOS type, and version matching the BIOS you want to flash.
5. Click **Copy Selection**.

### To download a BIOS update

1. Once you have selected the computers, either by running the report in the previous task or selecting them manually, click **Download Package**  on the toolbar.
2. Enter the URL for the digitally signed BIOS package's manifest file. Enter proxy settings if you need to. Click **Apply**.
3. At the Install Package page, verify the computers you selected are in the list and are the ones you want to flash. Click **Apply**.
4. Check the global or local logs for the BIOS flash status.

## Managing a computer that uses an older Client Manager version

The Client Manager 6.3 administrator can manage computers running Client Manager 6.0 to 6.3 client software. The Select Computer page displays the Client Manager version in the Version column. To manage a computer running an older version of Client Manager, simply click the computer link in the Select Computer page. This launches the 6.x client console on your computer.

# Using the inventory

---

## Using inventory data

Client Manager can display information about the hardware and software components on the computers you manage. You can access inventory with these methods:

- [View all inventory data](#) for a single computer
- [Export all inventory data](#) for a single computer or for selected computers
- [Use predefined inventory reports](#) to view selected inventory data for selected computers

### What kind of data is available?

The following list describes the information available in the default Client Manager inventory. Some components may not be available for some computers, depending on the computer's motherboard and the manufacturer's configuration of Client Manager.

- [Computer Summary](#)—Displays a summary of the computer's hardware and software information.
- [Asset Management](#)—Displays information (if provided) about the computer's user, such as name, phone number, department, location, and position. The computer name and an asset number may also be available.
- [Battery](#)—If the computer is a laptop running the Client Manager mobile options, battery information will be available.
- [BIOS](#)—Displays the [BIOS](#) manufacturer, version, date, and size.
- [Drives](#)—Displays the computer's available and used disk space, and the configured thresholds that trigger alerts if disk space is running low. The partition, [file system](#), cylinder, and sector information is also provided for each hard disk.
- [Installed Applications](#)—Displays a list of applications installed on the computer with version, date, filename, size, and path information.
- [Keyboard/Mouse](#)—Displays the type of keyboard and mouse the computer uses.
- [Memory](#)—Displays the computer's available and used memory (physical and virtual), sockets, and the configured thresholds that trigger alerts if memory is running low. Memory upgrade options are also provided.
- [Motherboard](#)—Displays motherboard manufacturer, model, current CPU speed, maximum CPU speed supported, and [system slot](#) information.
- [Multimedia](#)—Displays information about the computer's multimedia devices.
- [Network](#)—Displays information about the computer's network adapter and driver, [IP address](#) configuration, data statistics, and network connections.
- [Operating System](#)—Displays operating system and version information, Windows tasks, environment variables, and real mode device drivers.
- [Ports](#)—Displays the port name, [IRQ](#), [I/O address](#), and other information for the computer's [paralle](#)l and [serial ports](#).
- [Processor](#)—Displays processor, speed, socket, and cache information.
- [System Resources](#)—Displays the computer's IRQ settings, [DMA channels](#), input/output addresses, and memory addresses.
- [Video](#)—Displays information about the computer's monitor (if available), video adapter and driver, and supported video [resolutions](#).

## Viewing inventory data

Client Manager can display information about hardware and software components on the computers you manage. The type of data that is available is described in [Using the Inventory](#).

You can also:

- [Export all inventory data](#) for a single computer or for selected computers
- [Use predefined inventory reports](#) to view selected inventory data for selected computers

### To view inventory data

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

3. To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click any of the items.

## Exporting inventory data


Using Client Manager, you can export information about hardware and software components on the computers you manage. The type of data that is available is described in [Using the Inventory](#).

### Exporting from the administrator console

From the administrator console, you can export inventory data from selected computers to a comma separated values (.CSV) file. This inventory export contains all of the information available in the Client Manager inventory as configured by the original equipment manufacturer of the computer. Therefore, the contents can vary from computer to computer.

Because Client Manager gathers all of a computer's inventory information during an export, a single export process can sometimes take up to a minute or more. Performing an inventory export for several computers takes considerably longer. The operation takes place in the background, however, so you can continue to work in Client Manager while it gathers and exports the data.

### To export inventory data from multiple computers

1. Right-click the Client Manager [taskbar icon](#).
2. Click **Manage Computers**.
3. Log on using your Client Manager username and password.
4. In the left pane, click **Select Computer**.
5. Select the computers you want to manage by clicking the check boxes next to each computer name.
6. Click **Export**  on the toolbar. While Client Manager exports the information to a .CSV file, it displays the message "Client Manager has \_\_\_ of \_\_\_ exports left to process"

on the Windows taskbar. When it is finished, the message "Client Manager has finished exporting. All export files were saved in the \_\_\_\_ directory" appears.

You can import the .CSV file into another spreadsheet or database program that reads files in .CSV format.

## Exporting from the client console

As administrator, you can log on to an individual client computer and run an export for just that computer from the client console. Client Manager end-users have the same options.

Because Client Manager gathers all of a computer's inventory information during an export, the export process can sometimes take up to a minute or more.

When exporting inventory data for a single computer from the client console, you can choose from these formats:

- **Comma Separated Values (.CSV) file**—This format is useful for importing into other database or spreadsheet applications.
- **HTML printable file**—This format is useful for printing or viewing the computer's summary in a browser.

### To export inventory data to a .CSV or HTML printable file

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

3. To run the client console (if it is installed), click **Manage This Computer**.  
Click **Comma separated values (.CSV) file or HTML printable file**:
  - If you selected .CSV file, click **Save this file to disk** and **OK**. Specify a filename and location, then click **Save**. Or, you can click **Open** to open the file in Notepad.
  - If you selected HTML printable file, the file will open in a new browser window.

## Using inventory reports

Client Manager can gather a substantial amount of information about the software and hardware components installed on the computers that you manage. The type of data that is available is described in [Using the Inventory](#). You can use this information to make decisions about performing specific tasks, such as a BIOS upgrade for the computers that need it.


The predefined reports listed below gather inventory data for the computers you select. These reports can help you with some of the more common tasks that you perform as an administrator:

- **BIOS report**—For each of the computers you selected for the report, you can see the computer name, BIOS manufacturer, BIOS version, and BIOS date.
- **Installed programs**—Provides a drop-down list of the programs that are installed on the computers you selected for the report. When you select a program from the list, the report updates to show which computers have the selected program installed. **Note**—Information about installed applications is not available for client computers running Client Manager versions older than 6.2.
- **Operating system**—For each of the computers you selected for the report, you can see the computer name, the operating system for that computer, and the version of the operating system, including any service packs or updates that might be installed.

In addition to generating the predefined reports described above, you can:

- [Export all inventory data](#) for a single computer or for selected computers
- [View inventory data](#) about hardware and software components on the computers you manage

### To run inventory reports

1. Right-click the Client Manager [taskbar icon](#).
2. Click **Manage Computers**.
3. Log on using your Client Manager username and password.
4. In the left pane, click **Select Computer**.
5. Select the computers you want to manage in the right pane by clicking the check boxes next to each computer name.
6. Click the **Run a Report**  icon on the toolbar.
7. Select a report type, then click **Run**.

### To sort, print, or export the report

1. To sort the report data, click column headers in the HTML table after generating the report.
2. To print the report, click **File | Print** from your browser window.
3. To manipulate the report data, select the table (all of it or just a portion) and then copy and paste it into Microsoft Excel\* or a similar application.

### Example: Running consecutive reports to merge data

You can run consecutive reports to progressively filter the data by using the Copy Selection button. For example, you may have discovered that a particular program causes problems when it runs under Windows XP. Client Manager provides an Installed Programs report and an Operating System report (see description above). To merge the reports and get the data you need to fix the problem, you could:

1. Click the **Installed Programs** report, then click **Run** to see all of the computers that have the problem program installed. (See [To run inventory reports](#) above for details.)
2. From the Installed Programs report results, select some of the computers listed, or click **Select All**.



3. Click **Copy Selection** to return to the Select Computer page. The computers you just selected are check-marked.
4. Click the **Operating System** report, then click **Run** to see OS information about the computers you selected in step 2.
5. Click the Operating System column header to sort by OS. Now you can see all computers grouped together that are running the problem program under Windows XP.
6. Select the data in the table and paste it into a spreadsheet for further manipulation.

or

Click **Copy Selection** again to return to the Select Computer page with only the "problem" computers selected. From this page, you could perform other operations, like installing a package to fix the problem.

## Why do I see an error message in a report?

If Client Manager can't connect to a computer or if you do not have rights to view inventory information, you may see these error messages in the body of the report:

Error message	Explanation
Failed: This client computer could not complete the operation.	Client Manager could not connect to the computer. The client computer may be turned off, or network problems may be preventing a connection.
Failed: You do not have sufficient rights to perform this operation.	You can't view inventory information on client computers unless you can log on with administrator privileges.

## Viewing CIM information

Common Information Model (CIM) is a standard, managed by the Desktop Management Task Force (DMTF), for managing computer components (such as network adapters, processors, and disk drives). CIM offers a richer modeling language than [DMI](#) and promises an increased management potential as it gains acceptance throughout the industry. Client Manager uses both CIM and DMI models to manage components. CIM is optional on Windows 98 Second Edition and Windows NT 4.0 and is standard on Windows Me, 2000, and XP. To use CIM on a Windows 98 or Windows NT computer, you must first install the CIM Module, available on Microsoft's Web site.

CIM-compliant components use [providers](#) to obtain component information in realtime. For example, a CIM-compliant disk drive provider can report exactly how much drive space is available when Client Manager requests that data. Components can also provide a Managed Object Format (MOF) file. [MOF files](#) describe a component's attributes, such as a processor's clock speed. For more information about CIM, visit <http://www.dmtf.org> on the World Wide Web.

To manage CIM components, Client Manager uses a CIM Object Manager (CIMOM), which runs as a service under Windows ([Windows Management](#)). CIMOM manages the CIM Repository, which is a database of all CIM data. As the CIMOM collects and manages the CIM data, it displays the most useful information about these components in the Client Manager inventory pages.

## Why would I use the CIM Browser?

Not all CIM data is considered useful in managing computers, so only a fraction of this data appears on the inventory pages. If you want to view all the available CIM data for a component, you can use the CIM Browser. The CIM Browser organizes all CIM data into a hierarchy of classes, instances, properties, and values. For example:

```
Class = Win32_Processor
Instance = (Class Path) Win32_Processor.DeviceID="CPU0"
Property = CurrentClockSpeed
Value = 450 (MHz)
```

**Note**—The CIM schema defines several classes that have no instances. These classes simply display the message "No instances of this class are available."

### To view CIM information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Tools, click **CIM Browser**.
  5. Click the class whose data you want to view.
  6. Click the instance whose data you want to view.
  7. Click **View all properties**.

**Note**—You can't change any of the CIM data using the CIM Browser.

## Viewing DMI information

Desktop Management Interface (DMI) is a standard, created and managed by the Desktop Management Task Force (DMTF), for managing computer components (such as network adapters, processors, and disk drives). To be DMI compliant, components must provide a Management Information Format (MIF) file. [MIF files](#) describe a component's attributes, such as a processor's clock speed.

Ideally, DMI-compliant components also provide [instrumentation](#). With DMI instrumentation, Client Manager can display attribute values in realtime. For example, a DMI-compliant disk drive can report exactly how much drive space is available when the instrumentation requests that data. For more information about MIF files, instrumentation, and DMI, visit <http://www.dmtf.org> on the World Wide Web.

To manage computer components, Client Manager uses a Windows-based Service Provider. This Service Provider manages the MIF database (SLDB.DMI), which is created from the contents of the MIF files. The Service Provider also manages component information provided by instrumentation.

As the Service Provider collects and manages the DMI data from the MIF database and component instrumentation, it displays the most useful information about these components in the Client Manager inventory pages. Because not all DMI data is considered to be useful in managing computers, only a fraction of all DMI data is displayed in the inventory pages. If you want to view all the available data for a component, you can use the DMI Browser. The DMI Browser organizes all DMI data into a hierarchy of components, groups, attributes, and attribute values. For example:

Component = CPU  
Group = Processor  
Attribute = Current speed  
Attribute value = 450 (MHz)

### To view DMI information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Tools, click **DMI Browser**.
  5. Click the component name whose data you want to view.
  6. Click the group name whose data you want to view.

## Installed Applications

Client Manager provides two types of information about applications installed on client computers. This information is displayed in two separate lists:

- **Programs**—This list corresponds to the programs shown in Add/Remove Programs in the Windows Control Panel.
- **File and Version Information**—This list contains specific file and version information obtained from .EXE files. File and version information is provided for all applications that properly register "per-application paths" in the Windows registry.

**Note**—These two lists are obtained from different sources and aren't directly related. The File and Version Information list often contains more entries than the Programs list. The Programs list should be used to determine what applications are installed on the client computer. The File and Version Information list is used when more specific information is needed.

Using the File and Version Information list, you can view the following information:

- **Application**—The names of the applications installed on the computer (based on .EXE files found on the computer's hard disk.)
- **Version**—The version number of the application executable file.
- **Date**—The date of the application executable file.
- **Filename**—The name of the application executable file.
- **Size**—The size of the application executable file.
- **Path**—The path of the application executable file.

## To view applications information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Installed Applications**.

## Asset Management

If the computer supports intrusion detection, Client Manager's Asset Management page reports when the computer's case has been opened. You can also configure alert actions to notify you when a case has been opened.

Client Manager enables you to manage and view the following user and asset information for the computer:

- **User name**—The primary user's name.
- **Phone number**—The primary user's phone number.
- **Location**—The primary user's location in the building.
- **Department**—The primary user's department.
- **Position**—The primary user's job position.
- **System name**—The Windows system name.
- **Asset number**—The asset tracking number assigned to the computer. This is sometimes assigned by the computer's manufacturer and stored in the computer's [BIOS](#).
- **Motherboard system serial number**—A serial number assigned to the motherboard by its manufacturer.

## To view and edit asset information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Asset Management**.
5. Place the cursor in any edit box and enter the new text.
6. Click **Apply**.

**Note**—The asset information fields can only be edited if you have [Administrator rights](#).

## To set alert actions for intrusion detection

**Note**—Not all client computers support this feature.

1. In the Set Alert Actions box, select an alert action to notify you when the computer's case is open.
2. Select the health severity levels you want to trigger the alert action (OK=closed, Warning=open).
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

To clear the intrusion detection indicator, click **Clear** (this button only appears when the computer case has been opened).

## Mobile battery

Client Manager displays the following mobile battery information for laptop computers:

Attribute	Description
A/C line status	Whether the computer is connected to A/C power or running on battery power.
Charging status	Whether the battery is charging and the status of the battery charge: critical, low, or high.
Remaining time	The approximate amount of time remaining before the battery is discharged. Based on the remaining battery charge and the current system demands on the battery.
Full charge life time	An estimate, based on current system conditions, of how long a full battery charge will last.
Battery charge	The approximate percentage of charge remaining in the battery.

## To view battery information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Battery**.

# BIOS

Client Manager displays the following [BIOS](#) information for the computer:

- **Manufacturer**—The manufacturer of the BIOS chip installed on the motherboard.
- **Version**—The version of the BIOS chip installed on the motherboard.
- **Date**—The date of the BIOS chip installed on the motherboard.
- **Size**—The size of the BIOS chip (reported in kilobytes).

You can also use this page to set alert actions for POST (power-on self test) errors that may occur when a computer boots.

## To view BIOS information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **BIOS**.

## To set alert actions for POST errors

1. In the Set Alert Actions box, select an alert action to notify you when a POST error occurs.
2. Select the health severity levels you want to trigger the alert action (OK, Warning).
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

# Computer Summary

Client Manager displays the following computer summary information for the computer:

- **Computer name**—The Windows name assigned to the computer.
- **Processor**—The type of processor installed on the motherboard.
- **Manufacturer**—The manufacturer of the computer.
- **Model**—The model number of the computer.
- **Asset number**—The asset tracking number assigned to the computer. This number is sometimes assigned by the computer's manufacturer and stored in the computer's BIOS.
- **BIOS version**—The version of the BIOS installed on the computer's motherboard.
- **TCP/IP address**—The four-byte address assigned to the computer for communicating on TCP/IP networks.
- **Total physical memory**—The amount of total memory capacity of the computer's memory chips. (This doesn't include virtual memory.)
- **Operating system**—The operating system currently running, such as Windows 98 Second Edition, Windows Me, Windows NT, Windows 2000, or Windows XP.

- **Version**—The operating system version, build number, and service pack release number.
- **Total hard drive space**—The size of the installed hard disk, reported in megabytes.
- **Total free hard drive space**—The amount of available hard disk space, reported in megabytes or gigabytes.

### To view computer summary information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. The Computer Summary page opens with information for the selected computer.

## Drives

Using Client Manager, you can view drive information for computers on your network. You can also set thresholds for individual computers that will trigger alerts if exceeded. As an administrator, you can also set global thresholds that apply to the drives of all computers running Client Manager. See [Configuring alert actions](#) for more information.

- **Set thresholds**—Use the Set thresholds bar to configure warning and critical thresholds for disk space alerts. The colored portion of the bar (green, yellow, or red) is the used disk space. The white portion of the bar is the available disk space. You can drag the colored arrows and click Apply to change the thresholds. (Used and available disk space are not updated dynamically. If you want to refresh the available and used disk space information, click Apply or Refresh.)
- **Used space**—The percentage and amount of disk space used on the drive.
- **Free space**—The percentage and amount of disk space available on the drive.
- **Set alert actions - Disk space**—Determines which alert actions to take when a disk space threshold is crossed. You can set different alert actions for different severity levels.
- **Set alert actions - Disk failure prediction**—Determines which alert actions to take when a disk failure is predicted.

### To set alert actions for disk space or drive failure prediction

1. In the Set Alert Actions box, select the alert action if the computer's hard disks run out of available space or fail.
2. Select the health severity levels you want to trigger the alert action. Drive errors can generate both a warning and critical alert, based on thresholds you define. If the computer exceeds one of the thresholds, Client Manager only reports the problem once. If you want to know when the problem is resolved, configure an alert action on "When health is OK."
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

## Logical drives

- **Used space**—The percentage of disk space used on the logical drive.
- **Free space (%)**—The percentage of disk space available on the logical drive.
- **Drive capacity**—The size of the logical drive (measured in megabytes or gigabytes).
- **Free space**—The amount of disk space (measured in megabytes or gigabytes) available on the logical drive.

## Physical drives

- **Total capacity**—The size of the physical drive, measured in megabytes or gigabytes.
- **Cylinders**—The number of concentric tracks on the hard disk that the drive's read/write head can be positioned over.
- **Sectors**—The number of total sectors on the hard disk.
- **Heads**—The number of total heads on the hard disk.
- **Partition**—A drive letter assigned to the partition, such as C: or D:.
- **Capacity**—The size of the drive partition, measured in megabytes or gigabytes.
- **File system**—The [file system](#) in use by the partition, such as [FAT](#), [FAT32](#), or [NTFS](#).
- **Volume label**—A name given to the partition.
- **Free space**—The amount of disk space (measured in megabytes) available on the partition.
- **CD-ROM or DVD**—Information about the CD, DVD, Jaz, or ZIP drive.

### To view drives information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Drives**.

## Fans

Client Manager can monitor the speed for cooling fans installed in the computer (if the motherboard and fans support this feature). These can include:

- Processor fans for each microprocessor installed on the motherboard
- Rear chassis fans
- Front chassis fans
- Other fans included by the computer's manufacturer

The first time the computer boots after Client Manager is installed, Client Manager autodetects any fans installed in the computer. After these fans are first detected, Client Manager makes no further attempt to detect installed fans. Once a fan has been detected, Client Manager monitors the fan's speed and generates an alert if the fan ever stops.



## To view fans information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Fans**.

## To set alert actions for fan problems

1. In the Set Alert Actions box, select the alert action that will notify you if a problem occurs with the computer's fans.
2. Select the health severity levels you want to trigger the alert action.
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

# Keyboard/Mouse

Client Manager displays the following keyboard and mouse information for the computer:

## Keyboard

- **Type**—The manufacturer and make of keyboard attached to the computer.
- **Connector type**—The type of connector used to attach the keyboard to the computer, such as PS/2, Micro-DIN, USB or DB-9.
- **Layout**—The keyboard layout selected in the operating system (in Control Panel | Keyboard), such as US, French (Standard), or German (Standard).

## Mouse

- **Type**—The manufacturer and make of pointing device attached to the computer.
- **Connector type**—The type of connector used to attach the keyboard to the computer, such as PS/2, Micro-DIN, USB or DB-9.
- **Mouse driver**—The filename of the mouse driver.
- **Driver version**—The version of the mouse driver.

## To view keyboard/mouse information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Keyboard/Mouse**.

# Memory

Client Manager displays the following memory information for computers on the network:

- **Total physical memory**—The amount of total memory capacity of the computer's memory chips. (This doesn't include virtual memory.)
- **Total virtual memory**—The total memory available for use (the physical memory plus the amount of disk space assigned for use as virtual memory).
- **Free virtual memory**—The amount of available virtual memory.
- **Set thresholds**—Use the Set thresholds bar to configure warning and critical thresholds for memory alerts. The colored portion of the bar (green, yellow, or red) is the used memory. The white portion of the bar is the available memory. You can drag the colored arrows and click Apply to change the thresholds. (Used and available memory is not updated dynamically. If you want to refresh the available and used memory information, click Apply or Refresh.)

## To set alert actions for virtual memory

1. In the Set Alert Actions box, select the alert action that will notify you if a problem occurs with the computer's virtual memory.
2. Select the health severity levels you want to trigger the alert action. Memory errors can generate both a Warning and Critical alert, based on thresholds you define. If the computer exceeds one of the thresholds, Client Manager only reports the problem once. If you want to know when the problem is resolved, configure an alert action on "When health is OK."
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

## Memory module information

- **Socket**—The type of memory sockets used to hold the memory modules.
- **Size**—The size of the memory module currently installed in a given socket, such as 64 MB, 128 MB, or Empty.
- **Characteristics**—Any details regarding the memory module installed in the socket, such as [EDO](#), [SIMM](#), [DIMM](#), and so on.
- **ECC**—The error correction code of the memory module. This code can detect both single-bit and multi-bit errors and correct single-bit errors.
- **Speed**—The speed of the memory module, such as 100 MHz, 133 MHz, 166 MHz.
- **ECC parity errors**—Lists the number of ECC errors that have been detected.

## Memory upgrade information

Client Manager enables you to easily obtain information on upgrading your physical memory (some motherboards don't support this feature). Client Manager knows the types of memory and memory sizes the system can upgrade with. For example, if you want to add 128 MB of memory to your computer, Client Manager can tell you the different memory configuration options.

## To view memory upgrade information

1. Under Memory Upgrade Information, select the total amount of physical memory you want the computer to have (after installing the new memory).
2. View the memory upgrade options that display in the box.

## To view memory information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Memory**.

# Motherboard

Client Manager displays the following information about a computer's motherboard:

- Temperature
- Motherboard information
- System slots

## Temperature

- **Current temperature**—The temperature ([in Celsius](#)) of the computer's motherboard.
- **Critical threshold**—A threshold (in Celsius) that the motherboard's temperature should not exceed (as determined by the motherboard manufacturer).

**Note**—Some motherboards don't provide temperature information.

## To set alert actions for motherboard temperature

1. In the Set Alert Actions box, select the alert action that will notify you if a problem occurs with the computer's motherboard.
2. Select the health severity levels you want to trigger the alert action. If the motherboard exceeds the critical temperature threshold, Client Manager only reports the problem once (or at every reboot if the threshold is still exceeded). If you want to know when the problem is resolved, configure an alert action on "When health is OK."
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

## Motherboard information

- **Manufacturer**—The manufacturer of the computer's motherboard.
- **Model**—The model of the computer's motherboard.
- **Maximum CPU speed supported**—The maximum speed of a processor that can be installed on the motherboard.

## System slots

- **Slot description**—The type of expansion slots available on the computer's motherboard, such as [ISA](#), [EISA](#), [MCA](#), [PCI](#), [SCSI](#), or [PCMCIA](#).
- **Slot width**—The bus width of the expansion slot, such as 16-bit or 32-bit.
- **In use**—Indicates if the slot is available or currently in use.

**Note**—The computer may have two expansion slots (such as an ISA slot and a PCI slot) that share the same opening in the computer's case and can't be used at the same time.

### To view motherboard information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Motherboard**.

## Multimedia

Client Manager displays the following multimedia information for the computer:

- **Manufacturer**—The manufacturer of the multimedia device.
- **Device type**—One of the following types of multimedia devices:

<b>Audio compression codec</b>	A driver that compresses and decompresses audio.
<b>Audio device</b>	A driver that controls a piece of audio hardware.
<b>Line input device</b>	A driver that handles input from a physical-line input device.
<b>Media control device</b>	A driver that uses Media Control Interface (MCI) commands to control a multimedia device.
<b>MIDI device</b>	A Musical Instrument Digital Interface (MIDI) driver that delivers MIDI format to sound devices.
<b>Mixer device</b>	A driver that provides mixer functionality for a sound card.

<b>Video capture device</b>	A driver that handles input from a video device.
<b>Video compression codec</b>	A driver that compresses and decompresses video.

- **Device name**—The name of the multimedia device.
- **Product name**—The device's product name (if different from the device name).
- **Version**—The product version number.

### To view multimedia information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Multimedia**.

## Network

Client Manager displays the following network information for the computer:

### Network information

- **Network adapters**—A description of the network adapter (or adapters) installed in the computer.
- **Node (MAC) address**—The computer's unique six-byte hexadecimal [MAC address](#).
- **Driver rate**—The speed configured for the driver to send and receive data, such as 10 Mbps or 100 Mbps.
- **Driver**—The filename of the network adapter driver.
- **Driver version**—The version number of the network adapter driver file.
- **Driver description**—A description of the network adapter driver, such as NDIS 3.0 driver.
- **TCP/IP address**—The four-byte address assigned to the computer for communicating on TCP/IP networks.
- **Subnet mask**—The four-octet number (such as 255.255.255.0) that is paired with an IP address. This number tells an IP router which octets in the IP address are the network ID and which octets are the node ID.
- **Primary gateway**—The IP address of the router that is configured as a default gateway for [packets](#) leaving the network.
- **DNS server**—The IP address for each Domain Name Service (DNS) server on your network. You may have more than one.

## Data statistics since startup

- **Packets transmitted**—The number of network packets transmitted from the computer since startup.
- **Packets received**—The number of network packets received at the computer since startup.
- **Transmit errors**—The number of times since startup that the computer was unable to transmit a packet.
- **Receive errors**—The number of times since startup that the computer was unable to receive a packet.
- **Host errors**—The number of transmit or receive errors that have occurred since startup because of buffer overruns.
- **Wire errors**—The number of transmit or receive errors that have occurred since startup because of [CRC](#) errors, alignment errors, or maximum collisions reached.

## Network connections

- **User**—This applies only to Windows XP, which supports Fast User Switching.
  - If you're logged on to Client Manager as an administrator, you will see all active network connections for all logged on users.
  - If you're logged on to Client Manager as a non-administrator (power user, for example), then you will not see the drive mappings of other users. You will see your own drive mappings if your Client Manager login name matches your Windows login name.
- **Drive**—The driver letter assigned to a particular network drive, such as F: or G:.
- **Connection name**—The [UNC](#) name of the network resource, such as \\server\sharename.

### To view network information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Network**.

## Operating System

Client Manager displays the following information about the computer's operating system:

- **Operating system**—The operating system currently running.
- **Version**—The operating system version, build number, and service pack release number.

## Windows tasks

- **Task name**—The task names of all Windows-based 16-bit and 32-bit tasks.
- **Type**—A description of the task, such as 32-bit task or 16-bit task.

## System variables

- **Variable**—Variables that are initialized on startup and used by the operating system.
- **Value**—The value or text assigned to the system variable.

## User environment variables

Information about user environment variables is available for clients running Windows 2000 or Windows XP. Windows 98 Second Edition and Windows Me do not support user environment variables. If you're running Windows NT, you will see user environment variables grouped with system variables.

- **User**—The login name of the user that set the variable.
- **Variable**—User-specific variables that are initialized on startup and used by the operating system.
- **Value**—The value or text assigned to the variable.

## Real-mode device drivers

- **Driver name**—The name of the real-mode device driver.
- **Version**—The version number of the real-mode device driver.
- **Date**—The release date and time of the real-mode device driver.

## To view operating system information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Operating System**.

## I/O Ports

Client Manager displays the following port information for the computer:

### Serial ports

- **Name**—The name of the [serial port](#), such as [COM1](#) or COM2.
- **IRQ**—The [interrupt request](#) number assigned to the serial port, such as 3 or 4.

- **I/O address**—The starting memory address (represented in [hexadecimal](#)) designated for the input/output of data from the serial port.
- **Maximum speed**—The maximum baud rate of data transfer for the serial port.

**Note**—Although Windows 98 Second Edition enables you to select a baud rate faster than the maximum speed reported by Client Manager (currently 115200), the serial port may not actually support that speed. The ability to select baud rates faster than 115200 was provided in the Windows operating system to support future baud rates as they become available in newer hardware.

## Parallel ports

- **Name**—The name of the [parallel port](#), such as [LPT1](#).
- **IRQ**—The IRQ assigned to the port.
- **I/O address**—The starting memory address (represented in hexadecimal) designated for the input/output of data from the parallel port.
- **Type**—The connector type, such as DB-25 pin female.

### To view ports information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **I/O Ports**.

## Voltages

On motherboards that support voltage monitoring, Client Manager monitors the power voltages on the computer's power supply lines. When the voltage on a given power supply line exceeds a threshold defined by the manufacturer, Client Manager can notify you of a potential problem with the computer's power supply. The monitored voltages vary depending on the computer's motherboard. Also, the voltage thresholds that trigger an alert can vary across voltage lines, and can also be adjusted by the motherboard manufacturer. The typical voltages Client Manager monitors and their associated thresholds are:

- **1.5 volts**—The threshold is generally plus or minus 0.1 volts. (On some computers, the 1.5-volt supply may be a 2.5-volt supply.)
- **CPU core**—This voltage can vary greatly from processor to processor, ranging from 1.6 volts to 2.3 volts. So it is simply listed as CPU core. The threshold is generally plus or minus 0.1 volts.
- **3.3 volts**—The threshold is generally plus or minus 0.6 volts.
- **5 volts**—The threshold is generally plus or minus 1 volt.
- **-5 volts**—The threshold is generally plus or minus 1 volt.
- **12 volts**—The threshold is generally plus or minus 1.2 volts.
- **-12 volts**—The threshold is generally plus or minus 1.2 volts.



## To view voltage information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Health, click **Voltages**.

## To set alert actions for voltage

1. In the Set Alert Actions box, select the alert action that will notify you if a problem occurs with the computer's power supply.
2. Select the health severity levels you want to trigger the alert action.
3. Click **Apply**.
4. Repeat these steps for other alert actions you want to configure (for the same severity level or other severity levels).

# Processor

Client Manager displays the following processor information for the computer:

- **Processor**—The type of processor installed on the motherboard.
- **Processor speed**—The speed (measured in megahertz and gigahertz) at which the processor is currently running.
- **Socket type**—The type of socket on the motherboard that the processor plugs in to, such as [Slot 1](#), [Slot 2](#), [ZIF socket](#), or [LIF socket](#).
- **Number of processors**—The number of microprocessors installed on the motherboard.
- **Vendor ID**—An unique ID assigned to the processor which identifies its manufacturer.
- **Cache type**—Indicates whether the cache is internal ( [primary](#) ) or external ( [secondary](#) ) to the microprocessor.
- **Size**—The size of memory cache (measured in kilobytes) available to the processor.
- **Write policy**—The type of memory cache used, such as [Write Through](#) or [Write Back](#).

## To view processor information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **Processor**.

# System Resources

Client Manager displays the following system resources for computers on the network:

- **IRQ**—Lists all of the interrupt request lines currently assigned and the devices that are using them.
- **DMA**—Lists all of the DMA channels currently assigned and the devices that are using them.
- **I/O**—Lists all of the input/output addresses in memory currently assigned to devices, and the devices that are using them.
- **Memory**—Lists all of the memory addresses currently assigned to devices, and the devices that are using them.

## To view system resources information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

3. To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Inventory, click **System Resources**.

# Video/Monitor

Client Manager displays the following video and monitor information for the computer:

## Monitor (Windows 2000 and XP only)

Monitor information is available only on computers running Windows 2000 or Windows XP. More than one monitor may be listed if the computer has ever been connected to multiple monitors.

- **Name**—The name of the monitor as it appears in the Display properties of the Windows Control Panel. If no specific driver is installed for the monitor, the name may be "Default Monitor."
- **Vendor**—The name of the manufacturer. For example, Hitachi. If no specific driver is loaded for the monitor, the vendor may be "Standard monitor types."

## Video device

- **Manufacturer**—The manufacturer and make of video card installed in the computer.
- **Model**—The model number of the video card installed in the computer.

## Driver information

- **Driver**—The filename of the video driver.
- **Driver version**—The version number of the video driver file.
- **Date**—The date of the video driver file.

## Resolution

- **Current resolution**—The pixel [resolution](#) and number of colors the video card is currently set to display, such as 1024 x 768 pixels, 65536 colors.
- **Supported resolutions**—A list of the resolutions the video card is capable of displaying, such as 640 x 480, 800 x 600, and 1024 x 768.

## To view video information

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Video**.



# Monitoring computer health




---

## Monitoring health

Client Manager monitors important computer functions and resources so it can alert you to problems as soon as it becomes aware of them. Depending on the computer's hardware, some of the resources and functions Client Manager can monitor include:

- **Logical drives**—Monitors how much drive space remains on each logical drive. [Thresholds](#) are configurable for each logical drive.
- **Disk failure prediction**—Monitors a [S.M.A.R.T.](#) drive for potential disk failure.
- **Free virtual memory**—Monitors how much virtual memory remains available to the computer. Thresholds are configurable.
- **Parity errors**—Monitors the computer's memory for [parity errors](#) which indicate that a memory chip might be failing.
- **\*Intrusion detected**—Monitors the computer's case to determine if it has been opened. (An opened case might indicate that an unauthorized individual has tampered with or removed some of the computer's components.)
- **\*Power supplies**—Monitors the nominal and current voltage of the computer's various power supplies to see that they remain within an acceptable range.
- **\*Temperature**—Monitors the temperature of the computer's processor and/or motherboard to see that it remains within an acceptable range.
- **\*Fans**—Monitors the computer's fans and fan speed to help ensure the computer's cooling system is functioning properly.
- **\*Non-critical boot failures**—Reports a computer's failed attempt to power up (as long as the computer doesn't hang).
- **\*Boot virus detected**—Monitors for boot viruses while the computer is powering up. (This virus detection does not cover other types of viruses and should not be used as a solitary defense against computer viruses.)

\*Some motherboards don't support this feature. If this is the case, the feature doesn't appear in Client Manager.

When a problem occurs in one of the areas listed above, the computer's health status changes from normal  to warning  or critical , depending on the event and its severity. (The icons may vary slightly depending on the Client Manager tool you use.) You can observe a computer's health change using any of four Client Manager tools:

- **Inventory**—The [inventory](#) page for the item generating the health status change displays a description of the problem and steps you can take to resolve it. (The Computer Summary page also displays a description of the problem, but no resolution steps are included.)
- **Select Computer list**—The [Select Computer list](#) displays an icon and text description indicating the health for each computer in the list.
- **Taskbar icon**—Client Manager displays a [health icon](#) on the Windows [taskbar](#).
- **Alerts**—Client Manager includes up to four different [alert actions](#) to notify you of health changes.

## Using the Client Manager taskbar icon

The Windows [taskbar](#) displays an icon you can use to launch Client Manager. Depending on which version of Client Manager is installed (client, administrator, or both), the taskbar icon also indicates the health status of your computer or other computers on the network. Placing the mouse pointer over the icon displays the health status and number of unacknowledged alerts generated by this computer.

### Administrator

With an administrator-only installation, the taskbar icon includes two computers. The computer in the foreground has a gray monitor to indicate that this is an administrator-only installation. The flashing colored background indicates the most severe unacknowledged notification in the administrator's global log. No foreground image is used to indicate this computer's health, since an administrator-only installation doesn't report health for the administrator computer.



Normal



Warning



Critical

### Client and Administrator

With a full client and administrator installation, the computer in the foreground has a blue monitor and a foreground image shows the administrator computer's health:




Normal



Warning



Critical

 Other combinations can also appear, such as this one showing a current status of critical, with all notifications acknowledged.

### To run Client Manager from the taskbar

1. Right-click the taskbar icon.
2. Click **Manage Computers**, or click **Manage This Computer**.

**Note**—If both the administrator and client versions are installed on the computer, both items appear in the menu.

# Configuring and viewing alerts

---

## Configuring alerts

When a problem or other event occurs on a computer (for example, the computer is running low on disk space), Client Manager can send an alert. You can customize these alerts by choosing the severity level or threshold that will trigger the alert.

- [How do I see alerts?](#)
- [What kinds of computer problems can generate alerts?](#)
- [Configuring severity levels for events](#)
- [What is the difference between a global alert and an individual alert?](#)
- [Example: Configuring an individual alert for a disk space problem](#)
- [Example: Configuring global alert actions for all computers](#)
- [Hearing an alert](#)

## How do I see alerts?

Client Manager can notify you of problems or other computer events by:

- Adding information to the [notification log](#).
- Displaying information in the [notification monitor](#).
- Sending an [SNMP trap](#) to an [SNMP management console](#) on the network.
- Forwarding information to the [Alert Management System<sup>2</sup>](#) (AMS<sup>2</sup>) so other alert actions can be generated.

**Note**—The SNMP and AMS<sup>2</sup> options are only available if the SNMP and AMS<sup>2</sup> software are installed on the Client Manager computer. This software is not included on the Client Manager CD. SNMP is available on the Windows NT or Windows 98 Second Edition Setup CD; AMS<sup>2</sup> is available with other Intel products such as Intel® LANDesk® Management Suite. If Client Manager doesn't detect these components when it loads, these options aren't available to select when configuring alert actions.

## What kinds of computer problems can generate alerts?

Client Manager monitors computers differently depending on the hardware and chipset that is installed. For example, intrusion detection might not be available for all computers on your network. Some of the events that Client Manager can monitor are listed below:

- **Disk failure prediction**—A [S.M.A.R.T.](#) drive has predicted a potential disk failure.
- **Disk space**—Disk space is running low on a logical drive.
- **Fans**—One of the computer's fans may not be functioning properly.
- **Intrusion detection**—The computer's case has been opened.
- **Parity error detection**: A [parity error](#) occurred in the computer's memory, which may indicate that a memory chip is failing.
- **POST error detection**—A problem was detected during the computer's Power-On Self Test at startup.

- **Temperatures**—The temperature of the computer's processor and/or motherboard has exceeded an acceptable threshold.
- **Virtual memory**—Virtual memory is running low for the computer.
- **Voltages**—The voltage of one of the computer's voltage lines has exceeded an acceptable threshold.

## Changes in configuration

Client Manager also generates alerts if a computer's configuration changes. The configuration change may or may not be a problem, but it is information that can be useful to a system administrator. The computer configuration changes that will generate an alert are:

- Application installed or uninstalled
- Memory added or removed
- Hard drives added or removed
- Processor(s) added or removed

See [Monitoring configuration changes](#) for more information.

## Configuring severity levels for events

Computer problems or events have some or all of the severity levels shown below. You can choose the severity level or threshold that will trigger the alert.

- **Information**—Is available to support configuration changes, BSA events, or computer events that manufacturers may include with their systems.
- **OK**—Notifies you when a problem has been resolved and returned to an acceptable level.
- **Warning**—Provides some advance warning of a problem before it reaches a critical point.
- **Critical**—Probably needs your immediate attention.

Depending on the nature of the event or computer problem, some severity levels don't apply and aren't included. For example, with the Intrusion Detection event, the computer's chassis is either open or closed. If it is open, this can trigger an alert action with a severity of warning. Other events, such as Disk Space and Virtual Memory, include three severity levels (OK, warning, and critical).

## What is the difference between a global alert and an individual alert?

Users can configure some alerts and thresholds specifically for their computer. For example, from the client console, you can set customized warning and critical thresholds for disk space and then configure alert actions.

As an administrator you can configure global alert actions for events that take place on any computer on the network. The global alert actions you configure from the Client Manager administrator console are independent from any alert actions configured on local client computers. From the administrator console, you can also configure alert actions for individual computers by logging on to a computer from the Select Computer page.



## Example: Configuring an individual alert for a disk space problem

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane under Inventory, click **Drives**.
  5. Set warning and critical thresholds for local drives, then click **Apply**.
  6. Set an alert action for disk space (either add to the [notification log](#) or display in the [notification monitor](#)), then click **Apply**.
  7. Set an alert action for disk failure prediction (either add to the [notification log](#) or display in the [notification monitor](#)), then click **Apply**.



## Example: Configuring global alert actions for all computers

1. In the left pane under Global Alert Actions, click a computer event such as **Disk space**.
2. Select notification options. See [Configuring severity levels for events](#) for more information. For example, for the Disk Space event you could configure Client Manager to:
  - Add the event to the notification log when Disk Space reaches a warning level.
  - Add the event to the notification log, display the event in the notification monitor, and send an SNMP trap when Disk Space reaches a critical level.
  - Add the event to the notification log and display the event in the notification monitor when Disk Space reaches an OK level (so you know the problem is now resolved).

## Hearing an alert

You can configure different .WAV files to play when information, OK, warning, or critical alerts occur. At the client console, you can add sound to alerts occurring locally. At the administrator console, you can add sound to global alerts occurring on managed clients. If you have both consoles installed on your administrator computer, you can also add sounds to alerts occurring locally.

### To configure .WAV files for alerts

1. From the Windows Start menu, click **Programs | Intel LANDesk Management | Client Manager | Options**.
2. Click the **Sounds** tab.
3. To configure .WAV files for local alerts, enable the **Play notification sounds** option. To configure .WAV files for global alerts, enable the **Play administrator notification sounds** option.
4. Place your cursor in one of the Information, OK, Warning, or Critical notification edit boxes.
5. Click the  icon to browse to a .WAV file. Select a file, then click **Open**.
6. To test the .WAV file, click the  icon next to the .WAV file you want to test.

7. Repeat steps 4-6 for each .WAV file you want to configure.
8. Click **OK**.

### To disable .WAV files for alerts

1. For local alerts, clear the **Play notification sounds** option. For global alerts, clear the **Play administrator notification sounds** option.
2. Click **OK**.

## Viewing the notification log

When an event occurs on a Client Manager computer, Client Manager records the event details in your computer's notification log. The administrator version of Client Manager also has a global notification log that records event details for other Client Manager computers on the network. This log includes the date and time the event occurred, the computer name, a brief description of the event, and an icon indicating the event severity.

You can filter the log file to view only certain categories of events. This may be useful if the log file is large and contains many entries. About 50 categories of log entries are available, including configuration changes, processor missing, and disk space.

The notification log continues to store events until you empty the log or until it reaches maximum size. When the log reaches its maximum size, the older entries are removed as new entries are added. You can set the global log size to be from 4 KB to 1600 KB. You can set the local log size to be 4 KB to 80 KB. Resizing clears the log.

### To view the local notification log

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.



or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Tools, click **Local Log**.
5. Use the View drop-down list in the log file toolbar to select one particular event to view, or view All Events. By default, the local log displays data for all events.
6. Click the **Next** and **Previous** buttons to scroll through the pages of notifications in the log.

### To view the global notification log

1. From the administrator console, click **Global Log** (under Administrator Tools).
2. Use the View drop-down list in the log file toolbar to select one particular event to view, or view All Events. By default, the global log displays data for all events.
3. Click the **Next** and **Previous** buttons to scroll through the pages of notifications in the global log.

## To delete or resize a log file

1. Display the local or global log file as described above.
2. If you want to resize the log, click  , enter a new size, then click **Resize**. This will reinitialize the log and delete all current entries.
3. If you want to delete the log, click .

## To copy the notification log contents to another application

1. Select the notification log entries you want to copy. (Use the Ctrl + shift keys to select multiple entries.)
2. Click **Edit | Copy** to copy the selection to the Windows clipboard.
3. In the application where you want to copy the notification log entries, click **Edit | Paste**.

## Using the notification monitor

The notification monitor pops up in a yellow box in your computer's bottom right corner. It displays information about events that have occurred on your computer or other Client Manager computers that you manage. You can configure which events and which severity levels trigger the notification monitor to open. See [Configuring alert actions](#) for more information.

Notifications are cleared from the notification monitor each time you log out or the computer shuts down. However, notifications are not deleted from the [notification log](#) when the computer boots.

## If you're running Windows XP with Fast User Switching

If you're running Windows XP with Fast User Switching enabled, the following rules apply:



- The notification monitor will pop up for the current user who is logged on to the computer. Other users will see a flashing Client Manager icon in the taskbar as described in [Using the taskbar icon](#). These users can display the notification monitor by clicking the Client Manager icon.
- If multiple users are logged on and the current user dismisses the notification monitor, other users will still see the notification when they switch back.

## Choosing notification monitor options

In addition to the computer name and event details, the notification monitor includes the following options:

- **More Info**—Connects you to the computer that generated the notification, displays a more detailed description of the problem, or provides suggestions for corrective action.
- **Acknowledge**—Clears the current notification from the notification monitor and displays the next notification. The notification monitor closes when the last notification has been cleared.
- **Do not display new notifications**—Prevents the notification monitor from appearing when new notifications are received.
- **Advanced options**—Right-click in the notification monitor message box to access these advanced options:

- **Acknowledge all**—Clears all notifications and closes the notification monitor.
- **Acknowledge all from**—Clears all notifications from a specific client computer.
- **Copy**—Copies the current notification to the clipboard.
- **Options**—Gives you the opportunity to change the number of notifications stored in the queue and change the hot key used to display the notification monitor. The queue has a minimum of one notification and a maximum of 300.

Use the Page-Up  and Page-Down  arrows to cycle through a circular list of accumulated unacknowledged notifications.

**Note**—If you aren't logged in, notifications from your computer are stored in the log file. While your administrator computer is off the network, alerts from remote client computers are stored and later forwarded to your computer after it comes back on the network. Also, alerts from remote clients that are off the network are stored and later forwarded to the administrator computer after they come back on the network.

### To display the notification monitor

- Click the Client Manager taskbar icon.

or

Press the notification hotkey combination on the keyboard (Ctrl+Alt+N by default)

### To change the character used for the notification monitor hotkey

1. From the Windows Start menu, click **Programs | Intel LANDesk Management | Client Manager | Options**.
2. In the Hotkey to display Notification Monitor box, type a letter or number and click **OK**.

### To close the monitor using the keyboard

- Press **Esc** or **Alt+F4**.

## Monitoring configuration changes

Client Manager can generate alerts if a computer's hardware or software configuration changes. These changes may affect a computer's performance and stability or cause problems with a standard installation. By monitoring vital pieces of the computer, Client Manager can help you reduce the total cost of ownership (TOC).

The computer configuration changes that will generate an alert are:

- **Application installed or uninstalled**—You can see which users installed or removed applications. This may be helpful in tracking licenses or employee productivity. Client Manager monitors applications that are registered in the Windows Add/Remove Programs area of the Control Panel. Other applications are ignored. The application name that is used in the Windows Add/Remove Programs is the application name that appears in the notification log or notification monitor.
- **Memory added or removed**—Client Manager detects and monitors the quantity and type of memory installed. If the configuration changes, Client Manager generates an alert.

- **Hard drives added or removed**—Client Manager detects and monitors the type and size of the drives installed on computers. If the configuration changes, Client Manager generates an alert. Client Manager does not monitor disk configuration changes on laptop computers because the administrator would constantly be getting alerts from drives that are designed to be temporarily plugged in and then removed. Drives in docking stations could also generate excessive alerts as the laptop is docked and undocked.
- **Processor (or processors) added, removed, or modified**—Client Manager detects and monitors the number, type, and speed of the processor(s). If the configuration changes, Client Manager generates an alert. Client Manager does not monitor processor changes on laptop computers.

## How do I see configuration changes

On computers running the client console, the configuration changes described above are logged. On computers running the administrator console, the configuration changes are displayed in the notification monitor and are also logged. See [Using the notification monitor](#) and [Viewing the notification log](#) for more information.

## Using SNMP

When an event occurs on a Client Manager computer, Client Manager can send an [SNMP trap](#) to an [SNMP management console](#). Configuring a Client Manager computer to send an SNMP trap requires several steps, depending on the computer's operating system. In general, you need to:

- Install SNMP.
- Specify a destination for the SNMP traps. This destination can be either an [IP address](#) or a computer name.
- Start SNMP and the SNMP Trap Service if you're running under Windows NT.

Client Manager can send SNMP traps to a management console using two different routes:

- **From the Client Manager clients directly to a management console.** This method is more reliable than having an administrator forward the events, because if the administrator computer responsible for sending the SNMP traps goes off the network, none of the SNMP traps will be sent.
- **From the Client Manager clients to an administrator. The administrator then sends the SNMP trap to a management console.** This method, although less reliable than the first, is much easier to implement. Instead of installing and configuring the SNMP software on each client computer on your network, you can install it on one administrator computer. The administrator computer can then send SNMP traps to a management console on behalf of all client computers it manages.

## Installing SNMP

Different operating systems require a different installation of SNMP.

- [Install and configure SNMP on Windows NT](#)
- [Install and configure SNMP on Windows 98 Second Edition](#)
- [Install and configure SNMP on Windows 2000 or XP](#)

**Note**—Windows Me doesn't support SNMP.

## Using Alert Management System<sup>2</sup>

If the [Alert Management System<sup>2</sup>](#) (AMS<sup>2</sup>) is installed on the Client Manager computer, you can have Client Manager forward event information to AMS<sup>2</sup>. AMS<sup>2</sup> can then generate any of these alert actions:

- Display a message box.
- Send a pager message.
- Send an Internet mail message.
- Run a program.
- Send a network broadcast.
- Send an [SNMP trap](#).
- Log the event in the Windows Event Log.
- Load a Netware NLM\*.

**Note**—The AMS<sup>2</sup> software is not installed with Client Manager or included on the CD. AMS<sup>2</sup> is available with other Intel products such as Intel® LANDesk® Management Suite. If Client Manager doesn't detect AMS<sup>2</sup> when it loads, the AMS<sup>2</sup> option isn't available when configuring alerts. For more information about AMS<sup>2</sup>, refer to the documentation included with Intel LANDesk Management Suite.

## Using Alert on LAN

Alert on LAN\* is an optional Client Manager feature that you can use if these conditions are met:

- At least one of your client computers is enabled with Alert on LAN technology.
- You enabled the Alert on LAN options during Client Manager Setup. (Or the original equipment manufacturer shipped the computer with these Client Manager options enabled.)
- You [configure Alert on LAN](#) for each computer enabled with the technology.

### Overview

Alert on LAN refers to a microchip on a computer's motherboard or network adapter that monitors some of the computer's critical functions. A software agent residing on the computer periodically polls the computer's Alert on LAN chip for information and generates alerts as needed. For example, if the computer is hung, disconnected from the network, or experiencing a temperature or voltage problem, the Alert on LAN chip can send an alert.

The Alert on LAN chip is wired by the computer manufacturer to monitor different computer components. The specific components that are monitored depend on the computer manufacturer, but the Alert on LAN chip typically reports such things as:

- **The computer case is open (intrusion detection)**—This is detected even if the computer is powered off (but still plugged in to the power supply and connected to the network).
- **The computer is disconnected from the network (LAN leash tamper)**—This is detected even if the computer is powered off and unplugged from the power supply.

- **The computer's processor is missing**—This is detected even if the computer is powered off (but still plugged in to the power supply and connected to the network).
- **The computer's voltage, temperature, or fan speed has exceeded a threshold**—These are detected even if the computer is powered off (but still plugged in to the power supply and connected to the network).

Client Manager displays Alert on LAN alerts on a designated proxy server (usually a Client Manager administrator) on the network. For both the client and administrator computers, Alert on LAN alerts can be viewed:

- On the Alert on LAN page for a specific computer. (In the left pane under Tools, click Alert on LAN.)
- In the [notification monitor](#)
- In the [notification log](#)

The Alert on LAN page provides the following information:

- **Computer name**—The Windows computer name assigned to the computer.
- **System ID**—A system identification number assigned to the computer.
- **Unique system ID**—A unique-16 byte number that positively identifies the computer. This ID is assigned by the BIOS manufacturer and is stored in the computer's BIOS.
- **Alert status**—Lists the Alert on LAN alerts that have occurred on the computer.

### To configure Alert on LAN alerts

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

To run the client console (if it is installed), click **Manage This Computer**.

3. Log on to the computer using your Client Manager username and password.
4. In the left pane under Tools, click **Alert on LAN**.
5. Click the **Enable Alert on LAN** option to turn on the hardware chip.
6. Type the **Server IP address** and **UDP port** where you want Alert on LAN alerts to be sent. This server is usually a Client Manager administrator that has the Alert on LAN proxy software installed. The UDP port Alert on LAN uses is 5500.

**Note**—Only one Client Manager administrator or Alert on LAN proxy can be configured to receive these alerts at a time.

7. Select the events you want to create alerts for.
8. Configure the Alert on LAN **Watchdog** timer and/or **Heartbeat** option.

<b>Set watchdog timer</b>	Enables the watchdog timer on the client computer. The watchdog timer is a counter that is periodically reset to zero as long as the operating system is functioning properly. If the operating system fails, the watchdog timer fails to reset at the established intervals and the timer continues to count upward indefinitely. When this happens, an alert is sent to the administrator computer indicating that the operating system is probably hung.
<b>Timer interval</b>	Determines how frequently the watchdog timer is reset. Depending on

	the version of Alert on LAN chip your computer uses, the watchdog timer interval you specify is rounded to the closest value the hardware permits.
<b>Send heartbeat</b>	<p>Enables the heartbeat on the client computer when it's in a powered-down state. The administrator computer monitors the heartbeats and, if they stop, generates an alert. Since a heartbeat only stops if the computer is unplugged or disconnected from the network, this alert is often an indication of tampering or unauthorized removal of equipment.</p> <p><b>Note</b>—The Heartbeat feature is only configurable with certain versions of Alert on LAN and may not appear on this page.</p>
<b>Heartbeat interval</b>	Specifies how often the Alert on LAN agent sends a heartbeat packet to the administrator computer. Depending on the version of Alert on LAN chip your computer uses, the heartbeat interval you specify is rounded to the closest value the hardware permits.

9. If your Alert on LAN version supports it, type the number of times the client attempts to send its alerts to the server. (Alert on LAN uses [UDP](#) to send alerts, so a single attempt to send an alert may fail.) Select the amount of time between alert attempts.
10. If your Alert on LAN version supports it, select the corrective actions that you will allow a system administrator to perform on this computer.
11. Click **Apply**.

### To clear Alert on LAN alerts

- Select the alert you want to clear and click **Clear**.

or

Click **Clear All** to clear all Alert on LAN alerts.

## Configuring Alert on LAN events


Alert on LAN is an optional Client Manager feature that you can use if these conditions are met:

- At least one of your client computers is enabled with [Alert-on-LAN technology](#).
- You enabled the Alert on LAN options during Client Manager Setup. (Or the original equipment manufacturer shipped the computer with these Client Manager options enabled.)
- You configure Alert on LAN for each computer enabled with the technology.

You can configure Alert on LAN by connecting to individual client computers and configuring them separately (if you want their configurations to be different), or by configuring them as a group (which is much faster). You can also configure different groups of computers using a similar configuration.



## To configure Alert on LAN events for a group of computers

1. From the main Client Manager page, click **Select Computer**.
2. Select the Alert on LAN computers you want to configure and click  on the toolbar. Only the options that are common to all versions of Alert on LAN are available when configuring a group of Alert on LAN computers.
3. Type the **Server IP address** and **UDP port** where you want Alert on LAN alerts to be sent. This server is usually a Client Manager administrator that has the Alert on LAN proxy software installed. The UDP port Alert on LAN uses is 5500.

**Note**—Only one Client Manager administrator or Alert on LAN proxy can be configured to receive these alerts at a time.

4. From the Alert on LAN Hardware drop-down list, select **Enable** to turn on the hardware chip.
5. From the All Alerts drop-down list, specify whether you want to enable or disable all Alert on LAN alerts for the selected computers. If you've already configured unique alert options for different computers in the group, you may not want to override those individual configurations. If this is the case, select **Don't change**.
6. From the Alert Clearing drop-down list, specify whether you want to enable or disable the automatic clearing of alerts on the Alert on LAN agent.
7. From the Watchdog drop-down list, specify whether you want to enable or disable the watchdog timer for the selected computers. If you don't want to change this option for the selected computers, select **Don't change**.

<b>Watchdog</b>	Enables the watchdog timer on the client computer. The watchdog timer is a counter that is periodically reset to zero as long as the operating system is functioning properly. If the operating system fails, the watchdog timer fails to reset at the established intervals and the timer continues to count upward indefinitely. When this happens, an alert is sent to the administrator computer indicating that the operating system is probably hung.
<b>Monitoring frequency</b>	Determines how frequently the watchdog timer is reset. Depending on the version of Alert on LAN chip your computer uses, the watchdog timer interval you specify is rounded to the closest value the hardware permits.

8. Click **Apply**.

## Performing Alert on LAN actions


Alert on LAN is an optional Client Manager feature that you can use to take corrective actions, such as rebooting a hung computer, if these conditions are met:

- At least one of your client computers is enabled with [Alert on LAN technology](#).
- You enabled the Alert on LAN options during Client Manager Setup. (Or the original equipment manufacturer shipped the computer with these Client Manager options enabled.)
- You [configured Alert on LAN](#) for each computer enabled with the technology.

The corrective actions supported depend on the version of Alert on LAN chip installed and the computer's configuration by the manufacturer. The default actions included with the most current version of Alert on LAN include:

- **Reboot**—Reboots the selected computer if its operating system is hung. This is a hard reset and simply turns the power off and back on again.
- **Power Off**—Powers off the selected computer if its operating system is hung.
- **Power On**—Powers on the selected computer.

### To perform an Alert on LAN action

1. From the main Client Manager page, click **Select Computer**.
2. Select the Alert on LAN computers you want to work with and click  on the toolbar.
3. From the Computers with Alert on LAN list, select the computer you want to perform the action on. (You can only select one computer at a time.)
4. Click the action you want to perform (reboot, power off, or power on).

**Note**—The Reboot and Power Off buttons are only available if the operating system is hung. If you want to reboot a computer (or group of computers) whose operating system is not hung, use the [Reboot](#) and [Power Off](#) toolbar icons on the Select Computer page.


# Power management

## Remotely rebooting a computer

After making changes to a computer on the network, you may need to reboot the computer for changes to take effect. Using Client Manager administrator, you can remotely reboot computers. You can expect the following when rebooting computers:

Description of event	Example from log file or notification monitor
Client Manager sends notification to all administrator consoles that a reboot was requested.	A system reboot command was issued by the Client Manager user "administrator."
Each client computer that you are attempting to reboot displays a message box indicating that it will be rebooted in 30 seconds. Users can cancel the reboot command during that time if they are using the computer. If the user cancels, administrators receive notification. See the example at the right.	A system reboot command issued by the Client Manager user "administrator" was cancelled by the user Joe.
If the computer being rebooted is running Windows XP with Fast User Switching enabled, all users currently logged on will receive notification that the administrator wants to reboot the computer. If any of the users cancels the reboot within the countdown period, all users will receive the notification when they log on. See the example at the right.	The Client Manager user "administrator" attempted to reboot this computer. Because Joe cancelled that action, this computer will need to be rebooted before any changes take effect.  Contact your system administrator immediately.

### To remotely reboot a computer


1. From the main Client Manager page, click **Select Computer**.
2. Click the checkbox next to the computer(s) you want to reboot.
3. Click **Reboot**  on the toolbar.

## Remotely powering off a computer

There may be times when you want to remotely power off computers on the network, such as before leaving for the weekend. Or, you may have remotely powered on a computer to perform a management function and now need to remotely power it back off. Using Client Manager administrator, you can remotely power off computers. When using this feature, you can expect the following:

Description of event	Example from log file or notification monitor
Client Manager sends notification to all administrator consoles that a shutdown was requested.	A system shutdown command was issued by the Client Manager user "administrator."
Each client computer that you are attempting to shut down displays a message box indicating that it will be shut down in 30 seconds. Users can cancel the shutdown command during that time if they are using the computer. If the user cancels, administrators receive notification. See the example at the right.	A system shutdown command issued by the Client Manager user "administrator" was cancelled by the user Joe.
If the computer being shut down is running Windows XP with Fast User Switching enabled, all users currently logged on will receive notification that the administrator wants to shut down the computer. If any of the users cancels the shutdown within the countdown period, all users will receive the notification when they log on. See the example at the right.	<p>The Client Manager user "administrator" attempted to shut down this computer. Because Joe cancelled that action, this computer will need to be rebooted before any changes take effect.</p> <p>Contact your system administrator immediately.</p>



### To remotely power off a computer


1. From the main Client Manager page, click **Select Computer**.
2. Click the checkbox next to the computer(s) you want to power off.
3. Click the **Shut down selected computers**  icon on the toolbar.

**Note**—On Windows NT computers, this action only shuts down the operating system so the screen reads, "It is now safe to turn off your computer." It does not actually power off the computer.

## Remotely powering on a computer

Client Manager can remotely power on a computer. For this feature to work, your remote computers must use network adapters that support [Wake on LAN technology](#). These computers may have remote wake-up disabled in the [BIOS](#) by default. You may need to enable this option in system Setup on remote computers before Client Manager can power on these computers.

You can also configure these computers to display a Wakeable icon  in the Select Computer page when powered off, instead of the standard Unavailable icon . This helps you know which computers you can wake up with Client Manager.


After you attempt to power on a computer, its status changes in the Select Computer page to Wake Pending  (if you refresh the page by clicking the Refresh toolbar icon). If the attempt to wake up a computer is successful, the Wake Pending status changes to a status reflecting the computer's health.

If the computer doesn't wake up after five minutes, a message box appears stating possible reasons why it did not respond. (For example, your [routers may not be correctly configured](#), or the computer may be disabled or may not support Wake on LAN.) After clicking OK, the Wake Pending status reverts to its original status of Unavailable or Wakeable.

### To remotely power on a computer

1. From the main Client Manager page, click **Select Computer**.
2. Select the computer(s) you want to power on.

You can only attempt to power on computers that have a status of Unavailable or Wakeable. If the Select Computer page doesn't display any computers with these statuses and you suspect it should, the display list may be filtered to display only unhealthy or available computers. You may need to [filter the display list](#) to display all computers.

3. On the toolbar, click **Wake up the selected computers**  to power on the selected computer(s).

### To configure Client Manager to display the Wakeable icon for a computer

1. From the Windows Start menu of the computer you want to configure, click **Programs | Intel LANDesk Management | Client Manager | Options**.
2. Click the **Network** tab.
3. Click **This computer uses a Wake on LAN network adapter**.
4. Click **OK**.
5. To verify that the change has been made, power off the client computer. Then, at the administrator computer, refresh the Select Computer page.

### Configuring your routers for Wake on LAN technology

If your network subnets are connected with routers, ensure that the routers are configured to handle the directed IP broadcasts that Wake on LAN uses. Otherwise, Client Manager's power-on feature will not work. For more information, review your router documentation.



# Client Manager accounts

---

## Adding new user accounts

Before you can use Client Manager to access a computer, you must have a valid user account on the computer you want to access. During Client Manager installation, you are required to create an initial user account. This account is automatically assigned administrator rights. For security reasons, it is strongly recommended that you change this account name and/or password during installation or soon afterward.

You can create multiple user accounts on each managed computer, and assign different access rights to each user account. You manage accounts by logging in to each computer. Client Manager doesn't enable you to create user accounts for multiple computers as a group function.

User accounts can be assigned the following access rights:

- **No access**—This account is essentially disabled.
- **Browser**—Includes read rights.
- **User**—Includes read/write rights.
- **Power user**—Includes read/write rights, plus some vendor-definable rights.
- **Administrator**—Includes all rights. In order to access the administrator version of Client Manager, you must use an account with administrator rights. This can either be the initial administrator account you created during Setup, or another administrator account.

### To add a new user

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane, click **Client Manager Accounts**.
5. Click **Add new user**.
6. Enter a username. (Usernames are case insensitive.)
7. Enter a password. (Up to 31 characters. Valid characters include a-z, A-Z, 0-9, !, \$, -, and \_ . Passwords are case sensitive.)
8. Specify the access rights and other account/password options.
9. Click **OK**.

For information about changing a user account, see [Editing, deleting, or disabling user accounts](#).

## Editing, deleting, or disabling user accounts

When editing, deleting, or disabling a Client Manager user account, remember these things:

- Ensure that you always retain at least one administrator account to access the administrator console with full rights.
- You can't change access rights for the user account you're currently using. Some of the password options are also unavailable for the user account you're currently using. For example, for accounts with administrator rights, you can't select the User Cannot Change Password option.
- You can't delete or disable the user account you are currently using to log into Client Manager. For the current account, these options are not displayed.

**Tip**—If you plan to use an account some time in the future, don't delete it. Just disable the account temporarily.

### To edit, delete, or disable a user account

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
4. In the left pane, click **Client Manager Accounts**.
5. Click the user account you want to edit, delete, or disable.
6. Make the necessary changes to the account (note that you can't rename a user account), or click **Delete** or **Account disabled**.
7. Click **OK**.

## Displaying user properties

You can easily view the properties information for each user account created on a computer. The user properties include:

- **Username**—Displays name assigned to the user account. User accounts are listed in the order they were created or modified. Your current logon account is highlighted.
- **Access Rights**—Displays the access rights assigned to the account: No Access (account disabled), Browser (read rights), User (read/write rights), Power User (read/write rights, plus other vendor-definable rights), and Administrator (full access).
- **Account Status**—Displays whether the account is enabled or disabled.
- **Password Status**—Displays the password status for the account:
  - **Expires in \_\_ days**—The user account password must be changed after the number of days indicated.
  - **Never expires**—The user account password never expires.
  - **Has expired**—The account's password has expired. The account can't be used until you change the account password.
  - **Need to change**—The user is required to change the account password during the next logon.



## To display user properties

1. Right-click the Client Manager [taskbar icon](#).
2. To run the administrator console (if it is installed), click **Manage Computers** and log on, then click the computer you want to manage from the Select Computer list.

or

- To run the client console (if it is installed), click **Manage This Computer**.
3. Log on to the computer using your Client Manager username and password.
  4. In the left pane, click **Client Manager Accounts**.



## Reference information

### Converting Celsius to Fahrenheit

Because temperature-monitoring computer hardware reports the temperature in degrees Celsius, users in the United States may want to convert the reported temperature to Fahrenheit. The table below lists the Fahrenheit equivalents to the Celsius values reported by Client Manager.

°C	°F	°C	°F	°C	°F	°C	°F
0°	32.0°	26°	78.8°	51°	123.8°	76°	168.8°
1°	33.8°	27°	80.6°	52°	125.6°	77°	170.6°
2°	35.6°	28°	82.4°	53°	127.4°	78°	172.4°
3°	37.4°	29°	84.2°	54°	129.2°	79°	174.2°
4°	39.2°	30°	86.0°	55°	131.0°	80°	176.0°
5°	41.0°	31°	87.8°	56°	132.8°	81°	177.8°
6°	42.8°	32°	89.6°	57°	134.6°	82°	179.6°
7°	44.6°	33°	91.4°	58°	136.4°	83°	181.4°
8°	46.4°	34°	93.2°	59°	138.2°	84°	183.2°
9°	48.2°	35°	95.0°	60°	140°	85°	185.0°
10°	50.0°	36°	96.8°	61°	141.8°	86°	186.8°
11°	51.8°	37°	98.6°	62°	143.6°	87°	188.6°
12°	53.6°	38°	100.4°	63°	145.4°	88°	190.4°
13°	55.4°	39°	102.2°	64°	147.2°	89°	192.2°
14°	57.2°	40°	104.0°	65°	149.0°	90°	194.0°
15°	59.0°	41°	105.8°	66°	150.8°	91°	195.8°
16°	60.8°	42°	107.6°	67°	152.6°	92°	197.6°
17°	62.6°	43°	109.4°	68°	154.4°	93°	199.4°
18°	64.4°	44°	111.2°	69°	156.2°	94°	201.2°
19°	66.2°	45°	113.0°	70°	158.0°	95°	203.0°
20°	68.0°	46°	114.8°	71°	159.8°	96°	204.8°
21°	69.8°	47°	116.6°	72°	161.6°	97°	206.6°
22°	71.6°	48°	118.4°	73°	163.4°	98°	208.4°
23°	73.4°	49°	120.2°	74°	165.2°	99°	210.2°

°C	°F		°C	°F		°C	°F		°C	°F
24°	75.2°		50°	122.0°		75°	167.0°		100°	212.0°
25°	77.0°									

## Client Manager error messages

---

### "A connection with the server could not be established."

A [proxy server](#) on your network is preventing you from accessing Client Manager on the computer. Client Manager must be able to bypass the network's proxy server in order to access the computer. To bypass the proxy server for local intranet network communication, in Internet Explorer 5.5, click **Tools | Internet Options** and the **Connections** tab. Click **LAN Settings**. If "Use a proxy server" is selected, you must also select **Bypass proxy server for local addresses**.

---

### "An administrator on computer [computer name] attempted to shutdown / reboot this computer. Because you cancelled that action, you will need to reboot this computer before any changes take effect. Contact your system administrator immediately."

You will receive this message when a system administrator attempts to power off (or reboot) your computer to perform computer maintenance tasks, such as updating drivers. Because you cancelled the action, the maintenance tasks were not performed (or not completed) on your computer. You should contact your system administrator to find out what maintenance was being performed and how to proceed.

---

### "An internal program error has occurred. Please contact your system administrator for assistance."

The Client Manager installation has probably been damaged. Uninstall and reinstall Client Manager.

---

### "Client Manager needs additional time to load the requested page. Wait 20 seconds, then click the Refresh button on the browser window. If the problem persists, contact the system administrator."

The computer may have been busy or rebooting when Client Manager tried to load the requested page. Wait 30 or 40 seconds and click Retry to see if Client Manager can load the page. If the page still fails to load, try restarting the Win32sl and Intel CI Manager services (if you're running on Windows NT) and restart Client Manager. If the page still fails to load, increase the computer's virtual memory, reboot the computer, and try it again. If the page still fails to load after rebooting,

the installation of Client Manager probably has some damaged or missing files. Uninstall and reinstall Client Manager.

---

**"Notification Monitor could not establish a default hotkey. The hotkey provides keyboard access to the Notification Monitor. Please free up hotkey resources."**

Each time a Client Manager computer starts up, Client Manager attempts to assign Ctrl + Alt + N as the hotkey to display the notification monitor. If Ctrl + Alt + N is already assigned as a hotkey for another program, Client Manager will try to assign another letter of the alphabet (working from A to Z) until it finds an available letter. If all 26 letters have been assigned to other programs, Client Manager displays the error message. Try using a number (0-9), or free up some of your hotkey resources. To set the hotkey: From the Windows Start menu, click **Programs | Intel LANDesk Management | Client Manager | Options**. Click the **Notifications** tab and type the alpha-numeric character in the **Hotkey to display Notification Monitor** box. Click **OK**.

---

**"Only a letter or number may be used as a Hotkey."**

This message refers to the hotkey used to open the notification monitor. Use an alpha character (A-Z) or a number (0-9) for the hotkey.

---

**"The administrator computer could not be found. Verify that the computer name or IP address, and communication port is correct."**

This error message appears if you provide administrator connection information with an incorrect computer name or IP address in the dialog located at **Programs | Intel LANDesk Management | Client Manager | Options**. You can verify the computer name and IP address information on the Computer Summary page of the administrator computer.

---

**"The client computer does not support the requested operation."**

The client computer has received a request from an administrator computer that it can't process because some Client Manager functionality has been removed from the client version. This error message is the equivalent of "501 Not Implemented" as defined in the HTTP Specification (RFC2068).

---

**"The client computer might not support the requested operation."**

The client computer received a request from an administrator computer that it can't process because of a syntax error in the request (which may have occurred as a result of customizing Client Manager). This error message is the equivalent of "400 Bad Request" as defined in the HTTP Specification (RFC2068).

---

**"The Client Manager HTTP server host for this computer is unavailable. Please restart the computer or contact your system administrator."**

Client Manager's HTTP server is no longer running properly in the computer's memory. Usually restarting the computer will resolve this problem. If it does not, some of Client Manager's files may be corrupted. Uninstall and reinstall Client Manager.

---

**"The description for this notification is not available."**

This default message appears if no other notification description is available. This message will probably only appear for notifications that have been added in special implementations of Client Manager by the computer's manufacturer.

---

**"The Hotkey you have chosen is currently in use."**

The hotkey you have chosen to display Client Manager's notification monitor is currently assigned to another program. Specify another alpha-numeric character.

---

**"The system is running dangerously low on memory. Close any unnecessary applications and try again."**

Client Manager is running out of physical and virtual memory, and may crash if memory isn't made available. Close any applications you aren't currently using.

---

**"The system received a shutdown / reboot command from computer *[computer name]* and will initiate system shutdown in *[time]*."**

You will receive this message when a system administrator attempts to power off (or reboot) your computer to perform computer maintenance tasks, such as updating drivers. Because remotely powering off your computer can potentially interrupt your work or result in lost data, you may cancel the shutdown or reboot action within the indicated time. If you cancel the shutdown /

reboot action, you should contact your system administrator to find out what maintenance was being performed and how to proceed.

---

**"This application requires that Microsoft Internet Explorer version 5.5 or above be installed on this system to run. Please contact your system administrator for assistance."**

Microsoft Internet Explorer 5.5 is one of the [system requirements](#) for Client Manager 6.3. Before you can run Client Manager, install (or reinstall) Internet Explorer 5.5 or above.

---

**"You do not have sufficient rights to perform this operation."**

The account you have used to log in to Client Manager has limited rights and doesn't permit you to perform this action. You must have administrator rights to configure the rights for other user accounts. User account rights are set under [User Management](#). This error message is the equivalent of "401 Unauthorized" or "403 Forbidden" as defined in the HTTP Specification (RFC2068). &&Verify that user management page still exists.

---

**"You have entered an invalid address."**

This IP address is for an individual computer. It should be in dotted decimal notation (such as 192.168.5.15) and the node portion of the IP address (usually the last number) should *not* be all binary 1s (such as "11111111" in binary notation, or "255" in decimal notation). If you need to identify the IP address for a computer, run Client Manager on that computer and click **Network** under Inventory.

---

**"You have entered a broadcast address that is already in the list. It was not added."**

There is no need to add a network broadcast address to the list more than once. If you want to discover computers using a broadcast address, select the address and click **Discover**.

---

**"You have entered an invalid broadcast address."**

A valid broadcast address is one that ends in binary 1s (such as "11111111" in binary notation, or "255" in decimal notation). Valid broadcast addresses vary depending on the subnet mask, but generally the numbers 255 or 127 are used as the last octet (number) in the broadcast address. So if your network's address is 192.168.5.0, its broadcast address might be 192.168.5.255. This address is used to attempt to contact or "ping" every Client Manager computer on the network and see which ones respond.

---

**"You have not selected any networks. Select the networks you want to discover on from the Select Networks list."**

Before you can discover computers, you must specify the network(s) where you want to discover. After adding the network broadcast address(es) to the Discover Computers list, select the network(s) in the list, then click **Discover**.

---

**"You have selected more than 10 networks. Discovery can only be performed on 10 networks concurrently. Deselect some networks until there are only 10 networks selected."**

Because discovery uses a broadcast over the selected networks and then waits for computers to respond, discovery imposes a practical limit on the number of networks it can discover on at one time. If you need to discover Client Manager computers on more than ten networks, select ten networks, click **Discover**, then select the next ten networks, and so forth.

---

## Glossary

### **AMS<sup>2</sup>**

Alert Management System<sup>2</sup>. A component of Intel® LANDesk® management products that provides various alerting capabilities, such as paging, Internet mail, and broadcasts.

### **AGP**

Advanced Graphics Port. A high-performance bus type that uses short expansion slots for AGP video cards. AGP buses are targeted at 3D graphics applications and based on a set of performance enhancements to [PCI](#).

### **BIOS**

Basic Input/Output System. A set of software routines generally stored in a firmware chip located on the motherboard. The BIOS is responsible for your computer's input/output activities, such as interpreting keystrokes and mouse clicks, displaying images and characters on the screen, and sending data to the printer.

### **cache**

A block of fast memory that holds data or instructions the processor is most likely to use next. A primary cache is built into the microprocessor. A secondary cache is external to the microprocessor and uses its own memory chips. The write policy of a memory cache can be implemented in two ways: a [write-through cache](#) and a [write-back cache](#).



## **COM1**

First communications port (Communications 1). Because serial ports are often used for connecting long-distance communications devices (such as modems) to a computer, the serial ports on a computer are named "COM1" (Communications 1) and "COM2" (Communications 2).

## **CIM**

Common Information Model. An industry standard for managing a computer's components. Like DMI, CIM is also sponsored by the Desktop Management Task Force (DMTF). Client Manager uses both CIM and DMI to gather information about a computer's components.

## **CRC**

Cyclical Redundancy Check. A network error-checking procedure that calculates a checksum of a [packet](#)'s contents before sending the packet, then stores that checksum in the trailer of the packet to be delivered. When the packet arrives at its destination on the network, the checksum is recalculated to verify the data integrity. If a discrepancy exists, the originating computer receives a request to resend the packet.

## **DMI**

Desktop Management Interface. An industry standard set forth by the Desktop Management Task Force (DMTF) for managing the computer's components. DMI uses a combination of static [MIF files](#) and [instrumentation](#) to gather and report information about a computer's components. Client Manager uses both DMI and CIM.

## **DIMM**

Dual In-line Memory Module. A small circuit board that contains memory chips on both sides of the module. Like the [SIMM](#), the DIMM is easily inserted into a socket on the motherboard to increase the amount of RAM available to the computer. The DIMM connector tabs use 168 pins with separate contacts on each side of the circuit board. The dual contacts allow twice as much data to pass in and out of the DIMM. (DIMM also refers to the socket type designed to receive the DIMM circuit board.)

## **DMA**

Direct Memory Access. The process of moving data from devices (such as a hard disk) directly into memory. This process frees up the processor substantially so it can focus on other tasks.

## **discover**

Searching specified networks for computers.

## **DMA channel**

One of seven channels (numbered 0-6) used to move data from devices (such as a hard disk) directly into memory.

## **DNS server**

Domain Name Service server. Maintains a dynamic database of computers on the Internet with a network address (usually an IP address) and a meaningful domain name, such as "www.intel.com." To find an Internet resource, type a domain name and a DNS server finds the associated IP address of that resource.

## **ECC**

Error Correction Code. The error correction code of the memory module. This code can detect both single-bit and multi-bit errors and correct single-bit errors.

## **EDO**

Extended Data Output. A type of memory chip technology that can increase the CPU's memory access time by 10 to 15 percent over a non-EDO chip. To achieve the performance increase, however, the computer must be designed to take advantage of the speed benefit EDO memory offers.

## **EISA**

Enhanced Industry Standard Architecture. One of two immediate successors to the [ISA](#) bus standard. The EISA bus was developed by a consortium of IBM competitors to challenge IBM's [MCA](#) bus.

## **environment variables**

Variables that are initialized on startup and used by the operating system.

## **expansion slots**

Long, narrow sockets on a motherboard used to install custom expansion cards into your computer for extended functionality. For example, you can plug a network adapter into an expansion slot so your computer can connect to a network. Other examples of expansion cards include video cards, sound cards, and modems.

## **FAT**

File Allocation Table. A common file system supported by most operating systems. FAT is widely used and requires little overhead, but does not offer many of the features available in more advanced file systems, such as [NTFS](#) or FAT32.

## **FAT32**

File Allocation Table 32-bit. FAT32 supports larger disk sizes (up to 2 terabytes) than the original FAT. It also uses a smaller cluster size, which reduces the amount of slack space (unused space) in each cluster.

## **file system**

The portion of an operating system responsible for managing, saving, and retrieving files on a hard disk or other media. Three of the more common file systems are FAT, FAT32, and NTFS.

## **GDI**

Graphical Device Interface. An executable program that serves as a graphical display buffer between device-independent applications and device-specific drivers.

## **gigahertz**

One billion cycles per second. A microprocessor's speed (also known as its clock speed), is measured in gigahertz. Because each computer instruction requires a fixed number of cycles, the clock speed determines how many instructions the microprocessor can execute in one second. A microprocessor that runs at 10 GHz executes 10 billion cycles per second.

## **hexadecimal**

A base-16 system of counting used to enumerate and provide addresses for many aspects of computer circuitry, such as memory, [IRQs](#), and network adapter addresses. The hexadecimal digits are: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. These digits represent the decimal numbers 0 through 15. After counting to the digit F in hexadecimal, you continue counting in double digits from 10 to 1F (16-31 in decimal), 20 to 2F (32-47 in decimal), and so forth.

## **HTTP server**

Hypertext Transfer Protocol server. A server computer that stores files, such as HTML Web pages, and serves those files to HTTP client computers as they are requested.

## **I/O address**

A hexadecimal address in base memory used for input and output.

## **IP address**

A number composed of four octets separated by decimals, such as 127.17.5.12. Each address identifies a unique computer on the Internet. IP Addresses are used exclusively with the TCP/IP network protocols.

## **instrumentation**

The executable code that provides DMI management functionality for a particular component. The instrumentation code is provided by the component manufacturer.

## **Interrupt Request (IRQ)**

A prioritized signal line used by hardware devices to interrupt the processor and request processing attention. Each hardware device generally requires its own IRQ address--a number from 0 to 15 (0 to F in [hexadecimal](#)).

## **ISA**

Industry Standard Architecture. The original bus standard used in IBM and compatible computers. ISA was later superseded by more technologically advanced bus architectures, such as [EISA](#), [MCA](#), [PCI](#), and [SCSI](#).

**LIF socket**

Low Insertion Force socket. An older socket type used on early motherboards for processors and other chips. Unlike its successor, the [ZIF socket](#), you must use considerable force when inserting a chip into a LIF socket, and a special tool or screwdriver is generally required to remove a chip from a LIF socket.

**LPT1**

First parallel printer port (Line Printer 1). Because parallel ports are typically used for connecting printers to a computer, the parallel port names LPT1 and LPT2 were named after the early "line printers" that connected to them (line printer 1, line printer 2, and so forth).

**MAC address**

Media Access Control address (also known as the hardware address or node address). A unique six-byte hexadecimal address (such as 00AA00C778F7) that is permanently coded into the network adapter and can be used to identify a specific computer on a network.

**MIF**

Management Information Format. The file format used by DMI to describe components.

**MIF database**

The collection of known MIF files, maintained by the Service Provider in an implementation-specific format (in the SLDB.DMI file) for fast access.

**MIF file**

A text file that describes a component. MIF files are generally organized in a hierarchy of components, groups, attributes, and attribute values.

**MOF**

Managed Object Format. The file format used by CIM to describe components. MOF files are text files generally organized in a hierarchy of classes, instances, properties, and values.

**MCA**

Microchannel Architecture. A bus architecture developed by IBM as a successor to the ISA bus.

**megahertz**

One million cycles per second. A microprocessor's speed (also known as its clock speed), is measured in megahertz. Because each computer instruction requires a fixed number of cycles, the clock speed determines how many instructions the microprocessor can execute in one second. A microprocessor that runs at 450 MHz executes 450 million cycles per second.

## **NDIS**

Network Device Interface Specification. A standard that defines how the MAC sublayer (in the OSI model) communicates with the various protocol drivers. This interface is used to enable different protocols (such as TCP/IP, IPX\*/SPX\*, and NetBEUI\*) running in the same computer to communicate with the network adapter.

## **NTFS**

New Technology File System. A proprietary, feature-rich file system developed by Microsoft and used in Windows NT. Among other things, NTFS supports long filenames, file level security, and file compression.

## **packets**

Discrete chunks of data, packaged with control and addressing information, that travel over a network cable between sending and receiving computers.

## **parity errors**

Parity errors occur when a memory error-checking procedure finds that some data stored in memory has become flawed. Parity errors are generally caused by a physical problem in the memory chips and often signal that a memory chip is going bad.

## **parallel port**

A hardware port that is used to connect printers or other devices using parallel communication. Parallel ports and cables are generally used over short distances because "cross talk" (data from one wire bleeding over onto another) is a problem with parallel cables over long distances.

## **PCI**

Peripheral Component Interconnect. A bus architecture developed by Intel that has wide support as a successor to the original [ISA](#) bus.

## **PCMCIA**

Personal Computer Memory Card International Association, also known as PC Card. An expansion card about the size of a credit card, originally developed for the portable computer market.

## **primary cache**

Memory cache that is built into the microprocessor. The close proximity of a primary cache to the microprocessor's circuitry gives a primary cache more speed-up potential than a secondary cache.

## **primary gateway**

In a TCP/IP network, the router that all network packets are sent to if their ultimate destination is not on the local network.

**provider**

The CIM instrumentation that collects and manages data from CIM components.

**proxy server**

A server that resides on the network between an application (such as a Web browser), and another server (such as an HTTP server). Proxy servers improve performance by caching and fulfilling requests for files that have been previously accessed by the proxy server. Proxy servers also provide security for the network by filtering requests made to the server.

**resolution**

The number of tiny individual picture elements ("pixels") of a screen that combine to make up a screen display. A high resolution (1280 x 1024) uses many more pixels than a low resolution (640 x 480) and yields a sharper screen image. Higher resolutions are generally selected by users with larger monitors to achieve a more economical use of the large screen's viewing area.

**SCSI**

Small Computer Systems Interface. A bus type that allows up to seven SCSI devices to be chained together and share a common bus. Without processor intervention, SCSI devices can arbitrate which device in the chain has access to the bus at any given time. Two SCSI devices (such as a SCSI hard disk and a SCSI tape drive) can even relay data directly between each other without processor intervention.

**secondary cache**

Memory cache that uses a cache controller and memory chips that are external to the microprocessor. Secondary cache does not offer the same degree of speed-up potential as primary cache. However, it can be considerably larger than a primary cache and therefore hold more instructions and data.

**serial port**

A hardware port that is used to connect serial devices (modem, mouse, and keyboard) to the computer. Serial ports convert the computer's parallel data into serial data that can be sent over a serial cable one bit (or voltage pulse) at a time. Serial ports and cables are used for long-distance communication to eliminate the "cross talk" (data from one wire bleeding over onto another) that can occur with parallel communication over long distances. Serial ports are also used to connect the mouse and keyboard to a computer. These devices don't send much data and therefore don't require the extra bandwidth of a parallel cable.

**Service Provider**

The software code that arbitrates access to [DMI](#) component instrumentation and manages the MIF database.

**SIMM**

Single In-line Memory Module. A small circuit board that contains usually eight or nine memory chips in a single bank. The SIMM is easily inserted into a socket on the motherboard to increase the amount of memory available to the computer.

## Slot 1

The processor socket type used for some Intel® Pentium® processors. Slot 1 uses a 242-contact slot that accepts a processor packaged as a Single Edge Contact (SEC) cartridge. A motherboard has one or two Slot 1s. Slot 1 only supports communication between the L2 cache and processor at half the processor's clock speed.

## Slot 2

The processor socket type used for the Intel® Pentium® II Xeon™ processors. Slot 2 uses a 330-contact slot that accepts a processor packaged as a Single Edge Contact (SEC) cartridge. The Slot 2 design allows the processor to communicate with the L2 cache at the processor's full clock speed.

## slot type

The type of expansion slots available on the computer's motherboard, such as [ISA](#), [EISA](#), [MCA](#), [PCI](#), [SCSI](#), or [AGP](#). (Not to be confused with the processor's socket types: Slot 1 and Slot 2.)

## S.M.A.R.T.

Self Monitoring Analysis and Reporting Technology. A drive technology that monitors its own health and reports potential problems before they occur.

## SNMP

Simple Network Management Protocol. A network management protocol that is part of the standard TCP/IP protocol suite. Client Manager can snap in to an [SNMP management console](#), which can receive and manage SNMP traps to monitor network devices and notify of extraordinary events or problems that occur on the network.

## SNMP management console

A computer on the network that has software installed to receive and manage SNMP traps. Some products commonly used for this purpose include Microsoft Systems Management Server, HP OpenView Network Node Manager\*, CA Unicenter Frameworks\*, and Tivoli NetView\*.

## SNMP trap

A notification of some network event that SNMP sends to a specified destination, usually an SNMP management console.

## subnet mask

A 32-bit number composed of four octets separated by decimals, such as 255.255.255.0. The subnet mask is paired with an [IP address](#), such as 127.17.5.12, to tell an IP router which octets in the IP address are the network ID and which octets are the node ID. A subnet mask of 255.255.255.0, for example, would indicate that the first three octets of an IP address (such as 127.17.5) are the network ID, and the last octet of the IP address (such as .12) is a node ID. (The valid numbers that can be used in a subnet mask are 255, 254, 252, 248, 240, 224, 192, 128, and 0.)

## **taskbar**

A Windows toolbar that usually appears at the bottom of the screen (although it can be moved to the top or either side of the screen). The taskbar includes the Windows Start menu, buttons representing the running applications, and a system tray (on the far right side of the taskbar) which includes the current time and icons for various tools and programs.

## **threshold**

A configurable value that, if passed, can trigger an alert action. You can set the thresholds for some system events, such as available disk space and memory.

## **UDP**

User Datagram Protocol. A connectionless transport-layer protocol commonly used in the TCP/IP protocol family. Unlike TCP, when a UDP packet is sent over the network, UDP makes no effort to verify that the packet was successfully received on the other end.

## **UNC**

Universal Naming Convention or Uniform Naming Convention. A format for specifying the location of resources (such as computers and printers) on a network. A UNC name uses this format:

\\computer name\shared resource pathname. Example: \\My computer\My documents\file.txt

## **Wake on LAN technology**

A standard method for remotely waking a personal computer from sleep mode or a power-off condition. Wake on LAN technology is only supported on computers that contain a Wake on LAN network adapter, which enables a sleeping computer to monitor network traffic and respond to a Wake on LAN instruction.

## **write-back cache**

A write-back cache writes data into the cache, then periodically checks for discrepancies between cache data and memory data. (Discrepancies can occur, for example, from a hard disk transferring data directly into memory via [DMA](#)). Write-back cache is faster than write-through cache, but the overhead to monitor discrepancies between memory and cache makes write-back cache more expensive.

## **write-through cache**

A write-through cache writes the same data into memory and cache in a single operation. A write-through cache is slower than a write-back cache, but potentially safer because it guarantees that cache data and corresponding memory data are always the same.

## **ZIF socket**

Zero Insertion Force (ZIF) socket is a socket type used on motherboards for processors and other chips. Unlike the [LIF socket](#), little pressure is needed to seat a chip into a ZIF socket, and a special tool or screwdriver is not required to remove a chip from a ZIF socket. The ZIF socket was



designed to reduce the risk of accidentally bending a pin (or whole row of pins) on an expensive processor when seating the chip into a socket.

## Installing SNMP on Windows NT

### To install and start the SNMP services

1. From the Windows NT Control Panel, double-click **Network**.
2. Click the **Services** tab.
3. Click **Add**.
4. Double-click **SNMP Service**.
5. Specify a location for the Windows NT install files and click **Continue**.
6. At the Microsoft SNMP Properties dialog, click the **Traps** tab.
7. In the Community Name box, type a name for the SNMP community, such as Public.
8. Click **Add**.
9. Below the Trap Destinations box, click **Add**.
10. Type the computer name or IP address of your network's SNMP management console (where you want the traps sent).
11. Click **Add**.
12. Click **OK**.
13. Click **Close**.
14. When prompted, click **Yes** to restart your computer.
15. When the computer restarts, from the Windows NT Control Panel, double-click **Services**.
16. If it's not already started, click **SNMP** and **Start**.
17. If it's not already started, click **SNMP Trap Service** and **Start**.
18. Click **Close**.

**Note:** After installing SNMP, you must reinstall any Windows NT Service Pack that was installed on the computer.

## Installing SNMP on Windows 2000 or XP

### To install SNMP services

1. Log on to Windows 2000 or XP as administrator or with administrator rights.
2. Click **Start | Settings | Control Panel**.
3. Double-click **Add/Remove Programs**.
4. Click **Add/Remove Windows Components**.
5. In **Components**, click **Management and Monitoring Tools** (but do not clear its check box).
6. Click **Details**.
7. Select **Simple Network Management Protocol**.
8. Click **OK**.
9. Click **Next**.
10. Follow the prompts in Windows Components Wizard to finish installing SNMP.
11. When finished, SNMP automatically starts.

# Installing SNMP on Windows 98 Second Edition

## To install SNMP services

1. From the Windows 98 Control Panel, double-click **Network**.
2. Click **Add**.
3. In the Select Network Component Type dialog, double-click **Service**.
4. In the Select Network Service dialog, click **Have Disk**.
5. In the Install From Disk dialog, type the path to the \Tools\ResKit\NetAdmin\SNMP directory on the Windows 98 Second Edition CD.
6. Click **OK**.
7. In the Models list, click **Microsoft SNMP Agent**.
8. Click **OK**.

**Note**—You may be prompted to specify the location of additional files. If this happens, specify the path to the Windows 98 source files at another location, such as a shared directory or the Windows 98 Second Edition CD.

9. Restart the computer for the changes to take effect. After rebooting, use System Policy Editor to configure SNMP.

**Note**—You'll need to install System Policy Editor from the Windows 98 CD if you haven't already done so. It's usually located in the \Win98\Setup\Upgrade.CD\Admin\AppTools\PolEdit directory, but may vary depending on your CD.

10. Run **POLEDIT.EXE**.
11. Click **File | Open Registry**.
12. Type the computer name or IP address of your network's SNMP management console (where you want the traps sent).
13. Click **Add**.
14. Double-click **Local Computer**.
15. Double-click **Network**.
16. Double-click **SNMP**.
17. Enable the **Traps for '[community name]' community** option.
18. Click **Show**.
19. Click **Add**.
20. Type the computer name or IP address of your network's SNMP management console (where you want the traps sent).
21. Click **OK** three times.
22. Click **File | Save**.
23. Click **File | Exit** to exit System Policy Editor.

## Integrating Client Manager with MMC

Microsoft Management Console (MMC) is a common console framework for management applications such as Intel® LANDesk® Client Manager. You can read more about Microsoft Management Console at:

<http://www.microsoft.com/products/backoffice/management/MMC/overview.htm>

If you have MMC installed on your administrator computer, you can configure it to include Client Manager in its left pane as a snap-in.

## To integrate Client Manager with Microsoft Management Console

1. From MMC, click **Console | Add/Remove Snap-in**.
2. On the Standalone tab, click **Add**.
3. Click **Intel LANDesk Client Manager**.
4. Click **OK** twice.
5. To run Client Manager in MMC, Click **Intel LANDesk Client Manager** in the MMC's left pane. MMC displays the Client Manager administrator console in its right pane.

## Manually removing Client Manager from Windows 98/Me/NT/2000/XP

To uninstall Client Manager from a computer, you should generally use the Add/Remove Programs option in the Windows Control Panel. However, if certain Client Manager program files are corrupt, it may be necessary to manually remove the program files and registry keys that Client Manager installs during Setup.

**Note**—You should only try to manually remove Client Manager if all of the following conditions are met:

- Uninstall failed to remove part or all of Client Manager.
- You're unable to reinstall Client Manager because of the failed uninstall.
- The computer does not have any other Intel LANDesk products installed on it (such as Intel® LANDesk® Management Suite).
- The drives on which Client Manager was installed are FAT or FAT32 (or you're using a third-party NTFS utility).

## To remove the Client Manager files and folders

1. Boot to DOS using the Windows boot disk created during installation.
2. From a command prompt, delete these files and folders (and any files and folders beneath them) if they exist. **Note**—Some of these files and folders may not exist depending on the Windows version and type of Client Manager installation (Client or Administrator). On Windows 98 computers, you'll need to look in the "System" folder rather than the "System32" folder.
  - {InstallPath}\Intel\Alert on LAN
  - {InstallPath}\Intel\BootStrap Agent
  - {InstallPath}\Intel\Common
  - {InstallPath}\Dmi
  - {InstallPath}\LDCM
  - {WindowsPath}\System32\msgsys.dll
  - {WindowsPath}\System32\nts.dll
  - {WindowsPath}\System32\pds.dll
  - {WindowsPath}\System32\drivers\smbus.sys
  - {WindowsPath}\System32\drivers\smbusp.sys
  - {WindowsPath}\System\drivers\smbus.vxd

## To remove the Client Manager registry keys

1. Boot to Windows.
2. From the Windows Start menu, click **Run**.
3. Type **REGEDIT** and click **OK**.
4. Delete these registry keys (and any keys and values below them) if they exist:

### Windows 98

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\RunServices\aoInsrvr
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\RunServices\Intel PDS
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\RunServices\Intel File Transfer
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\RunServices\DMISStart

### Windows NT

- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\aoInsrvr
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Intel File Transfer
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Intel IIDS
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Intel SSM
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Intel Bootstrap Agent
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Intel CI Manager
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\win32sl

### Windows 98/Me/2000/NT/XP

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App Paths\NML.exe
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App Paths\SMBus Driver
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run\User Space Manager
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\Intel BootStrap Agent
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\Client Manager 6.0
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\SMBus
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\SNMP\Parameters\ExtensionAgents\{the number that contains the path to the snmp.ssp file}
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\SMBus
- HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\SMBusP
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\Alert on LAN
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\BootStrapAgent
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\cimgr
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\DMI 2.0 SDK
- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\LANDesk

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\Shared Components
  - HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\SharedComponents
  - HKEY\_LOCAL\_MACHINE\SOFTWARE\Intel\SMBus Driver
5. Click **Registry** | **Exit** to close REGEDIT.
  6. Reboot the computer.

## Windows services

On Windows NT, Windows 2000, and Windows XP, Client Manager runs up to seven services, depending on the components installed:

- **Intel CI Manager**—Intel Component Instrumentation Manager. Runs the [instrumentation](#) that queries and returns dynamic information about the computer.
- **Intel PDS**—Intel Ping Discovery Service. Enables Client Manager to discover other Client Manager computers on the network.
- **Intel SSM**—Intel System Space Manager. Loads and unloads Client Manager components (such as the [HTTP server](#), [DMI](#) event listener, node discovery engine, node log file, health manager, store and forward, and [SNMP](#)) as they are needed by Client Manager.
- **Windows Management**—Gathers and manipulates information about system resources such as processor, memory, and disks. This is a Microsoft service that manages [Component Information Model \(CIM\)](#) objects.
- **Win32si**—Gathers and manipulates information about system resources such as processor, memory, and disks. This is an Intel Windows 32-bit service provider that manages [Desktop Management Interface \(DMI\)](#) objects.
- **IIDS**—Intel Internet Data Service. Acts as Client Manager's management Web server by performing HTTP GETs and POSTs to obtain the interface for both client and administrator via Internet Explorer.
- **BSA**—Intel Bootstrap Agent. Enables the discovery of Client Manager clients and provides a secure mechanism to transfer packages, mainly BIOS and driver updates.

### To manually start a Windows service

1. On the Windows Start Menu, click **Settings, Control Panel**.
2. If you're running Windows XP, double-click **Administrative Tools | Component Services**.
3. Double-click **Services**.
4. In the Service list, click the service you want to start.
5. Click **Start**.



# Release notes

---

## Client Manager 6.3 release notes

This document contains a list of the known issues in this release of Intel® LANDesk® Client Manager. While these errors were not considered significant enough to delay this release, every effort will be made to address these issues in the next maintenance release of Client Manager 6.3.

- [Setup issues](#)
- [Discovery and network issues](#)
- [Inventory issues](#)
- [Health issues](#)
- [Alerting issues](#)
- [Client Manager account issues](#)
- [User interface issues](#)

### Setup issues

#### Changing the installation path only changes the Client Manager path

Changing the installation path during Setup only changes the location of the LDCM directory tree. Other files and directories Client Manager installs, such as Alert on LAN, DMI, SMBus and Bootstrap agent, are still installed to the default directories on the C: drive.

#### Setup allows installation to begin even when insufficient disk space is detected

Client Manager Setup's Select Components screen includes a field (in the bottom right corner) indicating how much hard drive space is required, and how much is available. Setup allows the installation to proceed even when the available space is substantially less than the space required (100 MB). If Setup continues, Client Manager begins copying files and eventually aborts due to lack of space.

#### Creative DVD decoder card causes Client Manager service provider to crash

When installing Client Manager on a Windows 98 Second Edition computer with a Creative DVD decoder card, the Client Manager service provider Win32sl.exe crashes and displays the following message:

Win32sl.exe caused an invalid page fault at 0000:efefefef.

This is followed by two or three blue screens with the following message:

Fatal exception error 0E at 0028:C006F20B in VXD VNETBIOS(01) + 000005EB.

## Error when uninstalling Client Manager: "Failed to create an instance of AOL 2 Agent object"

Uninstalling a full Client Manager installation (including the Alert on LAN agent) on a computer running Windows NT 4.0 displays an error message with the title: "Failed to create an instance of AOL 2 Agent object." The dialog contains only a title and an OK button. This message box can be ignored as it is not reporting an actual problem.

## Installing Japanese version when browser is set to English results in English interface

If you install the Japanese version of Client Manager on a computer whose browser has the default language set to English, Client Manager installs and displays the English interface.

**Workaround**—Set the browser's default language to Japanese before installing a Japanese version of Client Manager.

## CIMOM not installed with Client Manager

If you want Client Manager to use the optional CIM hardware instrumentation to provide inventory information on Windows 98 Second Edition and Windows NT computers, you must download and install the WMI core download from Microsoft's Web site:

<http://download.microsoft.com/msdownload/wbem/2.0/x86core/en/wbemcore.exe>. The CIM hardware instrumentation is not necessary in order to run Client Manager and view inventory information. If you use the CIM instrumentation, you must install it on the computer *before* installing Client Manager.

## Uninstall leaves program folders under Program Files

When Client Manager uninstalls, some folders and files may remain under Program Files.

## Client Manager fails when installed in the root directory

If you install Client Manager into the root directory, such as C: or D:, Client Manager doesn't run.

**Workaround**—Always install Client Manager into a subdirectory on a drive.

## Administrator console is slow when loading a fully-qualified hostname

If you type a fully-qualified hostname in the browser's address field (such as <http://computername.company.com:6787/index.tpc>) instead of the abbreviated host name (such as <http://computername:6787/index.tpc>), the administrator console is slow in loading the page.

**Workaround**—Double-click Windows Control Panel's **Network** icon, click the **Protocols** tab, select **TCP/IP Protocol**, click **Properties**, click the **DNS** tab, and make sure all the information is filled out for your computer's DNS settings.



## Different versions of Client Manager administrator should not be installed on the same computer

If you install Client Manager 6.3 administrator on a computer, you should not install an earlier version of Client Manager on the same computer—doing so causes some interface irregularities. Also, uninstalling an older version removes some files needed by the 6.3 version.

## Updated network adapter required for Alert on LAN agent

If you plan to install the Alert on LAN agent on a computer using an Intel network adapter, the computer's network adapter driver must be dated March 5, 1999 or later. The latest drivers for Intel network adapters are available at the Intel Web site.

## Don't install the Alert on LAN agent on a computer that doesn't support Alert on LAN

Installing the Alert on LAN agent on a computer that doesn't support Alert on LAN causes problems during install and uninstall. If you're not sure if the computer supports Alert on LAN, don't install the Alert on LAN agent.

## Don't over-install the client version

If you need to reinstall the client software, either on the client or as part of a full installation at the administrator computer, you must first uninstall the Client Manager software.

## Client Manager not compatible with other DMI service providers

Client Manager should not be installed on computers running a DMI service provider from another vendor. DMI service providers from other vendors need to be removed from a computer before running Client Manager Setup.

## Error message running Client Manager with HP OpenView, Tivoli, or CA

When Client Manager is installed on a Windows NT, 2000, or XP computer that is also running HP OpenView\*, CA Unicenter\*, or Tivoli TME\* 10, the error message "Ordinal 383 could not be found in WDMIUTIL.DLL" may occur. Client Manager requires a newer version of the WDMIUTIL.DLL file and will not function when this error occurs.

### Workaround:

1. Install the Client Manager Application Integration Module (AIM), which will replace the DLL with the newer version Client Manager needs. The AIM is available on Intel's Web site.
2. Rename the WDMIUTIL.DLL in the Windows\System32 directory.
3. Copy the newer version of the WDMIUTIL.DLL file from the Program files\Intel\DMI\BIN directory to the Windows\System32 directory.
4. Reboot the computer.

## Uninstalling Client Manager with CIM on Japanese Windows 2000 displays errors in Event Viewer

On a computer running the Japanese version of Windows 2000 professional, if you install the CIM instrumentation during Client Manager Setup and then uninstall Client Manager, errors are displayed in the Windows 2000 Event Viewer. These errors should not display in the Event Viewer.

## Uninstall stealth mode before installing non-stealth mode version

A "stealth mode" installation (no user interface on the client) should be uninstalled before installing the non-stealth mode version. If you install a non-stealth mode version over a stealth mode installation, several problems can occur, including:

- Client Manager doesn't launch from the Start | Programs menu.
- The Client Manager icon doesn't appear on the taskbar.
- The program executable that can be used to launch Client Manager isn't available in \Intel\LDCM.

## Stealth mode admin install is possible

It is possible to do a "stealth mode" installation of the administrator console (choosing Admin or Full), which would result in the administrator console files being installed but not usable. The "stealth mode" installation option was intended for client installations only.

## Removing network adapter causes shutdown problems

If the network adapter is removed from the computer after Client Manager is installed, the operating system can't shut down. When you attempt to shut down the operating system, it displays the message "Please wait while your computer shuts down," and never completes the shutdown. A network adapter (or modem) and TCP/IP are required for Client Manager to run. Removing the network adapter after Client Manager is installed results in an invalid hardware configuration for Client Manager.

## Don't install administrator on laptop computer

The Client Manager administrator console should not be installed on a laptop computer (or any computer that goes into a suspended power mode). If a Client Manager administrator computer returns from suspend mode and then needs to be shut down, the computer may require an excessive amount of time (up to ten minutes) to power off. This is because the laptop must restore all of its connections with the Client Manager client computers it manages each time the computer returns from suspend mode and comes back online. This process can take several minutes.

**Workaround**—If you need administrative access to Client Manager computers from a laptop computer, use Internet Explorer on the laptop to browse to the Client Manager administrator on a non-mobile computer. For information on how to do this, see the topic "Connecting to a computer from any browser" in the online help.

## Error: "The file 'SMBUS.VXD' or (Unknown) could not be found"

On Windows 98 Second Edition or Windows Me computers that support SMBUS, the error message "The file 'SMBUS.VXD' or (Unknown) could not be found" appears when reinstalling Client Manager.

Steps to reproduce:

1. Install Client Manager on an SMBUS computer and reboot.
2. Uninstall Client Manager and reboot.
3. Install Client Manager again and reboot.
4. During bootup, the SMBUS.VXD error appears.

**Workaround**—Specify the path to the SMBUS.VXD driver, such as \WINDOWS\SYSTEM (for Windows 98 Second Edition).

## Intel® InBusiness™ Remote Services Center deletes crucial Client Manager DLLs when uninstalled

If you install Intel InBusiness Remote Services Center and then install Client Manager administrator on the same computer, they both run and co-exist quite well. But if you uninstall Remote Services Center and reboot, Client Manager doesn't start properly and displays error messages such as "Unable to locate DLL." It is looking for NTS.DLL. If you manually restore this file and launch Client Manager, it displays a message indicating that PDS.DLL is missing.

## Discovery and network issues

### Japanese Windows 98 SE computers running Client Manager can't shut down if system resources are low

Japanese Windows 98 Second Edition computers with Client Manager installed sometimes can't shut down properly if system resources are at 20 percent or lower.

### Client Manager computer names can't contain spaces

If the computer name contains a space, the browser can't connect to the HTTP server. Other operations, such as inventory export, remote reboot, and remote power off/on also do not work if the computer name contains a space.

Workaround: Instead of using a space in the computer name, use a hyphen character (-).

### Administrator can't connect to client temporarily if client's IP address changes

If a client computer on the network using one IP address later connects to the network using a different IP address (through a RAS connection, for example) the administrator can't connect to the client computer until the DNS server resolves the computer name with its new IP address.

**Workaround**—On the client computer, provide the IP address of the administrator computer you want to manage the client (from the Windows Start menu, click **Programs | Intel LANDesk Management | Client Manager | Options | Remote Administrator** tab). Or if you know the new IP address of the client, on the administrator computer's Select Computer page, delete the old

reference to the client computer and add the new IP address using the Add Computer button on the toolbar.

### Double-byte Japanese computer names not supported

If double-byte Japanese characters are used to name a computer, the Computer field in the notification monitor displays dashes (-). Also, if you try to select a computer that uses a double-byte name in the Select Computer page, the hotlink to log on to that computer will not be available and you will not be able to access the computer. According to RFC-1034, DNS is limited to 7-bit ASCII characters for computer domain names. Double-byte characters are not supported.

### Microsoft TV Data Adapter prevents discovery of clients from administrator console

If the Microsoft TV Data Adapter is installed on a Windows 98 Second Edition computer, the Client Manager administrator console is unable to discover client computers. This is because the TV Data Adapter registers with the operating system as the first network adapter installed, and Client Manager attempts to use the first network adapter it finds when performing a discovery.

**Workaround**—Uninstall the TV Data Adapter. To do this, from the Windows Start menu, click **Settings | Control Panel**. Double-click the **Network** icon. On the **Configuration** tab, click **TV Data Adapter** and click **Remove**.

### Administrators using a Japanese language computer only see English information from non-Japanese clients

Install the Japanese OS language pack on Windows NT 4.0 clients from the operating system CD. Once you do this, information from these clients will appear in Japanese on Japanese Client Manager administrator computers. **Note**—This only resolves the problem for Windows NT 4.0 clients, not for Windows 98 Second Edition clients.

### Remote administrator doesn't completely power down some Windows 2000 computers

When a remote administrator sends a power-down instruction to computers, some computers running Windows 2000 may only shut down to the screen "It is now safe to turn off your computer" but not actually power off the computer.

**Workaround**— In the Windows registry, navigate to HKEY\_LOCAL\_MACHINE/SOFTWARE/Microsoft/Windows NT/Winlogon. Change the powerdownaftershutdown value to 1.

### Managing clients over a router

If you need to manage Client Manager clients over a router, you must configure your router to forward broadcast (or Magic Packet) packets to the other networks where Client Manager clients are located.

## Inventory issues

### Adaptec PCI Ultra2 SCSI controller reports being connected to IRQ 52

The Adaptec PCI Ultra2 SCSI controller shows that it is connected to IRQ 52, but computers only have 16 IRQs, numbered 0-15. Windows NT also reports the IRQ as 52 in Control Panel. The instrumentation appears to be reporting the value from the controller's BIOS. This problem is being investigated with Adaptec.

### Partial video information on a multi-monitor Windows 98 SE or Windows 2000 system

Windows 98 Second Edition and Windows 2000 both support multiple monitors. On these computers, the information displayed in Client Manager's Video inventory page is not the information for the primary video card. Ideally, this page should display information for all installed video cards.

### Network adapter not detected by instrumentation

On some computers, the network adapter information is not detected by Client Manager instrumentation. The Network Adapter Name field in the Network inventory page is left blank.

### Refreshing the Asset Management inventory page displays confusing message

When you change data on the Asset Management page and click Apply, then right-click in the right frame and click Refresh, a dialog appears asking if you want to "Repost form data?" This happens because the data you just changed was updated (posted) when you clicked Apply, and now you're asking to post the same data to the form again.

### Video doesn't show supported resolution with default vga.sys driver

When Client Manager is running on Windows NT and using the default vga.sys video driver, the Video inventory page doesn't display the supported video resolutions. The driver supports at least two modes: 800x600 with 16 colors, and 640x480 with 16 colors.

### Computers with two mice (one PS/2, one USB) only report information for one mouse (USB)

On computers that have two mice connected (one PS/2, one USB), Client Manager only displays information on the Keyboard/Mouse inventory page for the USB mouse.

### Operating System inventory page doesn't display information for device drivers

When Client Manager is running on a Windows 98 Second Edition computer, the Operating System inventory page doesn't display version or date information for Real Mode Device Drivers. On computers running Windows NT, these fields display the version and date information for the Windows NT device drivers.

## Drives information reported for stripe sets and volume sets can be misleading

If a computer has a stripe set or volume set configured across multiple hard disks, the Drives inventory page reports information that can be misleading. For example, if a D drive stripe set is created on physical disks 0, 1, and 2, Client Manager lists all of drive D as a partition on disk 0 because disk 0 is the first disk of the stripe set. Client Manager doesn't report that the D drive is striped, so it appears that disk 0 is much larger than it actually is.

## Client Manager doesn't autodetect new processor core voltage if the processor is replaced

The first time Client Manager runs, it autodetects the CPU core voltage (if it was set to autodetect). The Windows registry is then updated with the processor information, and the processor autodetection is turned off. After this happens, if you upgrade or replace the processor to a processor with a different core voltage, Client Manager generates voltage warnings for the CPU core voltage because it doesn't match the value in the Windows registry.

**Workaround**—From the Client Manager CD, navigate to the ASICCFG directory and double-click the .REG file. (The name of the .REG file will vary depending on the computer manufacturer.) This forces Client Manager to autodetect the new processor's core voltage.

## Missing data in the I/O Ports page

If the computer's BIOS settings for the serial/parallel ports are set to AUTO, the I/O Ports inventory page doesn't display the port information on Windows NT computers. Windows NT doesn't load the drivers (or set the registry) if the port is set to AUTO.

**Workaround**—Configure the port to ENABLED in the BIOS and reboot.

## Discrepancies exist between Client Manager's System Resources and Windows utilities

Some Windows utilities (such as Device Manager and WINMSD.EXE) report IRQs, memory addresses, and I/O ports differently than what Client Manager reports on its System Resources inventory page. This is due to differences in the way these programs read the system resource information of a computer.

## Operating System information doesn't appear unless logged in with administrator rights

If you are not logged in to a Windows NT operating system with administrator rights, the Real Mode Tasks and System Variables inventory information will not appear on the Operating System page (or in the export files if you export the information). This has been modified to work with Windows 2000 and Windows XP.

## Mouse connector type incorrectly reported as "PS/2"

On installations of Windows NT 4.0, the Client Manager inventory may incorrectly report the Mouse Connector Type as "PS/2" and the Keyboard Port Type as "Unknown" for Universal Serial Bus (USB) mice and keyboards. This is because Windows NT 4.0 does not support USB.

Computers running Windows NT 4.0 with USB keyboards and mice can do so only because of the ability of the BIOS to convert USB signals to PS/2 signals. PS/2 is supported by Windows NT 4.0.

### Drives information different than that reported by Windows 98 SE

Windows 98 Second Edition reports some Drives inventory values differently. The values reported for "Set Thresholds Disk Space" and "Total Capacity" may vary (about 1 percent) on Windows 98 Second Edition computers. Also, the "Total Capacity" reported by Client Manager may differ (about 1 percent) from the amount reported by the operating system, particularly on drives larger than 8.4 GB. This is because the method used to calculate drive capacity differs between Client Manager and the Windows operating system.

### System Resources information different than that reported by Windows

On the System Resources inventory page, the values reported for IRQ, I/O, Memory, and DMA may not be consistent with values reported by the operating system.

### BIOS information not displaying

The BIOS information does not display on the BIOS inventory page if the BIOS event logs are stored in General Purpose Non-Volatile memory on Windows NT and Windows 2000/XP computers.

## Health issues

### Registry key needed for chassis detection and alerting to occur on Intel chipset-based motherboards

For all current and future Intel chipset-based motherboards, a missing registry key prevents chassis detection and alerting from working correctly.

**Workaround**—You need to add a key to the registry that enables chassis detection and alerting to work correctly with these motherboards.

1. In the Registry Editor, navigate to:

```
HKLM\software\intel\cimgr\instrumentation\intel.iosmal.2.1\Chassis\Health  
Contributor|Intrusion Detection|001\state
```

2. Add a new DWORD value, name it **OKState**, and set its value to **1**.
3. Reboot the computer.

### S.M.A.R.T. drive errors not detected with CD-ROM as master and hard drive as slave

When a CD-ROM is configured as a master and a hard drive is configured as a slave, the Client Manager instrumentation does not pick up S.M.A.R.T. drive errors from the slave hard drive. The following configuration results in this problem:

Main HD on Primary IDE controller

CD-Rom on secondary IDE controller (Master)

Second HD (generating SMART errors) on secondary IDE controller (Slave)

### S.M.A.R.T. drive errors not very descriptive

When Client Manager reports a S.M.A.R.T. drive error, it reports the drive as "IDE 0," "IDE 1," and so forth. Descriptions for these physical drive names are provided below:

**IDE 0**—The master drive on primary controller

**IDE 1**—The slave drive on primary controller

**IDE 2**—The master drive on secondary controller

**IDE 3**—The slave drive on secondary controller

## Alerting issues

### Alert on LAN support

The **Alert on LAN agent** is not supported on Client Manager clients running Windows Me. The **Alert on LAN proxy** is not supported on Client Manager administrators running Windows 98 Second Edition or Windows Me.

### Registry key needed for chassis detection and alerting to occur on Intel chipset-based motherboards

For all current and future Intel chipset-based motherboards, a missing registry key prevents chassis detection and alerting from working correctly.

**Workaround**—You need to add a key to the registry that enables chassis detection and alerting to work correctly with these motherboards.

1. In the Registry Editor, navigate to:

```
HKLM\software\intel\cimgr\instrumentation\intel.iosmal.2.1\Chassis\Health  
Contributor\Intrusion Detection\001\state
```

2. Add a new DWORD value, name it **OKState**, and set its value to **1**.
3. Reboot the computer.

### A client computer's store and forward queue can't be turned off

If a client computer is off the network for several days or weeks and generates dozens or hundreds of alerts during that time, when it finally reconnects to the network, it sends all of its alerts to the administrator computer(s) it previously registered with. This can generate significant network traffic and quickly fill the administrator computer's notification monitor. The store and



forward queue can't be turned off to prevent these alerts from forwarding. It is very unlikely, however, that such a scenario would occur since administrator computers are removed from the client's list of administrator computers in approximately 60 days.

### **Deleting a client computer may not prevent it from forwarding alerts to the administrator**

If a client computer is disconnected from the network, and the administrator then deletes that computer from its Selected Computers list, when the client computer is reconnected to the network (without rebooting) it continues to forward its alerts to the administrator.

**Workaround**—Ideally, you should delete the computer from the list before disconnecting it from the network. If the client computer has already been removed from the network and then deleted, reboot the client after it is reconnected to the network. You can also rediscover from the administrator and then delete the client computer again.

### **Health icon on status bar may display incorrect health in rare conditions**

The health status icon that Client Manager displays on the status bar may be incorrect and inconsistent with the health status reported in other areas of Client Manager. This generally occurs when rare steps are taken to create and resolve a Client Manager health problem.

### **Clearing global log and refreshing deletes the log again**

When the global log in the administrator console is cleared and then receives a new alert, if you right-click in the right pane and click Refresh, the log doesn't display the new alert(s). Instead, Client Manager deletes any new alerts that have been received by the global log.

**Workaround**—Instead of right-clicking in the right pane and clicking Refresh, click the Global Log link in the left pane again. (If you right-click in the right panel and click Refresh, clicking Global Log won't show the new event.)

### **POST errors aren't reported if date is set back**

If you set the computer's system date back, after the BIOS scan has occurred, POST errors are no longer reported in Client Manager until after the scan date is reached, or the registry values are set to zero.

**Workaround**—In the Windows registry, navigate to HKEY\_LOCAL\_MACHINE\Software\Intel\cimgr\Instrumentation\Intel.IOSystem.2.1\POSTError\Health Contributor. Reset the keys ScanTimeHiDWORD and ScanTimeLoDWORD to 0.

### **JN440BX motherboards may generate a cover tamper alert when computer is powered down**

Computers that use an Intel® JN440BX motherboard may send a cover tamper alert to the Alert on LAN proxy server when they are powered down, even when the computer's cover is not open.

## Store-and-forward alerts from client aren't forwarded until administrator clicks Refresh on the Select Computer page

If a client computer generates an alert while it (or the administrator computer) is off the network, the client computer stores the alert, then forwards it to the administrator when both computers are back on the network. The administrator computer must display the Select Computer page to receive the stored alert.

## Client Manager doesn't discover both networks on computers with two network adapters

When Client Manager is installed on a Windows 98 Second Edition or Windows Me computer with two network adapters, using a discovery broadcast address of 255.255.255.255 should discover Client Manager computers on both networks, but it doesn't. Only one network is discovered.

## Alert on LAN proxy server can be changed but not removed

You can change the IP address for the Alert on LAN proxy server to another IP address, but you can't delete it.

**Workaround**—Disable Alert on LAN on the client.

## Alert on LAN proxy server receives "presence heartbeat expired" alert when heartbeat is disabled on the client

When the Alert on LAN "presence heartbeat expired" alert is disabled on the client computer, the proxy server receives a notification stating the Alert on LAN client computer is no longer available. This is incorrect—the computer is still available.

## Client Manager account issues

### Changing username and password from a remote console transmits data as clear text

When you connect to a remote installation of Client Manager from a browser on the network, then make changes to Client Manager user accounts, the usernames and passwords you create or change are transmitted over the network using clear text. Although this information remains invisible to the average user, the clear text makes it possible to identify Client Manager account information using a packet sniffer on the network.

**Workaround**—If you're concerned about the security of your Client Manager accounts, only create and modify user accounts from the computer on which they reside.

### Performing an action on a client computer from an administrator computer requires an account on the client computer

In order to perform most administrator console actions on a client computer (such as remotely powering on/off a computer, remotely flashing the BIOS, and so on), you must be logged into the administrator console using a username and password that is identical to a user account on the client computer.

## User interface issues

### Client Manager taskbar icon disappears when computer has critically low memory

When a computer is critically low on memory, many of its 16-bit applications can begin crashing. In addition, the Client Manager taskbar icon (as well as other icons) are unloaded from the operating system's taskbar. When the memory problem is corrected, the Client Manager taskbar icon is not automatically reloaded. This is not a defect of Client Manager; Client Manager is simply responding as it should when the operating system begins shutting down applications as a result of insufficient memory.

**Solution**—Reboot the computer to restore the Client Manager taskbar icon.

### Pressing F1 in Client Manager displays Internet Explorer Help

Pressing the F1 key anywhere in the Client Manager program causes the Internet Explorer Help to appear instead of Client Manager Help. This is working as designed, but may cause some confusion if you press F1 expecting to see Client Manager Help.

### Client Manager randomly displays error text in a frame

Client Manager randomly displays the text INVALID CGI REQUEST in a frame.

**Workaround**—Refresh the browser or close and restart Client Manager.

### Alert on LAN page accepts invalid character input

The Alert on LAN page accepts invalid characters (alpha characters where numbers are expected) without displaying an error message.

### Selecting "Open in New Window" generates a script error

When you right-click an option in the left pane of the client console and click Open in New Window, Client Manager displays an Internet Explorer Script Error: "Object doesn't support this property or method."

**Workaround**—Use the Open option instead of Open in New Window.

### Client Manager shouldn't run as an Active Desktop element

Don't run the Client Manager interface as a Windows Active Desktop element. If you do, clicking many of the inventory links generates a script error.

### Date format is inconsistent between administrator console and notification monitor

An administrator console displays its dates in the mm-dd-yyyy format. However, for notifications that display in the notification monitor, the date format used is according to the regional settings specified on the computer generating the alert, which may be a format of dd-mm-yyyy.

### **Clicking Refresh in log and global log pages can clear log**

If the Client Manager log or global log has been cleared, right-clicking in the right pane and clicking Refresh deletes the log again. To refresh the right pane, click the Refresh button rather than clicking Refresh on the right-click menu.

### **BIOS date format doesn't reflect format in regional settings**

On the BIOS inventory page, the BIOS date always displays in the MM/DD/YYYY format, even when a different date style is selected under Regional Settings for the operating system.

### **Conflict with OpenGL Screen Savers**

If you attempt to access Client Manager while running an OpenGL\* screen saver, your computer might crash.

### **Large fonts cause display problem in the Select Computer page**

When you run Windows using the Large Fonts font size (Control Panel | Display | Settings tab | Font Size), the column headings in the Select Computer page don't display correctly and are unreadable.