

## CU-SeeMe For Windows

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WSAStartup Failed

Unable to startup [Winsock](#). This means that CU-SeeMe is not able to start communications using Winsock. You should check your winsock installation and perhaps try other winsock applications.

## WSAAsyncSelect Failed

This function call is used to set up communications so that our application receives messages whenever a packet is received and so we can send packets without waiting until transmission is complete before returning to our other tasks. If this function fails, your Winsock stack is not prepared to use UDP in the mode required by CU-SeeMe for Windows.

CloseSocket Error

WSACleanup Error

UDP Create Socket Error

ReUseAddr Error



GetHostName Failed

GetHostByName Failed

Error Binding to UDP Port

## System Requirements

Basic Requirements (video receive capability only):

- \* Processor (These are recommendations)

:

Video receive only:	386SX
Video send & receive:	386DX
Video receive w/ Audio:	486SX
Video send & receive w/ Audio:	486DX

- \* Windows 3.1 or higher running in Enhanced Mode.
- \* A Windows Sockets compliant TCP/IP stack, known as [Winsock](#).
- \* A 256 color (8 bit) video driver at any resolution (640x480, 800x600, 1024x768, or higher).

To send & receive video youll also need:

- \* Video capture board that supports *Microsoft Video For Windows*. (Look for a list of boards that currently work in COMPAT.TXT)
- \* A video camera to plug into the video capture board.

To send & receive Audio youll also need:

- \* A Windows Sound board that conforms to the Windows MultiMedia Specification. (Sound Blaster or better). Full Duplex audio is very desirable - see COMPAT.TXT for more information.
- \* Speakers (or headphones) and a microphone.

## Winsock

A Winsock stack is Network software for Windows TCP/IP network Applications.

This software is available from several vendors including Microsoft, Netmanage (Chameleon), FTP Software (PC/TCP), Novell (Lan WorkPlace for DOS - some problems with this software), Beame & Whiteside - (doesn't work w/ CU-SeeMe), a shareware package called Trumpet Winsock, and others.

Lan WorkPlace - In order for CU-SeeMe to work you must make the following adjustment to the NET.CFG file. Make sure that the number of sockets defined for tcp and udp is 30 or less:

tcp_sockets	30
udp_sockets	30
raw_sockets	1

## Setup

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Make sure your video card is set for 256 colors

Use the cu-seeme-l list to get answers, post conclusions back to the public list.

## Installing CU-SeeMe files

### Distribution Files:

Unzip all the files from the cuseeme.zip file into any directory. This directory need not be in the PATH. Using the Program Manager create a group for CU-SeeMe if you would like (or just chose an existing one). Use the Windows File Manager and bring up the CU-SeeMe directory. Drag CUSEEME.EXE and CUSEEME.HLP into this group to create the icons.

### msvideo.dll and ctl3d.dll:

Look in your windows directory (usually c:\windows) and in your windows system subdirectory (usually c:\windows\system) to see if you have a coyp of msvideo.dll. If you do not, AND ONLY IF YOU DO NOT, copy msvideo.dll from the cuseeme directory into your windows directory. If you already have a copy of msvideo.dll ERASE the copy from your cuseeme directory so that your software will not accidentally use this copy. Repeat this procedure for ctl3d.dll.

Note: These files are distributed for those users who, for some reason, do not have copies of these files already installed on their system. There is nothing special about the versions supplied with CU-SeeMe and, in fact, they are probably less functional than any copy you may have.

## Hostname

Your Windows machine will need a hostname. *CU-SeeMe for Windows* will not work without it (this requirement will disappear eventually). If you don't already have a hostname for your PC, you may want to contact your network administrator about getting one assigned and installed in a DNS server (Domain Name Server). The quick way to provide a hostname by yourself is to make an entry into a hosts file called "hosts" (with no extension). This file should go in the same directory as your winsock. network apps, but in any case, the directory you place it in must be in the DOS path before you start Windows. The format for the hosts file is:

**<your IP address> <name for your PC>**

For example, you might decide to use the hostname WillieBob. If your IP address was 128.32.64.88, the entry in your hosts file would look like:

**128.32.64.88 WillieBob**

If you don't already have a hostname for your PC, you may want to contact your network administrator about getting one assigned. If your host name is defined in a Domain Name Server (DNS) accessible to your PC, you won't need to have a HOSTS file. Keep in mind, in this case, that if you can't reach your DNS, you'll get the "GetHostByName() Error" message.

While this issue has been a problem for many it has worked on all stacks after some work (The FTP software hitch mentioned below took many phone calls to a very patient user at NSF before solving).

Things to verify:

\*) Verify that you've only got one HOSTS file (there might be a bad one earlier in your path). Use FILE MANAGER, File Menu, Search - Search for the file hosts, start from c:\, check the 'Search All Subdirectories' box. If you find entries other than the one you expect to find in your Winsock directory, consider removing or updating them.

Possible stumbling blocks:

\*) You're using FTP PCTCP and you've something set in the "Domain Completion" box. This can cause your software to not find its real hostname in the hosts file.

\*) When Defining your hostname with your Winsock Customization software, do not include the domain name in the hostname specification. For example, if WillieBob is in the domain cit.cornell.edu, do NOT specify WillieBob.cit.cornell.edu as the hostname. Just enter WillieBob and enter the domain in its place.



## Video Format

*CU-SeeMe* needs to capture video using *image demensions* of 160x120, and an *image format* called 8 bit palettized. This happens to be the default configuration for many video capture cards, so chances are you are all set. If you do get a strange image, or no image at all, the *File / Video Format...* menu item will display a dialog box that allows both image demensions and image format to be set.

See also: [A bit more info](#)

## Video Source

You may want to check the File / Video Format... menu item to see that the correct video input is selected. Most users have NTSC cameras. If you have a PAL camera see if this dialog box has a PAL selection option and select it (it is possible for a capture card to automatically detect PAL so dont give up if you have a PAL camera and dont see an option).

## Preferences

Your Name -	The name you want to have appear at the top of your video window on other peoples displays.
Show Splash Screen at Startup -	Displays the CU-SeeMe Splash screen in receive video windows until actual video data arrives.
Save Video Window Position -	Save the positions of the video windows currently on the screen.
Auto-Tile Video Windows -	Automatically place video windows in order on the screen as they are opened.
Open New Video Windows -	Automatically open new video windows whenever a new sender joins the conference.
Max kbits/sec -	Maximum number of kilo-bits per second transmitted by your workstation. This number is the total amount of data including video, audio, control info, and packet headers. The actual transmission rate is between Max kbits and Min kbits depending on packet loss.
Min kbits/sec -	Minimum number of kilo-bits per second that your workstation will be limited to because of packet loss.
Max Video Windows -	Maximum number of video windows that can be opened at one time. This feature is most useful when you have selected Open New Video Windows (above) so that not too many windows are automatically opened at once.
Brightness/Contrast -	Controls the brightness & contrast of the local video window. As you adjust this control the local video window updates every second or so so you can see the effects.

## Features

### Flexible conferencing

*CU-SeeMe For Windows* provides a one-to-one connection, or by use of a reflector, a one-to-many conference depending on user needs and hardware capabilities. It displays 4-bit grayscale video windows at 160x120 pixels or at double that dimension

If you do not have a video capture board, *CU-SeeMe* will come up in *Receive-only mode*. You will be able to receive video, but not send.

### Keyboard Messaging

Typing with the local video window in the foreground (while the local video window has the focus ) will cause the characters typed to be displayed at the bottom of the local video, and sent with your video. You must select the local video window when typing.

### Participants

When connected, the Participant Window will show a list of all the participants in the conference. To display the Participant Window hit the menu Participants/Show Participants Window item.

Senders are listed in the top section.

Senders whose windows are currently not showing are listed in the next section.

Lurkers are listed in the third (bottom) section.

Each section of the participants list can be collapsed by hitting the little button at the left of each section.

### Closing video windows

Any video window (except the local video window) can be closed via that window's system menu. When a window is closed, that user moves from the Senders section to the second section - Senders (not showing). Clicking on a participant name in the Senders (not showing) section of the participant list will reopen that video window.

### Brightness/Contrast

If you are sending video, you can adjust the brightness and contrast of the local video window. There is a brightness/contrast slider (horizontal scroll bar) in the Preferences dialog.

### Most Recently Used (MRU) list

The Connect dialog box contains a combobox, that when dropped, will show the last 100 connections. This will be replaced by a nickname feature in the future.

### Minimizing video windows

Like most Windows programs, any window can be minimized to an icon:

The local video window will stay "live", showing the upper left hand corner of the video window as the icon. Just for fun, try waving in the upper left corner of your picture while your video window minimized.

All other video windows will show an icon of a camera, using the name of the sender as the caption. While minimized, the video in these windows will be "frozen". When restored, the video will be "un-frozen", and once again "live."

### Video window options

Clicking the right mouse button (a la OS/2) will bring up a floating pop-up menu containing a list of options that can be set for that video window. The current options are:

Freeze - stops displaying video for that window, but stays connected.

Topz - keeps that video window on top all the time (the window can not be covered).

Get Info - displays the name and IP address of that sender.

Each video window can be individually set to any combination of options. The local video window can also be frozen, and will send about 1 frame/second when connected. *If you like the right mouse button pop-up menu feature, please say so and post to the [CU-SeeMe mailing list](#). I think it is way-cool, but this feature is a small departure from the Mac program.*

### Rates

The following *rates* appear at the bottom of each video window:

Frames per second (fps) - how many times per second the video window is updated (redrawn).

Kilobits per second (kbps) - how much video is travelling across the network from that sender.

The local video window will also show the current [rate cap](#) in parentheses.

### Auto-connect from the command line

*CU-SeeMe* can automatically connect to conference upon startup if an IP address or hostname is specified on the command line. For example, you could have a *CU-SeeMe* icon in Program Manager with the command line field in the Properties dialog set to *cuseeme.exe video.spazo.org*, where *video.spazo.org* is the hostname of a reflector, PC, or Mac running *CU-SeeMe*.

## How to tweak this Beta Release

### Rate cap

*CU-SeeMe* uses an adjustable *rate cap* to control how fast it sends video over the network. The rate cap has maximum and minimum settings. The maximum setting (Max kbits/sec) is the highest speed at which *CU-SeeMe* will send. The minimum setting (Min kbits/sec) is the slowest speed at which *CU-SeeMe* can send. Both values are adjustable from the *Preferences...* menu item.

### Some things you may notice

*CU-SeeMe* will not currently display "high resolution video" from a Mac (although this feature will be added). A video window will appear, but no video will be displayed. If the Mac switches to "standard resolution", video will be displayed.

If you are able to send video, the hourglass cursor will appear when *CU-SeeMe* is starting. The video capture driver is "initializing an 8 bit gray scale palette", and this can take anywhere from 10 to 30 seconds, depending on machine speed. The main window's status bar will say "Initializing capture palette..." during this time.

*CU-SeeMe* will work on a "standard 16 color" VGA, or with any Windows video driver at any resolution that displays only 16 colors. The catch is, the picture will look, well, interesting; showing only black, white, and 2 "shades" of gray.

A bit more information.

All video capturing is done via the *Microsoft Video For Windows* Video-Capture API (that's why we use msvideo.dll). This allows *CU-SeeMe* to capture video from any video capture board that supports *Video For Windows*. One caveat is that *CU-SeeMe* currently only knows how to deal with uncompressed 8 bit palettized images. Folks who have boards that don't support that image type (like *Intel Indeo* video capture cards) may get an upside down image that looks fuzzy.

We have successfully tested the following video capture boards:

Video Spigot for Windows (now sold by Creative Labs, formerly sold by SuperMac)  
Video Blaster (Not the RT-300) (sold by Creative Labs)

The following Windows Sockets compliant stacks have been successfully used:

*Chameleon* by NetManage.  
*Distinct* by Distinct Corp.  
*Trumpet WinSock* by Peter Tattam.  
*Windows NT 3.1* (built-in) by Microsoft.

And also, PLEASE TREAT THE INTERNET KINDLY--keep bandwidth limits set down under 100kbps, or less if you share limited bandwidth with others. Many, many folks connected to the Internet can use *CU-SeeMe* with default settings and cause no problem to anyone else; but unfortunately, not everyone. If you don't know whether using *CU-SeeMe* will mess up the network for someone else, CHECK IT OUT first, please.

*CU-SeeMe For Windows* is copyright 1993, 1994, Cornell University. The project leader is Dick Cogger. Programming is being handled by Steve Edgar and Rich Kennerly. *CU-SeeMe For Windows* is designed to work with its Macintosh counterpart (also called *CU-SeeMe*) written by Tim Dorcey.

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*CU-SeeMe For Windows* was written with Microsoft Visual C++, with some routines developed in 386 specific assembler with Microsoft Macro Assembler.

Have fun. More speed and features to come.

A handwritten signature in blue and red ink, reading "Steve Rich".

Steve Edgar - Cornell University  
Rich Kennerly - Cornell University





## CU-SeeMe mailing list

For anyone interested in following developments in CU-SeeMe or its use, or in contacting other CU-SeeMe users, an automated maillist has been established. The list is provided for unrestricted discussion of the CU-SeeMe packet video software. Developers and project management all read the list. To date there has been little traffic, but we expect more as new versions are released over the next few months. We, and other users, would also like to hear about and discuss innovative uses of CU-SeeMe. Please write and tell us your story. To join the list, send a message with the following line as the entire message body to [listserv@cornell.edu](mailto:listserv@cornell.edu):

**subscribe cu-seeme-l** *<first name> <last name>*

(Substitute your actual name, please; it's amazing how many don't.) You should receive a confirming message with extensive instructions on use of the list.

You can send mail to be distributed to the list to: [cu-seeme-l@cornell.edu](mailto:cu-seeme-l@cornell.edu). Please be sure to send to this address **ONLY** when you want your message redistributed.

