CU-SeeMe For Windows

<u>System Requirements</u>

For receive-only:
1.   386SX processor or higher.
2.   Windows 3.1 running in Enhanced Mode.
3.   Windows Sockets compliant TCP/IP stack.
4.   A 256 color (8 bit) video driver at any resolution (640x480, 800x600, 1024x768, or higher).

To send as well as receive:
1.   386DX processor or higher.
2.   Windows 3.1 running in Enhanced Mode.
3.   Windows Sockets compliant TCP/IP stack.
4.   A 256 color (8 bit) video driver at any resolution (640x480, 800x600, 1024x768, or higher).
5.   Video capture board that supports *Microsoft Video For Windows*.
6.   A video camera to plug into the video capture board.

Setup

Hostname
Check msvideo.dll
Video Format

<u>Hostname</u>

Your Windows machine will need a hostname.   *CU-SeeMe for Windows* will not work without it (this requirement may disappear soon).   If you don't already have a hostname for your PC, you may want to contact your network administrator about getting one assigned.   One quick way to provide a hostname is to make an entry into the *hosts* file (which should be in the directory that contains your Windows Sockets stack).   An example of an entry in a *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

Msvideo.dll

CU-SeeMe comes with the file *msvideo.dll*, which it uses for "device independent video capture". If you have *Microsoft Video For Windows* installed, you will want to delete the copy of *msvideo.dll* that comes with *CU-SeeMe*. *Video For Windows* will have already installed a copy of *msvideo.dll* in your Windows System directory.   Having a second copy in your *CU-SeeMe* directory may cause some problems.   Be sure to delete the copy of *msvideo.dll* in your *CU-SeeMe* directory, not the copy in your Windows System directory.

<u>Video Format</u>

CU-SeeMe needs to capture video using *image demensions* of <u>160x120,</u> and an *image format* called <u>8 bit palettized.</u>   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 *Video Format...* menu item will display a dialog box that allows both image demensions and image format to be set.

See also: <u>A bit more info</u>

Features

Flexible conferencing
CU-SeeMe For Windows provides a one-to-one connection, or by use of a reflector, a one-to-many, a several-to-several, or a several-to-many conference depending on user needs and hardware capabilities.   It displays 4-bit grayscale video windows at 160x120 pixels or at double that diameter, and does not (yet) include audio.

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.   The title of the main window will say "CU-SeeMe (Receive-only)".

Messaging
Typing with the local video window in the forground (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.

Participants
When connected, the main window will show of a list all the particpants in the conference.   The main window can be moved and resized to meet any preference.   The main window will show all senders (anyone sending video in the conference) and lurkers (anyone receiving but not sending).

       Senders are denoted with a **[v]**.
       Lurkers are denoted with a **[x]**.

Closing video windows
Any video window (except the local video window) can be closed via that window's system menu.   A participant with a closed video window is denoted with a **[c]**.   Double clicking on a participant with a closed video window 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 5 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 netowork 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*.

<u>How to tweak this Beta Release</u>

<u>Rate cap</u>
CU-SeeMe uses a 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 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.

<u>Some things you may notice</u>

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.

<u>A bit more information</u>.

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 (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.

Since Oct.   1, 1993, the CU-SeeMe Project receives funding from the National Science Foundation.   This material is partially based on work sponsored by the National Science Foundation under Cooperative Agreement No. NCR-9318337.   The Government has certain rights in this material.   Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author and do not necessarily reflect the views of the National Science Foundation.

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.

Steve Edgar - Cornell University
Rich Kennerly - Cornell University

<u>CU-SeeMe mailing list</u>

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:

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.   Please be sure to send to this address ONLY when you want your message redistributed.