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Michael Gough

Jason Rosenfeld Technical Editor

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Video Conferencing Over IP

Configure, Secure, and Troubleshoot

Michael Gough

Jason Rosenfeld Technical Editor

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A Word from the Author

Personal videoconferencing is a growing way to communicate over the telephone alone. I first wanted to use personal videoconferencing to communicate with my daughter and found it to be an incredible tool to help communicate with her. Telephone calls that lasted minutes now lasted often over an hour. So I got involved with testing video call solutions to find the best possible one, and I have since tested over 40. I have tested many webcams, hardware solutions, and software solutions—it is my hope that all my testing will help others learn far faster what took me a couple of years to find out. I started www.VideoCallTips.com to provide information so that others would not have to go through as much work as I did, and now I have written this book to help you understand the technology and make a good decision about which solutions to use. As solutions change, I will update www.VideoCallTips.com with feedback I receive so that you can have access to all the latest information.

I hope that you enjoy the book. It's my intention that it helps you understand the world of personal videoconferencing and how you can use the latest in video call technology over the Internet to communicate with your family, friends, and coworkers. After reading this book, you should be ready to explore the many options video calls have to offer, improving your communication experience and making life a little more fun.

—*Michael Gough*

About the Author



Michael Gough is host and webmaster of www.VideoCallTips.com, which was launched in January 2005 and receives more than 81,000 hits per month. He is also the author of *Skype Me! From Single User to Small Enterprise and Beyond* (Syngress Publishing, ISBN, 1-59749-032-6) and webmaster of www.SkypeTips.com, which receives more than 140,000 hits per month. Michael writes articles on personal videoconferencing and related issues and contributes to the Networking Pipeline section of Skype.com. He also explains personal videoconferencing options and instructions to users so that they can practically apply video calls at home and while out of town on business to stay in touch with family and friends. Michael also evaluates products for vendors and posts ratings on his Web sites. He evaluates products used with video calls and provides feedback to the vendors on features and improvements to help drive the direction of video call-related products. Michael is also the host and webmaster for www.InternetVisitation.org, a Web site focused on helping people understand how to make video calls to family and friends after divorce, and maintains ratings of the many video call solutions available. Michael gives presentations on this subject at several conferences around the country to educate attorneys on the use of video calls in divorce—a practice known as virtual visitation, and www.InternetVisitation.org currently receives 100,000 hits per month.

Michael's full-time employment is as a Computer Security Consultant with 18 years' experience in the computer technology field. He works for a Fortune 500 company where he delivers security consulting services to its clients. He also presents for his company at many trade shows and conferences and works with associations and groups, advising agencies like the FBI on Skype security and the Center for Internet Security on wireless security.



Dedication

For my daughter, for without her I would not have known how important video calls could be and how much they helped us stay close. To my friend Jason, I wish you the best and thanks for your help. To all those who helped in this project by testing, thank you!



Technical Editor

Jason Rosenfeld is the Director of Marketing & Technology for DVD Acquisition and Development Group. He has over 10 years of technology, marketing, and business strategy experience at both startups and large corporations.

Upon leaving Bertelsmann in 2001, he developed unique niche marketing strategies that were widely adopted by the entertainment industry in general and the DVD business, in particular. These strategies involved using the Internet to interact with fans and consumers to directly involve potential customers at multiple stages of the product design process. Since 2000, he has used a wide array of video call solutions to bring an incredibly diverse group of contributors, designers, and programmers together, in many cases with extremely limited direct contact.

Jason holds an MBA in Marketing and Supply Chain Management from Rutgers Business School and a BA from Rutgers College. He lives in Morris County, NJ, with his wife, Kimberly. A cancer survivor, he is most interested in how video call technology can be used to improve the lives of the elderly and infirmed by bridging the gap between patient, family, and medical experts.

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Foreword

The author of this book, Michael Gough, and I have been good friends for several years. Throughout those years, Michael and I have spent countless hours talking about life and bouncing various ideas and schemes off of each other. I've met his daughter, and she laughed at the new tricks performed by my adorable (and spoiled) Boston Terrier, Molly.

When I was diagnosed with cancer in 2005, Michael visited me frequently, often filling me in on what was going on in the world outside. He got to know me as people sometimes get to know each other during difficult or trying times. I showed him the work my wife and I were doing on our new house and gave him a tour of my new office space when the home office couldn't cut it anymore.

It may seem odd, then, that Michael and I have never occupied the same physical space at the same. We've never actually met in person. In fact, when he was recently in my neck of the woods for the first time, I was out of town on business.

Still, through these last few years, we've spoken from random WiFi hotspots scattered around the country. We are part of a growing number of people who utilize video call technology in our daily lives.

For Michael, it means getting to spend more time with his daughter, reading bedtime stories to her and discussing her daily routine. For countless of other divorced parents, it enables them to bring some stability and normalcy to their daily lives.

Although successful video calling relies on a modern Internet backbone, it enables people to communicate with other people via the one way that comes most naturally to everyone—traditional face-to-face communication. Unlike other forms of so-called instant messaging, video callers do not have to know how to type or use a computer. At its essence, a video call enables its participants to conquer distance.

Some video call solutions are better suited than others for different purposes. This is where this book will be a treasure trove for those new to this exciting communication medium. Video call solutions can meet the needs of parents trying to spend more time with children away at college, a child trying to spend more face time with an elderly parent, or grandparents who want to spend more time playing peek-a-boo with their grandchildren. And for those of you who simply want to make sure that your dog doesn't chew the house apart while you are at work, there is a video call solution that suits your needs, too.

—*Jason Rosenfeld*

*Director of Marketing & Technology
DVD Acquisition & Development Group*

Part I: Getting Started with Video Calls

Introduction to Video Calls

Solutions in this chapter:

- Types of Videoconferencing
- Personal Videoconferencing
- Business Videoconferencing
- Web Videoconferencing
- What Is a Video Call?
- Where You Can Perform Video Calls

Types of Videoconferencing

Before we help you understand what you need to make video calls, let's discuss the various flavors of videoconferencing and outline the topics we focus on in this book so that you have a clear understanding of the differences among the various videoconferencing solutions. We divide these videoconferencing types into three categories:

- Personal videoconferencing
- Business videoconferencing
- Web videoconferencing

These solutions can be software that you use with your computer, stand-alone hardware, or combined software and hardware solutions. They all have one thing in common: they allow you to make a video call of some sort using various features.

Personal Videoconferencing

This book focuses primarily on *personal videoconferencing* solutions, or what we call *video calls*. We use the term *personal* because these calls are usually between only two people—you and the person you are communicating with. A video call, at minimum, is simply the communication between two or more people who have both audio and a moving video image using a computer, dedicated video telephone, or both. It may also include additional features such as instant messaging (IM) and file transfers (FT), commonly found in many IM tools such as Skype, iChat AV, MSN Messenger (MSN), Yahoo Instant Messenger (YIM), and AOL Instant Messenger (AIM). Though we will discuss business videoconferencing and Web videoconferencing so that you can understand the basic differences among them, we focus on personal videoconferencing solutions, from here on referred to simply as *video calls*. This will help simplify what we are addressing in this book: the ability of making video calls between two people to better communicate and enhance the communication experience.

Business Videoconferencing

Business videoconferencing can involve the same solutions as personal videoconferencing but with the addition of several features:

- The capability to include multiple people on the video call
- Collaboration features
- Document-sharing capabilities
- Enhanced presentation capabilities

- Whiteboard capabilities
- Additional bandwidth requirements
- Additional costs

Business videoconferencing is specifically designed to meet the needs of business meetings and group collaboration, not our personal needs to communicate with family and friends. Business videoconferencing solutions are more expensive and as a general rule need more equipment at the office location as well as more network and/or Internet bandwidth than we have available to us at home.

Business videoconferencing solutions do have single-user solutions for mobile users or telecommuters, such as solutions from PolyCom, Sony, and others. These solutions are designed to communicate with higher-end and more expensive solutions that you would see in your business conference room at work. We will discuss these solutions in more detail in Chapter 8.

Web Videoconferencing

Web videoconferencing is specifically designed to transmit a video call inside a Web page or classroom-type environment. You might have seen Web videoconferencing employed in a Web training seminar, or Webinar as they are called, where you saw the presenter's video image streamed to your Web browser. You might have been sending your video image as well, but most likely not, because Webinars tend to comprise one-way video to you. Solutions such as WebEx and Microsoft Live Communication Server are two Web conferencing solutions. These solutions are also designed to record a session and post it to a Web site for on-demand viewing any time via a video stream to your browser. We will discuss these solutions in more detail in Chapter 8.

What Is a Video Call?

This book provides the information you need to understand what a video call is, the solutions that are available, the hardware and software required, and what high-speed Internet connection will work best for you so that you can set up a videoconferencing system easily and quickly and start using it with your children, family, and friends.

Video call technology can have many names: video calls, personal videoconferencing, videoconferencing, video messaging, instant messaging, video phone, video telephone, and video chat. The name any one technology goes by might be due to a vendor's product and its marketing, but it should be understood that all the technologies are basically the same and essentially interchangeable; only the features vary. A video call is the total experience

that two people can have while communicating with one another using audio and a moving video image, and possibly additional features.

Understanding the Basics...

What Is a Video Call?

A video call is a call between two people that includes both audio and a moving video image; it can take place between two computers or dedicated video telephone equipment.

Most of us have used e-mail and even IM solutions such as Skype, iChat AV, MSN, AIM, YIM, or others. These IM solutions let you chat between two or more people, voice chat or talk between two or more people, and now even do a video call between two people. Some solutions are better than others, however; this book will help you select a solution that will allow you to have a good video call experience the very first time you use it.

A video call can utilize one or more of the following devices:

- A personal computer (PC), either Windows or Apple
- A Webcam
- A video telephone
- A dedicated videoconferencing device
- A Pocket PC, Palmtop, or other handheld device
- Cell phones with picture and/or video capability
- Digital cameras
- Video recording devices

Imagine the ability to talk to someone far away and actually see the person you are talking with using live video. Picture yourself being able to play an Internet game while participating in a video call that lets you not only see the individual you're playing with but also send funny comments via IM while waiting for your turn. Or imagine being able to send family members photos or, even better, video clips of the latest family outing.

The experience of communicating with family and friends when you are busy or living in a different city is becoming a more robust experience with the technologies and solu-

tions available today. As young as the Internet is, imagine the improvements that await us in the future!

The most important component of a video call is the video. Video is the main improvement over a conventional telephone call. With the addition of video, seeing the person you are speaking to enhances the experience and expands the possibilities. You can actually show the person on the other end what you can only verbalize during a telephone call.

According to www.whatis.com, the term *videoconferencing* is defined as, “A live connection between people in separate locations for the purpose of communication, usually involving audio and often text as well as video. At its simplest, videoconferencing provides transmission of static images and text between two locations. At its most sophisticated, it provides transmission of full-motion video images and high-quality audio between multiple locations.”

This book not only covers solutions that you can use on your computer but also discusses solutions that are stand-alone video telephones and solutions that use your television set as a part of the video call. We also cover forthcoming solutions, such as the ability to perform a video call on your cell phone.

With the Internet today, along with inexpensive high-speed or broadband Internet, as it is called for home use, video calls are no longer something reserved for the business or corporate world. The first successful videoconferencing solution for a personal computer was Microsoft NetMeeting. IM solutions such as those from Skype, Apple, Microsoft, Yahoo, and AOL added improvements including video, making video calls more mainstream than ever before. In fact, Microsoft and Logitech report they have already had over 3 billion Webcam session chats with MSN Messenger (www.microsoft.com/presspass/press/2005/mar05/03-09logitechpr.mspx). Remember, MSN Messenger is only one of over 40 video call solutions.

To make a video call, you need a broadband Internet connection (high-speed Internet). The technical details of how to choose a high-speed Internet connection are discussed in Chapter 3, but it should be understood that in a video call, the speed of the Internet connection becomes very important. Dialup access will not provide you a very good solution, so do not even bother trying. Although there is one solution that relies on a regular telephone line, video needs more bandwidth than dialup can provide.

Do you think video calls are too complicated? While reading this, are you thinking that you or your child, friends, or family do not know how to use a computer very well, let alone make a video call? For the less computer savvy user there are video call solutions that do not use a computer, such as dedicated video telephone devices; some devices use only your television, a device set on top of your television connected to your broadband Internet connection, and a remote to control the video call. We delve into dedicated video telephone devices in Chapter 5.

If you are already computer literate or willing to use a computer, there are many more things you can do with a Windows or Apple computer equipped for video calls. You can do IM, send photos, help your children with their homework, talk to your parents, play games, send video and pictures to your children, friends, or family—and more important, they can send these things to you!

Imagine coming home from a day at work and having your son send you a video clip from his football practice, or your daughter from her gymnastics class. Imagine being a business traveler and while in your hotel room, be able to see and speak to family and friends while you are traveling. Imagine if you are a divorced parent the potential benefits of a video call with your children who live in another city or state. Using video call technology, I read my daughter bedtime stories when she was four years old, and she was 1400 miles away! Now she is seven and reads stories to me. Even though we are not home together, we can participate in our children's lives or communicate with family and friends more than ever before, thanks to video calls.

A recent study by HarrisInteractive.com found that roughly a third (30 percent) of U.S. adults live in a different state than their mothers. Although 66 percent of these adults speak to their mothers at least once a week on the phone, 84 percent would prefer to talk face-to-face with their family and friends rather than use the phone. Unfortunately, 87 percent of these adults also report that they see their moms only once a month or less (www.motorola.com/mediacenter/news/detail/0,,6088_6049_23,00.html). With your computer and a Webcam, video telephone, cell phone, and other upcoming technologies, a video call with your children, family, and friends will improve your communication experience more than can be achieved with a telephone call alone.

Where Can You Perform Video Calls?

You can carry out video calls at home or anywhere a high-speed Internet connection, some privacy, and the proper hardware and software are available. Since the camera and headset are small, all you need is a computer and software. For this discussion, we assume that a computer is available. The video call software is the core of personal videoconferencing. It enables you and the other party to see as well as hear one another.

You need to consider two things when selecting a solution for your personal videoconferencing needs:

- Where will you use it?
- Are there special configuration needs?

As a business traveler, I often find that during my down time I would like to participate in video calls with my family and friends. To do this I must have a solution that will work wherever I am. I could be in a hotel, an airport, a friend's home, or an Internet café. I need a solution that will work no matter where I am and no matter whose computer I am using. So where can the business traveler go to do personal videoconferencing? There are lots of options. Hotels are the best because they have high-speed connections for all the hotel guests. I stay at Marriott and Courtyard by Marriott because they have consistent high-speed connections at a reasonable price, or free in many cases, now that hotels are using high-speed Internet access to attract customers.

Where else can you do personal videoconferencing when you're on the road? At any airport that has a "laptop lane" or other road warrior laptop hookup service. Many airports have WiFi access available in the general waiting area for a daily use fee, but you will not have much privacy. Some airlines actually have high-speed access on the planes on international flights, so you could even pass the time having a video call with your family, friends, or colleagues at 30,000 feet.

As I mentioned, Internet cafés have computers and high-speed connections, and some I have visited even have Webcams. However, the connection speeds are usually not that good, with everyone else using the other computers doing gaming and such, and it is not very private. You will have to ask the business for permission to install the video call software you use on their system.

If you are a frequent flyer and belong to one of the elite flyers clubs such as Delta's Crown Room, United's Red Carpet Room, and others, they are now starting to offer wireless access for a fee so that you can work while waiting for a flight. Some airlines are the latest to offer wireless broadband for international flights. Boeing is planning a service called Connexion that will start to show up on domestic flights in the future. This brings up an interesting point about privacy, not only for you but for others sitting next or around you. You will probably want privacy when you make a video call, but what about the person sitting next to you? They might not want to be bothered by your video conversation after they get over the novelty of it; they might want to rest or sleep, so you must practice proper etiquette and not invade their privacy. You can find more on Boeing's Connexion service at the following Web site: www.connexionbyboeing.com/

Starbucks and many other WiFi "hotspots" also have high-speed wireless connections that could allow you to do a video call, but these places are often crowded, noisy, and not private. Many hotel lobbies have wireless access and can provide a comfortable and somewhat private place to make a video call.

Summary

This chapter gave you an overview of the three types of videoconferencing: personal videoconferencing, used for one-on-one video communication between two computers or between two dedicated video telephone devices; business videoconferencing, which consists of higher-end solutions for business needs; and Web videoconferencing, used for Web-based training or presentations.

We also discussed our definition of the term *video call*, which is the total experience that two people can have while communicating with one another via many types of devices, not just computers. We also discussed where you could potentially have a video call outside your home. You can have them from 30,000 feet in an airplane or at your local Starbucks while having a latte.

Videoconferencing is fast becoming the way people will communicate in the years to come. You can expect more and more options in this space for your computer, cell phone or via specialized devices such as a dedicated video telephone that connects to your television. You will have a new way to communicate with your family and friends, and most important, you can not only hear them, you can see them for a more complete communication experience.

Getting Started

Solutions in this chapter:

- Requirements for Making Video Calls
- Broadband High-Speed Internet Connection
- Computer or Dedicated Video Phone Device
- Existing Computers
- Additional Hardware
- Video Call Software
- Frame Rate and Picture Quality
- Security and Privacy
- Firewall Friendly
- Parental Controls
- Recording Videoconferencing Sessions

Requirements for Making Video Calls

To make video calls you need hardware, software, and a high-speed Internet connection for each party who wants to participate. The hardware can be a specialized device that provides videoconferencing using a telephone-type device or your television, or a computer with additional hardware and software.

According to the Pew Internet and American Life Project report *Digital Divisions*, “As of May–June 2005, 68% of American adults, or about 137 million people, use the Internet, up from 63% in 2004. Twenty-six percent of Americans age 65 and older go online, compared with 67% of those age 50–64, 80% of those age 30–49, and 84% of those age 18–29. Fifty-three percent of Internet users now have a high-speed connection at home, up from 21% of Internet users in 2002” (www.pewinternet.org/pdfs/PIP_Digital_Divisions_Oct_5_2005.pdf). According to Nielsen/NetRatings, in November 2005 broadband penetration of U.S. homes rose 1.13 percentage points to 64.89 percent, up from 63.76 percent in October. At the current growth rate of more than 1.1 percentage points per month, broadband penetration among active Internet-using U.S. homes should break 70 percent by early March 2006.

This means that two of every three people you are thinking about communicating with have computers and are connected to the Internet via high-speed Internet connections. These statistics show that using a computer for video calls will probably be your choice, but it should be understood that there are other options, or you may choose to do both, using a computer on each end and a specialized videoconferencing device connected to your living room television.

For computer-savvy people, using a computer brings far more benefits, but people like our parents or grandparents might not own computers or might not be as computer literate, so a dedicated videoconferencing device might be a good option. Cost also could be a factor, and a dedicated device is the least expensive option, though computers are now available for less than \$500, so not much less.

Whatever you decide to use, the same solution or a compatible solution must exist in each location where people plan to participate in the video call. The software used on computers for videoconferencing must be compatible on both computers, and video calls will be the most demanding application you will use over your high-speed Internet connection.

You will need to make the following decisions to have a successful video call:

- To use a computer or not
- A broadband or high-speed Internet provider for each location
- Personal videoconference software

- A video camera, called a *Webcam*
- A combination headset/microphone or a microphone and speakers
- Other personal videoconferencing options
- Security and privacy assurances

You have many options to choose for making a video call—a Windows-based personal computer (PC), an Apple with Mac OS X, or a Linux-based system—but this book focuses on three solutions: those for the PC running Microsoft Windows, those for Apple computers, and those for dedicated video telephone devices. If you want to experiment with Linux, solutions are available, but Linux does not offer any user-friendly video call solutions and is best left to the more technically savvy to figure out. Future editions of this book might cover Linux, but for now Linux is not the best option for an easy video call solution.

Broadband High-Speed Internet Connection

Several types of high-speed Internet connections, also known as *broadband*, are available today: DSL, cable modem, satellite, wireless broadband, and fiber optic in some countries, and even more options—such as broadband over power, WiMax, and others—will be available in the near future. Any one of them will work as long as the speeds required for video calls can be obtained, since video is the most demanding part of a video call.

There are two main components of a high-speed Internet connection: the upload speed (how fast you send data) and the download speed (how fast you receive data). Video calls use both video and audio, so unlike surfing the Web or receiving e-mail, video calls require both users to have adequate upload and download speeds. (We'll cover more on upload and download speeds in Chapter 3.)

The second decision you need to make is what high-speed Internet provider you will use. The other party with whom you want to communicate will probably be part of this decision. As you research this issue, you might find that another solution from a different provider than your current one is faster, so converting to a faster broadband solution might be an option.

You first have to find out what high-speed Internet access is available in your area and go from there. You will need to have all involved parties' home addresses and phone numbers so that you can do the research and make inquiries. (More details on broadband Internet are covered in Chapter 3.)

Computer or Dedicated Video Phone Device

To use a computer or not is the first question that needs to be addressed. If so, Windows or Mac? (Those of us who have been around a while call all computers from Apple *Macs*, from the highly successful Macintosh series of computers from the 1980s and '90s, even though some models go by other names now.)

For around US \$250 for each location that wants to participate in a video phone call, you can find video call solutions that do not require a computer. You can also add the needed hardware and software to existing computers, or buy a new computer and outfit it to perform video calls. If you make the decision to use a computer, the next steps are to upgrade an existing computer if necessary or purchase a new computer.

I recommend starting with a computer-based solution, since computers are readily available these days and most people have them. Though other solutions are discussed in this book, most of the video call solutions we talk about are based on using computers.

Existing Computers

If you and the other party with whom you will participate in video calls already have computers, you already have the base investment to build on. Now all you need to do is find out if the PC or Mac is capable of performing video calls.

The general rule of thumb is, if your computer is less than three years old, it probably can handle video call requirements. Of course, you can just try it, and if you have issues, upgrade the item that gives you problems. All that is required to outfit an existing computer to perform basic personal videoconferencing are the following:

- A full-duplex audio card
- A good video card capable of 1,024 x 768 24-bit colors or better
- A Webcam
- A combination headset/microphone or a microphone and speakers
- Video call software

The first two items, the audio and video cards, are probably already in your system and good enough if they are less than five years old. Most computers come with a sound card that can perform full-duplex audio, which is nothing more than the ability to send and receive audio at the same time. Most video cards installed in computers today can provide a good image for video calls.

Additional Hardware

Choosing additional hardware is one of the easier decisions to make. All that is required is the addition of a Webcam, a headset with built-in microphone or a sound-canceling microphone, and computer speakers. You also need to make sure your computer is adequate for the task. Newer Windows and Apple computers only need the addition of a Webcam and combination headset/microphone or microphone and speakers to make a complete video call system. The additional hardware you'll need is covered in more detail in Chapter 4.

Understanding the Basics...

Headset vs. Headphones

A *headset* is a headphone with an integrated microphone. *Headphones* have only the earpiece speaker and no microphone.

Video Call Software

If you decide to use a computer, the software you decide to use will be based on the video call functions you want to perform. For example, if you are an AOL user on Windows and are familiar with AOL's Instant Messenger, you'll need to know that AIM interacts with Apple's iChat AV solution for a video call. SightSpeed, one of the better video call solutions, also has Windows and Mac capability. Yahoo's Instant Messenger was one of the first to have video and audio capabilities. If you use Microsoft's MSN Messenger, it too handles audio and video, but only for Windows. By the way, all these solutions are free—a way for vendors to encourage use of their Internet portals or additional services. (More detail on software video call solutions is included in Chapters 6–8.)

Frame Rate and Picture Quality

One of the things to keep in mind when you're using video call solutions is the kind of frame rate and picture quality you get with the solution. The best-quality video, the kind you see on television or your camcorder, is 30 frames per second (fps). Some solutions trade picture quality for improved frame rate so that the video is moving at real time, or 30fps, even though the quality is more "grainy." Most solutions slow the frame rate to 15fps in order to keep the picture quality high.

Let's take a look at a basic frame rate versus video quality and how they affect bandwidth. This is only an example, and not a realistic one, of the data being transferred as solutions use compression to reduce the amount of data sent. The typical video call screen size is 320×240 pixels, for a total of 76,800 pixels. At 30fps, that is 2,304,000 pixels being sent every second. If you cut the frame rate in half, to 15fps, then only 1,152,000 pixels are being sent every second. You can see the obvious savings you'll get by reducing frame rate to reduce the amount of video data being sent.

This is important for home users because the speed at which you send data, called the *upload speed*, is always less than the speed at which you receive data, called the *download speed*. Software makers have to balance frame rate and image quality to handle the limitations of current broadband connections. But have no doubt that the quality of video calls you can do today is very good and designed specifically for home broadband connections. Vendors use compression and fancy formulas to adjust the quality of the image and balance it with the frame rate to keep the video flowing and the audio quality good. This is also why you will see the video screen size in a 3×2 -inch screen, to reduce the data that is being sent. When these solutions expand to large windows, the data does not increase, only the image size does, so the video gets grainy, just as though you blew up a 4×6 -inch photograph to 8 by 11 inches.

So, the more frames per second that are sent, the higher the quality of the video image and size of the video window, the faster your bandwidth or Internet connection needs to be. Since bandwidth to the home has a limit, some video call solutions limit the size, quality, and frames per second to reduce the bandwidth required. Therefore, you have to decide what is more important to you, frames per second or picture quality. Many applications do not allow you to adjust the picture size, and ones that do are just blowing up the picture, not actually increasing the amount of data being sent, resulting in a grainier picture as it increases in size.

I prefer quality over frame rate because I want to see the best picture possible rather than a grainy person moving in real time. When performing video calls with my children, for example, it is the fine details that I want to see, like a missing tooth, so quality is more important than smooth movement, in my opinion. Some of the solutions have automatic bandwidth meters and adjust both quality and frames per second based on the high-speed connection. MSN Messenger, for example, keeps a very good picture and reduces the frame rate based on the slowest of the two connections in the video call.

Latency, the delay between the time you say something and the time the other party hears and sees you, is also a concern. Remember many years ago, when making long distance calls, you had to learn to wait a few seconds before saying something so you would not "step on" the other caller? Latency is not a desirable condition and is often found in server-based solutions that relay the video call.

The faster the Internet connection, the faster frame rate MSN Messenger allows. This is a good strategy. As video call solutions improve and compression and broadband become faster, frame rate will only improve over time.

Security and Privacy

Now that we're planning to connect a computer or are already connected to the Internet, let's not forget that there are hackers/crackers, worms, and viruses out there against which we need to protect ourselves. Security and privacy concerns must be addressed. Your computer and video call setup must be properly configured to prevent your system being exposed to bad things.

You will need to secure your Internet connection, which will also give you the ability to connect multiple computers and even use wireless within your home. This brings up a whole series of questions we will address in Chapter 3.

So, are you still thinking this is all too complicated? The next several chapters will help you begin making decisions, if you have not already started to do so. Everyone has an idea of what they might like, and the purpose of this book is to make sure that what you select will work as you expect and provide a video call experience of the best possible quality.

Firewall Friendly

Video call applications sometimes require ports to be configured on your broadband router (more on this topic in Chapter 3) in order to pass the video data to your computer or video telephone device. Yahoo Instant Messenger, for example, requires port 5100 for Super Mode to work. These ports are like special windows that an application uses to operate through a network. This is much like an apartment building that has one physical address (in a computer, an IP address) and an apartment number (in a computer, a port) so that you know where to go. Appendix A includes a list of applications and the ports required to allow the application to work with your broadband router or firewall.

Solutions that do not require special ports to be configured are considered "firewall friendly," which is a very good thing for the video call user. Some of the SIP-based video call solutions, such as the Sony/GlowPoint IVE solution, use the SIP voice protocol, so ports need to be opened for these solutions to work properly. Don't worry, this is only a one-time configuration. Personal firewall solutions such as Norton Internet Security have auto-configure capabilities and either automatically allow the traffic or ask you if it is OK to allow the application to talk to the Internet and usually do not require any special configuration. Hardware devices such as DSL/cable broadband routers or hardware firewalls must be manually configured to allow the video call traffic to pass, if special configuration is needed. Appendix A has a list of ports needed for many of the video call applications.

Parental Controls

Though we won't go into any significant detail about parental control solutions here, we believe that parents have an obligation to monitor their children's Internet and Webcam use. Parents with children who make video calls should be aware that they can unplug the Webcam when it is not being used to make approved video calls and keep it out of reach so that your kids can't use it for inappropriate purposes or to talk with strangers. Either remove the Webcam when it's not used to make an approved video call and/or use a parental control solution when children have unrestricted access to a computer. Several video call solutions have community chat rooms that can include anyone chatting for any reason, and this activity should be monitored if you are a parent. You can read more about parental controls and monitoring solutions at my Web site, www.internetvisitation.org.

Parental controls mainly include limiting your children's access to a computer, monitoring any and all activity, access to an application or Web sites, or how long the computer may be used. For example, do you argue with your child to get off the computer for dinner or bedtime? Do you have multiple children wanting to use the computer? Do you want to limit the applications they use during certain times, so homework gets completed versus surfing the Web, instant messaging with friends, or gaming?

Parental control solutions can do these tasks for you automatically so that you do not have to argue with your children about these issues. You simply install the software, and the software enforces the rules for you so that you do not have to have a debate, argue, or nag your children. You will probably find that your children's attitudes change when the filter is automatic as opposed to a parent nagging them. Chapter 4 lists many available parental control solutions for you to consider as a part of your personal videoconferencing system.

Understanding the Basics...

Parental Controls

If you are going to allow a child to use a computer unattended, it is recommended that you use parental control software.

Recording Videoconferencing Sessions

I have been asked several times if it is possible to record video calls. A couple solutions have the capability of recording video calls. If you really need this capability, use a solution that is designed to record anything you do on your computer. For example, Camtasia Studio is an application that allows you to record anything from the clicks you make to a complete video call. You can find more information at the TechSmith Web site: www.techsmith.com/products/studio/.

Some video call applications, like the Sony IVE solution, are unable to record the receiving video due to the way it is displayed to your computer. So if you have a specific need to record your video calls, do some homework and test various solutions to see if they can be used with a solution like Camtasia Studio or other screen-capturing programs. Solutions that hook up to your television may be recorded using a VCR or DVR, just as you record a regular TV show. Some video cards have an S-Video out connection that could allow you to record the video call onto a DVR or VCR. Whether S-Video will work for you needs to be tested with the solution you are using.

Summary

In this chapter, we talked about the prevalence of computers and broadband connections and learned that two out of three Americans who are connected to the Internet have a high-speed Internet connection. You have the option of using not only your computer but also dedicated video telephone devices to make video calls. We discuss the requirements for making video calls, including a broadband Internet connection.

We also discussed that you have options to make video calls; a computer or a dedicated video telephone device will help you start making your decision on what to use. We covered what you need to add to your computer to make video calls: a webcam, headset, and video call software.

We covered some technical details of the video call, such as frame rate and video image quality, and we touched on security and privacy of your video call solution. We learned what “firewall friendly” means to you and why you should care. If you are a parent, reading this book should help you understand that parental controls are an important aspect of video calls.

We also covered ways in which you might record your video calls. This chapter began to cover the details of what you will need to make video calls and the options and solutions that are available so that you can start your decision process to select the solution that’s right for you.

Selecting a High-Speed Internet Provider

Solutions in this chapter:

- Selecting a High-Speed Provider
- Cable Modem
- DSL
- Satellite Broadband
- Wireless Broadband
- Broadband over Power Line
- Networking Your Home
- What Type of Wireless to Use?
- Wireless Routers
- Wireless Security
- Wireless Antennas
- Testing and Troubleshooting

Selecting a High-Speed Broadband Provider

Selecting a high-speed Internet provider can be a challenge, so this chapter is dedicated to helping you understand the options, find the providers for each location from which you plan to make video calls, and ask the right questions of the providers. You might already have a high-speed provider, so this chapter will help you understand which options are readily available for high-speed Internet. To make consistently good video calls, your broadband connection should be at least:

- 2Mbps download
- 250Kbps upload

Although you might be able to have video calls with slower speeds than the aforementioned speeds, the number we recommend is for consistently good video calls. Some of the solutions will work fine with a slower connection, but many will be choppy or inconsistent.

The terms *high-speed Internet*, *Internet broadband*, *wireless broadband* and *broadband Internet* are synonymous; throughout the rest of the book, we will use the term *broadband*. Generally, broadband is any device with a download speed of 256Kbps or faster, but all these different terms refer to faster Internet access than you can get with a dial-up modem connection of 56Kbps.

Broadband Internet access is offered in many flavors: cable modem, digital subscriber line (DSL), satellite, and wireless. Integrated Services Digital Network (ISDN) is not considered a broadband or high-speed service because it has a maximum speed of 128Kbps. Frame relay, or T1, lines are considered for business use only; therefore, they will not be covered in this book.

The first step is to find the providers of high-speed Internet in your area. You can probably find your local offerings online, or you can just call various providers and inquire about the details of their offerings. A great Web site to find a list of U.S. high-speed Internet providers is www.dslreports.com.

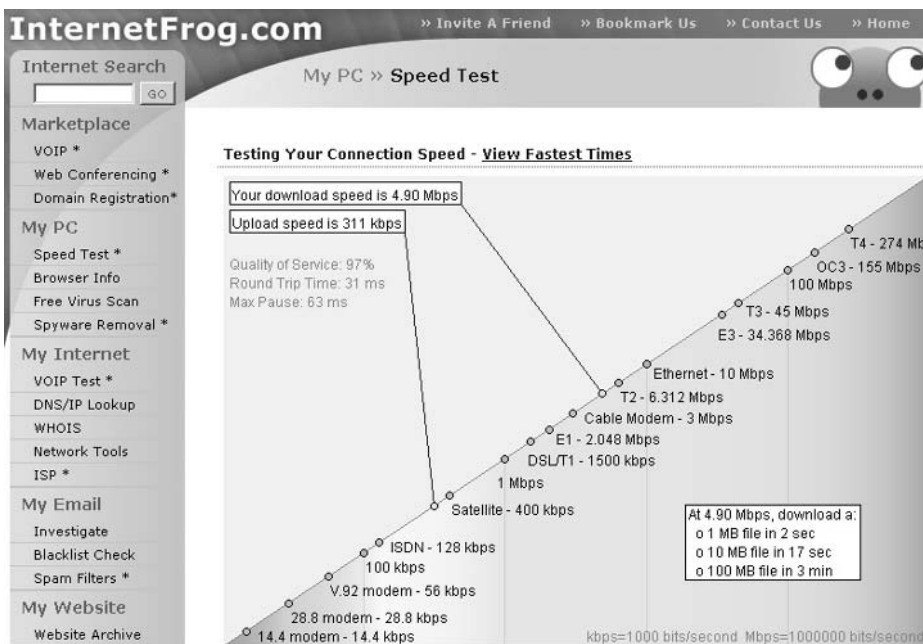
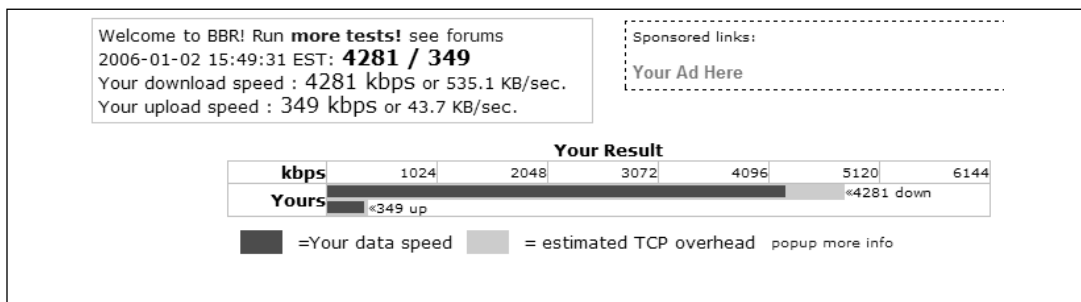
This Web site's "Find Service" option, reviews, information, and even testing tools, which we will discuss later, will help you with your high-speed Internet decision. Remember, you need high-speed Internet access at all locations where you plan to make video calls, so you will need to research all those locations.

Cable Modem

Cable modem is the leading provider of high-speed broadband services, with 65 percent of the broadband market in 2003, according to nua.com (see *More High-Speed Net Subscribers*

in U.S., April 02, 2003). I prefer a cable modem over DSL for many reasons. Older homes have poor or old phone wiring that can cause issues. The distance from your phone company's central office (CO) affects the speed of DSL: generally, the further away, the slower your connection is.

Cable modems, on the other hand, are so successful that cable companies do not care if you subscribe to their cable television services. Cable modem broadband costs approximately US\$50 per month and usually has a 3.0Mbps to 5.0Mbps download speed and 250Kbps or faster upload speed for standard services. Many Cable providers such as Time Warner offer a premium service that provides an even faster 7.0Mbps download for US\$79 per month. The following two screen shots show my cable modem speed.

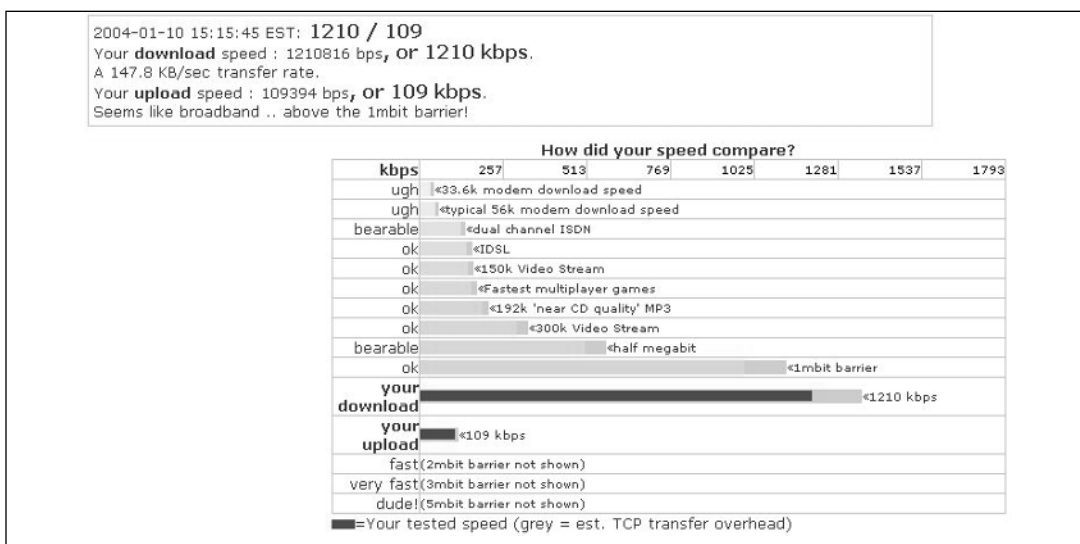


As you can see, my Time Warner RoadRunner cable modem provides very good download speeds and adequate upload speeds.

DSL

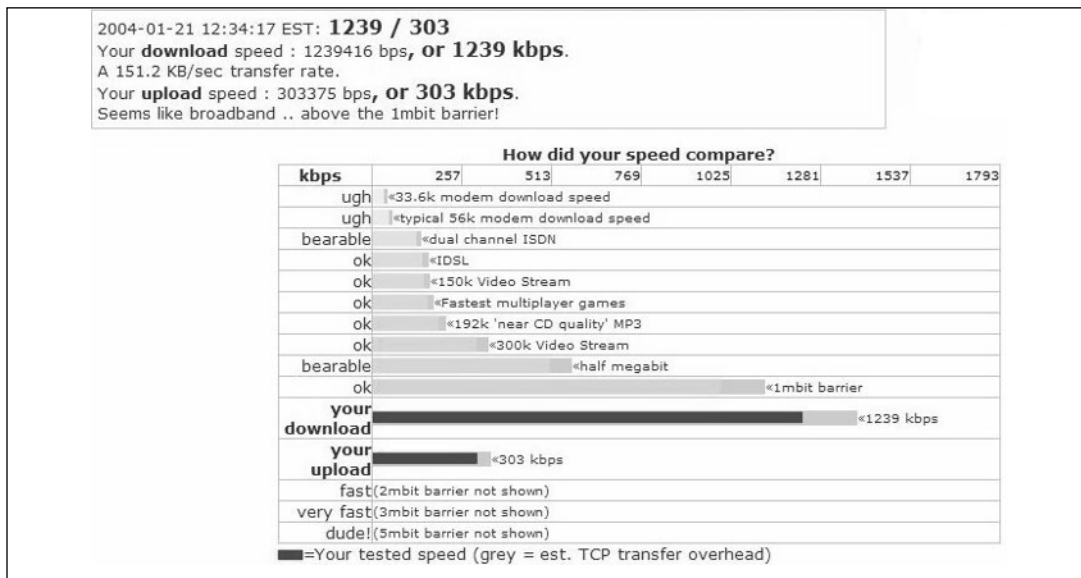
DSL providers are the second leading provider of high-speed Internet service; DSL providers now have about a 25 percent share of the broadband high-speed market, and it is growing. DSL is available only to those homes or businesses that are within a certain distance of the phone company's CO. This distance is normally 18,000 feet (3.5 miles, or 5.5 kilometers) for normal service and may be extended farther, but being farther than 18,000 feet can result in slower speeds. Typically, residential DSL or ADSL comes in 768/128 or 768Kbps download speed and 128Kbps upload speed. Many providers offer faster packages for a higher monthly rate. Keep in mind, however, that these are "maximum" speeds, and your DSL provider does not guarantee these speeds. What you get is what you get, and as long as it works, your DSL provider will not do much to improve the speed for you. Over the years providers have made improvements to their services, so you can get faster DSL service, but distance is still a limiting factor with DSL. A speed test will be the best indicator of how fast your connection is. At the end of this chapter, you'll find information on troubleshooting and how to conduct a speed test to see how fast your Internet connection is. To see what you can expect from DSL in your neighborhood, ask your neighbors if they have DSL and ask them to do a speed test on their systems.

The following screen capture indicates what my DSL speeds just before I pulled the plug and converted to a cable modem. I was sitting at 21,000 feet (4 miles, or 6.5 kilometers) from my CO, and after four months of drop-offs, 20-plus open tickets with Earthlink tech support, and Covad (the company responsible for the DSL lines for Earthlink) replacing a card at the CO, this was the best speed I could hope for. The download speed was fine, but the upload speed was not fast enough for sending quality audio and video consistently and reliably.

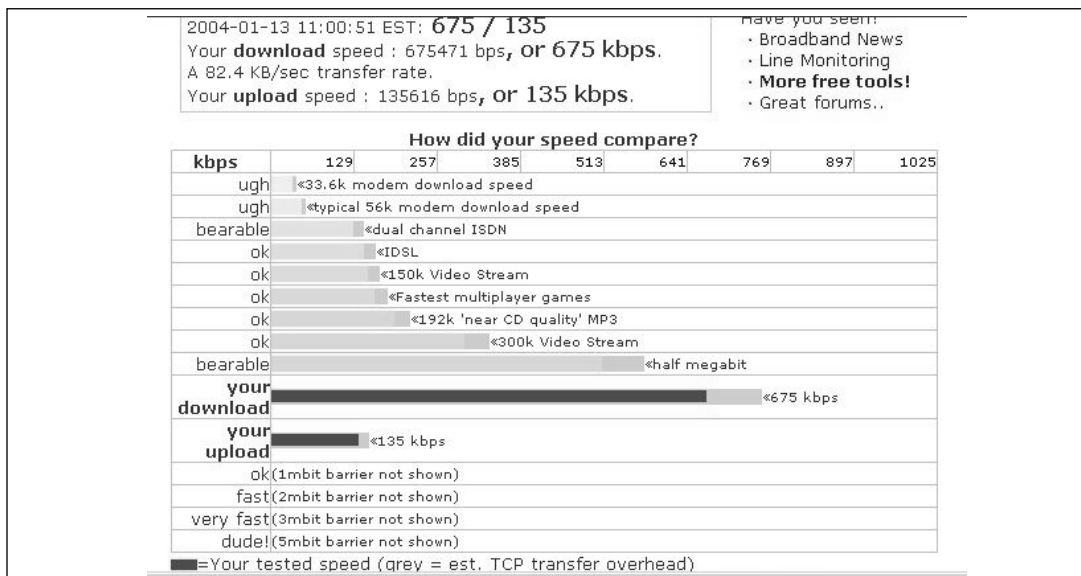


A 1,210Kbps download with 109Kbps upload is pretty good for the typical home user, but video calls will require better upload speeds if you want a good experience.

The following screen shot shows my friend's DSL speeds; he gets really good speed from his DSL installation, although at around 9,000 feet (1.75 miles, or 2.8 kilometers), he is much closer to the CO—half the maximum distance from the CO.



So the distance you are from your CO will dictate the performance you can expect. The next screen shot is an example of another poor DSL installation.



I have provided several screen shots so that you can understand what a good and a poor DSL installation looks like from a speed-test perspective.

DSL often comes with a minimum contract period of one to two years, which could limit your flexibility to change to a faster provider if one becomes available to you. Also, to get DSL, you will most likely have to maintain a telephone number with your local telephone company. Many of us, myself included, are moving to voice-over-IP (VoIP) services such as Vonage, Packet8, or digital phone services from cable providers and may not need a home telephone PSTN service. Therefore, DSL might not be the best solution for you. See my book titled *Skype Me! From Single User to Small Enterprise and Beyond* (Syngress, ISBN: 1-59749-032-6) for more information on VoIP.

Understanding the Basics...

DSL requires local telephone service

To have DSL you will most likely have to have local telephone service. This requirement will prevent you from being able to cancel your telephone service and switch to VoIP.

Unless you are really interested in what exactly you will get with your DSL provider, you can skip the following table because all you need to be interested in is the download speed and, more importantly, the upload speed of your DSL Internet connection. Testing your connection or your neighbor's connection will let you know how fast your DSL performs.

NOTE

Generally, the farther away you are from your local telephone company office, the slower your connection will be.

The following table summarizes the different types of DSL services available in the event that your provider tries to confuse you with all the variations of DSL.

DSL Summary Table

DSL Type	Description	Data Rate Downstream; Upstream	Distance Limit	Application
IDSL	ISDN digital subscriber line	128Kbps	18,000 feet on 24-gauge wire	Similar to the ISDN BRI service, but data only (no voice on the same line)
CDSL	Consumer DSL from Rockwell	1Mbps down-stream; less upstream	18,000 feet on 24-gauge wire	"Splitterless" home and small business service; similar to DSL Lite
DSL Lite (same as G.Lite)	Splitterless DSL without the "truck roll"	From 1.544Mbps to 6Mbps down stream, depending on the subscribed service	18,000 feet on 24-gauge wire	The standard ADSL; sacrifices speed for not having to install a splitter at the user's home or business
G.Lite (same as DSL Lite)	Splitterless DSL without the truck roll	From 1.544Mbps to 6Mbps, depending on the subscribed service	18,000 feet on 24-gauge wire	The standard ADSL; sacrifices speed for not having to install a splitter at the user's home or business
HDSL	High bit-rate digital subscriber line	1.544Mbps duplex on two twisted-pair lines; 2.048 Mbps duplex on three twisted-pair lines	12,000 feet on 24-gauge wire	T1/E1 service between server and phone company or within a company; WAN, LAN, server access
SDSL	Symmetric DSL	1.544Mbps duplex (U.S. and Canada); 2.048Mbps (Europe) on a single duplex line downstream and upstream	12,000 feet on 24-gauge wire	Same as for HDSL, but requiring only one line of twisted-pair

Continued

DSL Summary Table continued

DSL Type	Description	Data Rate Downstream; Upstream	Distance Limit	Application
ADSL	Asymmetric digital subscriber line	1.544Mbps to 6.1Mbps down stream; 16Kbps to 640Kbps upstream	1.544Mbps at 18,000 feet; 2.048Mbps at 16,000 feet; 6.312Mbps at 12,000 feet; 8.448Mbps at 9,000 feet	Used for Internet and Web access, motion video, video on demand, remote LAN access
RADSL	Rate-Adaptive DSL from Westell	Adapted to the line, 640Kbps to 2.2Mbps down stream; 272Kbps to 1.088Mbps upstream	Not provided	Similar to ADSL
UDSL	Unidirectional DSL proposed by a company in Europe	Not known	Not known	Similar to HDSL
VDSL	Very high digital subscriber line	12.9Mbps to 52.8Mbps down stream; 1.5Mbps to 2.3Mbps upstream; 1.6Mbps to 2.3Mbps down stream	4,500 feet at 12.96 Mbps; 3,000 feet at 25.82Mbps; 1,000 feet at 51.84Mbps	ATM networks; Fiber to the Neighborhood

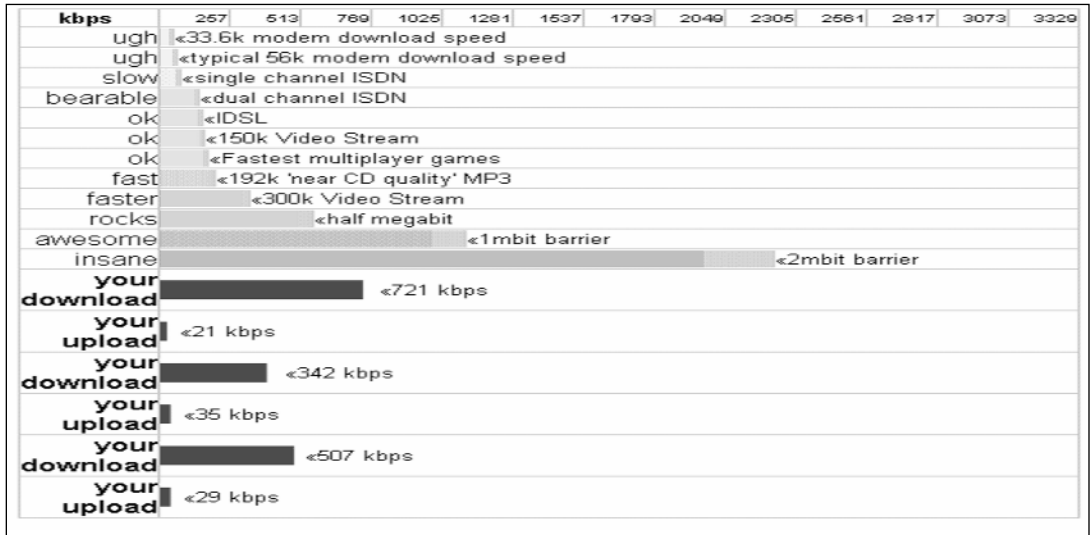
For more information on DSL and other broadband technologies refer to the following Web site: www.dslreports.com/faq/faq

Satellite Broadband

Satellite broadband allows high-speed access basically anywhere in the world where there is a clear view of a communication satellite that provides broadband access. In the United States, satellite broadband service is offered anywhere with a clear view of the southern sky. Installation and equipment costs are steep, around US\$500, so the initial charge might be tough for consumers to swallow, but the monthly fee (around \$60 per month) is similar to other high-speed options. In addition, satellite is not a good solution for videoconferencing at this time. The upload speed is far too slow to send reliable video and audio. You can prob-

ably receive audio and a still picture just fine, but, of course, we are looking for the best possible solution—one that includes full-motion fluid video.

The following is a speed chart for satellite broadband service shows that download speeds are acceptable, but upload speeds are below 50Kbps. HughesNet’s Home service claims 700Kbps download and 128Kbps upload speeds.



As you can see, Satellite is rather slow and therefore not recommend for video calls. Try to find another provider because satellite just will not work well for receiving a good video call. For more information on satellite broadband, visit HughesNet’s Web site, www.hughesnet.com

Wireless Broadband

Wireless technology comes in many flavors. Here, we are not discussing WiFi service that is based on 802.11a, 802.11b, or 802.11g wireless standards. This type of WiFi service is found in homes and businesses and has a fairly short range of only 300 feet or 100 meters. Instead, we are referring to the wireless broadband options that exist for high-speed Internet access offered by your cellular phone company or a specialty wireless broadband provider.

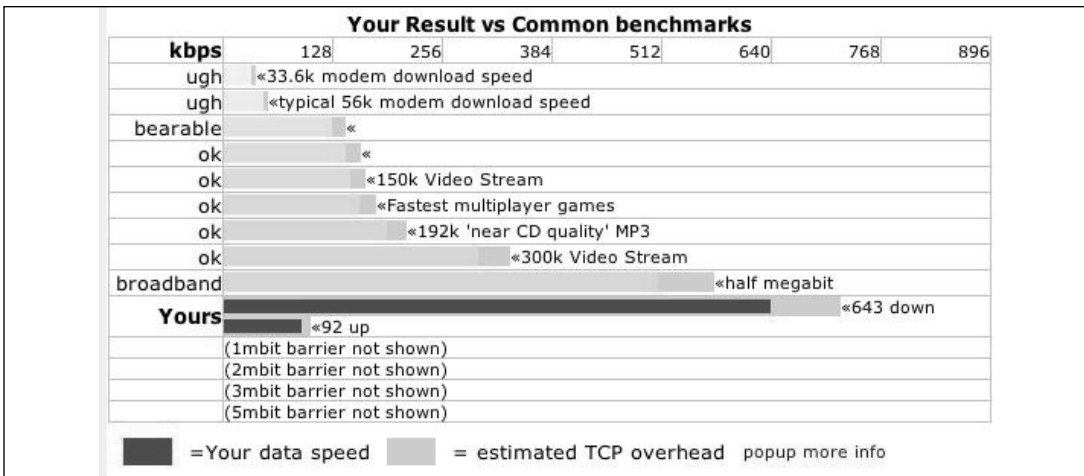
Cellular Broadband

Many cell phone companies offer high-speed data access for your cell phone or Pocket PC or with a PC Card for your laptop. I would not recommend cellular broadband for your home, but if you are a mobile professional who uses a laptop and needs more connectivity than WiFi provides, cellular broadband could be an option for you. In the United States,

cellular broadband is called *EV-DO*, which is short for *Evolution Data Only* and now called *Evolution Data Optimized* (EVDO, EvDO, 1xEv-DO, or EV-DO). This wireless high-speed service accommodates 300Kbps to 500Kbps download speeds; older 1xRTT cellular broadband service accommodates 50Kbps to 100Kbps download speeds and is not capable of transmitting video calls.

EV-DO has a maximum throughput of 2.4Mbps. This throughput can be as fast as some DSL connections. Qualcomm demonstrated EV-DO capabilities in a video call with a participant traveling in a car at 60 miles per hour (96 km/hour).

In the United States Verizon Wireless offers VZAccess, and Sprint offers PCS Vision. The following screenshot shows the results of a speed test from the Verizon VZAccess. This data reflects a typical experience that you can expect.



Although this speed is on the low end of the requisite speed for making a video call, it will only get better in time. Let us just say that cellular broadband services like those currently offered from the cell phone companies are not what the home user wants for video calls. But if you need to make some level of video calls on your laptop and you are not near a WiFi hotspot, this could be a solution, even though it is a little slow for a fast video frame rate.

Wireless Broadband

When I lived in Utah and was unable to get DSL or cable service, I had a wireless microwave setup offered by Sprint with Earthlink as the Internet service provider (ISP). It was reliable and consistent, although the speeds were not as fast as a cable modem. However, the upload speed was better than my Earthlink DSL upload speed, which is the main reason I converted to a cable modem.

A typical wireless broadband setup will consist of a dish or antenna like the two shown in the following photos. This equipment attaches to your home and points in the direction of the base antenna, very similar to a cell phone, but directional, much like satellite service. You will see more and more of these types of solutions coming out in areas where DSL and cable are not readily available.



Photo of the Canopy® Subscriber Module courtesy of Motorola, Inc. (www.motorola.com/canopy).

For reference only, and to give you an idea of what you might find in your area, I mention a local company in Utah named ReadyTek that offers wireless broadband service. To receive information about this company's residential broadband wireless service, go to www.readytek.com.

As you can see, the speeds are acceptable for video calls, and the service is reasonably priced. If you cannot get a cable modem, this might be an option for you. With this service, you should be capable of making good video calls. Another name you might hear is *WiMax*, or long distance WiFi. This is a newer technology, but we should start seeing this technology appear in 2006.

Broadband over Power Line

A relatively new offering you might see come up in 2006 is one from your power company that offers very fast broadband over standard power lines going into your home. You will

plug an adapter into the wall outlet, and it will convert the signal into a high-speed Internet transmission sent over the same lines through which electricity flows. The speed should facilitate making video calls.

Recommendation

If you are looking for a recommendation among all these choices, the main goal is to get as fast an upload speed (the speed at which you send data) as you can get because it is always at least 10 times slower than the download speed (the speed at which you can receive data). The following are my top three recommendations of what you should look at getting if you do not already have broadband Internet or are considering changing if your speed tests are slower than we recommend for a good video call:

1. Cable modem
2. DSL
3. Anything else that provides decent upload speeds

NOTE

A cable modem solution from your cable television provider is the fastest solution you can get at any distance. You do not need cable television service to get cable broadband from your cable television provider.

Networking Your Home

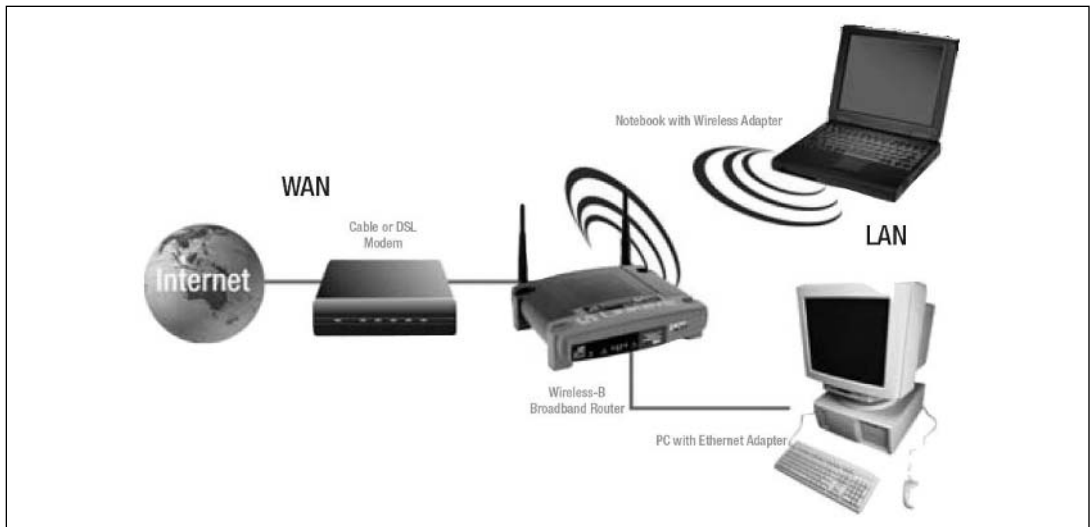
If you are like me, you have multiple computers, or you want to be able to take a laptop anywhere in the house or outside on the porch to do your work. This section will help you understand what you need to know to set up a network in your home or office to make video calls anywhere in your home.

Wireless service is the easiest way to create a network in the home. Setting up an 802.11 wireless network is easy, and this network enables you to work anywhere in your home without a lot of wires. You might have heard that wireless is not secure and that a Pringles can is able to pick up the wireless signal from miles away. We'll soon show you how to secure your wireless network so that you will not have to worry about security issues.

The concept of wireless is not any different from a wired network. The only difference is a little setup and no wires. Wireless does have a limit of 300 feet, or 100 meters, so keep

this in mind when you install your broadband connection. You should also keep in mind that basements and other thick walls will interfere with and reduce the signal strength. You'll need to think about where your Internet connection will be installed so that you centralize your installation to maximize the wireless range within your home.

The following diagram shows a typical home network with a PC and a laptop. The wide area network (WAN) portion is nothing more than your ISP and the local area network (LAN) is your network in your home. Most broadband routers come in wireless or wired versions; the only difference is the addition of wireless capability.



Once you decide where to install your Internet connection, you are ready to install your broadband router. If you decide to use wireless, you must secure the wireless connection so that others do not use your connection or cannot access your computers. If you decide not to use wireless, you can connect your computers, and you are finished.

What Type of Wireless to Use

There are three types of wireless networks, or WiFi, as it is called: 802.11a (54Mbps), 802.11b (11Mbps), and 802.11g (54Mbps). However, I do not recommend 802.11a and believe it will eventually fade away, so that leaves 802.11b and 802.11g. The 802.11b network is the slower and less expensive of the two types. The 802.11g network is the faster option and the best solution if you want to make video calls over your wireless connection. Most 802.11g routers are compatible with both 802.11b and 802.11g and are therefore called dual-protocol wireless routers. These routers give you more flexibility.

Speed improvements based on the 802.11n protocol allow the wireless router to operate faster than the 56Mbps speed at which 802.11g normally operates. This speed is also referred to as multiple input/multiple output (MIMO) or SpeedBoost by Linksys. MIMO is just faster wireless technology that transmits signals over multiple channels to improve performance. For video calls, the faster the speed, the better when it comes to wireless. Something also worth noting is that 802.11b and 802.11g with their 2.4MHz signals can interfere with your 2.4MHz cordless telephone. If you experience a “warble” with your 2.4GHz cordless phone, you might want to upgrade to a better cordless phone or keep the devices away from one another.

TIP

If you do not already have wireless service, then consider using 802.11g with MIMO (802.11n) or any other SpeedBoost options.

Wireless Routers

There are several makers of wireless routers: the ones that follow make up the short list for you to consider. As far as my suggestion, Linksys, the largest of all the vendors, has the largest installed base, and that’s what I use. You can decide based on features and cost because some vendors have more features that you might be interested in.

- Linksys Wireless G with Speedboost
- D-Link Super G with MIMO
- NetGear RangeMAX Wireless Router with MIMO
- Belkin Wireless G Plus MIMO Router

Other vendors offer models with other features that you may want to consider, so research the vendors and decide what you want and can afford. I do not recommend buying a device with a built-in cable modem because your flexibility will be reduced. If you need one, cable modems can be rented or purchased, and you could end up moving and use something other than a cable modem for your broadband Internet access.

Wireless Security

Five steps are required to secure your wireless connection. The User Guide instructions that came with the wireless router you purchased contain detailed setup steps. Just be aware that if you do not follow these steps to secure your wireless network, you will be at risk:

1. Change the SSID to something unique for your home.
2. Disable SSID Broadcasts.
3. Change the default password for the Administrator account. Do not use a dictionary word or name. Use a combination of upper-case letters, lower-case letters, numbers, and special characters.
4. Enable MAC address filtering and enter all the MAC addresses of your network cards into the list so that only your devices can use your wireless network.
5. Enable WPA to secure your wireless connection.

For more information on securing your wireless network, read *Hack Proofing Your Wireless Network* (Syngress, ISBN: 1-92899-459-8). You can also look at the *Wireless Benchmark* from the Center for Internet Security on how to secure your Wireless Router: www.cisecurity.org/bench_wireless.html

In addition, the wireless device that you have or that you purchase has instructions on the options that are available to secure your Wireless connection.

Wireless Antennas

If you need to extend the range or improve the wireless signal in your home, you can choose from several makers of wireless antennas that can be connected your wireless router to improve range and signal. For example, Hawking Technologies has a wide variety of wireless antennas to boost your signal within your home. For more information, visit www.hawkingtech.com and www.Linksys.com.

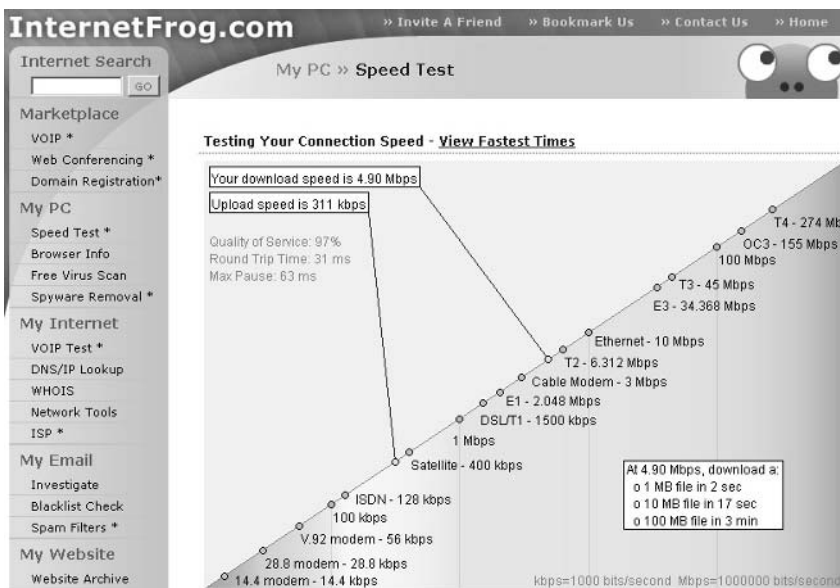
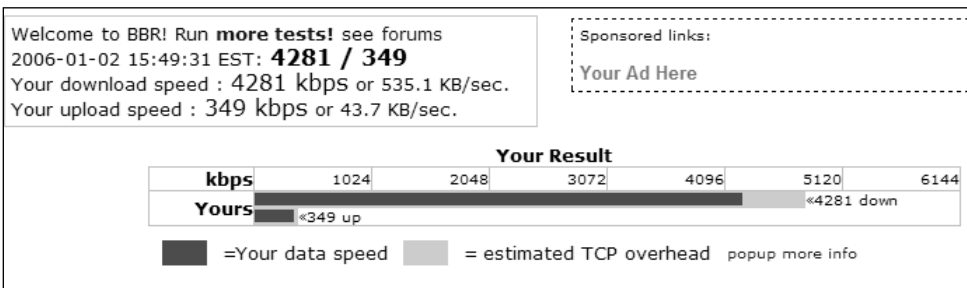
Testing and Troubleshooting

The most important test you can run is to test your Internet connection speed. It will tell you whether you should even try personal videoconferencing or if you are having problems with your Internet connection. A slow Internet connection will result in choppy or slow video and choppy or poor audio. If you already have a high-speed Internet or broadband connection or after you get your new broadband connection installed, you will want to find out the speed of your connection. To see how fast your high-speed Internet connection is,

try either of these Web sites to get a speed test: www.DSLReports.com/stest or www.internetfrog.com/mypc/speedtest.

Depending on what Web browser you are using, you might need to install a copy of Java to run the speed test utility. As a side note, I recommend you consider using the Web browser Mozilla Firefox as your primary browser because Microsoft Internet Explorer is prone to vulnerabilities, and Firefox is usually safer to use. You can get a copy of Firefox for free at www.mozilla.com. If you are using Microsoft Internet Explorer (IE), nothing is required. You can get a copy of the Java Runtime Environment from Sun at <http://java.sun.com/getjava/manual.html>.

If you are a road warrior like myself, the first thing you do when you hook up to an Internet connection is to test the speed so that you can know what to expect when you make a video call. You will get results like the following from DSLReports.com and InternetFrog.com:



The goal is to make sure you have at least 250Kbps upload and 2Mbps download speeds for your home. Many solutions will work with slower connections, but you want some room to do other things while in a video call. In hotels or hotspots, you might find speeds slower than the ones we recommend, so you will at least understand why you are having problems with your video calls in those locations.

Summary

In this chapter we discussed the details of which broadband Internet connection you should select, how fast it should be, and how to test your connection to understand how fast it really is and if it will be up to the task of making good video calls. We gave examples of Internet speed tests for the various broadband options. We covered cable modems, DSL, satellite, wireless, and the cutting-edge broadband over power line. We recommended that cable is the best solution, followed by DSL, and then anything else you can get that will give you adequate speeds.

This chapter also provided you with information to network your home and prepare for multiple systems sharing one Internet connection. We discussed WiFi to give you flexibility and suggested that 802.11g is the best option for networking your home. We touched on how to secure your wireless connection and boost your wireless signal. We also discussed in detail how to test and troubleshoot your Internet connection because a speed test on both sides of your connection is the best way to determine if a speed issue is preventing you from making good video calls.

Part II: Taking Video Calls to the Next Level

Just Tell Me What I Need

Solutions in this chapter:

- **Broadband Internet Connections**
- **Broadband Routers**
- **Do You Need a Computer?**
- **Windows-Based PCs**
- **Apple Mac**
- **Windows Webcams**
- **Webcam Lighting**
- **Webcams for the Mac**
- **Headsets or Microphone and Speakers**
- **Personal Videoconferencing Solutions for the PC**
- **Personal Videoconferencing Solutions for the Mac**
- **Security, Privacy, and Parental Controls**

Introduction

If you are like a lot of people, you might just want us to recommend what to use so that you don't have to digest all the information in this book before deciding for yourself. What we have found is that once you are up and running and using personal videoconferencing, you will start trying to convince your friends and family to participate. You will receive many opinions from people that have been using other solutions they are happy with or that someone recommends for various reasons.

The goal for us with this book is to recommend a basic setup and then to educate you on many of the other options and solutions available, including the pros and cons of some of these solutions so that you do not get overwhelmed with input from your friends and colleagues. Being a “techie” or “geek,” as we are sometimes called, exposes us to an often overwhelming number of options that exist out there.

Keep in mind that the recommendations made in this chapter are solely to get you up and running. After that, you can try other personal videoconferencing solutions mentioned in this book and decide what you will use. Some video call solutions are free and some have one-time or monthly costs for each user. Of course, your personal preference will also play a part. Be sure to send me your comments on what you use and how you like it and I will post them to the www.VideoCallTips.com Web site to assist others in making a decision.

Broadband Internet Connections

The primary goal of selecting a high-speed Internet provider is to get an upload speed of at least 250 Kbps, as we stated in Chapter 3, “Selecting a High-Speed Internet Provider.” If you already have a broadband Internet connection, you may find (by a speed test we discussed in the preceding chapter) that your connection is slower than what we recommend. At this point, do not worry too much about it until you are up and running and test your video calls. You may find that the speed you have is acceptable to you and remember: the speed of Internet connections are constantly getting faster. If you can get cable television—especially digital cable—then more than likely you can get a high-speed cable modem from your cable provider. Cable modem broadband is the fastest option available for the home user. If you cannot get cable, then ask the other broadband providers what their “minimum guaranteed” speed is. Check www.dslreports.com/search to find a provider in your area. You may find, as with DSL, that the provider will say the “speeds are not guaranteed,” so you will want to ask what the cancellation period is so that you can test the connection speed to see if it is adequate for video calls. You will usually have 30 days to evaluate the installation.

TIP


We recommend a cable modem because it is the fastest of the connections and usually does not require a contract to lock you in like DSL does.

Broadband Routers


One of the security measures we recommend is to add a DSL/cable router to your Internet connection. It will also give you the capability to share your Internet connection with multiple systems. We recommend that you always consider a wireless version (802.11g or the newer 802.11n) for your DSL/cable router so that you have the flexibility that WiFi provides, but that decision is up to you. We recommend the following broadband routers:

- Any Linksys 802.11g DSL/cable router (with or without 802.11g wireless)
- Any DLink 802.11g DSL/cable router (with or without 802.11g wireless)
- Any NetGear 802.11g DSL/cable router (with or without 802.11g wireless)
- Any Belkin 802.11g DSL/cable router (with or without 802.11g wireless)


Wireless-G Broadband Router with SpeedBooster
The Wireless-G Networking Solution with SpeedBooster Performance Enhancement





- ◆ All-in-one Internet-sharing Router, 4-port Switch, and up to 35% performance enhanced Wireless-G Access Point
- ◆ Shares a single Internet connection and other resources with Ethernet wired, Wireless-G, -B, and SpeedBooster devices
- ◆ Push button setup feature makes wireless configuration secure and simple
- ◆ High security: Wi-Fi Protected Access™ 2(WPA2), 802.1x, powerful SPI firewall




June 7, 2005
Wireless-G Router with SRX
WRT54GX









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June 7, 2005
Wireless-G Router with SRX
WRT54GX

For more information on wireless and networking your home, see Chapter 3, “Selecting a High-Speed Internet Provider.”

Do You Need a Computer?

We recommend using a computer video call solution if you can, but there are many situations where a computer is not the best solution. If you are in one of the following categories, then select a video telephone device, which is covered in more detail in Chapter 5. For ease of installation and quality of service, we recommend that you use a VoIP service provider such as Packet8, ACN, or Vonage, and select that provider’s video telephone option. Remember that each side must join the same service and have the same video telephone. The following are some reasons that you might select a dedicated video telephone device:

- You need the least expensive solution and do not have a computer.
- You are using it for grandparents or family members who are not comfortable using a computer.
- You are using it for an elderly care facility.
- You want to use it for multiple family members who do not have computers and cost is an issue.
- You want a solution that can connect to a television set for a larger screen.

If these situations do not apply to you and you want to use a computer, then the following sections will cover what you need to get up and running.

First you need to decide whether you want to use Windows or Apple Mac OS. If you do not already own a Mac or have a good reason for buying one, then we recommend a Windows PC.

Windows-Based PCs

If you already own a Windows PC, we recommend Windows XP as the operating system. If you are not running Windows XP, then we strongly recommend that you upgrade because many solutions will work only on Windows XP. Many more video call options are available for Windows than for Mac and most people you will communicate with will have a Windows PC.

Which PC?

If you have a Windows PC, anything newer than an Athlon, Celeron, or Pentium III should work fine. You will need to add a Webcam, headset/microphone, and video call software to get up and running. If you have an older and slower computer, you can try it, but you may find that it will be slow for video calls.

Minimum Windows PC Requirements

- Athlon, Celeron, Pentium III, or better
- 2.0 GHz or better processor
- 256MB RAM
- Full-duplex audio card (send and receive audio at the same time)
- Microsoft Windows XP or later
- Internet Explorer 6.0 or later
- DirectX December 2005 or later
(www.microsoft.com/windows/directx/default.aspx)
- Keep your system patched with the latest updates from Microsoft (<http://window-supdate.microsoft.com>)

Apple Mac

Only a few solutions work with Apple Mac systems. But with Apple announcing that its next release of Mac OS X will enable you to run both operating systems, called “dual booting,” you can have the best of both worlds.

Which Mac?

If you have a Mac, anything later than an Apple G3 or better should work fine. You should not have to make any upgrades except for a Webcam, headset/microphone, and software to get up and running. If you have a G2, you can try it, but you may find that it is a little slow for personal videoconferencing.

Minimum Mac Requirements

- Apple G3 or better
- 600 MHz or better
- 256MB RAM
- Audio and video will be automatic with Apple systems
- Mac OS 10 or later

Windows Webcams

There are several vendors of Webcams. Logitech is the world leader; Creative is second; Ezonics and Philips are a distant third. We have tested many Webcams over the past couple years and one thing is for sure, you get what you pay for, so do not buy a cheap Webcam. The only Webcams we have tested that are remotely worth buying are the top of the line Logitech Webcams. Webcams come with two types of sensors: CCD and CMOS. The CCD sensor is much better quality; CMOS sensors are less expensive.

One of the reasons Logitech Webcams are the best is their drivers. Logitech has some free add-on video effects for their newer Webcams. These video effects enable you to have some fun, especially if you are having video calls with children. I am a parent and I love to goof around with my daughter in video calls. This is also great for grandparents who want to have some fun with their grandchildren. It uses the face-mapping feature of the Logitech Webcam and enables you to use a cartoon character or add features to your face to make some funny video calls.





For more information, visit www.logitech.com/index.cfm/products/videoeffects/welcome/US/EN,crid=2354

On my www.VideoCallTips.com Web site, I maintain updated Webcam ratings, so check the Web site before making your final decision to see if there are any updates. The following Webcams are my short list of recommendations. The Philips model listed is available only in Europe and the United Kingdom.

Philips

Philips SPC900NC



- www.consumer.philips.com/webcams/

QuickCam

QuickCam Pro 5000



QuickCam for Notebooks Pro



Quickcam Fusion



- www.logitech.com/index.cfm/products/productlist/US/EN,crid=2203

Understanding the Basics...

Are Webcams Dangerous?

Being a seasoned computer security consultant and Virtual Visitation expert, I am often asked, "Does a Webcam add any additional risk to my children?" My reply is always the same: "Not unless you do not monitor your children's Internet access."

Webcams for the Mac

There is only one Webcam that will work and is still supported on the Mac because Logitech has discontinued support for their Webcams after Mac OS X 10.2. So the decision is easy, because the Apple iSight Webcam is the best option and a good one. More detail on Webcams will be covered in Chapter 9.

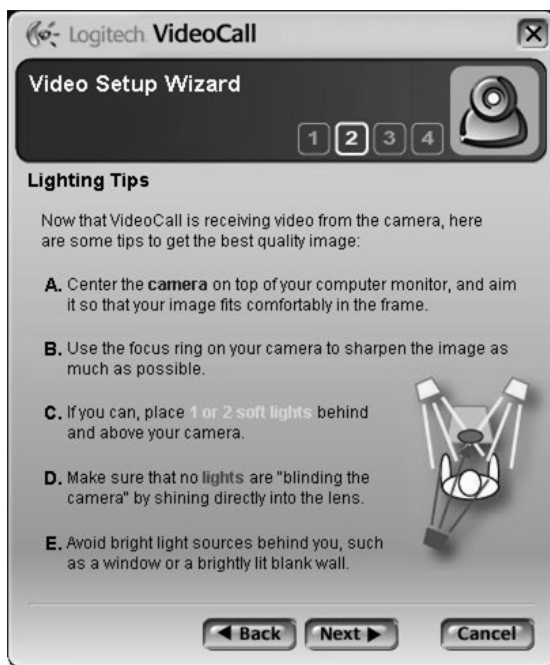
Apple iSight



Logitech Webcams will only work on Mac OS X 10.2 or earlier.

Webcam Lighting

Lighting with your Webcam is very important. Natural lighting is best and lighting towards your face is what you need most, so you may need to put some soft bulb lamps on your desk and turn off the lighting above and behind you. Webcams have brightness controls to further adjust your lighting. We came across this good lighting tip from Logitech.



Headset or Microphone and Speakers

A headset has both a headphone and a microphone and is the same for the PC and the Mac. Headsets have two 1/8" plugs, one pink or stamped with a microphone icon (microphone) and one black or stamped with a speaker/headset icon (headphone) on the connectors—or they come in USB. Headsets are the easiest decision because it is based on only three things:

- Comfort and how it fits
- Cost
- 1/8-inch connectors or USB

If you have children, over-the-head headsets will often be too large, so we recommend using over-the-ear models for children. When it comes to microphones, speakers, and head-

sets, you have options. You can use either a noise-canceling microphone in combination with your computer speakers or use a headset. In fact, I use both depending on my video call and privacy needs and use a Radio Shack Computer Headphone speaker switch (26-204) to switch between the two so I do not have to deal with the wires. Plantronics and GE also make a similar switch, but I found the Radio Shack one to be the best available.

Radio Shack (26-204) Computer Headphone Speaker Switch



Photo courtesy of Radio Shack.

- www.radioshack.com/product/index.jsp?productId=2049682&cp

What you select and use is really going to depend on how noisy your environment is and whether you want anyone listening to your video calls over your computer speakers. So if you already have speakers, then add a microphone first and give it a try. If you find you do not like the quality or the echo (your speakers' feedback into your microphone), then add a headset and the Radio Shack switch. So the decision for a microphone and headset will then be based on cost and comfort, so purchase what your budget allows, but there is nothing like a comfortable headset for long video calls.

TIP

A headset will give you far better quality for video calls and provides more privacy. If you want to be truly hands free, then using a microphone and speaker combination will be preferred. We recommend using both depending on your video call needs.

Important to note is that a headset for a Windows PC will be the very same for a Mac computer. There are two options for headsets and microphones: 1/8-inch connectors and USB options. We recommend using the 1/8-inch models that plug into your sound card so

you can use the Radio Shack switch listed above and have the option to switch between a headset and microphone/speaker as needed. USB microphones and headsets work just fine and tend to cost more.

TIP

We recommend selecting headsets and microphones that use the 1/8-inch connectors that plug into your sound card because they are less expensive and enable you to use a switch to change between a headset and your microphone/speakers.

Most Webcams have built-in microphones, so if you already have speakers, you do not have to get a microphone. The built-in Webcam microphones tend to gather too much background noise unless you are in a quiet environment, so we recommend using a headset for times you need your video call to be more private and have better quality. Using a headset also avoids echo and feedback that can occur from the microphone picking up what is coming out of the speakers. (You need to adjust the volume of the microphone and speakers to avoid this issue.) Also, you can place your headset around your neck and just use it as a microphone if needed.

Headsets

Plantronics

Plantronics Audio 340

- www.plantronics.com/north_america/en_US/products/cat640035/cat1430032



Photos courtesy of Plantronics.

Logitech

Logitech Premium Headset and Premium Headset 350 (USB)



Logitech Internet Chat Headset



- www.logitech.com/index.cfm/products/productlistns/US/EN,crid=101,ad=hmf

Microphones

Logitech

Logitech Desktop



Photos courtesy of Logitech.

Plantronics



Plantronics Audio 300

- www.logitech.com/index.cfm/products/productlistns/US/EN,crid=101,ad=hmf
- www.plantronics.com/north_america/en_US/products/cat640035/cat1200101

Personal Videoconferencing Solutions for Windows

Remember, the goal of this chapter is to get you going with something that works and is cost effective. Because many of these solutions are free, we recommend that you select one of the free solutions to start; then you can evaluate other solutions depending on your needs.

- SightSpeed (Windows and Mac)—Free with additional features for a cost
- Microsoft MSN Messenger (Windows only)—Free
- Skype 2.0 (Currently Windows only, but others are coming)—Free

SightSpeed 4.5 is probably the best-designed video call software available and is available for both Windows and Mac OS X so you can call anyone using either operating system. MSN Messenger 7.5 is also a good solution, but it can have issues with audio; if you have this issue, use it in conjunction with Skype for the audio portion. Skype has superb audio quality, so using it with MSN Messenger is a complementary solution.

Skype 2.0 added video to their already great voice solution for Windows, which gives us another video call solution to consider. However, the size of the sender's video screen, which is roughly one-inch wide and three-fourths of an inch tall is too small to be practical, because you cannot tell if you are in focus or if anything you hold up is readable by the other person in your video call. Of course, if you want to know more about Skype, visit my Web site, www.SkypeTips.com, and pick up a copy of my other book, *Skype Me!* So what do we recommend? Well, all three, of course! They do not interfere with one another and since they're all free, why not use them? More details on video call software will be covered in Chapters 6 and 7.

Personal Videoconferencing Solutions for the Mac

Remember, the goal of this chapter is to get you going with something that works and is cost effective. Because many of these solutions are free, we recommend that you select one of the free solutions to start; then you can evaluate other solutions depending on your needs.

- Apple iChat AV (Mac to Mac only)—Free
- SightSpeed (Windows and Mac)—Free with additional features for a cost

Apple iChat AV is a great Mac-to-Mac solution, but does not have a Windows client. AOL AIM client can work with Apple iChat AV to provide a PC-to-Mac solution, but it is so bad for a video call and is so firewall unfriendly that we do not recommend this solution. As mentioned in the Windows video call section, SightSpeed is one of the best designed solutions available and works for both Mac and Windows systems, so you can call people using either operating system. As stated in the previous section, we recommend using both solutions for the flexibility to make video calls with users of either solution and to users with Windows PCs. More details on video call solutions for the Mac will be covered in Chapters 6 and 7.

Security, Privacy, and Parental Controls

It is important to secure your Internet connection and your computer from the unknown Internet. A DSL/cable router, or broadband router, is really a necessity. You can also protect your system with a personal firewall/security suite software solution and by keeping your system up to date with the latest patches.

Webcam Security and Privacy

We have been asked many times about Webcams and if there is anything to worry about if you add one to your computer. You may have read, seen, or heard about some recent newspaper articles and television news that scared you with a worst-case scenario, but Webcams themselves are not something to be concerned about. It is what you or a child might use them for that is the issue. If you are a parent, you have complete control over a Webcam if you choose to. Most Webcams come with a lens cover just like a traditional camera so you can turn it down after you are done and feel assured that no one can see anything unless you let them. You can also just turn the Webcam to face a wall or even unplug it and remove it when not in use. If you have children, put it away until it is time to use it again if it makes you feel better and you still have any concerns. It is up to you to control your Webcam however it makes you feel comfortable. In addition, the software for video calls by default does not auto-answer incoming calls, so someone cannot just call your computer and see what is inside your home unless you set it up that way. Do not let a child use a Webcam without monitoring their use in person or with automated monitoring solutions that we will discuss in this section. If you do these things, a Webcam is nothing to fear and will provide you with a better way to communicate.

If you follow our recommendations to use a DSL/cable router, to install a personal firewall software/security suite, to keep your system up to date with security patches, and to control your Webcam, you have little if anything to worry about when it comes to someone breaking into your computer to watch your Webcam. The reality is, it is your or your chil-

dren's behavior that is the actual risk, not the additional accessories. Monitoring and controlling your Webcam will take care of any issues you might have heard, read, or seen. Really, it is just common sense.

Personal Firewall Software

When it comes to selecting a personal firewall solution, you might want to consider what parental controls you might like that we touched on in Chapter 2, "Getting Started," because the features in a parental control solution may overlap somewhat with personal firewall or security suite features. With that in mind, we recommend using one of the following security suites, because they contain many security features you should have:

- Symantec's Norton Internet Security
- McAfee Security Suite
- ZoneAlarm Internet Security Suite

Parental Controls

Parental Controls are options you can set for your computer that will enforce what you want your children to have access to on the computer or the Internet. A popular control is "black listing," which is a list of Web sites you do NOT want your children to visit; or it can be a subscription of topics such as "Sports," "News," "Gaming," and, of course, "Adult," to name a few, and then all sites that fit a category you black list are blocked. "White listing" is the reverse and works by blocking all Web sites unless they are entered into the approved list. This is better for younger children so that you can know and approve the Web sites they have access to and you can feel safe that they will not come across any inappropriate content. Also, check the options of your DSL/cable router because they may have parental control features as an option like Linksys does with some of their wireless 802.11g routers.

Parental control solutions can also control access to programs and the times of day they are allowed to be used. So you could, for example, block all instant messaging or video call applications between 8:00 A.M. and 6:00 P.M. while you are at work, so children cannot meet or chat with any strangers. Add this to a white list for surfing the Internet and you have serious control of a computer a child might use. Because every family will have different needs, we will not be making a recommendation for a parental control solution. You can visit my www.internetvisitation.org/articles/Privacy.html Web site for more-detailed information on the subject and visit the following Web sites for comparisons and ratings of some of the top parental-control applications to help in your decision:

- <http://internet-filter-review.toptenreviews.com/?ttreng=1&ttrkey=parental+controls>
- www.kidsnet.com/chart.asp

The top 10 parental control solutions are:

- ContentProtect
- CYBERSitter
- Net Nanny
- Cyber Patrol
- FilterPak
- CyberSentinel
- McAfee Parental Controls
- Norton Parental Controls
- Cyber Snoop
- Child Safe

Custom parental control solutions are available as well to further refine your parental control needs. Visit this Web site for more information:

- <http://kids.getnetwise.org/tools/>

Understanding the Basics...

Parental Controls

We recommend that anyone allowing a child to use a computer with access to the Internet use parental control software to control what a child can access on the Internet, as well as with whom they can communicate via e-mail, instant messaging, or video calls.

Monitoring Solutions

Monitoring is the next level of parental controls. Some parents may not want to severely limit their children's access, but prefer to trust them to do the right thing and to use the

Internet appropriately. For these situations, we suggest using a monitoring solution. Monitoring solutions are designed to monitor a user's e-mail, IM, Web, and computer usage and report it in some way, even without the user knowing since they often run in "stealth" mode.

As we said in Chapter 2, if you give children access to the Internet, you have the obligation to monitor their access 24x7. Of course, you cannot physically do that, so we recommend using one of the monitoring solutions that will notify you of your child's activity on the Internet and even e-mail it to you. For more information on monitoring, visit my Web site www.InternetVisitation.org for some detailed articles on this subject. Video calls are a nice way to communicate, but you must be careful that you do not let your child have unlimited or unmonitored access to a Webcam on the Internet or they could use it inappropriately. Visit these Web sites for more information on monitoring solutions:

- <http://kids.getnetwise.org/tools/>
- www.internetfilterreview.com
- www.spectorsoft.com/
- www.securitysoft.com
- www.secureactics.com/SpySolution
- www.overspy.com/products

Understanding the Basics...

Monitoring Solutions

We believe that if you allow a child to use a computer to access the Internet and perform video calls that you have an obligation as a parent to monitor a child's computer and Internet use.

Summary

In this chapter, we started to discuss the details of what you need to place video calls and to protect you, your children, and your computer from potential threats of the Internet. We discussed using a broadband router, whether or not to use a computer for video calls, and what the minimum requirements are for computers to perform video calls. We discussed Windows PCs and Apple Mac PCs and Webcams for Windows and Apple Mac systems. We also started to discuss the security aspects of Webcams and how best to monitor their use if you have children or are concerned if someone on the Internet might be able to turn it on when you least expect it. We also discussed some considerations for lighting when using a Webcam and computer video call solution. We discussed headsets, speakers, and microphones for your audio needs.

We also started to discuss the short list of video call solutions for Windows and Mac systems that we will go into more detail about in Chapters 6 and 7. Finally, we went into detail about privacy, security, and parental controls and discussed what every parent should know about the security and privacy of a computer that will be used to perform video calls. We provided specific recommendations on what parental control and monitoring solutions to look at to best protect you and your family.

Selecting a Computer or Dedicated Videophone Device

Solutions in this chapter:

- Which Solution to Select?
- Cost
- Video Call Software Solutions
- Video Telephone Options
- Video Telephones That Require a Service
- Video Telephones That Do Not Require a Service
- Dial-up Video Telephones
- Typical Video Telephones
- So What Solution Should You Choose?
- Additional Accessories
- Companies That Have a VoIP PBX

Which Solution to Select?

Selecting a computer or dedicated video telephone device, or both, is something you will need to consider. To help with that decision, we have provided some information to assist you in making an informed decision. Whatever your choice, keep in mind the same solution, or a solution that is compatible, must be installed at each location where you want to have a video call. Just remember you need two of everything.

NOTE

You will see the use of *video telephone* or *videophone* in this chapter. They are all the same and interchangeable. If you want to separate the terms, use *video telephone* to describe a device that looks like a traditional telephone with a video screen and *videophone* to describe units that do not look like a telephone.

A Little Bit about Protocols

We can't talk about voice and video without discussing a bit about the protocols that are used to make video and audio calls. Think of protocols as the language the solutions use to speak to one another. These protocols are important because if two solutions use the same protocols, they might be able to communicate with one another. The other factor is how the solution initiates the call. For example the DLink and Black Crow videophones use the system's IP address to initiate a call to another device or solution somewhere on the Internet by its IP address. All you need to know is your family's or friend's Internet address to initiate the video call. Many of the software video call solutions, such as SightSpeed, Skype, MSN Messenger, Yahoo, and Apple iChat AV, use a log-on server and contact list to initiate the call. Even if the video call software used the same protocols as a video telephone device, you could not call a Skype or MSN Messenger user from your Black Crow or DLink videophone without a gateway to locate the user and redirect your call to the correct person.

The next screenshot is a typical diagram of how an H.323 video telephone works. This diagram is of the DLink DVC 2000.

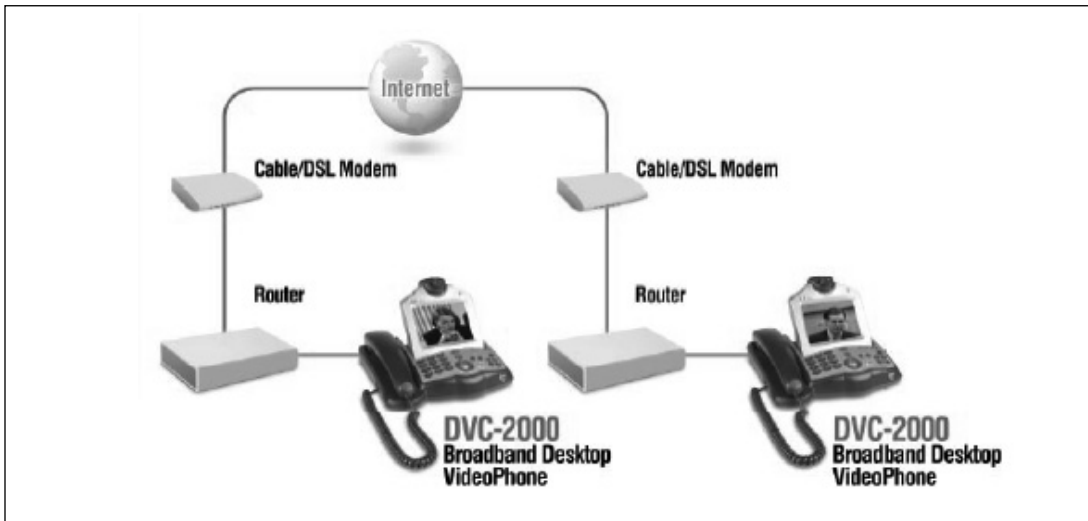


Diagram courtesy of D-Link.

Understanding the Basics...

Protocols and Codecs

The average user does not need to know the details about protocols or codecs. Just know that you need the same solution for each party you want to have a video call with, whether it is a software video call solution or a hardware video telephone solution. Keep in mind that H.323 devices normally can call another H.323 device by knowing only the IP address of the device you want to call while SIP needs to have a SIP provider to route the call.

For video telephone devices, the two primary management protocols are H.323 and SIP, which control the way the voice or video call happens and can use any of the appropriate audio and video codecs. Codecs encode the audio or video signals or data for transmission, storage, or encryption and decode it on the other end, which is why they must match for each solution. H.264 and H.263 for video and G.723 and G.711 for audio are the most commonly used. Many video telephone devices or software video call solutions support multiple codecs to operate with multiple solutions.

Tweaking the Technology...

Technical Alert

The following is for the technical people wanting to understand more about the protocols and codecs used.

- **H.263** A video codec or the video portion of the video call.
- **H.264** A video codec or the video portion of the video call that has a very good compression rate. Also known as MPEG4 to many of us.
- **G.711** An audio codec or the audio portion of the video call.
- **G.723** A better audio codec or the audio portion of the video call; requires less bandwidth than G.711.
- **G.729** A compression algorithm used to compress the voice portion of a call.
- **SIP** The management protocol used to control a Voice over Internet Protocol (VoIP) or video call. SIP is the industry standard for VoIP systems in many companies and softphones. Many video telephone solutions are SIP compliant so they can communicate with VoIP telephones with or without video.
- **H.323** The management protocol used to control a VoIP or video call. Microsoft NetMeeting is an example of an older solution that uses H.323.
- **H.324** The protocol used to control a VoIP or video call over analog or telephone lines. The Beamer Videophone devices use H.324. This is an older and limited protocol that you won't see much in today's products.
- **Custom or proprietary** Many solutions such as Skype may use standard protocols or codecs, but then do custom things like encryption or custom video codecs for better compression and so forth. These solutions will not be able to communicate with other solutions unless a gateway is used to translate the custom protocol to a standard protocol.
- **CIF (352x288)** The video resolution of the screen.
- **QCIF (176x144)** The video resolution of the screen.

If you want to investigate these protocols further to better understand them, take a look at the definitions found at www.wikipedia.org. For more in-depth details of which solutions

use which protocols and support which codecs, check out the Web site www.voip-info.org for more detailed information. For detailed information on corporate videoconferencing, you can also read *Videoconferencing: The Whole Picture*, by James R. Wilcox.

Basically, what you need to know is that the solutions you are considering must match protocols and codecs to have a chance to communicate with one another. For example, the DLink and Black Crow video telephones discussed later in this chapter can communicate with each other and with PolyCom PVX, Microsoft NetMeeting, or the Envision SL software that works on Windows-based computers. SIP softphones, such as those from Pulver Communicator or CounterPath (XTEN used by Vonage), can talk to SIP-compliant video telephones for the audio portion and possibly video as well. Many hardware video telephone devices will use SIP and/or H.323 and have multiple video and audio codecs to be compatible with other similar devices.

VoIP Primer

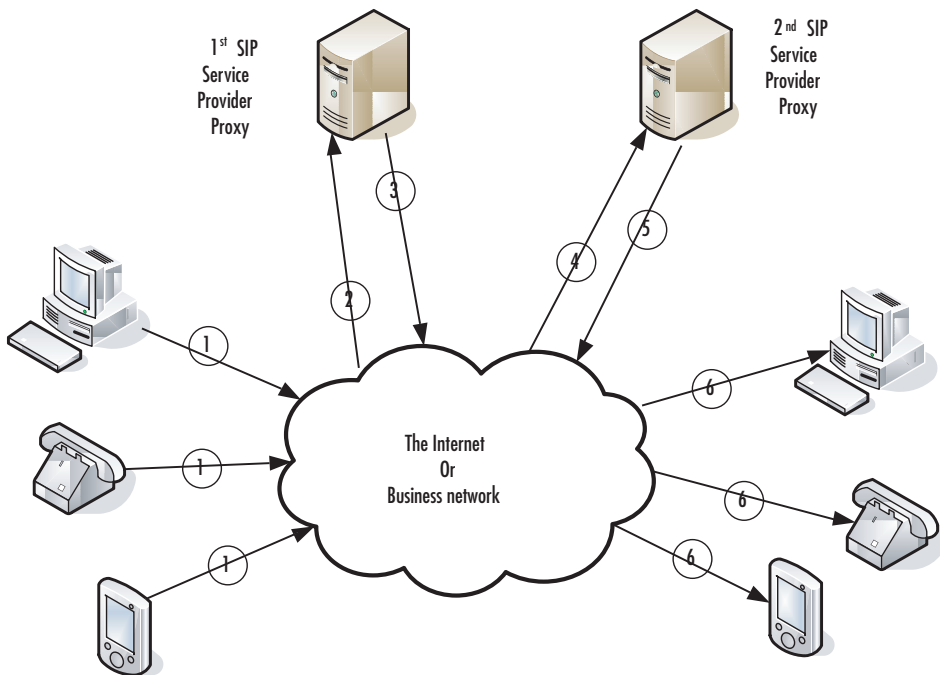
VoIP (pronounced “voyp”) stands for voice over IP. You have probably seen commercials for one or more of the VoIP or digital phone providers such as Vonage, AT&T CallVantage, Packet8, ACN, Time Warner Digital Phone, and ComCast Digital Voice. These services are basically a replacement of or supplement to your plain old telephone service (POTS), public switched telephone network (PSTN), or MaBell, as many of us call it. VoIP can reduce your local and long-distance charges by 50 percent or more, depending on your telephone use, because many of these services give you unlimited local and long-distance calling anywhere in the United States and Canada for one fixed price (around US\$25 to US\$45 per month). These services require that you have high-speed or broadband Internet, so add this cost of US\$20 to US\$45 per month, but they are still cheaper than MaBell local and long-distance charges. These services use the Internet to relay voice calls, which is what makes it cheaper. The quality of VoIP tends to be as good as that of your regular telephone service. I use Vonage, which provides 411 (information), 911 (emergency), and fax capability, along with many features the local and long-distance companies charge for. For more information on VoIP and using it in your home or business, consider reading my book titled *Skype Me! From Single User to Small Enterprise and Beyond* (Syngress, ISBN: 1-59749-032-6) and *Talk Is Cheap: Switching to Internet Telephones*, by James Gaskin

NOTE

Switching to a VoIP provider can save you 50% or more on your local and long distance telephone charges. Many of the VoIP service providers also offer a video telephone option so that you can make video calls to anyone using the same service.

A Word about SIP

Session Initiation Protocol (SIP) is leading the way that companies implement VoIP solutions and also the way most if not all VoIP service providers design their solutions. SIP works much the same way that e-mail and IM work. It requires two clients, you and the party you are calling, and a server for each to log in to, known as a SIP proxy. After each user logs into his SIP proxy for the same service, the proxies then connect the two clients and the call begins.



In the preceding diagram the user initiates a SIP call (1) and connects to the SIP proxy (2). The SIP proxy then directs the call to the appropriate SIP proxy (3) and that SIP proxy (4) knows where the user being called is (5) and then completes the connection (6). Finally, the call is connected between the users and the conversation begins, just like a regular

telephone call over the PSTN. There are more details to the server side of this transmission, but this is a high level of how the SIP VoIP call is routed.

What you need to know about SIP is that each device must be configured to log in to the appropriate SIP proxy. Just like a username for e-mail or instant messaging, you have a password and a server that the user connects to. A typical SIP configuration contains the following items:

- Display Name
- Username
- Password
- Authorization Username
- SIP Domain
- SIP Proxy
- SIP Listen Port

If you want to learn more about SIP and everything involved, I recommend the following books:

- *Talk Is Cheap: Switching to Internet Telephones*, by James Gaskin
- *SIP: Understanding the Session Initiation Protocol, Second Edition*, by Alan B. Johnston

For the sake of this book, you do not need to know anything other than that there is some configuration involved to use SIP. The VoIP service provider does all this for you if you use what they provide as it is preconfigured. If you want to use some of the video telephones we discuss later in this chapter or one of the SIP-capable video call software solutions, we also list in this chapter and discuss further in Chapters 6 and 7, you will need to do some manual configuration for the video telephone and software you are using.

Cost

You have three options available to you to perform personal videoconferencing: a computer (either an Apple or Windows-based system and the appropriate software), a dedicated video telephone device that does not require a VoIP provider service, or a video telephone device that does require a VoIP provider service, such as Vonage, Packet8, ACN, and others.

Using an existing computer with free or inexpensive video call software and a Web cam is your least expensive option. If you do not have a computer or do not want to use a computer to make video calls, then a dedicated video telephone device that does not require a VoIP service provider is the next least expensive. The most expensive solution, but not by

much if you are considering going to or are already using a VoIP provider, is to use your VoIP provider's video telephone option.

Understanding the Basics...

Video Call Costs

A computer with software and a Web cam (This option is the least expensive, if both parties own a computer.)

A dedicated video telephone device

A dedicated video telephone device from a VoIP provider (These devices are the most expensive. In some cases, they have a lower up-front cost than a dedicated video telephone without a provider, but a higher cost of ownership when monthly fees are factored in.)

If you want to communicate with friends and family, then using a computer is the best solution because most of us now have and use computers regularly. If you have older family members who are not as computer literate or who have no real interest in using a computer, you may also want to get a dedicated video telephone device to place video calls with people without a computer or use a compatible video call software that works with hardware video telephone devices. Video telephones can look just like a telephone with a 4-inch to 7-inch video screen (we call this a video telephone) or a device with no screen that sits on top of your television and uses your television as the screen (we call this a videophone). They all have a camera and all the connections to hook up to a telephone, a high-speed Internet connection, and a television, if needed.

Video Call Software Solutions

Chapters 6 and 7 will cover in more detail the video call software solutions available. Here, we will touch on some of the more popular solutions available for computers. Software works much differently than hardware video telephone devices do. The protocols and codecs used in hardware devices tend to be standard, while in software video call solutions they are often proprietary or closed systems. Most video call software solutions cannot make video calls with other vendors' video call software. The exceptions to this are AOL's AIM client and Apple's iChat AV client. In my opinion, AIM does not work very well and is not firewall friendly at all, but AIM and iChat AV can be made to work. The reason Apple and AOL did this was to enable a PC-to-MAC video call solution that links the two popular

instant messaging applications. They accomplished this by adding a gateway that connects the two video call solutions and their user database.

Ratings Criteria

We have criteria that we use when evaluating video call software solutions that form the basis for the ratings you see in this book and on my Web site, www.VideoCallTips.com. We evaluate many features, but the main goal is to provide criteria that enable a few solutions to stand out as the best ones to consider for your video call solution and have a great experience doing it. It should be easy to install and configure and have many basic features that are needed for two people to fully interact and work over many types of Internet connection options.

On my Web site we use the following criteria based on several years of use, the available places one can place video calls, and the logical directions these companies are taking. Being free versus commercial has little to do with the rating, but if two solutions are equal in every way, free gets the edge with a “+.”

1. A **Work Anywhere** configuration. The solution should be configurable to work in homes with personal firewall software and/or a hardware router with little or no special configuration—we call it “firewall friendly.” This way, the solution could work somewhere other than a home, such as a hotel, WiFi hotspot (Starbucks), or an airport. Operation from within a corporate network was not a requirement, but extra points are given to those solutions that do work in a corporate environment.
2. **Ease of installation and configuration.** We want applications to be simple to install, test, and configure.
3. **An easy interface or ease of use.** We do not want too many features that make a basic video call hard to initiate.
4. **Audio quality.** We do not want a time lag between audio and video, or video that is out of sync with the audio, or audio that is just plain choppy or poor quality. Also, the audio must be firewall friendly.
5. **Video quality.** There are two forms of thought here: image quality versus frames per second or pixilation (also called dithering) of the video image. Basically, does the video have a sharp image (like a photograph) and give up speed (frames per second – fluid video motion) for performance, or does it give up sharpness for better speed and more fluid motion? We conclude that image sharpness is the first preference and fluid motion second. What good is it if your lips are in sync with the audio if you cannot see the image clearly? We want the video to look as close to a photograph as possible so that we can see the little features when communi-

cating with our children or those that have a hard time seeing, such as grandparents and the elderly. We do not mind if the motion is not fluid as long as the picture is sharp and clear. We want to be able to read letters from a book. Also, Internet connections are getting faster every year, so frame rate will catch up as speed improves. The exception to this is applications that will be used for signing with the hearing impaired; frame rate becomes very important for these types of applications.

6. **See both sending and receiving video screens in an acceptable size.** This feature is important for reading books, showing text, or showing pictures to family and friends and being able to easily see what video you are sending, if it is in focus, centered, etc. Some solutions offer no view of the video you are sending or offer a very small picture-in-picture to improve performance, but we found this unacceptable. The video window of what you are sending needs to be at least 2 to 3 inches to be effective. The picture-in-picture feature can be hidden when needed.
7. **Additional features.** We look for features such as file sharing, remote desktop, instant messaging, phone calls, multiple person or conference calls, Web interface, full screen or larger screen capabilities, etc.
8. **Internet connection speed requirements.** A solution should have the capability of working “home to home” or “hotel to home,” because these places usually have slower Internet connection speeds than businesses. We look for DSL and cable modem speeds of 128Kbps upload and 500Kbps download speeds as the minimum.
9. **The capability of having video without audio.** This way you can use a cell phone or telephone, or a second application that is better at audio, if needed. Most, if not all, applications enable you to mute the microphone, but if the application is still sending audio when you’re not using it, video performance can be affected by the audio overhead. This is important for good video applications with poor audio or if bandwidth is an issue.
10. **Reliability and consistency.** Does the application function consistently across all the testers in all the configurations? Or does the solution perform better in certain situations, such as higher speed Internet connections?
11. **Cost.** Of course, we must look at the cost of these features. Free solutions tend to have basic features, whereas commercial solutions have more features. Are the additional costs worth the extra features or performance? Cost was used as a tie breaker if solutions were rated equally.

12. We do *not* test for **PC-to-Apple/MAC functionality**. Only a few applications even have this capability, so we decided to find the best solution, and if it works for PC-to-Apple/MAC, that's great. If not, make a request to the vendors for a feature upgrade.
13. **Parental Controls**. Does the application have any parental controls to limit what a child can do or whom he or she can contact?

NOTE

The www.VideoCallTips.com. Rating system is as follows: 1, 2, 3, 4, 5 (5 being best). Ratings are in order of score (high to low) and then alphabetical.

What Is Available

More than 40 video call software solutions are on the market today. Many are not very good per our rating system, but solutions are continually improving. In the three years since I started using video calls with my 4-year-old daughter, family, and friends, the amount of video call solutions available has doubled if not tripled.

There are basically two types of solutions: free and commercial (pay-per-use). Within these two options are SIP, H.323, and custom or proprietary solutions. Commercial solutions tend to have more features and offer multiparty connections. Free solutions tend to be basic and may offer additional services as pay-per-use options. Oddly enough, when we rated the video call solutions over the past two years, we found only a few solutions floated to the top of the list and it had little to do with cost. Some of the commercial solutions are surprisingly costly for what they offer and the quality they provide, but the quality will improve with time. So the manufacturers of these solutions are really going after their business model and unique way that they want to provide you a video call solution. Most commercial solutions are geared for business use and not personal videoconferencing, though there is some overlap. It all depends on what your personal needs are.

We have a short list of video call solutions to recommend, but there are different solutions for different situations. The focus of this book is personal videoconferencing, so the short list rates computer-based solutions for one-on-one video calls for Windows-to-Windows or Windows-to-MAC (Apple). We will discuss more on bridging the gap between computer video call software and hardware video telephones in Chapters 6 and 7.

Short List of Computer Video Call Solutions

Solution	WinTel	Apple MAC	Video Mail	Cost for 1-on-1 Video Calls	Additional Pay-per-Use or SIP Features	H.323 and/ SIP Support
SightSpeed 4.5	■	■	■	Free	■	none
MSN Messenger 7.5	■			Free	Coming	none
Skype 2.0	■			Free	■	none
Apple iChat AV		■		Free	MAC	none
FWD Communicator	■			Free	■	SIP only
CounterPath EyeBeam 1.1	■	■		\$60	■	SIP only
Polycom PVX 8.0.1	■		■	\$150	■	SIP and H.323

There are other video call solutions that I like but are not on the short list because of one feature or because they are still in the development or testing phase. For example, a plug-in for Skype called Video4IM is a good solution for Skype, because the video sender's screen is larger than Skype's video screen, but it is still in testing. WigiWigi, which is still in testing, holds great promise in high-quality multiuser video calls and works with any instant messaging application (the IM applications do not have to be the same). There are many solutions in the market, and we will list them all in Chapters 6 and 7.

Video Telephone Options

Video telephones, as the name suggests, are some form of device that acts and sometimes looks like a telephone with the added feature of performing video. We mentioned earlier that to separate the terms, use *video telephone* to describe a device that looks like a traditional telephone with a video screen and *videophone* to describe units that do not look like a telephone. Video telephone come in two types:

- Video telephones that require a VoIP service provider
- Video telephones that do not require a VoIP service provider

Video Telephones That Require a Service

The video telephones that are linked to a VoIP service provider require you to have a broadband connection, which they all need, but also that you subscribe to their specific VoIP service and join their video call service plan. This type of service adds cost and requires that all sides that want to participate in the video call must subscribe to the same service provider and use a compatible video telephone device. Packet8, ACN, and Vonage are three such providers that offer a video telephone option. You have to sign up for their monthly VoIP service, which costs roughly US\$25 to US\$45 per month; purchase one video telephone per side; and pay for the video call service option. Packet8 costs roughly US\$19 per month, the ACN video call option is free, and Vonage has not announced its pricing plan. These vendors' services add costs to the video call and also lock you into a single VoIP provider's service, since all parties must join the same service to place video calls with one another.

I do expect this to change in the future as the providers open up their systems to allow video calls between similar devices and VoIP systems, whoever your provider might be. This will take a year or two to happen in my opinion, as demand creates the investment for gateways to interconnect Vonage and Packet8, for example. The technology is available; the VoIP providers just have to make the investment to provide a gateway to add this option. In my opinion, if vendors want video telephones to be more successful, they should consider this interoperability of video calls so that people can have a choice of providers just as they do now for their telephone service. Packet8 and Vonage are the leaders in this space, so they would be the first logical partners to connect their video call solutions. To lock the users into using one provider is a mistake and will slow the adoption of video telephone use.

Packet8

Packet8 is a provider of VoIP or digital phone services that also offers the option of a video telephone. Packet8 charges extra for the video telephone option, but does discount the video telephones. You can contact Packet8 at: www.packet8.net (866) 879-8647.

Costs

- US\$399.98 for two video telephones (with a two-year video call contract)
- US\$19.99 per month for unlimited video calls
- US\$19.99 or \$49.99 USD for monthly VoIP service



Features (Visifone I)

Plug-and-Play Videophone

- Simple to set up; simple to use.
- No need for TV or monitor, keyboard, mouse, microphone, speakers, or computer.
- Regular dialing to any other Packet8 videophone for video calling or regular telephone for traditional audio-only call.
- High-quality CCD camera.
- Auto-focus range: 2 inches to infinity.
- Up to 30 frames per second video quality.
- Smooth full-motion, near-TV quality video.
- 5-inch, high-quality active matrix TFT-LCD screen with 23- to 90-degree tilt.
- Clear, moveable display.
- 100-number phonebook /10-number speed dial.
- Local camera view, picture-in-picture, adjustable to different screen quadrants.
- See and adjust the images you are sending.
- Privacy mode—block video send.

- Freeze frame for still shots—stop action to study a clear image.
- Auto-answer option—set number of rings for pick up to use for surveillance applications.
- Friendly on-screen menu instructions—intuitive, easy to handle.
- Audio-in and video-in jacks for external source—send prerecorded footage from a camcorder, digital camera, or VCR.
- Audio-out and video-out jacks for larger display—plasma screen, television, or projector, or recording to VCR to document call.
- External microphone jack—an accessory microphone to augment a built-in one.
- Echo-cancellation and no-delay high-quality audio.
- Two switched auto-sensing Ethernet ports.
- Auto-adjusts throughout call to maintain best video quality.
- Adjustable color and brightness to tailor the images to your preference.
- Standard phone features: redial, mute, speed-dial, ringer volume adjustment—all the phone features you are accustomed to having.
- Call logs, an automatically generated listing of calls placed and received for documentation and easy call back.

ACN

ACN is a provider of VoIP or digital phone services that also offers the option of a video telephone. ACN does not charge extra for the video telephone option, but does charge more for the video telephone devices. You can contact ACN at: www.myacn.com (888) 414-1958.

Costs

- US\$429 per phone for the Wooksung model (top, p. 76)
- US\$600 for the Ojo Video telephone option (bottom, p. 76) (expect the price to drop)
- No additional cost for video calls
- US\$23.99 for monthly VoIP service



Features (Wooksung)

- Network—H.323 and SIP
- Video codec H.261 and H.263
- Audio codec G.711, G.723.1 and G.729
- 4-inch TFT color LCD
- Color CCD Camera

- Echo cancellation
- Speakerphone/microphone
- External audio output
- External video output
- External audio input
- External video input
- Ethernet
- PSTN option
- Video privacy/audio mute

Vonage

Vonage is the leader in residential VoIP or digital phone services in the United States and will soon be offering the option of a video telephone. Vonage declined our request to test their units, so unfortunately we do not have any more details other than that Vonage will be coming out with the service some time in 2006. You can contact Vonage at: www.vonage.com (866) 243-4357.

Costs

- To be determined for the video telephone
- Additional costs for video calls to be determined
- US \$14.99 or US \$24.99 for monthly VoIP service

Features

- To be determined.

VoicePulse

VoicePulse is another VoIP or digital phone service that soon will offer the option of a video telephone. We have no information other than it is planning the release in 2006. Contact VoicePulse at: www.voicepulse.com (732) 339-5100.

WorldGate Ojo

The Ojo is not a typical VoIP provider. The Ojo is a different-looking video telephone device. It has a cordless telephone and can make voice calls and video calls. The Ojo Shadow does not have the cordless phone and can make only video calls. The one disadvantage of the Ojo is that it cannot be connected to a television, which limits its use in my opinion. We think that all video telephones should be able to connect to a television set for a bigger picture. The Ojo is a clever little device, though, with a seven-inch diagonal screen, which is larger than most other video telephones. WorldGate believes that their seven-inch diagonal screen should be enough to have a robust video call. With the recent drop in price by WorldGate, this is a good option for a video telephone. It also uses the higher-quality MPEG4 video codec, so provides a much sharper image than other video telephones. Contact WorldGate Ojo at: www.wgate.com/ojo/.

Cost

- US\$499 for the Ojo
- US\$399 for the Ojo Shadow
- US\$14.95 for monthly video call service with unlimited calls worldwide

Understanding the Basics...

The Ojo and a Television

The Ojo does not connect to a television, limiting this device to stand-alone only. It uses the MPEG4 video codec, which provides a very sharp video image. The screen is seven-inch diagonal — larger than most other video telephones.





Features

Videophone Features

- 30 frames per second video for near broadcast-TV quality
- Eye-level for easy conferencing
- State-of-the-art miniature camera
- Closable lens for privacy
- Automatic gain control to intensify images in real time
- Automatic white balance
- 176 X 144 resolution
- MPEG4 video format
- 2 LUX (816 watt) minimum illumination
- Compression (primary) H.264
- Compression (supported) H.263
- Compression (video calls) iLBC
- Compression (audio calls) G.711

Telephone Features

- 2.4GHz cordless telephone
- Voice-only calls with any home/office telephone line or VoIP
- Full-duplex speaker phone
- Advanced noise reduction with echo cancellation
- 3-line handset LCD
- 100-station phone book
- Adjustable volume
- Mute

Equipment Included

- Motorola Ojo personal videophone
- 2.4GHz cordless handset
- Ethernet cable
- Telephone cable
- Power adapter
- Quick-start guide
- User manual

Video Telephones That Do Not Require a Service

Now that we just discussed video telephone options that are tied to a VoIP service provider, let's ask this question: Is there a way to have video calls without subscribing to a VoIP service?

The answer is yes! Several video telephone devices do not require anything more than access to high-speed Internet. To do this, you will need to connect multiple devices to your broadband connection, as we discussed in Chapter 3, "Selecting a High-Speed Internet Provider."

Logically, there is little reason to subscribe to a service from VoIP providers, such as Packet8, ACN or Vonage, but they do have good service offerings and offer a better quality

of service. Also, the VoIP providers will ship you preconfigured devices, so setup is easy — just plug it in and call. If you were to compare the same video telephones with and without a VoIP service provider, we would expect better performance with the VoIP service provider than with a service from a straight Internet service provider. VoIP service providers have contracts with the main backbone providers of the Internet to route voice and video traffic in a faster way around the general Internet to improve quality and give priority to their traffic.

In this section we will discuss options to avoid subscribing to a VoIP service provider. Not all video telephone devices are capable of performing calls without a VoIP service provider. Do some investigation of the features of each video telephone device to see if they can support direct IP dialing. (Unfortunately, we were unable to test all the devices for this feature.) Question the supplier and ask if the devices support direct IP dialing. They should be able to tell you. Direct IP dialing is a common feature of H.323-compatible video telephone devices.

H.323-Compliant Video Devices

In this section, we'll discuss H.323 video devices.

Black Crow BCV-103

The Black Crow BCV-103 is also known as the Sorenson VP-100. This device was designed by Sorenson for the hearing-impaired community to enable a deaf person to communicate with a call center, sign to the operator, and then have the operator call the other party and relay the message back to the deaf caller. This is a subscription service, so it is not for the typical user, but the videophone device Black Crow improved with the Sorenson video chipset makes it far better than the video on the DLink i2eye videophone, which is the same unit except for the video quality. For more information on the Sorenson VP-100 unit for the hearing impaired, take a look at Sorenson's Web site: www.sorenson.com/

I own two of these devices, and I like the way they work with a television for the screen. The quality is good, and it is easy to use. I recommend not using the built-in microphone; you can connect a single cordless handset with a speakerphone to the unit and place the cordless phone on the coffee table in front of you or on your lap and have a great video call. This device is H.323 compliant and can work with Microsoft NetMeeting, Sorenson's Envision SL (just a front-end to NetMeeting), and Polycom's PVX software if you want to talk to one of these devices with a computer running Windows. I look forward to the updated version coming out toward the end of 2006; watch my Web site for the review: www.VideoCallTips.com.

A couple of distributors resell these videophones: www.twacomm.com/catalog/model_BCV-103.htm and www.telephonestuff.com/catalog/model_BCV-103.htm

Costs

- US\$249 to US\$299



Black Crow



Sorenson VP-100

Features

- Fast Ethernet broadband videophone.
- Plugs into a TV and a broadband connection.
- During a call, you view the image on your TV screen or PC monitor.
- Works across your TV—no computer needed.
- Uses broadband (cable/DSL) or network connection.

- H.323 videoconferencing standard compliant—compatible with other videoconferencing devices
- Easy set-up wizard.
- Picture-in-picture compatible or full-screen view—lets you conduct a call on the same TV that you're watching a program.
- Remote controllable for data input and placing/receiving calls.
- Speed dialing—50 entries.
- Built-in caller ID—identifies caller by name.
- Audio and video privacy—before and during a call.
- Do-not-disturb function.
- Uses assigned phone numbers that map to your IP address for easy dialing.
- Manual dial capable for direct IP entry.
- Free auto detection of system software upgrades.
- Up to 30 frames per second for TV quality image.
- 352 x 288 resolution.
- Accepts telephone handset for private conversations and placing and receiving calls.
- Works with Microsoft NetMeeting or Sorenson EnvisionSL (Sorenson's front end for NetMeeting).

DLink i2eye Broadband VideoPhone (DVC 1000 / DVC 1100)

The DVC 1000 (wired only) and DVC 1100 (wireless 802.11b and wired) are the same device as the Black Crow BCV-103 but with much lower video quality and the option for an 802.11b wireless connection. First, 802.11b wireless for video is not a good solution, so the DVC 1100 is not worth looking at, and with a device available that has better video than the DLink 1000, why bother with this device? I evaluated the DVC1100 and found the video quality to be much poorer than the Black Crow with the Sorenson video chipset. But DLink is a well-known computer hardware provider, so I expect they will improve the unit over time. These devices are H.323 compliant and can work with Microsoft NetMeeting, Sorenson's Envision SL (a front-end to NetMeeting), and Polycom's PVX software, if you want to talk to one of these devices with a computer running Windows. For

more information go to the following Web site: www.dlink.com/products/category.asp?cid=40&sec=1

Costs

- US\$199 for the DVC 1000
- US\$249 for the Wireless DVC 1100

NOTE

These devices connect to a television so that you can have a larger screen. Unfortunately, they use the lower-quality H.263 video codec, so the video quality is not as good as the Black Crow unit.





Internal Processor

- ARM-9 ASIC Communications processor

Wireless

- Enhanced 802.11b
- Up to 22Mbps*
- 64/128/256-bit encryption
- Site Survey

Standards

- H.323 (IP Communications)
- H.263 (Video)
- G.711 (Audio)
- G.723 (Audio)

Frame Rates

- 96 Kbps to 512 Kbps
- Up to 30 fps

Video

- CIF (352 x 288 pixels)
- QCIF (176 x 144 pixels)

Audio

- Telephone interface
- Echo cancellation
- Voice only to/from VoIP endpoints
- Speakerphone mode

User Interface

- Dialing
- Diagnostics
- Quality of service measurement
- Manual or auto answer
- Incoming caller ID
- Audio/video privacy
- Video display settings
- Microphone volume
- Answer with infrared remote control or attached telephone handset

Input/Output

- Power
- Audio Out

- Video Out
- Ethernet RJ-45
- 802.11b Wireless antenna
- RJ-11 Telephone connector

LED Indicators

- Power
- Status
- Video monitor
- Wireless LAN connect
- Ethernet link and transmit

Dialing Capabilities

- Speed dial list (50 entries)
- Manual dialing with direct IP entry
- Dial videophone number using built-in i2eye directory service

Remote Software Update

- Software update, automatic or manual

Dimensions

- D = 6.08 inches
- W = 8.07 inches
- H = 1.50 inches

DLINK i2eye Broadband VideoPhone (DVC 2000)

The DVC 2000 is your typical-looking video telephone. The nice thing about this video telephone is that it does have video and audio out, so you can connect it to your television for a larger image if you desire. It does, however, unfortunately use the lower quality H.263 video codec versus the MPEG4 H.264 codec, so the quality is not as good as others that

use the H.264 codec. I expect the video quality to be similar to the DVC 1000 videophone, with the video image a little short on quality. I expect second generation versions of the DLink video telephones will improve the video quality. This device is H.323 compliant and can work with Microsoft NetMeeting, Sorenson's Envision SL (a front-end to NetMeeting), and Polycom's PVX software, if you want to talk to one of these devices with a computer running Windows. For more information go to www.dlink.com/products/category.asp?cid=40&sec=1

Cost

- US\$299 to US\$349

NOTE

This device connects to a television so that you can have a larger screen. Unfortunately, it uses the lower quality H.263 video codec, so the video quality is not as good as others.



Photo courtesy of D-Link.

Internal Processor

- ARM-9 ASIC Communication Processor

Standards

- H.323 (IP Communications)
- H.263 (Video)
- G.711 (Audio)
- G.723 (Audio)

Frame Rates

- 96Kbps to 512Kbps
- Up to 30 fps

Video

- Built-in 5-inch LCD screen
- CIF (352 x 288 pixels)
- QCIF (176 x 144 pixels)

Audio

- Built-in handset
- Echo cancellation
- Speakerphone

Input/Output

- Power
- Audio out
- Video out
- Ethernet RJ-45
- RJ-11 analog line

Camera

- Manual tilt
- Manual focus
- Interchangeable lens

User Interface

- Dialing
- Diagnostics
- Quality of service measurement
- Manual or auto answer
- Incoming caller ID*
- Privacy via video/audio mute and do-not-disturb mode

LED Indicators

- PSTN
- Status
- Ethernet link and transmit

Dialing Capabilities

- Speed dial list (50 entries)
- Dial using videophone number via built-in i2eye directory service
- Dial using direct IP address entry
- Dial using voice-only analog PSTN connection

Remote Software Update

- Software update, automatic or manual

Dimensions

- D = 10 inches
- W = 9.3 inches
- H = 3.3 inches

SIP-Compliant Devices

Three video call software solutions may work with devices that are SIP compliant: Polycom PVX, Pulver's FWD Communicator, and CounterPath's EyeBeam software if you want to talk to one of these devices with a computer running Windows. EyeBeam also has an Apple MAC version that may work as well. Again, since there is some configuration needed for SIP, you will need to test your SIP provider to see if you can get the software solutions to work with a SIP-compatible video telephone device unless they support direct IP dialing.

GrandStream GXV-3000

The GrandStream GXV-3000 is a new video telephone at a great price point. It has all the latest features we would expect from a video telephone. It also uses the higher-quality MPEG4 video codec, so a much sharper image than other video telephones. I will be testing this device when it becomes available and should have a review on my Web site www.VideoCallTips.com by the time you read this book. For more information go to: www.voipsupply.com

Cost

- US\$295

TIP

I would have to say from the specifications, this is one of the best options for a video telephone. It has all the features one would want or need for a video telephone.



Features

- SIP compliant
- H.264 MPEG4 video
- Adjustable advanced VGA resolution camera sensor (with one-touch ON/OFF switch for privacy control)
- 5.6-inch TFT color LCD (two-dimensional rotate to allow nearly all viewing angles)
- 5 navigation keys
- 3 line indicators (each of which supports an independent SIP account)
- Visual voice/video message indicator
- Hands-free speakerphone with advanced acoustic echo cancellation
- Dual 10M/100M Ethernet ports (switch- or router-mode configurable)
- 2 USB ports
- 2.5mm headset jack
- RCA-style audio/video output jack enables simultaneous video output to TV

Dial-up Video Telephones

What can we say about dial-up video telephones except to avoid them? This is dead or dying technology and dial-up is just not fast enough for video. Beware of long-distance charges if you use this device. One application for these phones might be when one party does not have broadband or even dial-up Internet access. The quality is limited, but there is no need for any Internet service provider at all. This might be acceptable in some situations, such as communicating with someone in another country where there is no Internet access, or speaking with an elderly relative with no computer, broadband, or dial-up access.

Beamer Video Telephones

The Vialta Beamer line of videophones is designed to work with dial-up or POTS. To be frank, dial-up is just not fast enough for video, so although these units are sharp, sleek, and look good, they just do not perform all that well if you want true fluid video. They send a series of snapshots to the other device so you can see the person you are talking to. Also, being dial-up, you might incur long distance telephone charges when you make a call. If you want to reduce the costs of this type of solution, you might consider a VoIP provider, such as Vonage, Packet8, ACN, or Time Warner Digital Phone, but having a VoIP digital phone provider means you have high-speed broadband Internet, so why not use a broadband video telephone? We recommend avoiding these devices until a broadband version is available.

For more information, go to: www.vialta.com/

Understanding the Basics...

The Beamer Video Telephones

The Beamer Video Telephones depend on dial-up or your regular telephone line. This results in a choppy, low-quality video image and is not a good experience. Unless dial-up is your only option, we would recommend you avoid these video telephones. (Look for Vialta to come out with stylish, high-speed broadband video telephones in the future.)

Beamer TV Videophone

This device is similar to the Black Crow and DLink Videophones in that it requires you connect to a television as the screen. It transmits video at a slow rate of 4 to 15 fps, so do not expect fluid motion over your dial-up line.

- Cost: US\$99



Features

- Works with any home phone (corded or cordless).
- Works with any standard (analog) phone line.
- Works with any television (NTSC* and PAL** formats) that has an RCA video jack.
- No special wiring or equipment.
- No service fees, contracts, or subscriptions.
- No additional cost to your phone call.
- System: Fully ITU-T standard H.324 compliant.
- Video Input: Built-in CMOS camera.
- Video Output: Composite video (RCA).
- Audio Input/Output: Telephone handset or speakerphone.
- Dimensions: 1.5 inches (H) x 7.6 inches (W) x 6.0 inches (D).
- Frames per second: From 4 to 15 fps.
- Power: Operating voltage (AC Adapter) 100 to 240 VAC, 50/60Hz universal switching power supply.

- Network Interface: GSTN (RJ11) modem transmission speed X max 33.6Kbps NTSC ? format television connection.
- Compatibility: Beamer TV is fully compatible with Beamer and similar H.324-compliant devices.

Beamer Videophone

This sleek-looking device is a videophone that connects to your home telephone to enable you to talk to others with a similar device. It actually sends a series of pictures, so it's more of a picture phone than a videophone. Also, this device requires you to have a telephone connected to it, because it only sends and receives pictures; it does not transmit audio.

- Cost: US\$199



Features

- Works with any home phone (corded or cordless).
- Works with any standard (analog) phone line.
- No special wiring or equipment.
- No service fees, contracts, or subscriptions.
- No additional cost to your phone call.
- Three viewing choices: Self view, Other Party view, or Combo view.

- Snapshot/Privacy option: Send a high-resolution video image and temporarily halt any new video transmission until you want it to continue.
- Detail/movement control to select the degree of definition.
- Supports Caller ID (if you have this with your local phone service provider).
- Video confirmation: No video is sent until you approve transmission.
- Easy setup: Plug your phone to Beamer and plug Beamer to your wall phone jack.
- 3.5-inch LCD screen.
- Skid-proof base.
- Tinted acrylic frame.
- Recessed control buttons.
- Lightweight and portable.
- System: Fully ITU-T standard H.324 compliant.
- Video Input: Built-in CMOS camera.
- Video Output: Built-in TFT LCD screen.
- Audio Input/Output: Telephone handset or speakerphone.
- Network Interface: GSTN (RJ11) Modem transmission speed X max 33.6Kbps.
- Dimensions: 8.3 inches (H) x 6.0 inches (W) x 1.9 inches (D).

Beamer FX Videophone

Like the standard Beamer Videophone, this device connects to your home telephone to enable you to talk to others with a similar device. It actually sends a series of pictures, so it's more of a picture phone than a videophone. Also, this device requires you to have a telephone connected to it, because it only sends and receives pictures; it does not transmit audio. This "FX" version adds the capability to send and receive pictures from a memory card, like the features of the Vialta VistaFrame, so you can share pictures you take with your digital camera with the party you are calling.

- Cost: US\$299



Features

- Works with any home phone (corded or cordless).
- Works with any standard (analog) phone line.
- No special wiring or equipment.
- No service fees, contracts, or subscriptions.
- No additional cost to your phone call.
- Send and receive digital pictures between Beamer FX devices.
- Two memory card slots enable you to display digital pictures directly from your memory cards.
- 4-in-1 reader reads SD™, Memory Stick®, SmartMedia®, and MultiMediaCard™ formats.
- CompactFlash® card reader reads CompactFlash® cards (Type I).
- Save up to 12 digital pictures into My Album (Beamer FX's internal memory).
- Display one picture continuously or create a custom slide show.
- Choose from three slideshow interval settings (Slow, Medium, and Fast).
- Choose from three slideshow transition settings (Curtain, Blooming, and Vertical Blinds).

- Tinted acrylic frame.
- Clear, bright 3.5-inch TFT LCD flat-screen display.
- Recessed control buttons.
- Skid-proof base.
- Lightweight and portable.
- System: Fully ITU-T standard H.324 compliant.
- Video Input: Built-in CMOS camera.
- Video Output: Built-in TFT LCD screen.
- Audio Input/Output: Telephone handset or speakerphone.
- Storage: CompactFlash (Type I), SmartMedia, SD, MultiMediaCard, MemoryStick supported.
- File System: MS-DOS compatible.
- File Format: JPEG.
- Network Interface: GSTN (RJ11) modem transmission speed \times max 33.6Kbps.
- Dimensions: 8.6 inches (H) x 6.0 inches (W) x 1.9 inches (D).

Typical Video Telephones

According to Paul Hayes of ProVu Communications in the UK, the unlocked versions of their devices, which include the Wooksung video telephone, are able to call another device using the IP address alone, like the DLink and Black Crow units do, so no VoIP service provider is required. ProVu covers the UK and most of Europe. Their Web site can be found at www.provu.co.uk/ipvideo.html. In the United States, Wind Currents Technology sells the Wooksung. The company's Web site can be found at www.videophoneconnection.com.

Wooksung has two new units coming out: a low-cost video telephone supporting H.264 video, the Wooksung WVP-1100; and a higher-end version with a mouse and keyboard, called the WVP-3000 and WVP-3100. Black Crow will have an improved video telephone coming out at the end of 2006.

When used without a service provider, these devices require “port forwarding” to be configured on a DSL/cable router. Hardware solutions are a little more technical because of the required router configuration, but we have provided a list of ports for these devices in Appendix A to make it easier for you to test whether or not these devices will work for your needs.

The hardware video telephone devices are nice options for those that do not want to use a computer or want to have both a computer solution and a hardware solution. Also, they are for those that want more of a traditional telephone-type solution or have the capability to easily connect it to a television for a larger picture. Keep in mind that these are not corporate business videoconferencing solutions like we will discuss in Chapter 8. Business videoconferencing solutions are far more expensive and have more specific networking needs and features for complex networks and higher-end videoconferencing requirements. If you are a small business looking for a non-computer videoconferencing solution, you can use a video telephone in conjunction with a television for a cost-effective, entry-level videoconferencing solution.

Hardware Video Telephone Providers

Black Crow

- www.telephonestuff.com/catalog/model_BCV-103.htm

DLink

- www.dlink.com/products/category.asp?cid=40&sec=1

GrandStream

- www.grandstream.com/GXV3000_interop.pdf

InnoMedia

- www.innomedia.com/products_video.shtml

Leadtek

- www.leadtek.com/videophone.html

UMEC

- www.umec-web.net/icp/index.html

Viseon

- www.viseon.com/

Vizufon

- www.vizufon.co.kr/

WorldGate

- www.wgate.com/

Wooksung

- www.wooksung.com/eng/

We provided the following matrix so you can see the basic information of each of the video telephones we currently know about so you can do a comparison.

Video Telephone Information Matrix

Video Telephones	Retail US\$	U.S. VoIP		Needs		Screen	TV Out	Phone Req	Notes
		Provider	Provider	VoIP	Provider				
BlackCrow BCV-103	299.00		No	No	■	No	■	■	(1)
Dlink i2eye DVC 1000 / 1100	199.00		No	No	■	No	■	■	(2)
Dlink i2eye DVC 2000	299.00		No		■	5"	■		
Grandstream GXV-3000	295.00			■	■	5.6"	■		(3)
InnoMedia MTA 5550				■	■	5"	■		(3)
InnoMedia MTA 5531				■	■	5"	■		(4)
InnoMedia MTA 5410				■	■	4"	■		
InnoMedia MTA 5410S				■	■	4"	■		
LeadTek BVP 8770	599.00			■	■	5"	■		
LeadTek BVP 8750				■	■	No	■		(5)
LeadTek BVP 8762 (Wooksung)	499.00			■		5"	■		
WorldGate Ojo	499.00	.ACN	Yes			7"			
WorldGate Ojo Shadow	399.00		Yes			7"		■	
UMEC CU13				■		No	■	■	
UMEC CU751C				■		5"	■		(6)
UMEC CU730				■		5"	■		
Viseon VisiFone I	299.00	Packet8			■	5"	■		
Viseon VisiFone II		Vonage			■	5.6"	■		
Vizufon 4500	449.00			■	■				
Vizufon 5000	469.00			■	■	4"			
Vizufon 5300	399.00			■	■	3.5"			

Video Telephone Information Matrix

Video Telephones	Retail US\$	Needs			Screen	TV Out	Phone Req	Notes
		U.S. VoIP Provider	VoIP Provider	SIP				
Vizufon 5500	499.00		■	■	4"			
Vizufon 5700								
Vizufon 6000								
Wooksung	429.00	.ACN	No	■	5"	■		
Dial-up Only								
Beamer TV Videophone	99.00	None	No		No	■	■	
Beamer Videophone	199.00	None	No		3.5"		■	
Beamer FX Videophone	299.00	None	No		3.5"		■	
LeadTek TelVYou 511		None	No		4"	■		

(1) Uses the Sorenson Video Chipset, which dramatically improves the video quality over standard H.723.

(2) 802.11b wireless version available.

(3) USB ports for wireless 802.11g Ethernet connection.

(4) PC card slot for wireless 802.11g Ethernet connection.

(5) Microphone-only option; no telephone set connection available.

(6) 802.11 wireless option.

The following matrix shows the protocols supported by each video telephone and the codecs they use.

Video Telephone Protocol and Codec Matrix

Video Telephones	IP	H.323	H.263	H.264	G.711	G.723
BlackCrow BCV-103		■	■		■	■
Dlink i2eye DVC 1000 / 1100		■	■		■	■
Dlink i2eye DVC 2000		■	■		■	■
Grandstream GXV-3000	■			■		
InnoMedia MTA 5550	■		■	■	■	■
InnoMedia MTA 5531	■	■	■		■	■
InnoMedia MTA 5410	■	■	■		■	■
InnoMedia MTA 5410S	■		■		■	■
LeadTek BVP 8770		■	■		■	■
LeadTek BVP 8750		■	■		■	■
LeadTek BVP 8762 (Wooksung)	■		■		■	■
Ojo	■			■	■	
Ojo Shadow	■			■	■	
UMEC CU13	■		■		■	■
UMEC CU751C	■		■	■	■	■
UMEC CU730	■		■		■	
VisiFone I		■		■		
VisiFone II	■			■		
Vizufon 4500	■	■	■		■	■
Vizufon 5000	■	■	■		■	■
Vizufon 5300	■	■	■		■	■
Vizufon 5500	■	■	■		■	■
Vizufon 5700			■		■	■
Vizufon 6000			■	■	■	■
Wooksung	■		■		■	■

Video Telephone Protocol and Codec Matrix

Video Telephones	IP	H.323	H.263	H.264	G.711	G.723
Dial-up Only						
Beamer TV Videophone						
Beamer Videophone						
Beamer FX Videophone						
LeadTek TelVYou 511			■			■

So What Solution Should You Choose?

We recommend you start by using a computer-based video call solution discussed in this chapter and that we will cover in detail in Chapters 6 and 7. If you want to use something other than the computer or want to have something in addition to a computer solution, then you need to decide whether or not you want to join a VoIP service provider? We would recommend that, unless you already are a VoIP user or want to switch to VoIP in the next year, you get a non-service-provider solution. If other parties that you want to communicate with use a VoIP service provider, then seriously consider that provider's video telephone option, because the cost is only slightly more and it will perform well and will come preconfigured, so it's easy to install and use.

If You Have or Will Be Using a VoIP Service Provider

You will not have much of an option if you want to make video calls with your VoIP service provider, such as Packet8, Vonage, or ACN, because they will have a video telephone already selected and preconfigured. ACN does offer a choice between the Wooksung 2100 and the WorldGate Ojo, so the decision is which unit you like better. The Wooksung can connect to a television, the Ojo cannot. Use the matrix we provided to help in your decision. Ask your provider if there is a 30-day evaluation period so you can try one phone and switch if you do not like it for some reason.

If You Do Not Want to Use a VoIP Service Provider

If you want a standard video telephone that is not linked to a VoIP service provider for the most flexibility, then any Video Telephone that can dial using an IP address, called "direct IP

dialing” will work for you. Some of the solutions in the matrix we provided are not readily available to the typical consumer, because they are geared more for corporate customers. If you want a generic recommendation, select a solution that uses the MPEG4 H.264 video codec, because it is the best codec. Better yet, select a solution that does both H.263, H.264 for video, G.711, and G.723 to give you the most flexibility. You may need to choose between a SIP or H.323 compliant device, because not many do both. The leaders in my opinion for video telephones for personal use are:

- Black Crow videophone available at www.telephonestuff.com.
- Worldgate Ojo available at many online retailers.
- DLink 2000 available at many online retailers.
- GrandStream GXV-3000 available at www.voipsupply.com.
- Viseon VisiFone II available from your VoIP service provider.

Additional Accessories

If you want to connect your video telephone to your television, you may need long RCA cables to reach your television (if you place the video telephone on the coffee table, for example). We found two providers that have video RCA cables from 6 feet up to 50 feet. If you need to add a telephone, purchase a single cordless telephone that has a speakerphone so there are no cables to deal with.



RCA photo courtesy of Thompson, Inc.

- www.av-cables.net
- www.tigerdirect.com

Companies That Have a VoIP PBX

If you are a company with a VoIP implementation such as Cisco, Avaya, or Asterisk, then you can add any of the video telephones that are SIP and maybe even H.323 compliant to your network. It is a matter of features and cost as far as your selection, because you already have the infrastructure needed to implement these devices. If you want remote users to connect to your corporate VoIP SIP environment, you can have the users connect through a VPN and use a SIP softphone on their laptops, or use Skype.

Some companies do not like softphones (telephone software) and there are too many SIP softphones available to list. If you want to give your remote employees access to your SIP VoIP environment, just add a VoIP telephone with a video option. For more information on SIP and available options for SIP and VoIP, visit the following Web sites and read the recommended reading we have already mentioned:

- www.asterisk.org
- www.sipfoundry.org
- www.sippbone.com
- www.sipsoftware.com
- www.sipcenter.com
- www.sipforum.org

We will cover more on this subject in Chapter 8. You can also read the following book for detailed information on corporate videoconferencing:

- *Videoconferencing: The Whole Picture*, by James R. Wilcox

Summary

In this chapter, we started to discuss in detail what solution to select. We discussed the two main video call protocols, H.323 and SIP, and the video and audio codecs that are used in video calls. We started talking about the details of how to select a video call software solution and the criteria we used to rate the solutions on our Web site:

www.VideoCallTips.com. We also discussed that there are more than 40 solutions and listed our short list of video call software solutions for a good place to start.

We also went into detail about the video telephone devices that the VoIP services offer. We discussed that there are two options for video telephones, ones that require a VoIP service provider, such as Packet8, Vonage, and ACN, and ones that do not, such as DLink, Black Crow, and the dial-up solution from Vialta. We also discussed the various video telephone manufacturers and where to find more about their solutions because many do not have retail offerings.

We helped you understand the options available for video telephones and how to start deciding what is available to the typical consumer and what is not. We mentioned where to find long RCA cables to connect the video telephone to your television. We touched on companies that have a VoIP PBX and how you might connect to these systems and where to read more on this type of solution.

Free Video Call Software

Solutions in this chapter:

- Overview
- One-on-One Video Call Solutions
- Multiperson Video Call Solutions
- Multi-IM Video Call Solutions
- SIP Video Call Solutions
- H.323 Video Call Solutions
- Chat Room Video Call Solutions
- Other Video Call Solutions

Overview

In this chapter and in Chapter 7 we will discuss in some detail most of the video call software solutions currently available. We touch on more than 40 video call software solutions; if we miss one or two solutions, either they have a vertical application or they are not widely used. Of course, send me an e-mail about any that we missed and we will take a look at the solution for the Web site or the next edition of this book. In Appendix B we list all the software video call solutions together alphabetically so that you can compare them all together versus our breakdown by section. Appendix B contains the commercial solutions as well.

Now we will try to make sense of the plethora of solutions that exist in the software video call space so you can start to select what you need for your particular needs. In Chapter 1, we defined personal videoconferencing, business videoconferencing, and Web videoconferencing. Just know that anything that sends audio and video is a possibility for personal videoconferencing. We will only show screenshots and details of the better solutions, which are those that rate 4 or 5. Since we are trying to help you select a solution, we will do so by the categories and ratings. Of course, you are free to select anything you want and try it to see if a particular solution works for you. Also, because the solutions in this chapter are free, we recommend using multiple solutions because you may find that some of your family and friends will like solutions for certain reasons. I use MSN Messenger, Skype, and SightSpeed on my Windows systems and iChat AV and SightSpeed on my Mac and they all coexist just fine.

Because there are so many solutions, we need to somehow divide up the solutions into a few categories so that we may better compare or classify them for an easy comparison in their focus area. We have divided up the solutions into two main areas: Free video call solutions (those that are completely free) and commercial video call solutions (those that have a fee or cost associated with them). Commercial solutions may also have a free option (SightSpeed, for example) and charge you for additional features. To further break down the solutions, we have created several categories that will be used to assign each solution to a primary focus. These categories are:

- One-on-one video call solutions
- Multiuser video call solutions
- Multi-IM video call solutions
- SIP-based video call solutions
- H.323-based video call solutions
- Chat room video call solutions
- Other video call solutions

Of course, we cannot go into great detail on all the solutions, but we did test all of them over the course of the past two years, so we were able to get a good idea of what the solutions are all about. We were also able to evaluate the basic video call functions each solution has. Video call software is fairly easy to evaluate: we look at how easy it is to install, how a user connects to the solution, how easy the solution is to use, and, of course, the quality of the video call. Very quickly a person can determine if a solution will work for their particular needs. I use criteria on my Web site, www.VideoCallTips.com, that we discussed in Chapter 5 that was developed over the past two years in testing the solutions with my family, friends, and fellow video call techies. The criteria we use contain the following items:

- “Work Anywhere” configuration
- Ease of installation and configuration
- An easy interface or ease of use
- Audio quality
- Video quality
- See both sending and receiving video screens in an acceptable size
- Additional features
- Internet connection speed requirements
- The ability to have video without audio
- Reliability and consistency
- Cost
- PC-to-Apple/MAC functionality
- Parental Controls

- **www.VideoCallTips.com** Rating system: 12345 (5 being best)

One-on-One Video Call Solutions

As we discussed in Chapter 1, personal videoconferencing is a video call between two people. Can it be more? Yes, it can be, and we will discuss that more in the next section. We have to start somewhere and having a one-on-one or two-person video call is the place to start. We have all heard the saying, “We must crawl before we can walk before we can run.” Since most one-on-one or two-person video call solutions are free, it makes sense to start

with a two-party video call, get it working, and then add functionality or the capability of additional people later.

Being that most broadband connections are capable of having a two-person video call, everything we discussed in this book up until now has been designed to help you understand how to get everything you will need to have a successful experience with video calls. Making one-on-one video calls that work well and consistently will enable you to try other solutions and add functions like additional people to your video call experience. The following table contains a list of free solutions that are capable of a two-person video call, how we rate them, what version was rated, comments, what operating systems are supported, and how many people the solution can handle in a video call. Make note that what you get for free may just be a two-person video call and that the commercial version may be how you get multiparty video calls.

One-on-One Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
AOL Instant Messenger Includes AOL Triton	2	5.9/1.0.4.1	(1)	•	(b)	2
Apple iChat AV	5	3.0		(a)	•	2-4
Festoon	4	0.1.3.213	(7)(8)	•	•	2-6
iVisit - Lite	3	3.5.4/3.5.3		•	•	2
Microsoft MSN Messenger	5	7.5.0324		•	•	2
SightSpeed Basic	5	4.5		•	•	2
Skype Video (2.0)	4	2.0.0.103	(15)	•	•	2
Spontania Video4IM	5	0.8.5	(7)	•	•	2
WiqiWiqi / Vwho	4	ALPHA		•	•	2-9
Yahoo Instant Messenger	3	7.5.0.647		•	•	2
ZoomCall	3	5.1		•	•	2
Notes:						
(a) Can be used with AIM for a Mac-to-PC video call						
(b) Can be used with Apple iChat AV PC-to-MAC video call						
(1) Also has Mac and Linux versions available, but without video						
(7) This requires Skype for the contacts list						
(8) This requires GoogleTalk for the contact list						
(15) Additional telephone calling features available at an additional cost						

AOL Instant Messenger (AIM 5.9) and AOL Triton (BETA)

AOL is one of the more popular Instant Messaging solutions that also has video call capability. AIM, as it is called, has recently gone through a major upgrade from version 5.9 to what is now called AIM Triton. The amount of advertising and the invasive nature of the advertising are really annoying. Usually, when a product goes through a large change as this

one has, it gets easier and cleaner to use. In AIM Triton's case, I think they took a step backwards. AIM Triton is not very easy to use and there are no options to configure the video settings.

If you want to make video calls with Apple iChat AV users, you are out of luck with the new AIM Triton version, for now, anyway. You can still use AIM version 5.9 to make video calls with Apple iChat AV users, but in order to have a video call, you will need to open up the ports on your DSL/cable router as described in Appendix A. Currently you can only make video calls between AIM Triton users and not with either AIM version 5.9 users or Apple iChat AV users, so AOL has a lot of work to do.

We believe they should not have released this version until all the features were working as expected. The video in AIM Triton is also still in BETA and not finalized and the frame rate is slow. Though I like the fact that in AIM Triton the video screen is adjustable in size and has a picture-in-picture that you can place anywhere within the video screen. If you double-click anywhere in the video screen you get both images in an angled view, very similar to how iChat AV works. I expect AOL will improve this over time and the bugs will be worked out and function as it should. The video, even though it is not working well in this version, is far better than AIM 5.9. The rating reflects the BETA version and issues as of June 2006. I expect by the end of 2006, AIM Triton will improve to a score of 3, maybe even 4, so watch the Web site for an update to this rating. Also, Google has invested in AOL, so expect that GoogleTalk will interact with AIM in the future and possibly even video calls as well.

- www.aim.com
- VideoCallTips.com rating: 2

Article on how to make video calls between Apple iChat AV and AIM 5.9:

- www.mvldesign.com/video_conference_tutorial.html

Apple iChat AV

Apple iChat AV is a great video call application for Mac-only users because there is currently no Windows client for iChat AV. You can have video calls with Windows AIM version 5.9 users, but it is not firewall friendly and the video in AIM 5.9 is really poor. Hopefully, when AOL gets AIM Triton updated to work with iChat AV, this should be a good combination for Mac-to-Windows video calls. We have provided a link to an article that describes how to make iChat-to-AIM video calls. The image quality of the iChat video is top notch and the frame rate is good as well. If you only need Mac-to-Mac video calls, this solution is the best option for you. Paired with the iSight webcam, this is a great video

call solution. Though I list a solution to make USB webcams work with a Mac, don't waste your time because the iSight webcam provides everything you want in a webcam. Also listed below is a solution to record iChat AV video calls if you need this functionality.



- www.apple.com/ichat
- VideoCallTips.com rating: 5

Article on how to make video calls between Apple iChat AV and AIM 5.9:

- www.mvldesign.com/video_conference_tutorial.html

Using USB webcams for iChat AV:

- www.ecamm.com/mac/ichatusbcam/



To record iChat AV video calls:

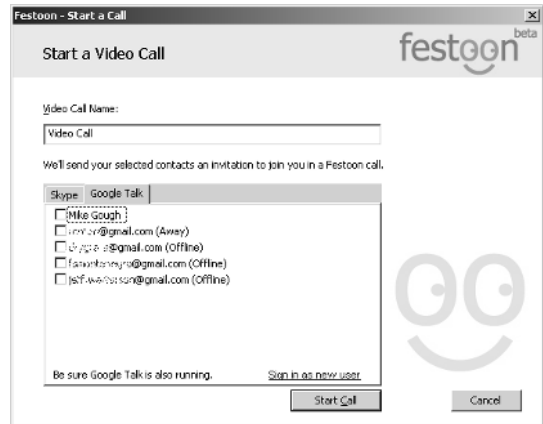
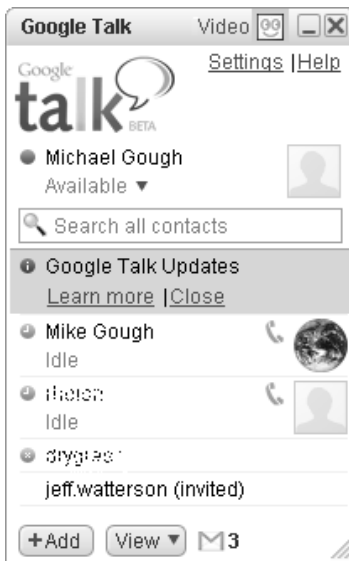
- www.ecamm.com/mac/conferencerecorder/


Festoon

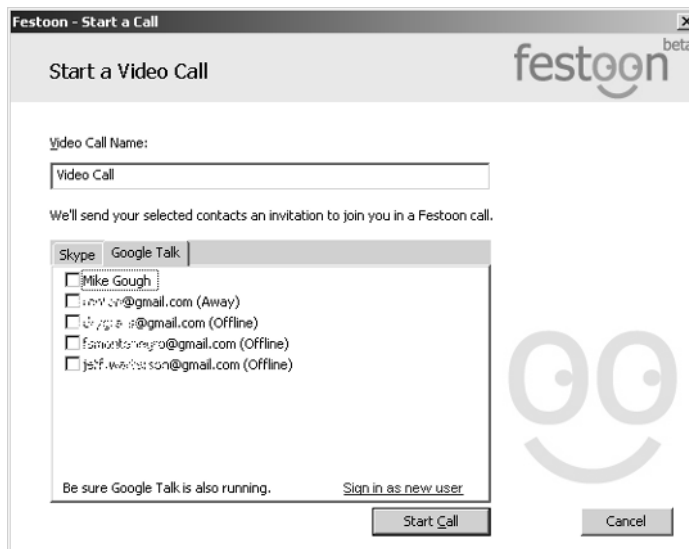
Festoon is a plug-in for Skype and GoogleTalk to add video call capabilities to these two IM solutions. Festoon integrates and uses Skype and GoogleTalk as their contact list that you would initiate a video call from (for an additional Skype reference, please see Appendix C). Santa Cruz Networks had a consumer solution called VidiTel and Festoon is the replacement for the consumer market. Festoon enables you to have a two-person video call and a multiuser video call as well. Festoon is very firewall friendly, so no special configuration needed because it uses ports 80 and 443.

In order to integrate Festoon with GoogleTalk or Skype, you will first have to install GoogleTalk and/or Skype and then install Festoon to integrate Festoon into these two IM solutions. After Festoon starts, be sure to manually set your webcam under **Tools |**

Options. In the pictures below, you can see that Festoon adds the  icon to GoogleTalk and the  icon to Skype.



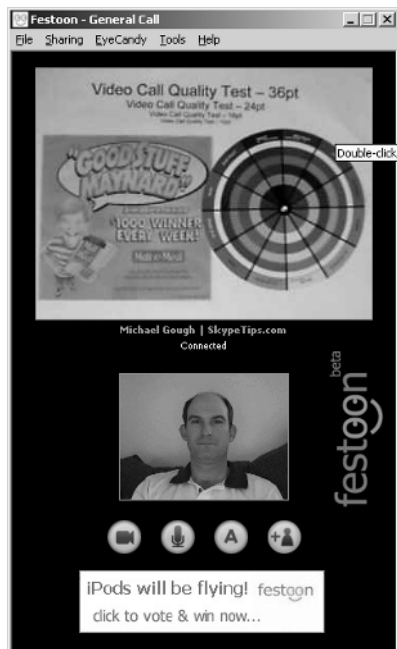
After Festoon is installed, all you need to do is right-click the  icon in the taskbar and select **Start a video call** and you will see the following screen that shows the Skype users and GoogleTalk users that are available for a video call. Of course, the contact you select needs to have Festoon installed to participate in a video call, but Festoon provides you a **Share Festoon with a friend** option so you can invite your IM contacts to use Festoon.



Festoon will IM your contact with a URL to select to start a video call if you have Festoon and a URL to get Festoon if your contact is not a user, as shown in the following Skype IM screenshot.



After Festoon starts, you will have a two-person video call. The following screenshot shows the typical test we used throughout this chapter.



Festoon also provides video effects options called EyeCandy that enables you to add video effects to your video calls. Festoon also enables multiuser video calls including yourself. Festoon will be adding support for video calls with other IM solutions for AIM, MSN, and Yahoo in the future, making this one of the better multiuser IM video call solutions.

- www.festooninc.com/
- VideoCallTips.com rating: 4

iVisit Lite



iVisit Lite, the free version of iVisit, is a good solution for Windows and Mac video calls. The free version limits the size of the video window to 160x120 pixels and only 60 minutes of video calls every 90 minutes. The user interface is not all that friendly and the quality is only average in the free version, but iVisit is a good solution for both Windows and Mac users. iVisit is firewall friendly.

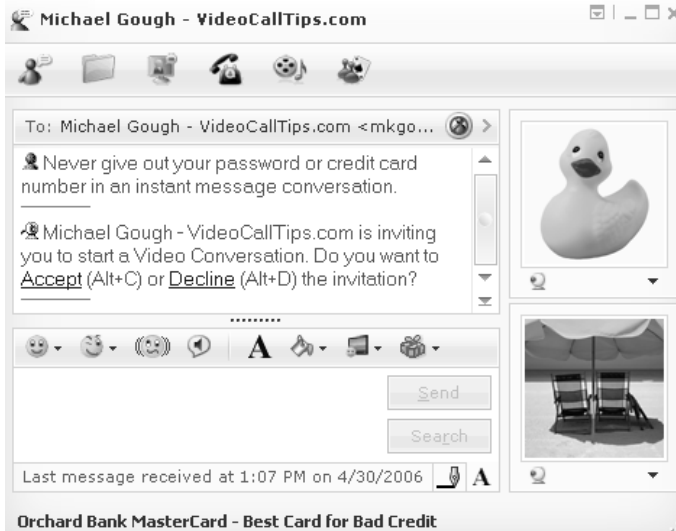
- www.ivisit.com/
- VideoCallTips.com rating: 3

Microsoft MSN Messenger 7.5 (Windows Live Messenger 8.0 BETA)

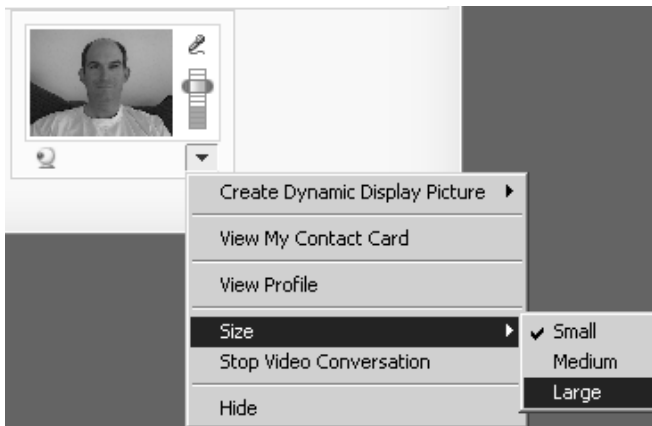
Microsoft MSN Messenger is one of the best free solutions available for free video calls. We will be showing Windows Live Messenger 8.0 BETA in the screenshots because this is the replacement for MSN Messenger 7.5. Know that Windows Live Messenger 8.0 has everything MSN Messenger 7.5 does and it is up to you to decide what to use. The new Live BETA is compatible with MSN Messenger 7.5 for video calls. We always recommend that you use the latest released version and avoid BETA solutions because BETAs do have bugs that may cause you some issues. Windows Live Messenger or MSN Messenger is also available in just about every language you might need.

One good thing about MSN Messenger 7.5 is that it runs on Windows XP, Windows 2000, and Windows 9.x systems, so it's good for older versions of Windows. I expect Windows Live Messenger will work only for Windows XP or later, so be aware of this requirement. Of course, I always recommend the latest version of Windows XP fully updated with the latest security patches for video calls because there are significant features Windows XP has that video call solutions will use.

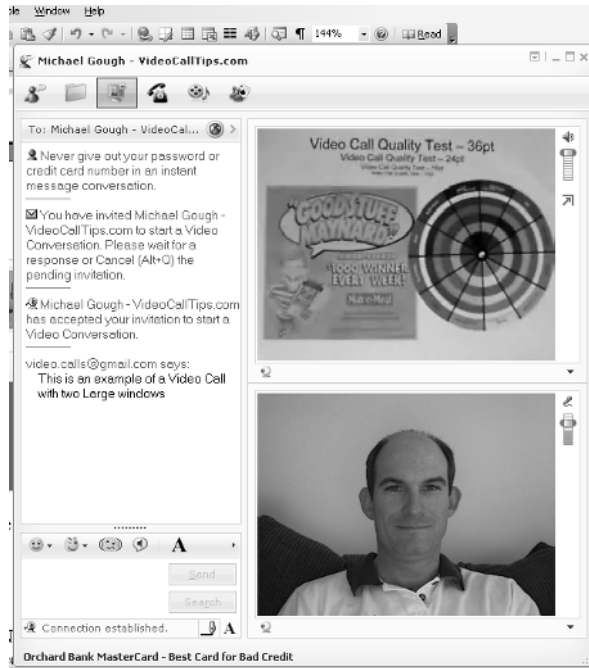
When you establish a video call by selecting the  icon for Live Messenger and the  icon for MSN Messenger within an IM window, Messenger auto senses the bandwidth available and slows the frame rate to match the broadband connection while maintaining a great image quality. When someone invites you to a video call, you will see the following screen. Just select **Accept** to start the video call.




Messenger has one of the best quality images available. It can maintain the image quality even with a slower frame-rate adjustment that the application chooses based on the speed of the Internet connection and the user cannot adjust. Messenger has three video window sizes and a full-screen mode. To select which window size you want, just click the icon and select **Size**, and then select one of the three options for your window or four options for the top window of the other party, Small (pictured below), Medium, Large, or Full Screen for the top image only.




After you select Large, you will see a good video call. The following screenshot shows a sample I use to test video quality and the sender of course is yours truly. This way there is something constant in each of the screenshots with my test picture for each solution. In the following screenshot I am using Windows Live Messenger 8.0 with the Philips SPC900NC webcam and the test image is on MSN Messenger 7.5 with a Logitech 5000 webcam on a cloudy rainy day.



In order to get a Full Screen image, select the  icon from the drop-down.



To undo Full Screen, just select the  icon and you are taken back to the IM window view. Be aware that, in Full Screen, the image will stretch on a wide screen.

If you have any issues with the audio portion of a Messenger video call, you can use different audio solution such as Skype for just the audio portion. The advantage of this is that Skype provides great audio calls and the capability of having a five-person audio conference call, and if you have the proper hardware, a 10-person audio conference call. This would enable you, for example, to be in a video portion only call using Messenger with a friend or family member and then add multiple people to the audio portion though Skype to ask a question or plan the weekend events—of course, you can only see one person in Messenger. I often use this combination if I find that the Messenger audio does not work well or I am in a really poor location with a slow broadband connection. Usually Messenger audio works fine.

Messenger is firewall friendly if your DSL/cable router supports and has uPnP enabled. Windows Live Messenger version 8.0 was renamed as a part of the new Microsoft Windows Live™ solutions that you can visit at: <http://ideas.live.com>. Windows Live Messenger 8.0 adds a new look but does not change the video call capabilities we are used to in MSN Messenger 7.5. We highly recommend this video call solution as a part of your video call solutions. Messenger works only with Windows systems. MSN and AOL, however, have agreed to interconnect their IM users so that you can IM with AIM users from MSN and visa-versa, but I doubt that video calls will be a part of the agreement to link the two Instant Messaging solutions.

- <http://messenger.msn.com>
- VideoCallTips.com rating: 5

Microsoft website for add-ons for MSN Messenger.

- ilovemessenger.msn.com

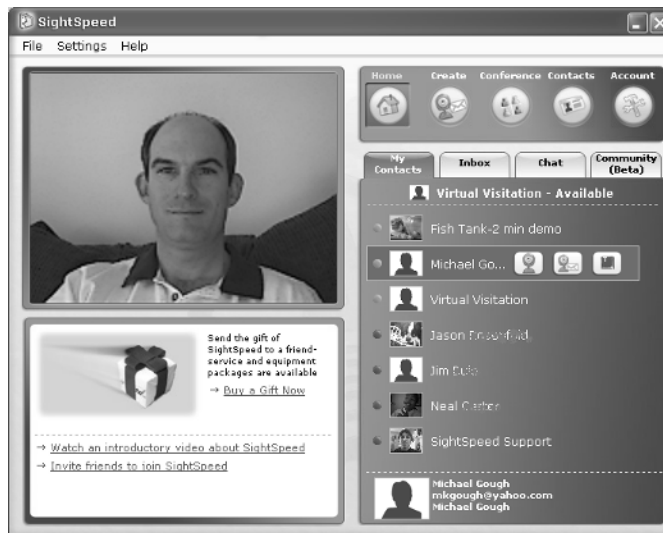
SightSpeed




SightSpeed is arguably the best-featured and best-designed video call solution available today with both a Windows and Mac version. The free version is limited to a two-person video call, but the interface is wonderful, easy to use, and provides a very good experience. SightSpeed is easy to use and configure and has a great optimization tool to enable you to adjust your video during install or afterwards if you change webcams, for example.

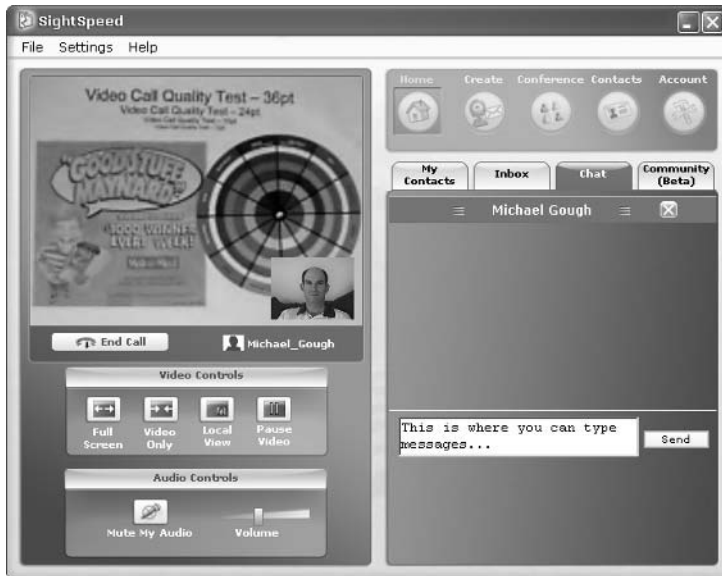
SightSpeed enables you to have video calls, of course, but you can also send a video mail message of 30 seconds stored for 30 days with the free version so you have a way to leave a message if one of your contacts is offline or you just want to send a quick message.


The video mail is not sent to you in a large e-mail; rather, it is stored on the SightSpeed server and only a short message telling you that you have a video mail message waiting is sent to you. In addition, you can send video mail to other SightSpeed users or any Internet e-mail address. SightSpeed is also firewall friendly, so will work most anywhere.

The following screenshot is the main interface and you can see an Inbox tab where any messages you receive will be stored, a Chat tab where you can send a quick IM to a contact, and the BETA Community tab where you can search for other SightSpeed users. There are also buttons to check your account, manage your contacts, start a multiuser call (Pro version only), create a video mail message, and take you back to the home screen.



So start a video call, you just select the user name and then you have three choices:  Start a video call,  Send a video e-mail, or  Send IM. Just double-click the user name to call your contact or select one of the icons for the action you want to perform. The following screenshot shows the basic interface once you are in a video call. In the following screenshot I am using SightSpeed 4.5 with the Philips SPC900NC webcam and the test image is on SightSpeed 4.5 with a Logitech 5000 webcam on a cloudy, rainy day.



SightSpeed also allows for Full Screen by selecting the  icon from the Video Controls menu and the Esc key to return. You also have the option of removing your picture-in-picture, pausing the video, or switching to the Video Only view as the following screen shows.



The Video Only view is adjustable to any size you like. Be aware that on wide screens like my laptop, the Full Screen picture gets stretched, so Video Only mode is better because it keeps the ratio for wide screens. SightSpeed is robust and well designed; actually the best-designed interface and features of any of the video call solutions and is what all video call solutions should shoot for. The only drawback SightSpeed might have is the video codec they use could have a sharper image, but I expect they will improve this in a matter of time and really blow your socks off. This is a GREAT solution and I highly recommend you try it and add it to your video call solutions suite. Since you can also use SightSpeed with Mac users, this is a perfect solution for the Windows and Mac video call users that have family and friends they would like to communicate with using either operating system.

- www.sightspeed.com
- VideoCallTips.com rating: 5

Features:

- One-on-one video calling
- Unlimited voice calling
- Community
- Multiparty conference calling (4 people)
- Create video/mail blogs
- Video mail
- My SightSpeed Web page
- Call from Internet Explorer, no client required
- Windows and Mac versions

Feature	Basic	Pro
Unlimited Voice Calls	■	■
Unlimited Video Calls	■	■
SightSpeed Community Access	■	■
Unlimited Text Messaging	■	■
Unlimited Video Mail	■	■
Video Mail Storage	30 Days	Length of subscription
Video Mail Length	30 seconds	1 min
Unlimited Voice Mail Inbox		■

Feature continued	Basic	Pro
Unlimited Video Mail Inbox		■
Unlimited Multiparty Voice Conferencing		■
Unlimited Multiparty Video Conferencing		■
Unlimited Group Text Messaging		■
Personalized My SightSpeed Web Page		■
Download and Save Video Mail		■
Save Offline Text Messages		■
Detailed Call History		■
Video Mail Management Interface		■
Priority Technical Support		■

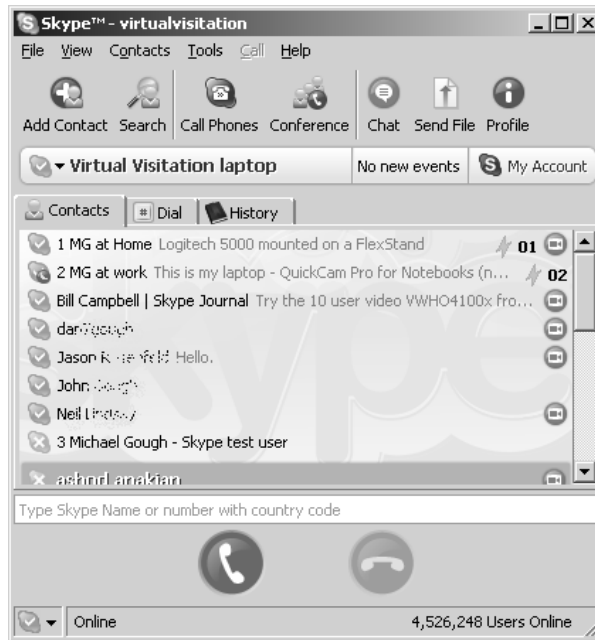
Skype 2.0


My last book, *Skype Me!*, by Syngress Publishing, was completed just before the release of Skype 2.0 that added video to the Windows client. Skype adding video has taken video calls to the next level with users of the famed voice application adding video call capability. Skype, by the way, works only with Windows XP, so you are out of luck unless you are up to date with the latest Windows operating system. Yes, Microsoft Vista is coming out and anything that is compatible with Windows XP should be compatible with Windows Vista as well. You would think, since I wrote the first book on Skype, that I would brag about the addition of video, but truth be told, I have two issues with the video. One is the extremely small picture-in-picture where you cannot see if you are in focus or if what you are holding up is in focus to the person you are in a video call with.

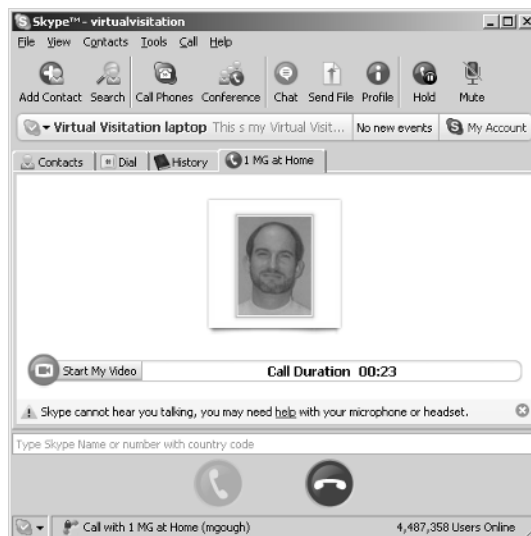
The second issue I have is that Skype is primarily a VoIP solution that enables you to make free or inexpensive voice calls over the Internet and many Skypers have multiple audio devices connected to their computers for Skype. In my case, I have a gateway that enables me to use Skype with my home cordless telephone so that I can make and receive Skype calls anywhere my normal cordless phone works, like my sofa, the kitchen, or the garage. The reason this is an issue for video calls is that it takes me eight mouse clicks to change from my VoSky Internet Phone Wizard (IPW) to my sound card so that I can have a video call and I must do this before I answer the video call, so it is a real pain and often I do not make it in time to answer the video call.

NOTE


For an additional Skype Reference, Please see, Appendix C.



To make a video call, you just select one of your contacts. By default, when you double-click a contact, you call them. I tell people to change double-click to “Start a chat” so you do not accidentally call a user every time. To initiate a video call with one of your contacts, select them in the contact window and press the  icon from the main window or from within the chat window to place the call. Once in the call you will see the following screen.



To start the video portion of the call just click the **Start My Video** button

 and you will see both parties' video if they too selected Start My Video as the following screen shows.



Skype provides multiple ways to view the video portion of the call. You can either see it in the main window or, if you select Video in Window, you will see the following screen.



After a few seconds the black menu options will disappear until you drag your mouse over the window. The following screen shows the same screen without the menu items.

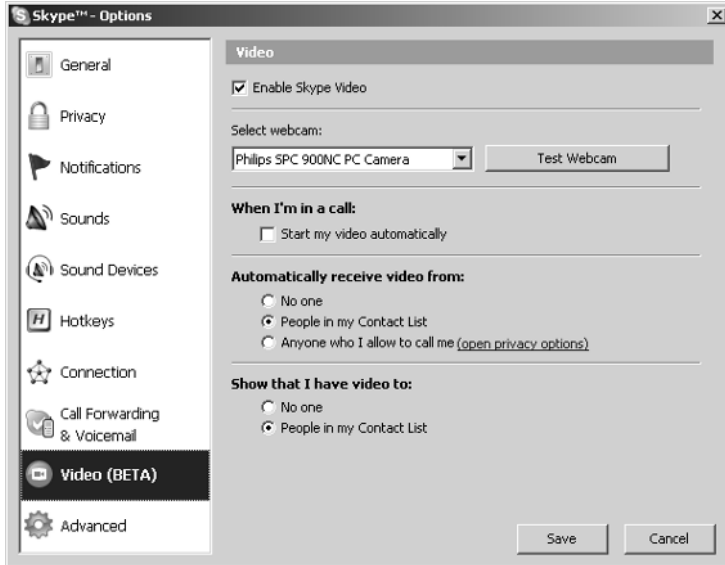


As you can see, the picture-in-picture is ridiculously small to be at all practical except to know you are indeed sending video. We would prefer if the small sender window had an option to be larger. Skype also supports Full Screen as the following screen shows.



Fortunately, Skype keeps the screen ration so when Full Screen is used it does not stretch like MSN Messenger does. Skype does enable you to set if the video starts automati-

cally with every call and even a way to test and select the webcam from the **Tools | Options** menu. Just select **Video (BETA)** and you will see the following screen.



Here you can enable or disable video, set and test your webcam, and adjust if it will start automatically or who you can send and receive video to. Currently, Skype video is 15fps and uses the On2 video codec, the same codec that Macromedia Flash uses, so a very good one.

With the two issues I have with Skype video aside, since not everyone will have multiple audio devices for Skype and do not need the picture-in-picture to be larger, Skype's video is very good and provides for an adjustable screen and full screen capability. Skype's addition of video has really caused video calls to be more popular as I see more and more of my contacts add webcams to use Skype's video call option. I expect Skype will fix my issues over time and make Skype one of the best solutions available for a one-on-one video call solution. I must say the reason I rated Skype a 4 is because of the lack of a Mac client and the two issues I personally have with it, and I know many of my fellow Skypers that want to interact with their children and parents as I do want these two items improved as well. Skype is also very firewall friendly and will work almost anywhere.

- www.skype.com
- VideoCallTips.com rating: 4

Spontania Video4IM

Video4IM is a plug-in for Skype that only adds video capability. Video4IM relies 100% on Skype for your contacts and the audio portion of the video call. The thing I like about Video4IM is that it has a much better picture-in-picture than Skype and it is fairly easy to use. If the name indicates anything, I expect that Spontania will add additional video capability to other IM solutions like AIM, MSN, GoogleTalk, and Yahoo so that you can have a video call with any user from any IM, but that is only a guess at this point based on the name.

To make a video call with Video4IM you install Skype first and then install Video4IM and configure it. I recommend that once installed you change the default settings of Video4IM. From the menu, select **Options | Video Device Setup** and you will see the following screen.




Change the settings to **Enable DirectX capture** and select your webcam from the **Select video device** drop-down and click **Accept** to accept your changes. Now you are using the Windows XP video benefits, the reason we recommend Windows XP. If you want to see the difference, play with the settings and I think you will see there is a significant difference in quality. If you want to have Video4IM start when you start Skype, select **Run with Skype** from the **Options** menu and if you want to automatically start video when you start a Skype call, select **Start with any video call** and Video4IM will start when you make a Skype audio call.

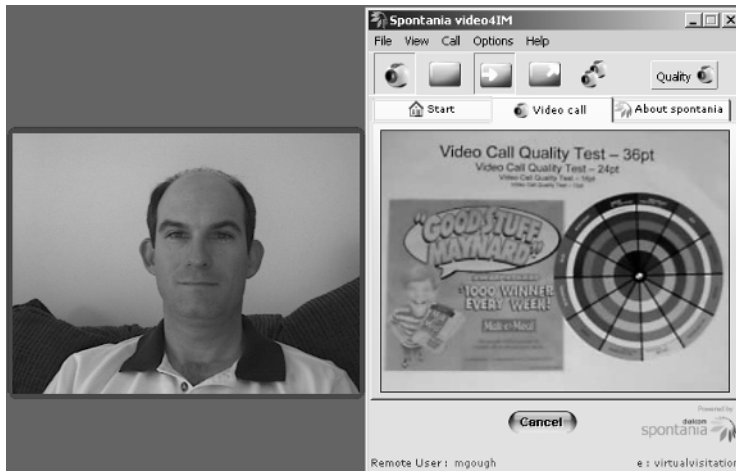
Video4IM checks to see if your Skype contact has Video4IM. If they do not, Video4IM will send the user an IM message inviting them to download Video4IM. If your Skype contact does have Video4IM, then you will be invited to have a video call as shown in the following screen.




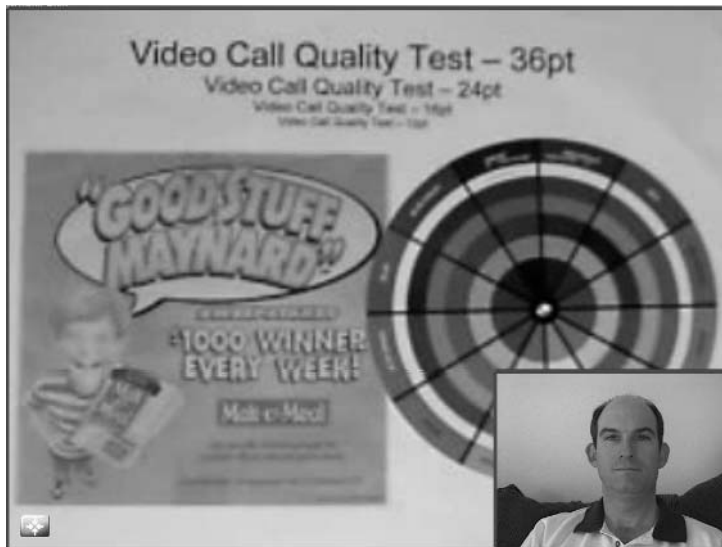
After you select **Start**, you will be in a video call, as shown in the following screen.




As you can see, the picture-in-picture is larger and you can see the sender image better than in Skype. Video4IM also allows for the sender's screen to be detached from the main window by selecting the  icon, as shown in the following screen.



To select Full Screen, select the  icon and you can have a full screen video call as the following screen shows.



To switch back to the normal screen, just select the  icon and you will be back to the main interface. Also, the full screen keeps the proper aspect ratio and will not stretch like MSN Messenger does.

Video4IM is a very good add-on for Skype to add video with full screen and a good picture-in-picture option to improve what Skype provides. This is another free solution I

would recommend to add to your video call solution suite. Video4IM is also firewall friendly and will work most anywhere.

- <http://www.video4im.com>
- VideoCallTips.com rating: 5

WigiWigi—Vwho

There is a project that I have been involved with as a tester that Ashod Apakin has been working on that has promise. I have been a tester from the beginning and really like what Ashod is doing, but Vwho is still currently in development. WigiWigi is a completely self contained application. It does not rely on any drivers, dlls, DirectX, OpenGL, or third-party components. As a result, WigiWigi will run under all versions of Windows and more importantly will run on a barebones Windows environment, such as the ones used in mobile devices or where resources are kept to a bare minimum like a kiosk. Additionally, WigiWigi is a very compact application, taking up no more than 500KB in file size, and requires no installation. It is very common for Internet users to pass the WigiWigi program to friends using IM file transfer and immediately start a video call. The tech editor for this book, Jason, and I have used this solution over the past year or so doing testing for Ashod.

Over the past year, WigiWigi has undergone some major improvements in terms of speed with a significant improvement in frame rate up to 45fps over a 128KBs connection with the DVD-quality version. WigiWigi has the ability to conduct a full-speed video call with broadband connections as low as 128KBs, like slower DSL connections. Ashod hopes to have the Vwho Pro version with true DVD quality available in the near future. The Free version is called Vwho Lite. Vwho will also have an API so application developers can imbed Vwho into their application. The following screenshot is my typical test setup.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

Features:

- True peer-to-peer solution.
- Low bandwidth requirements.
- Real-time lighting adjustment and night-vision modes, to conduct video conferencing in almost pitch-black environments, without the need to adjust the webcams' brightness.
- Multivideo and multiaudio conferencing has also been added with a maximum party size of 12 people. A unique feature of this is that it is truly peer-to-peer, without the need for anyone acting as a host: This effectively enables multiparty videoconferencing when all users are on low-speed connections.
- Adware, Spyware, and Malware free.
- Free.

Yahoo Messenger

Yahoo Instant Messenger is one of the oldest solutions to have video capability. Unfortunately, the latest version of YIM has a terrible video call solution. In order to get the Super Mode video to work, you have to open TCP port 5100 for each system. Even then the video image is slow and just not worth using.

- <http://messenger.yahoo.com>
- VideoCallTips.com rating: 2

ZoomCall

ZoomCall is a free video call solution that has two plans: the free Standard Plan gives you free incoming calls and 60 minutes per month for outgoing calls. ZoomCall has a nice interface and decent window size but does not release the webcam when minimized. The price is a bit steep for what you are getting.

- www.zoomcall.com
- VideoCallTips.com rating: 3

Multiuser Video Call Solutions

Many of us want options to have more than two people on a video call. With higher-speed broadband options like that which you can get from your cable provider and faster DSL options, having multiple people on a video call is an option. In the free space there are only three solutions that we already covered in the one-on-one video call section, but we will focus on the multiuser portion features of the video call.

Multi-User Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
Apple iChat AV	5	3.0		(a)	•	2-4
Festoon	4	0.1.3.213	(7)(8)	•		2-6
WigiWigi / Vwho	4	ALPHA		•		2-9
Notes:						
(a) Can be used with AIM for a Mac-to-PC video call						
(7) This requires Skype for the contacts list						
(8) This requires GoogleTalk for the contact list						

Apple iChat AV

As we already stated, Apple iChat AV is a great video call application for Mac-only systems because there is no Windows client for iChat AV. You can have up to four users in a video call if you have the system to support it. Multiuser video calls with AIM is not an option at this time. The following table shows what the system requirements are to have a four-person video call with iChat AV.

Requirements		1-to-1 Audio Conference	10-Person Audio Conference	1-to-1 Video Conference	4-Person Video Conference
To Initiate (Host)	System Required	Any G3, G4, G5, or Intel Core processor	1GHz G4, dual 800 MHz G4, any G5 or Intel Core	600MHz G3, any G4, any G5 or Intel Core	Dual 1GHz G4, any G5 or Intel Core
	Bandwidth Required	56Kbps Internet connection (up/down)	128Kbps Internet connection (up/down)	100Kbps Internet connection (up/down)	384Kbps Internet connection (up/down)
To Participate	System Required	Any G3, G4, G5, or Intel Core processor	Any G3, G4, G5, or Intel Core processor	600MHz G3, any G4, any G5, any Intel Core	1GHz G4, dual 800 MHz G4, any G5, or any Intel Core
	Bandwidth Required	56Kbps Internet connection (up/down)	56Kbps Internet connection (up/down)	100Kbps Internet connection (up/down)	100Kbps Internet connection (up/down)



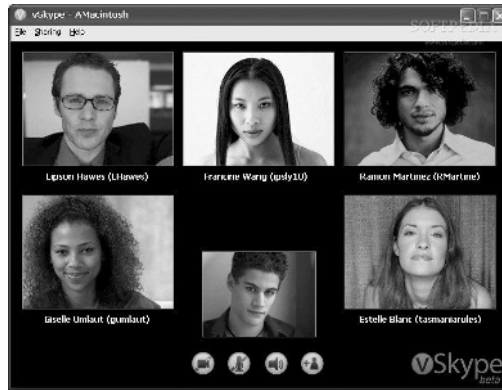
- www.apple.com/ichat
- VideoCallTips.com rating: 5

To record iChat AV video calls

- www.ecamm.com/mac/conferencerecorder/

Festoon

As we discussed in the previous section, Festoon is a plug-in for Skype and GoogleTalk to add video call capabilities to these two IM solutions. Festoon enables you to have a multiuser video call as well for up to six users at a time. Festoon will be adding support for video calls with other IM solutions for AIM, MSN, and Yahoo in the future, making this one of the better multiuser IM video call solutions. Festoon is very firewall friendly, so no special configuration is needed since it uses ports 80 and 443.



- www.festooninc.com/
- VideoCallTips.com rating: 4

WigiWigi—Vwho

WigiWigi Vwho enables you to have up to nine users in a video call. The free version, Vwho Lite, has smaller video windows for each user to maintain the quality for up to nine users, but the Pro version will expand on this with larger and sharper images. The following screenshot shows nine users in a video call.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

Features:

- True peer-to-peer solution
- Low bandwidth requirements
- Real-time lighting adjustment and night-vision modes, to conduct video conferencing in almost pitch-black environments, without the need to adjust the webcams' brightness
- Multivideo and multiaudio conferencing has also been added with a maximum party size of 12 people. A unique feature of this is that it is truly peer-to-peer, without the need for anyone acting as a host: This effectively enables multiparty videoconferencing when all users are on low-speed connections
- Adware, Spyware, and Malware free
- Free

Multi-IM Video Call Solutions

Multi-IM video call solutions are ones that have the capability to add your login and password of each IM solution so that you do not have to use multiple IM applications. Multi-IM solutions are used to centralize all your IM contacts from AIM, ICQ, MSN, and Yahoo, sometimes even Skype, into one tool. In fact, our tech editor uses one of these tools for AIM, Yahoo, and MSN. Now you can only do IM, but some even allow some video to work between solutions, but my testing has showed this is basically a waste of time. Unless the contact you want to have a video call with is using the same multi-IM solution such as Trillian, do not bother to try a video call between Trillian and AIM for example. The main reason is the revision cycle and if you get it to work, it will most likely stop working when one of the solutions updates something. Even if it does work, none of the multi-IM solutions provided a good enough video call to make a rating of 4 or 5 except for Festoon and Vwho. Use these for what they were intended and that is to use one application to centralize your IM contacts.

Multi-IM Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
EyeBall Chat	3	2.2	(2)(16)	•		2
Festoon	4	0.1.3.213	(7)(8)	•		2-6
FreeWorDialup Communicator	3	0.99.1	(4)(16)	•		2
PalTalk	2	8.3	(2)(16)	•		2-6
Qnext	3	2.3.2 BETA	(13)(16)	•	•	2-4
Trillian	2	3.1	(b)(16)	•		2
TryFast	3	4.6	(16)	•		2-12
VvigiVvigi / Vvwho	4	ALPHA		•		2-9
Notes:						
(b) Can be used with Apple iChat AV PC-to-MAC video call						
(2) Based on Chat Rooms - Highly NOT recommended						
(4) Is a SIP based VoIP solution with video capabilities						
(7) This requires Skype for the contacts list						
(8) This requires GoogleTalk for the contact list						
(13) A Linux version is available						
(16) This is a multi-IM solution (AIM, MSN, Yahoo, etc.)						

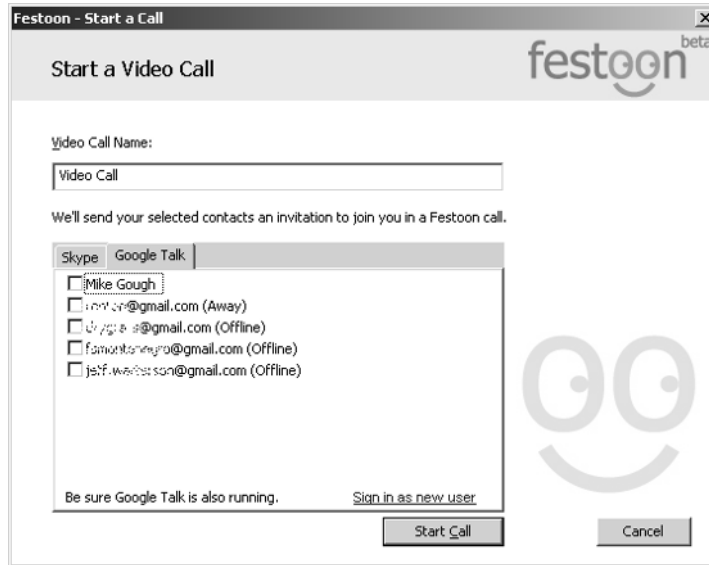
EyeBall Chat

EyeBall Chat is a basic video call solution. One thing EyeBall Chat can do is enable you to see your AIM, MSN, and Yahoo buddies in one tool to IM with. Only if your AIM, MSN, and Yahoo buddies are using EyeBall Chat will you be able to have a video call. This solution has access to chat rooms without any parental controls so if you are a parent and concerned about your children accessing a chat room, and you should be, this is not a solution you should allow a child access to. I have a simple recommendation about public chat-room-based solutions: chat rooms are dangerous for children and so this product needs parental guidance if used by children. More on chat-room-based solutions in the Chat Room Based Video Call Solutions section later in this chapter. EyeBall Chat is firewall friendly.

- www.eyeballchat.com
- VideoCallTips.com rating: 3
- Parental Guidance: Highly recommended

Festoon

As we discussed in the previous section, Festoon is a plug-in for Skype and GoogleTalk to add video call capabilities to these two IM solutions. Festoon enables you to have a multi-user video call as well for up to six users at a time. Since Festoon will be adding support for video calls for the other major IM solutions: AIM, MSN, and Yahoo, Festoon would be one of the better multi-IM video call solutions. Festoon is very firewall friendly, so no special configuration is needed since it uses ports 80 and 443.



- www.festooninc.com/
- VideoCallTips.com rating: 4

FWD.Communicator

Free World Dialup Communicator is a multi-IM tool and allows for video calls to other FWD.Communicator users. FWD.Communicator can see your AIM, ICQ, Jabber, MSN, GoogleTalk, Skype, and Yahoo contacts for Instant Messaging only. Since it has so many IM options, it is one of the better multi-IM solutions, just not for video calls. If you select a Skype contact for a voice call, FWD.Communicator will launch Skype and call that user using the native Skype application. Anyone calling you on your FWD SIP account can contact you through the FWD.Communicator client because it is a SIP softphone, but that will be covered in the next section. One serious drawback of this video call solution is you cannot see both the sender's and the caller's video windows at the same time and must

switch between the windows. This is not an acceptable feature for a video call solution. FWD.Communicator is not firewall friendly for video calls and you will need to open ports on your DSL/cable router as described in Appendix A.

- www.freeworlddialup.com/products/?p=communicator
- VideoCallTips.com rating: 3

PalTalk Basic

PalTalk is a Multi-IM video call solution. Like with several other solutions, you can see your AIM, ICQ, MSN, and Yahoo contacts and make video calls with them if they are also using PalTalk. PalTalk is a chat room model and has parental controls that does enable you to set that only G-rated chat rooms may be seen and used. As we stated already, chat rooms are dangerous for children and so this product needs parental guidance if used by children. PalTalk is firewall friendly. PalTalk Basic offers the following features:

- Black Nickname
- Banner Ads
- One video window
- Limited sample video
- Live pictures

- <http://www.paltalk.com/>
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

QNext

QNext is a multi-IM video call solution that enables you to see your AIM, ICQ, MSN, and Yahoo contacts and have a video call with them if they are also using QNext. QNext is one of the only solutions that also have versions for Linux, Mac, and Windows. This product is still in BETA, so expect a few issues and some changes in the future. The client can have up to four (4) people in the video call and can also collaborate with file sharing and a plug-in that enables you to control your home PC by remote. We expect that these features will not be free in the released version. The video windows are small and cannot be adjusted. This is an attractive client and with clients for Windows, Mac, and Linux, this is an application to watch. QNext is not very firewall friendly.

- www.qnext.com/universal_messenger.shtml
- VideoCallTips.com rating: 3

Trillian Basic

Trillian is probably the most popular multi-IM solution that can also have video calls. Trillian enables you to see your AIM, ICQ, IRC, MSN, and Yahoo contacts. To have a video call, you must purchase Trillian Pro, which we cover in Chapter 7. Even though Trillian Basic does not support video, I listed it here as it is the most popular Multi-IM client and if you purchase the Pro version you can add video calls. Trillian is ‘Firewall Friendly’.

- www.ceruleanstudios.com
- VideoCallTips.com rating: 3

TryFast

TryFast is another multi-IM client that offers video as well and enables you see your AIM, ICQ, MSN, and Yahoo contacts in one solution. Again, if you want to use the video portion of TryFast, it should be with another TryFast user. The video is OK and the video windows are small for the people you are calling. TryFast is firewall friendly and you configure the ports if needed to match the IM client you want to communicate with.

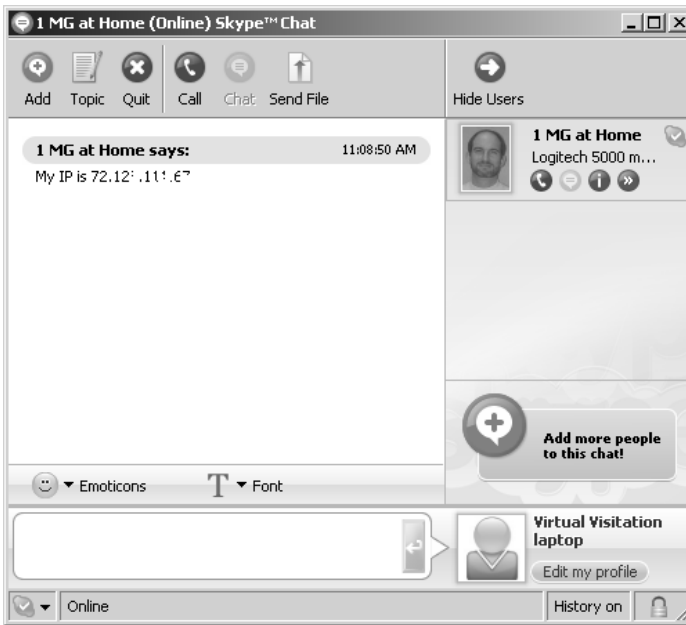
- <http://tryfast.com/>
- VideoCallTips.com rating: 3

WigiWigi Vwho

WigiWigi Vwho is on the multi-IM space because it enables you to initiate a video call from any IM application. It does not matter what IM tool you are using, if you can send a contact an IM, you can have a Vwho video call. All you do is press the CTRL key three times and your Internet-facing IP address will pop up in the IM window and the person you are having an IM with can copy the IP address into their Vwho address bar.



After you enter your contact’s IP address and press Enter, you will start a video call. Of course, each user must have Vwho running and each user must press CTRL, CTRL, CTRL to send each other their IP address which needs to be pasted into the Vwho address bar. The following screenshot shows my Skype window after I press CTRL three times.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

SIP Video Call Solutions

SIP-based video call solutions are an interesting option in the video call space. SIP is the protocol that is used in Enterprise VoIP solutions and is a way that SIP clients of all kinds connect to a central server and connect to other SIP clients. Mostly this is for voice calls and VoIP service providers like Vonage, Packet8, and enterprise VoIP solutions from Cisco, Nortel, and Avaya to name a few. Software that can connect to a SIP system is called a softphone and can call another softphone or a hardware VoIP SIP telephone or even make regular telephone calls to the PSTN network (MaBell) if you subscribe to a SIP service. These softphones and telephones as we discussed in Chapter 5 can also have video calls between them if the network and clients are configured correctly. Some of the better solutions have a charge, but a few free ones are worth discussing.

SIP Based Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
FreeWorldDialup Communicator	3	0.99.1	(4)(16)	•		2
iNeen	3	1.1.3010n	(9)	•	•	2-5
Lycos Phone	3	BETA	(4)	•		2
Sony / GlowPoint IVE	4	4.4.1	(4)	•		2
Yak Virtual VideoPhone	3	1.1.3015c	(4)(9)	•	•	2-5
Notes:						
(4) Is a SIP based VoIP solution with video capabilities						
(9) This is an OEM version of the CounterPath EyeBeam SIP video phone						
(16) This is a multi-IM solution (AIM, MSN, Yahoo, etc.)						

FWD.Communicator

Free World Dialup Communicator is a multi-IM tool and allows for video calls to other FWD.Communicator users. FWD.Communicator can see your AIM, ICQ, Jabber, MSN, GoogleTalk, Skype, and Yahoo contacts for Instant Messaging only. If you select a Skype contact for a voice call, FWD.Communicator will launch Skype and call that user using the native Skype application. Anyone calling you on your FWD SIP account can contact you through the FWD.Communicator client because it is a SIP softphone, but that will be covered in the next section. One serious drawback of this video call solution is that you cannot see both the sender's and the caller's video windows at the same time and must switch between the windows. This is not an acceptable feature for a video call solution. FWD.Communicator is not firewall friendly for video calls and you will need to open ports on your DSL/cable router as described in Appendix A.

The Pro version supports multiple SIP configurations and support for the open source Asterisk SIP server. This is a bit of a technical solution and not for the faint at heart. If you have a SIP video telephone device and configure it to use the FWD SIP Proxy, you may be able to have a video call with an FWD.Communicator user if the codecs are supported and the video is properly configured at the SIP Proxy; at minimum you will get an audio call. So you may have issues using FWD.Communicator and a video telephone over the Internet, but on an internal LAN it should work fine. One drawback of this client is that you cannot see both the sender's and the caller's video window at the same time and must switch between the windows.

- www.freeworlddialup.com/products/?p=communicator
- VideoCallTips.com rating: 3

INEEN

INEEN is based on the CounterPath/Xten SIP softphone solution. INEEN allows calls only with the INEEN SIP contacts and offers no out-of-network capabilities or calls to other SIP providers. INEEN has taken the EyeBeam softphone and modified it to work only on their network, but INEEN does allow up to five users including yourself to have a video call. Look for more pay-per-use features to come out in the future. Until more features come out I am not sure why this would be a solution to consider because the video windows are small and it lacks any significant feature needed to connect with other SIP video telephone solutions.

- www.ineen.com/
- VideoCallTips.com rating: 3



Lycos Phone

Lycos, the search engine and Web portal provider, is new to the video call space and just introduced Lycos Phone. This is currently a Windows-only solution that offers a video phone, regular phone features, instant messaging, music, Web, and movie options. Lycos Phone is trying to compete with AIM, GoogleTalk, MSN, Skype, and Yahoo by adding a full-featured SIP softphone client with video and additional features. The client has a lot of advertising and you are offered several ways to get free phone call minutes by visiting the advertiser's information or you can just purchase minutes to make PC-to-telephone calls. The interface is busy and a little difficult to navigate, though expect some changes as this product gets updated from feedback and use. The video windows are small with no option

to make them larger. This product is still in BETA and needs some improvements so expect some issues early on. Lycos Phone is not firewall friendly.

- <http://lycos.globe7.com/>
- VideoCallTips.com rating: 3

Sony/GlowPoint IVE

Instant Video Everywhere (IVE) was developed by GlowPoint and Sony resells the solution to be used with its videoconferencing solutions. IVE is a good SIP softphone and has good video options as well. The free version is limited to 128KB and no out-of-network calling, so you can only have video calls with other users who have and use the IVE solution. IVE is not firewall friendly and needs ports opened as explained in Appendix A.



Here is a table showing the features you get with each service plan.

Plan Features

Type of Service	IVE	IVE Premium	IVE Professional
Video Calling			
• Unlimited IVE-to-IVE calling worldwide video and voice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Make and receive voice-over-IP (VoIP) calls to telephone and cell phones*		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Make and receive videoconferencing calls to IP and ISDN-based video systems*			<input checked="" type="checkbox"/>
Personal Video Number			
• Personal Video Number—Everybody gets one	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Multiparty Calling			
• Instantly connect a four-person video/audio conference call*		<input checked="" type="checkbox"/>	
• Instantly correct a six-person video/audio conference call*			<input checked="" type="checkbox"/>
• Video Meeting Room—Dedicated private videoconference room			<input checked="" type="checkbox"/>
Video Call Mailbox			
• Customizable Mailbox—Store up to 10 messages		<input checked="" type="checkbox"/>	
• Customizable Mailbox—Store up to 25 messages			<input checked="" type="checkbox"/>
Live Video Operators			
• “000” Live Video/Operators—five free calls/mo*		<input checked="" type="checkbox"/>	
• “000” Live Vide Operators—Unlimited free calls			<input checked="" type="checkbox"/>
Other IVE Services			
• “Lisa,” the IVE Video Call Assistant	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• IVE Portal Access for featured content	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Direct connect to WebEx collaboration service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

* Additional charges may apply.

- <http://sony.glowpoint.com/>
- <http://www.sonyive.com/>
- VideoCallTips.com rating: 4

Yak Virtual Videophone

Yak is based on the CounterPath/Xten SIP softphone solution. Like INEEN, Yak only enables video calls with other Yak contacts and no out-of-network capabilities or calls to other SIP providers. Yak has taken the EyeBeam softphone and modified it to work only on their network, but does allow up to five users (including you) to have a video call. Look for more pay-per-use features to come out in the future. Until more features come out I am

not sure why this would be a solution to consider because the video windows are small and it lacks any significant feature needed to connect with other SIP video telephone solutions.

- www.yakforfree.com
- VideoCallTips.com rating: 3

H.323 Video Call Solutions

H.323 solutions are kind of outdated. SIP is basically the replacement to H.323, but there are still uses for H.323. One of the main reasons H.323 is no longer well liked as it is not firewall friendly for corporate environments and requires a lot of special configuration for the enterprise environment. As we discussed in Chapter 5, there are several hardware-based H.323 solutions that can be used for video calls for the home user. Many of the video telephone devices can have their BIOS flashed to support SIP or H.323, but rarely both. This enables us to use hardware-based video telephone solutions along with software-based video call solutions together for specific video call needs or requirements. H.323 solutions are not firewall friendly at all and need to be configured per each vendor solution as described in Appendix A.

H.323 Based Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
EnVision SL	2	n/a	(6)	•		2
Microsoft NetMeeting	2	3.01	(11)	•		2
Notes:						
(6) EnVisionSL is just a front end to Microsoft NetMeeting						
(11) This product is 'end of life' and obsolete						

EnvisionSL

Sorenson's Envision SL (just a front-end to NetMeeting) is a software solution that was developed to provide a software H.323 solution for Sorenson's VP 100 video telephone (same as the Blackcrow BCV-103 video telephone) to provide video call capabilities to the hearing

impaired community. EnvisionSL is Microsoft NetMeeting with a different, friendlier user interface. EnvisionSL runs on basically any version of Microsoft Windows, 98x, W2K, and XP. EnvisionSL is not firewall friendly at all and the ports for your cable/DSL router or corporate firewall will need to be configured as described in Appendix A.

- www.sorensonvrs.com/options/envision_info.php
- VideoCallTips.com rating: 2

Microsoft NetMeeting

Microsoft NetMeeting was the earliest video call solution that is included even today with every version of Windows. This product is now obsolete, but it can be still be used to call any H.323 video telephone device or other H.323 software solutions. NetMeeting runs on basically any version of Microsoft Windows, 98x, W2K, and XP. NetMeeting is not firewall friendly at all and the ports for your Cable/DSL router or corporate firewall will need to be configured as described in Appendix A.

- www.microsoft.com/windows/netmeeting/
- VideoCallTips.com rating: 2

Chat-Room-Based Video Call Solutions

Chat-room-based video call solutions should truly be used only by adults. So if you have children and you want or expect them to make video calls with family and friends, a chat-room-based video call solution is not for you, though of course it is your decision. Being a father and knowing what I do about computer security and the issue with predators and pedophiles, chat-room-based solutions are suited for adult use only! Statistics show that 65% of all predators initiate a conversation with a child in a chat room. IRC Chat should be included in this. If you are a concerned parent, block all chat-room-based solutions.

Of course, not all solutions are created equal and some have parental controls, like PalTalk Chat that allows you to show only G-rated content, but in reviewing these solutions over the past couple years, many solutions have a policy of appropriate use, but I do not trust someone else's policy, I trust my own controls when it comes to children. Only two solutions had good enough video to be considered: CUWorld and EyeBall Chat, but since they are chat-room-based, I only rated them a 3 due to the possible exposure. Remember in Chapter 4 I discussed in some details parental control and monitoring software if you are going to allow a child unrestricted access a computer on the Internet. This goes for chat-room-based solutions as well. Be sure you understand who may use these products before you select a solution. All chat-room-based solutions get the following label:

- Parental Guidance: Highly recommended

Chat Room Based Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
CamFrog	2	3.7	(2)	•		2-12
Chatablanca	1	1.7	(2)	•		2-6
CUWorld	3	7.0.59.1	(2)(5)	•		2-22
DKMessenger	2	4.5.3	(2)	•		2-12
EyeBall Chat	3	2.2	(2)(16)	•		2
Livve	1	7.2.32	(2)(5)	•		2-6
PalTalk	2	8.3	(2)(16)	•		2-6
Notes:						
(2) Based on Chat Rooms - Highly NOT recommended						
(5) Requires Microsoft Internet Explorer						
(16) This is a multi-IM solution (AIM, MSN, Yahoo, etc.)						

CamFrog

CamFrog is a video call client that is based on the use of public chat rooms. You add your contacts and IM them to start a private video call. You can also meet people from the various chat rooms and add them to your contacts list. As we stated many times, chat rooms are dangerous for children. The video windows are small with the free version. There is no exciting feature of this program worth considering.

- www.camfrog.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

Chatablanca

Chatablanca is another chat-room-based solution that has an interesting interface. As we have stated many times, chat rooms are dangerous for children, so this product is in the “Not Recommended” category. The video windows are small. There is no exciting feature of this program worth considering. Also Chatablanca is not firewall friendly.

- www.chatablanca.com/
- VideoCallTips.com rating: 1
- Parental Guidance: Highly recommended

CUWorld

CUWorld is a Web-based video call solution with multiple cost plans. CUWorld is a chat-room-based video call solution that can allow “private rooms” for one-on-one conferences or multiuser video calls depending on your membership. You can also have video calls with your “cupals” for private video calls. The quality of the video and number of people you can have video calls with is limited by each plan. For the Guest account, you get only 7fps (slow) and up to four users. Since this is a server-based solution with lots of users, you may experience a delay. CUWorld is firewall friendly since it uses Internet Explorer. The free version is nothing to write home about, but the VIP solution has some serious quality, but at a premium cost. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. CUWorld is firewall friendly and can be used just about anywhere.

- www.cuworld.com
- VideoCallTips.com rating: 3
- Parental Guidance: Highly recommended

DKMessenger

DKMessenger is a solution that offers multiple plans and features. The DKMessenger client has chat rooms that you can browse for other users. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. DKMessenger is nothing fancy and the client is rather complicated to use and configure. DKMessenger also does not release the webcam when minimized, so it is not friendly to use with other video call solutions. DKMessenger is not firewall friendly.

- <http://dkmessenger.com/>
- VideoCallTips.com rating: 1
- Parental Guidance: Highly recommended

EyeBall Chat

EyeBall Chat is a basic chat room and multi-IM video call solution that, as we mentioned earlier, enables you to see your AIM, MSN, and Yahoo contacts in one application for needs. Only if your AIM, MSN, and Yahoo buddies are using EyeBall Chat will you be able to have a video call. This solution has access to chat rooms without any parental controls, so if you are a parent, you should not allow your child access to this solution. EyeBall Chat is firewall friendly.

- www.eyeballchat.com
- VideoCallTips.com rating: 3
- Parental Guidance: Highly recommended

LivVE

LivVE is a Windows-only video call client. LivVE is a video community where you can host events in a chat room format. These events can be general or adult in nature. As we have stated many times, chat rooms are dangerous for children, so this product needs parental guidance if used by children. LivVE is firewall friendly.

- www.livve.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

PalTalk

PalTalk is a chat room and multi-IM video call solution. As with several other solutions, you can see your AIM, ICQ, MSN, and Yahoo contacts and make video calls with them if they are also using PalTalk. PalTalk is a chat room model and has parental controls that enable you to set that only G-rated chat rooms may be seen and used. As we have stated already, chat rooms are dangerous for children, so this product needs parental guidance if used by children. PalTalk is firewall friendly.

PalTalk Basic offers the following features:

- Black Nickname
- Banner Ads
- One video window
- Limited sample video
- Live pictures

- <http://www.paltalk.com/>
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

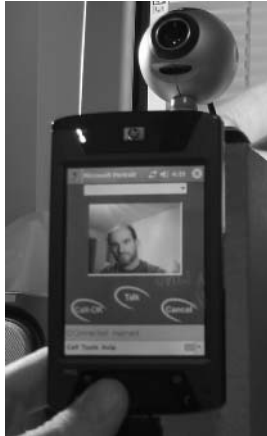
Other Video Call Solutions

There was only one solution that ended up not being able to be categorized, other than the solutions that have been discontinued or are at their end-of-life. We will list the obsolete solutions only so you know we know about them and at least took a look.

Other Video Call Solutions	Rating	Version	Comments	Windows	Apple / Mac	User video windows
Microsoft Portrait	2	2.3	(11)(12)	•		2
Notes:						
(11) This product is 'end of life' and obsolete						
(12) This solution has a Pocket PC version						

Microsoft Portrait

Microsoft Portrait is the only free video call solution for a Windows-based Pocket PC. MS Portrait is a Microsoft Research project developed to give Windows and Pocket PC users a video call client so they may have video calls with one another. This product is now basically obsolete, but it can be still be used to make a video call between a WiFi-enabled Pocket PC and a Windows system running MS Portrait. MS Portrait is not firewall friendly.



- <http://research.microsoft.com/mcom/portrait/>
- VideoCallTips.com rating: 2

Obsolete, End-of-Life, or Discontinued Solutions

This section is provided only so you know a few solutions are on their way out or already gone. The following is a list of solutions that you can ignore:

- 3wVP—Web-based solution that has terrible delays
- ClearPhone—older Windows and Mac client that has not been updated in years
- NetVidea—just plain vanished
- Microsoft Windows Messenger—will be replaced with Windows Live Messenger 8.0

Summary

In this chapter, we covered the free video call solutions that are readily available. They include solutions that are for on-on-one video calls, multiuser video calls, multi-IM video calls, SIP and H.323 video call solutions, chat room video call solutions and “other solutions” that needed to be mentioned and any that have been discontinued or that are at end-of-life. The categories helped to separate the solutions so that they could be better compared to similar solutions and some even appeared in multiple sections since they had multiple capabilities. This chapter shows that a few free video call solutions really seemed to be better than the rest and all the solutions that rated a score of 4 or 5 could coexist with other solutions to provide you a suite of video call applications for your specific needs.

Commercial Video Call Software

Solutions in this chapter:

- Overview
- One-on-One Video Call Solutions
- Multiperson Video Call Solutions
- Multi-IM Video Call Solutions
- SIP Video Call Solutions
- H.323 Video Call Solutions
- Chat Room Video Call Solutions

Introduction

In this chapter we will discuss in some detail most of the commercial video call software solutions (solutions that have cost) currently available. In this chapter we touch on 24 commercial video call software solutions; I know most of the more popular solutions and so if we missed one or two solutions they have a vertical application or they are not widely used (but of course send me an e-mail and we will take a look at the solution for the Web site or the next edition of this book). In Appendix B we list all the software video call solutions together alphabetically so that you can compare them all together versus our breakdown by section. Appendix B also contains the free solutions as well.

Now we will try to make sense of the plethora of solutions that exist in the commercial software video call space so you can start to select what you need for your particular needs. Since there are so many solutions, as in the free solutions, we somehow need to divide the solutions into a few categories so that we may better compare or classify them for an easy comparison in their focus area. We have divided the solutions into two main areas: Free Video Call solutions that we covered in Chapter 6 and those that are Commercial Video Call solutions—those solutions that have a fee or cost associated with them. Commercial solutions may also have a free option, like SightSpeed for example, and charge you for additional features. To further breakdown the solutions, I have created several categories that will be used to assign each solution into a primary focus:

- One-on-One video calls solutions
- Multiuser video call solutions
- Multi-IM video call solutions
- SIP-based video call solutions
- H.323-based video call solutions
- Chat Room video call solutions

Of course I cannot go into great detail on all the solutions, but over the course of the past two years and in writing this book I did test all of them, so I was able to get a good idea of what the solutions are all about. I was also able to evaluate the basic video call functions each solution has and what you get for what they cost. Video call software is fairly easy to evaluate; I look at how easy it is to install, how a user connects to the solution, how easy the solution is to use, and of course, the quality of the video call. Very quickly a person can determine if a solution will work for their particular needs. I use a criteria that is on my Web site www.VideoCallTips.com (discussed in Chapter 5) that was developed over the

past two years in testing the solutions with my family, friends, and fellow video call techies. The criteria we used contains the following items:

- “Work Anywhere” configuration
- Ease of installation and configuration
- An easy interface or ease of use
- Audio quality
- Video quality
- See both sending and receiving video screens in an acceptable size
- Additional features
- Internet connection speed requirements
- The ability of having video without audio
- Reliability and consistency
- Cost
- PC to Apple/MAC functionality
- Parental Controls
- www.VideoCallTips.com Rating system: 1 2 3 4 5 (5 = highest)

One-on-One Video Call Solutions

As we discussed in Chapter 1, personal videoconferencing is a video call between two people. Can it be more? Yes, it can, and we will discuss that more in the next section. We have to start somewhere, and having a one-on-one or two-person video call is the place to start. We have all heard the saying “we must crawl before we can walk before we can run.” Since most one-on-one or two-person video call solutions are free, it makes sense to start with a two-party video call, get it working, and then add additional functionality or the capability of additional people later.

Since most broadband connections are capable of having a two-person video call, everything we discussed in this book up until now has been designed to help you understand how to get everything you will need to have a successful experience with video calls. Making one-on-one video calls that work well and consistently will allow you to try other solutions and add functions like additional people to your video call experience. The following table contains a list of commercial solutions that are capable of a two-person video call, how I rate them, what version was rated, comments, and what operating systems are

supported and how many people the solution can handle in a video call. Make note that what you get for free may just be a two-person video call and that the commercial version may be how you get multiparty video calls.

One-on-One Video Call Solutions	Rating	Version	Price	Comments	Windows	Apple / Mac	User video windows
Clique Video Messenger	3	2.2.4.711	\$99.50/yr		■	■	2
iVisit Plus	3	3.5.4/3.5.3	\$49.95/yr.		■	■	2-8
KwalityTel	3	1.0	\$19.95/mo.		■		2-4
Logitech VideoCall	3	2.00.3470	\$64.95/yr	(5)	■		2
Lycos Phone	3	BETA	Per minute	(4)	■		2
SeenX	2	1.2.1	\$79.95	(14)	■	■	2
SightSpeed Pro	5	4.5	\$49.95/yr.		■		2-4
WigiiWigi / Vwho	4	ALPHA					2-9
Notes:							
(4) Is a SIP based VoIP solution with video capabilities							
(5) Requires Microsoft Internet Explorer							
(14) No evaluation version available							

Clique Video Messenger

Clique Video Messenger is a nice looking solution for video calls. Pricing is \$99.50 per year for a subscription—on the pricey side for such a solution. It does have the ability of recording video postcards up to 3MB (3 minutes) for you to send to your family and friends. If the cost was much lower, or a one-time charge, the rating could be as high as a 4. Clique VM is firewall friendly.



Image courtesy of Clique Communications, LLC.

- www.cliquevm.com/
- VideoCallTips.com rating: 3

Features for Clique Video Messenger

Live Video Chat

- Clear, fluid (no-flickering) TV-quality video and audio in real-time
- Full-screen capable
- Works with cable modem, DSL, WiFi, or 3G wireless networks
- Supports various Webcams and digital video recorders

Video Instant Messaging

- Send Video messages to online or offline users
- Send Video Postcards to anyone, even if he or she doesn't have CliqueVM
- Even works on dial-up

Audio Chat

- Real-time telephone quality audio conversations
- Even works on dial-up

Instant File Sharing

- Send and receive numerous multimedia format files
- Even works on dial-up

IVisit Plus

IVisit Plus is a good solution for Windows and Mac video calls. The user interface is not all that friendly and is the only real drawback, though iVisit is a good solution for both Windows and Mac users. IVisit also provides some collaboration options with sharing desktop applications like Microsoft PowerPoint. IVisit is firewall friendly.



- www.िवisit.com/
- VideoCallTips.com rating: 3

Features for iVisit Plus

iVisit Plus gives:

- Up to 8-way chat room—host 7 Lite users/guests
- A 100-person chat channel
- Up to 15 public and private windows
- 320 x 240 pixel video (with other subscribers)
- QuickTime export
- Untimed one-to-one connections
- Log on from any machine, anywhere
- Unlimited file sharing and transfers
- Free software upgrades

KwalityTel

KwalityTel is another Windows-only video call solution, and the interface looks like a cell phone. This solution is also known as VFON. For what they charge, this product should do a whole lot more. The video quality is pretty good, but small windows for up to four people

including yourself. This is extremely pricey for what you get and it does not release your webcam when minimized in the taskbar. KqualityTel is firewall friendly.

- www.kqualitytel.com/
- VideoCallTips.com rating: 2

Logitech VideoCall for Broadband

Logitech, the top-of-the-line webcam manufacturer, has entered the video call space with an OEM product made by Vibe Solutions Group called Vibe Video Phone. This is one of the nicer video call solutions as far as the interface goes because it is easy to use and attractive. This is a server-based solution, so you will experience a three- to five-second delay in the video and audio during the video calls. For what you get this could be cheaper as it only does one-on-one video calls and the sender video could be larger. You can also share pictures with the person you are in a video call with and add nice transition effects between pictures. Logitech Video Call is firewall friendly.



- www.logitech.com/
- VideoCallTips.com rating: 4

Lycos Phone

Lycos Phone (still in beta) is a new option in the video call space, and is more focused at competing in the voice call space than the video call space. As we discussed in Chapter 6, this is a Windows-only solution currently and has a video phone, but you do not get any extra video features with the paid version. Lycos Phone has regular phone features, instant messaging, music, web, and movie options. Lycos Phone is trying to compete with AIM, GoogleTalk, MSN, Skype, and Yahoo by adding a full-featured SIP softphone that works only on the Lycos network. The SIP softphone is not configurable to any other SIP service. The client has a lot of advertising that is not reduced with the paid services. The interface is

busy and a little difficult to navigate, though expect some changes as this product gets updated from feedback and use. The video window is small and no options to make them larger. This product is still in beta and needs some improvements, so expect some issues early on. Lycos Phone is not firewall friendly.

- <http://lycos.globe7.com/>
- VideoCallTips.com rating: 3

NuPhone

NuPhone is a newer solution that was recently taken over by the folks at NuPhone. It needs some updating to fix some of the bugs so watch for an updated rating. NuPhone charges by the minute, not the way I would recommend to charge for a video call solution.

- www.nuphone.net
- VideoCallTips.com rating: 1

SeeNx

SeeNx is a Windows video call client that does not offer a free trial. SeeNX uses Java as the base for the application. I am always leery of software that does not have a trial period—you have to contact SeeNx to get a trail license. This is a poor model to get people to try your product. SeeNX is a peer-to-peer solution. SeeNx is not firewall friendly.

- www.seenx.com
- VideoCallTips.com rating: 2

SightSpeed

As I stated in Chapter 6, SightSpeed is arguably the best featured and best designed video call solution available today with both a Windows and Mac version. SightSpeed Pro allows you to have a video call with two to four people, and you can also send a video mail message of up to one minute stored for as long as your account is paid. The video mail is stored on the SightSpeed server and only a short message is sent to you or your e-mail account if you are not a SightSpeed user. Another very nice feature with SightSpeed is that if you want to make a video call to a SightSpeed user, you only need to use Microsoft Internet Explorer and type the SightSpeed URL of the person with whom you want to make a video call. In my case it is <http://mgough.sightspeed.com>, and you will be able to call a SightSpeed user, with or without video. You do not need a webcam, but if you want to have a two-person

video call, of course you will need a webcam. This allows you, for example, to just save a bookmark in IE, and all that you need to do is select the bookmark and place a video call. This allows for easy configuration without needing to install the SightSpeed client onto the computer. Your SightSpeed profile also allows you to set a Parental Control password so that your children cannot enable the new Community option that allows them to find and communicate with other SightSpeed users if you do not want your children to have community access. SightSpeed is also firewall friendly, so it will work most anywhere. The following screenshot is an example of a two-person video call.



This is a *great* solution and I highly recommend you try it and add it to your video call solutions suite. Since you can also use SightSpeed with Mac users, this is a perfect solution for the Windows and Mac video call users that have family and friends they would like to communicate with using either operating system.

- www.sightspeed.com
- VideoCallTips.com rating: 5

Features of SightSpeed

- One-on-one video calling
- Unlimited voice calling
- Community
- Multiparty conferencing calling (4 people)

- Create video/mail blogs
- Video mail
- My SightSpeed Web page
- Call from Internet Explorer, no client required
- Windows and Mac versions

Feature	Basic	Pro
Unlimited Voice Calls	■	■
Unlimited Video Calls	■	■
SightSpeed Community Access	■	■
Unlimited Text Messaging	■	■
Unlimited Video Mail	■	■
Video Mail Storage	30 days	Length of subscription
Video Mail Length	30 seconds	1 min
Unlimited Voice Mail Inbox		■
Unlimited Video Mail Inbox		■
Unlimited Multi-Party Voice Conferencing		■
Unlimited Multi-Party Video Conferencing		■
Unlimited Group Text Messaging		■
Personalized My SightSpeed Web Page		■
Download and Save Video Mail		■
Save Offline Text Messages		■
Detailed Call History		■
Video Mail Management Interface		■
Priority Technical Support		■

WigiWigi–Vwho Pro

Vwho Pro is a video call application that can have a high-resolution video call for two to nine users. It does not matter what Instant Messaging tool you are using to invite a contact to a video call. As we discussed in Chapter 6, all you have to do is press the CTRL key three times and it sends your IM contact your IP address to start a video call.

Over the last year, WigiWigi has undergone some major improvements in terms of speed with a significant improvement in frame rate up to 45fps over a 128KBs connection with the DVD quality Pro version. WigiWigi has the ability to conduct a full speed video call with broadband connections as low as 128KBs, like slower DSL connections. Ashod hopes to have the Vwho Pro version with true DVD quality available in the near future. Vwho will also have an API so application developers can imbed Vwho into their application.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

Features of Vwho Pro

- True peer-to-peer solution
- Low bandwidth requirements
- Real-time lighting adjustment, and night vision modes, to conduct video conferencing in almost pitch black environments, without the need to adjust the webcams brightness
- Multivideo and audio conferencing, with a maximum party size of 12 people. A unique feature of this is that it is truly peer-to-peer, without the need for anyone acting as a host, effectively allowing multiparty video conferencing when all users are on low speed connections.
- Adware, spyware, and malware are free

Multiuser Video Call Solutions

Many of us want the option of having more than two people in a video call. With higher speed broadband options like that which you can get from your cable provider or faster DSL options, having multiple people on a video call is an option. We will focus that the multiuser portion features of the video call.

Multi-User Video Call Solutions	Rating	Version	price	Comments	Windows	Apple / Mac	User video windows
eViewChat	3	01.08.03	\$49.95/m.o.	(18)	•		2-8
iVisit - Plus	3	3.5.4/3.5.3	\$49.95/yr.		•	•	2-8
KwalityTel	3	1.0	\$19.95/m.o.		•		2-4
SightSpeed Pro	5	4.5	\$49.95/yr.		•	•	2-4
WiqiWiqi / Vwho Pro	4	ALPHA	TBD		•		2-9
Notes:							
(18) This solution uses a VPN to connect to the provider							

eViewChat

eViewChat is an interesting solution that uses a VPN connection to establish a secure connection to a central server called eViewNet. Once all the users connect, you can start a video call with anyone in the directory. The solution also can support H.323, but I did not list it as a H.323 solution because you need to connect using the VPN, and that would interfere with a direct H.323 solution. There is a partner, Sagaxis (www.sagaxis.com) that provides a version that does not use the VPN and so is a direct H.323 solution. It is a bit pricey for what you get, but it is an interesting solution for up to an eight-person video call. Espre offers several more solutions for video messaging, e-mail, and other image type solutions.



- www.espresolutions.com
- VideoCallTips.com rating: 3

Features for eViewChat

- Multipoint conferencing without a bridge
- Frame Rate: Up to 30 fps
- Video Sizes: 176x144, 256x192, 352x288
- Speeds of up to 30 frames per second
- H.323 compliant with non-VPM solutions
- Client-based multiparty video conferencing
- Intuitive user interface, makes calling a snap
- Easy setup and configuration
- Wavelet and H.263+ video compression optimized
- Conference group and address list set-up
- Advanced bandwidth and call management tools
- Manual bandwidth override to change frame rate and video quality reception
- Gatekeeper functionality—find others easily via active e-mail address listing
- Administrative call logging functions

iVisit Plus

iVisit Plus is a good solution for Windows and Mac video calls. The user interface is not all that friendly and is the only real drawback, though iVisit is a good solution for both Windows and Mac users. iVisit also provides some collaboration options with sharing desktop applications like Microsoft PowerPoint. iVisit is firewall friendly.



- www.िवisit.com/
- VideoCallTips.com rating: 3

Features for iVisit Plus

iVisit Plus gives:

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- A 100-person chat channel
- Up to 15 public and private windows
- 320 x 240 pixel video (with other subscribers)
- QuickTime export
- Untimed one-to-one connections
- Log on from any machine, anywhere
- Unlimited file sharing and transfers
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This is extremely pricey for what you get and it does not release your webcam when minimized in the taskbar. KqualityTel is firewall friendly.

- www.kqualitytel.com/
- VideoCallTips.com rating: 2

SightSpeed

As I stated in Chapter 6, SightSpeed is arguably the best featured and best designed video call solution available today with both a Windows and Mac version. SightSpeed Pro allows you to up to a four-person video call and you can also send a video mail message of up to one minute stored for as long as your account is paid. The video mail is stored on the SightSpeed server and only a short message is sent to you or your e-mail account if you are not a SightSpeed user. Another very nice feature with SightSpeed is that if you want to make a video call to a SightSpeed user, you only need to use Microsoft Internet Explorer and type the SightSpeed URL of the person with whom you want to make a video call (in my case it is <http://mgough.sightspeed.com>), and you will be able to call a SightSpeed user, with or without video. You do not need a webcam, but if you want to have a two-person video call, of course you will need a webcam. This allows you, for example, just to save a bookmark in IE and then just select the bookmark and place a video call. This allows for easy configuration without needing to install the SightSpeed client onto the computer. Your SightSpeed profile also allows you to set a Parental Control password so that your children cannot enable the new Community option that allows them to find and communicate with other SightSpeed users if you do not want your children to have community access. SightSpeed is also firewall friendly, so will work most anywhere. The following screen shot is an example of a four-person video call.



This is a GREAT solution and I highly recommend you try it and add it to your video call solutions suite. Since you can also use SightSpeed with Mac users, this is a perfect solution for the Windows and Mac video call users that have family and friends they would like to communicate with using either operating system.

- www.sightspeed.com
- VideoCallTips.com rating: 5

Features

- 1-on-1 video calling
- Unlimited voice calling
- Community
- Multi-party conferencing calling (4 people)
- Create video/mail blogs
- Video mail
- My SightSpeed web page
- Call from Internet Explorer, no client required
- Windows and Mac versions

Feature	Basic	Pro
Unlimited Voice Calls	■	■
Unlimited Video Calls	■	■
SightSpeed Community Access	■	■
Unlimited Text Messaging	■	■
Unlimited Video Mail	■	■
Video Mail Storage	30 Days	Length of subscription
Video Mail Length	30 seconds	1 min
Unlimited Voice Mail Inbox		■
Unlimited Video Mail Inbox		■
Unlimited Multi-Party Voice Conferencing		■
Unlimited Multi-Party Video Conferencing		■
Unlimited Group Text Messaging		■

Feature continued	Basic	Pro
Personalized My SightSpeed Web Page		■
Download and Save Video Mail		■
Save Offline Text Messages		■
Detailed Call History		■
Video Mail Management Interface		■
Priority Technical Support		■

WigiWigi—Vwho Pro

Vwho Pro is a video call application that can have up to nine (9) users. It does not matter what Instant Messaging tool you are using to invite a contact to a video call. As we discussed in Chapter 6, all you have to do is press the ‘CTRL’ key three times and it sends your IM contact your IP address to start a video call.

Over the last year, WigiWigi has undergone some major improvements in terms of speed with a significant improvement in frame rate up to 45fps over a 128KBs connection with the DVD quality Pro version. WigiWigi has the ability to conduct a full speed video call with broadband connections as low as 128KBs, like slower DSL connections. Ashod hopes to have the Vwho Pro version with true DVD quality available in the near future. Vwho will also have an API so application developers can imbed VWho into their application.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

Features

- True peer-to-peer solution
- Low bandwidth requirements
- Real-time lighting adjustment, and night vision modes, to conduct video conferencing almost pitch black environments, without the need to adjust the webcams brightness
- Multi video and audio conferencing has also been added with a maximum party size of 12 people. A unique feature of this, is that it is truly peer-to-peer, without the need for anyone acting as a host: This effectively allows multi party video conferencing when all users are on low speed connections.
- Adware, Spyware and Malware free

Multi-IM Video Call Solutions

Multi-IM video call solutions are ones that have the ability to add your login and password of each IM solution so that you do not have to use multiple IM applications. Multi-IM solutions are used to centralize all your IM contacts from AIM, ICQ, MSN, and Yahoo, and sometimes even Skype and GoogleTalk, into one tool. In fact our Tech Editor uses one of these tools for AIM, Yahoo, and MSN. Now you can only do IM, but some even allow some video to work between solutions, although my testing has showed that this is basically a waste of time. Unless the contact you want to have a video call with is using the same Multi-IM solution, do not bother to try a video call between Trillan and AIM, for example. The main reason is the revision cycle of the products, and if you get it to work, it will most likely stop working when one of the solutions updates something. Even if it does work, none of the Multi-IM solutions provided a good enough video call to make a rating of 4 or 5 except for Festoon and Vwho. Use these for what they were intended—that is, to use one application to centralize your IM contacts.

Multi-IM Video Call Solutions	Rating	Version	Price	Comments	Windows	Apple / Mac	User video windows
ICUII	2	7.6	\$49.95	(2)(16)	■		2
PalTalk Premium	2	8.3	\$39.95/\$59.95	(2)(16)	■		2-6
Trillian Pro	2	3.1	\$25	(16)	■	(b)	2
TryFast	3	4.6	\$34.95	(16)	■		2-12
WigiWigi / Vwho Pro	4	ALPHA	TBD	(16)	■		2-9

Notes:

(b) Can be used with Apple iChat AV PC-to-MAC video call

(2) Based on Chat Rooms - Highly NOT recommended

(16) This is a multi-IM solution (AIM, MSN, Yahoo, etc.)

ICUII

ICUII is another Multi-IM and video call client. The interface is OK but nothing to scream about. This solution also uses the Chat Room method; however it does have a parental control password to protect against Adult Only material. You can also see your other IM buddies for AIM, ICQ, MSN, and Yahoo for IM only unless they are also using the ICUII client to have a video call. ICUII is not firewall friendly, and you will have to configure the ports per Appendix A.



- www.icuii.com/
- VideoCallTips.com rating: 3

Features of ICUII

- DirectX Support—ICUII supports more cameras than ever!
- Imposter Stopper—Disabling software-based cameras to help curb imposters
- Integrated Pal List and QM Backup—Keep backups of your pal list so you never lose it again.
- Panic Button—Minimize ICUII with the press of a button to keep away unwanted eyes.
- Multiple Monitor Support—Get the most of out of your dual-monitor system.
- Bug fixes and optimizations—ICUII now runs even faster!
- Real-time one on one video chats with audio
- Real-time multiple video chats with audio
- User Directory with invisibility option
- Quick Messaging System
 - Still picture
 - Video message
 - Audio message
 - Video and audio message
- Pal List
 - Invisible to specific users
 - Visible to specific users
- Message Center
 - Ability to save/view all types of Quick Message received
 - Ability to save outgoing Quick Messages to pals
 - Ignore user
- Fully functioning on home networks
- Quick view of user profiles

- Offline Quick Message system
- G-rated and adult areas
- Auto updates via the ICUII program

PalTalk Premium

PalTalk Premium is a Multi-IM video call solution. Like several other solutions, you can see your AIM, ICQ, MSN, and Yahoo contacts and make video calls with them if they are also using PalTalk. PalTalk is a Chat Room model and has parental controls that does allow you to specify that only G-rated chat rooms may be seen and used. As we stated already, Chat Rooms are dangerous for children, so this product needs parental guidance if used by children. PalTalk offers two commercial solutions: PalTalk Plus gets you up to six video windows and increased image quality and frame rate and no pop-up advertising. PalTalk x-treme offers unlimited video windows, image quality, and frame rate, and no advertising. The version you would want is the PalTalk x-treme version as you want video quality and frame rate. PalTalk is firewall friendly.



- www.paltalk.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

Features of PalTalk Premium include the following.

PalTalk Basic	PalTalk Plus	PalTalk X-treme
Black nickname	Blue nickname	Green nickname
Banner ads	No pop-ups	No pop-ups
1 video window	Crystal clear voice	Crystal clear voice
Limited sample video	Up to 6 video windows	Unlimited video windows
Live pictures	Full motion video	Expandable video windows
		Crystal clear TV quality video

Features of PalTalk Premium Rooms include the following:

	Free	Deluxe	Ultimate
BENEFITS			
Maximum Room Capacity	200	500	1,000
Make money! Conduct business in your own chat room		✓	✓
Free X-treme service (green nickname)		✓	✓
24/7 support in Help Rooms	✓	✓	✓
24/7 support live chat with support staff		✓	✓
ADVERTISE			
Direct web access using a unique URL		✓	✓
Always open & visible chat room listing		✓	✓
Serve your own 468x60 Banners		✓	✓
Priority chat room listing in main category			✓
Multiple chat room listings main and subcategory			✓
Palcast (listen only)			✓
SECURITY			
Only those with the room password may access		✓	✓
Assign room admin(s) to co-manage while you are away	✓	✓	✓
Define the content of your room with a room rating			
G - General Audience including minors.	✓	✓	✓
R - Adult Audience, sexually explicit language restricted.		✓	✓
A - Adult Audience, sexually explicit language allowed.			✓
Make your room invitation only with a nickname access list		✓	✓

Trillian Pro

Trillian is probably the most popular Multi-IM solution that can also have video calls. Trillian Pro allows you to see your AIM, ICQ, IRC, MSN, and Yahoo contacts and have video calls with them if they also use the Trillian Pro client. Trillian Pro supports video calls with iChat AV users as does AIM 5.9. If you want to try it, it will be configured similar to AIM 5.9. Trillian is firewall friendly.



NEW In addition to picture-in-picture mode, Trillian can also neatly arrange your two video windows right next to each other. A full screen mode (not pictured) is also supported.

NEW With Trillian's powerful Emotiblips™ feature, you can share video and audio clips with your friends in realtime.

NEW Express yourself with mood setting video filters for the video you transmit to others. Trillian currently supports greyscale, sepia, pixelated, pastel, solarize and inverse.

- www.ceruleanstudios.com
- VideoCallTips.com rating: 3

Features of Trillian Pro

- Improved speed
- Bug fixes
- Biography (AIM Profiles)
- Universal Plug-and-Play (UPnP)
- On the fly link/emoticons
- Font face support in IMs
- Undo in edit area
- Orphaned contacts (no more merging)
- Many IRC enhancements
- Better Yahoo file transfers
- Identities (per section Biography/Icons)
- Real-time video chat
- Video filter effects
- Image capture
- Video capture

- Emotiblips™
- Picture-in-picture
- Side-by-side
- Full-screen video

TryFast

TryFast is another Multi-IM client that offers video as well and allows you see your AIM, ICQ, MSN, and Yahoo contacts in one solution. Again if you want to use the video portion of TryFast, it should be with another TryFast user. The video is OK and the video windows are small for the people you are calling. TryFast is firewall friendly and you configure the ports if needed to match the IM client you want to communicate with per Appendix A.

- <http://tryfast.com/>
- VideoCallTips.com rating: 3

Features of TryFast

Basic Instant Messaging

- Instant Messages with support for offline messages
- File Transfer
- Multi-person chat
- History of messages (stored on the user's computer)
- Contact list management with support for multiple folders
- Authorization request and hide e-mail privacy settings
- User profile, directory, and search
- Multiple connection states (busy, invisible, etc.)

Advanced Features

- Forward IMs to mobile device
- Multiperson video and voice chat
- Forward IM's to any e-mail address

- Offline message catcher
- Customizable automatic replies
- Invite by e-mail tool
- E-mail signature
- Web communication center
- Voice chat
- Video chat

Interoperability with AOL, MSN, ICQ, and Yahoo

- Multiperson video and voice chat on all networks in one room
- Instant messages
- File Transfer
- Multiperson multinet network text chat
- Contact list management with support for multiple folders
- Voice chat
- Video chat

WigiWigi—Vwho Pro

WigiWigi Vwho is on the Multi-IM space as it allows you to initiate a video call from any IM application. It does not matter what IM tool you are using, if you can send a contact an IM, you can have a Vwho video call. As we discussed in Chapter 6, all you have to do is press the 'CTRL' key three times and it sends your IM contact your IP address to start a video call.

Over the last year, WigiWigi has undergone some major improvements in terms of speed with a significant improvement in frame rate up to 45fps over a 128KBs connection with the DVD quality Pro version. WigiWigi has the ability to conduct a full speed video call with broadband connections as low as 128KBs, like slower DSL connections. Ashod hopes to have the Vwho Pro version with true DVD quality available in the near future. Vwho will also have an API so application developers can imbed VWho into their application.



- <http://wigiwigi.com>
- VideoCallTips.com rating: 4

Features

- True peer-to-peer solution
- Low bandwidth requirements
- Real-time lighting adjustment, and night vision modes, to conduct video conferencing almost pitch black environments, without the need to adjust the webcams brightness
- Multi video and audio conferencing has also been added with a maximum party size of 12 people. A unique feature of this, is that it is truly peer-to-peer, without the need for anyone acting as a host; this effectively allows multi party video conferencing when all users are on low speed connections.
- Adware, Spyware and Malware free

SIP Video Call Solutions

SIP-based video call solutions are an interesting option in the video call space. SIP is the protocol that is used in Enterprise VoIP solutions and is a way that SIP clients of all kinds connect to a central server and connect to other SIP clients. Mostly this is for voice calls

and VoIP service providers like Vonage, Packet8, and enterprise VoIP solutions from Cisco, Nortel, and Avaya to name a few. Software that can connect to a SIP system is called a softphone, and can call another softphone or a hardware VoIP SIP telephone or even make regular telephone calls to the PSTN network (MaBell) if you subscribe to a SIP service. These softphones and telephones as we discussed in Chapter 5 can also have video calls between them if the network and clients are configured correctly.

CounterPath EyeBeam

EyeBeam is a SIP softphone with video capabilities. It can be used Windows client to Windows client or to a Mac client or with any SIP-compatible video call solution or SIP video telephone like we discussed in Chapter 5. The video windows are adjustable up to a 320x240 window size by detaching and dragging the window larger. EyeBeam is the best of the Xten SIP softphones as you are able to configure multiple SIP providers. A maximum of five users for video are supported just like INEEN and the YAK softphones. EyeBeam can be used with multiple SIP service providers or can do a direct IP video call. EyeBeam is not firewall friendly, and needs to have ports configured per Appendix A.



- www.xten.com
- VideoCallTips.com rating: 4

Features of EyeBeam

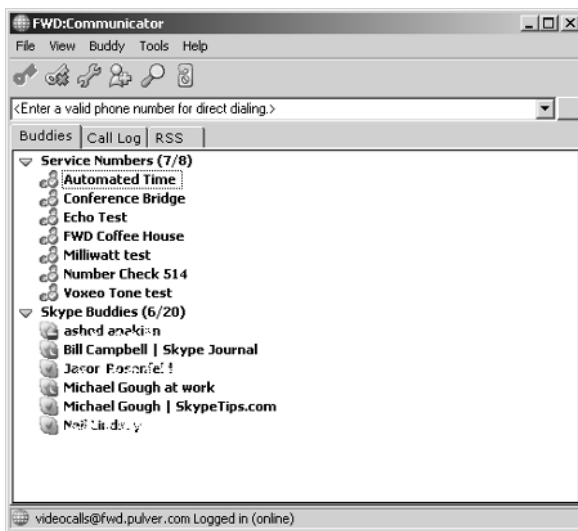
- Record Video
- Detachable sliding drawer
- Point-to-point (IP to IP)
- Via SIP proxy
- Transfer
- Hold
- Privacy (Start/stop sending video)
- Video conferencing (at the endpoint)
- Camera settings
- Codec selection (Basic H.263,H.263+,H.263++CIF, etc.)
- Image size settings
- Video quality settings
- Key-frame transmission rate
- Video synchronization tool
- Video tuning wizard

pulver.CommunicatorPro

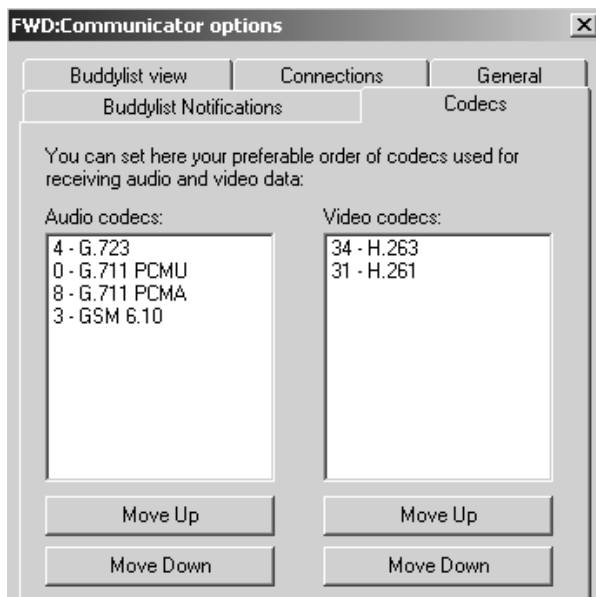
pulver.CommunicatorPro is a multi-IM tool that allows for video calls to other FWD.Communicator users. pulver.CommunicatorPro can see your AIM, ICQ, Jabber, MSN, GoogleTalk, Skype, and Yahoo contacts for Instant Messaging only. The Pro version also provides support for IAX and simultaneous/multiple SIP proxies so you can configure more than one SIP service like other SIP softphones. The Pro version also supports the Asterisk SIP PBX solution. This allows you to configure pulver.CommunicatorPro to work with any SIP service that provides external access. A list of SIP service providers can be found at www.freeworlddialup.com/learnmore/?p=features&s=accessnumbers#peering.

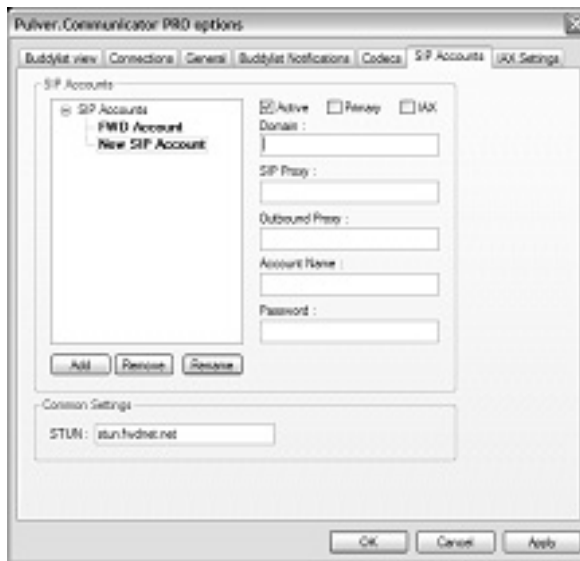
Since pulver.CommunicatorPro has so many IM options, it is one of the better Multi-IM solutions, just not for video calls. If you select a Skype contact for a voice call, FWD.Communicator will launch Skype and call that user using the native Skype application. Anyone calling you on your FWD SIP account can contact you through the pulver.CommunicatorPro client as it is a SIP softphone. One serious drawback of this video

call solution is that you cannot see both the sender's and the caller's video windows at the same time and must switch between the windows. This is not an acceptable feature for a video call solution. FWD.Communicator is not firewall friendly for video calls and you will need to open ports on your DSL/Cable router per Appendix A.

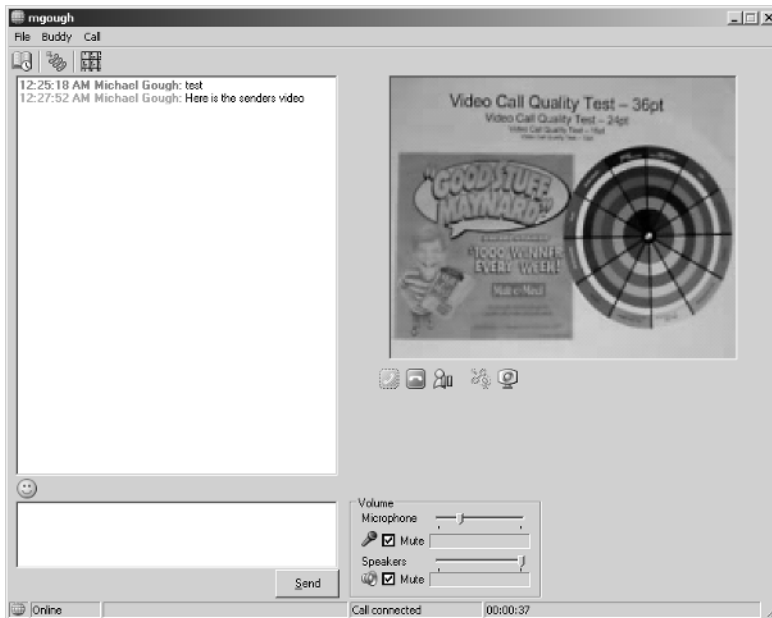


As you can see the client is simple, no bells and whistles, just a basic interface. The solution however does allow you to select which audio and video codec you would like to have priority when you make a video call.





The following screen is what a video call looks like:



- www.freeworlddialup.com/products/?p=communicator
- VideoCallTips.com rating: 3

Lycos Phone

Lycos, the search engine and web portal provider, is new to the video call space, and just introduced Lycos Phone. This is currently a Windows-only solution that offers a video phone, regular phone features, instant messaging, music, web, and movie options. Lycos Phone is trying to compete with AIM, GoogleTalk, MSN, Skype, and Yahoo! by adding a full-featured SIP softphone client with video and additional features. The client has a lot of advertising and you are offered several ways to get free phone call minutes by visiting the advertiser's information or you can just purchase minutes to make PC to telephone calls. The interface is busy and a little difficult to navigate, though expect some changes as this product gets updated from feedback and use. The video windows are small and there is no option to make them larger. This product is still in beta and needs some improvements so expect some issues early on. Lycos Phone is not firewall friendly.



Gold Member vs Regular User

Features	Gold Member	Regular User
FREE US Phone Number with unlimited incoming calls	✓	✗
FREE Voice Mail to email	✓	✗
FREE Fax to email (coming soon)	✓	✗
10% discount on the regular rate sheet / extra talk time	✓	✗
Follow Me Service	✓	✗

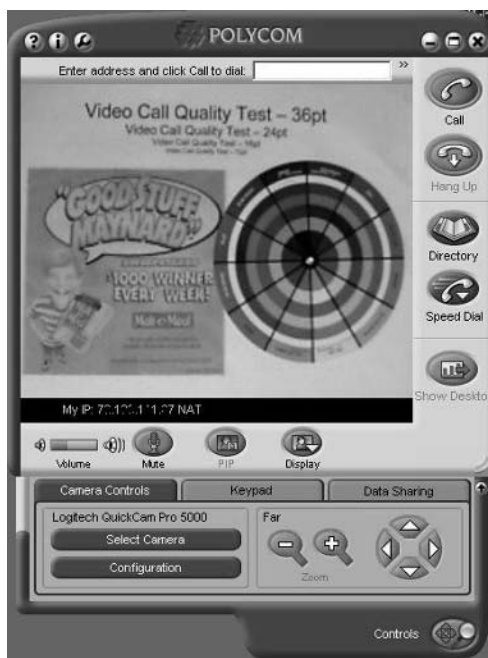
- <http://lycos.globe7.com/>
- VideoCallTips.com rating: 3

Features of Lycos Phone

- PC-to-PC free calling
- PC-to-PC real-time video calling
- Make international calls to any phone
- Unlimited free incoming calls
- Search the Web even while chatting
- Have a live chat with your buddy
- Call your Lycos Phone buddy while chatting
- Emoticons—express you mood more vividly
- Receive calls even when you are offline
- Receive voice mails even when you are offline
- Receive FAX to your e-mail when offline
- Status with Presence
- Watch free video services on e-Tainment
- Enjoy your favorite music with MP3 Player

PolyCom PVX

PolyCom PVX is the best commercial video call application if you want to connect to SIP hardware video telephone devices or H.323 video telephone devices. Of course if you have a need to connect to a Business Videoconferencing system, like those from PolyCom or Tandberg, then PolyCom PVX is your application. PolyCom PVX has a very nice user interface and is loaded with features that you would need for a SIP and H.323 video call client. PolyCom PVX is not firewall friendly and must be configured for SIP and H.323 per the port settings in Appendix A.



This is a full screen view.



- www.polycom.com/products_services/1,,pw-7953,00.html
- VideoCallTips.com rating: 5

Features of PolyCom PVX

- Conforms to International Telecommunications Union (ITU) H.264 video coding standard
- Strict adherence to ITU standard ensures industry wide interoperability across Polycom and with other standard compliant manufacturers
- Advanced, full-screen, full-motion video up to 30 fps
- High resolution people video up to VGA (640x480)
- Additional Annex support for better H.263+ video
- Supports Polycom Siren™ 14 kHz audio
- Receives 14kHz audio from group systems
- Codes and transmits 14kHz
- Requires 14kHz capable headset
- G.722.1–Wideband audio with low bandwidth consumption allows more bandwidth for higher video quality

- Automatic Gain Control
- Supports IP calls up to 2Mbps
- OS determined IP Precedence and DiffServ settings for optimal video quality through network edge equipment
- Video Error Concealment delivers smooth, clear video over IP networks by concealing the deteriorating effects of packet loss
- Integrates directly with Microsoft® collaboration infrastructure
- Registers and authenticates with Microsoft LCS 2005
- PVX users can be added to Microsoft Messenger's buddy list
- Presence information sent to LCS indicating video buddies' availability
- Convenient dialing to e-mail addresses
- Full screen mode—sit back and enjoy the video conferencing
- Individual windows for local video, remote video, and content can be located and sized independently to fit unlimited user preferences
- Video-only mode optimizes desktop layout for other applications with thin toolbar for video control
- Single window with PIP
- Great for drag-and-drop PIP, allowing near and far end to be on separate monitors
- Or, video on one screen, desktop applications on the other

Sony/GlowPoint IVE

Instant Video Everywhere (IVE) was developed by GlowPoint, and Sony resells the solution to be used with their video conferencing solutions. IVE has a very nice interface and is easy to use. It can only communicate with the IVE SIP service and is a very good SIP softphone with good video options as well. IVE offers two pay-per-use options, Premium and Professional, for additional features we list next. Also using the IVE network you can connect to other business video conferencing gateways that the IVE backend network will connect you to in order to communicate with out of the IVE network systems. You can also make video calls with other IVE users. IVE is not firewall friendly, and needs ports opened per Appendix A.



Here is a table showing the features you get with each service plan.

Plan Features

Type of Service	IVE	IVE Premium	IVE Professional
Video Calling			
• Unlimited IVE-to-IVE calling worldwide video and voice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Make and receive voice-over-IP (VoIP) calls to telephone and cell phones*		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Make and receive videoconferencing calls to IP and ISDN-based video systems*			<input checked="" type="checkbox"/>
Personal Video Number			
• Personal Video Number—Everybody gets one	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Multiparty Calling			
• Instantly connect a four-person video/audio conference call*		<input checked="" type="checkbox"/>	
• Instantly correct a six-person video/audio conference call*			<input checked="" type="checkbox"/>
• Video Meeting Room—Dedicated private videoconference room			<input checked="" type="checkbox"/>
Video Call Mailbox			
• Customizable Mailbox—Store up to 10 messages		<input checked="" type="checkbox"/>	
• Customizable Mailbox—Store up to 25 messages			<input checked="" type="checkbox"/>
Live Video Operators			
• “000” Live Video/Operators—five free calls/mo*		<input checked="" type="checkbox"/>	
• “000” Live Vide Operators—Unlimited free calls			<input checked="" type="checkbox"/>
Other IVE Services			
• “Lisa,” the IVE Video Call Assistant	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• IVE Portal Access for featured content	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Direct connect to WebEx collaboration service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

* Additional charges may apply.

- sony.glowpoint.com/
- www.sonyive.com/
- VideoCallTips.com rating: 4

Yak Virtual Videophone

Yak is based on the CounterPath/Xten SIP softphone solution. Like INEEN, Yak only allows video calls with other Yak contacts and three plans to call telephones outside the Yak SIP network. Basically, Yak is a VoIP service provider that adds video calls to Yak users. Yak has taken the EyeBeam softphone and modified it to work only on their network, but does allow up to five users including yourself to have a video call. Yak offers three pay-per-use plans: YakToAnyone, YakBasic, and YakUnlimited. Until more features come out I am not sure why this would be a solution to consider as the video windows are small and it lacks any significant feature needed to connect with other SIP video telephone solutions.

- www.yakforfree.com
- VideoCallTips.com rating: 3

Features of YakToAnyone

- Use your yakForFree Virtual VideoPhone
- Purchase prepaid credits to make outbound calls to any regular domestic or international landline or cellular phone number
- No monthly commitment, Pay-as-you-go!
- Free member-to-member calling
- Calls placed to the United States and Canada cost only \$.02 USD
- International rates are extremely competitively priced *

Features of YakBasic (coming soon)

- Free 10 hours per month for calls to the United States and Canada *
- Free yak member-to-member worldwide calling
- Purchase phone adapter for \$59.99 usd (plus shipping and handling)
- Free shipping of device to United States and Canada

- Personal online account manager
- Three-way Calling
- Free VideoPhone gadget
- Caller ID blocking
- 911 Service (where applicable)
- Huge savings on international rates *

Features of YakUnlimited

- Unlimited calls per month within the United States and Canada
- FREE yak member-to-member worldwide calling
- FREE Virtual VideoPhone
- Use Virtual VideoPhone or phone adapter to make and receive calls from the same account
- Purchase phone adapter for \$59.99 usd (plus shipping) or lease phone adapter for \$29.99 usd (plus \$2.49 usd per month, plus shipping)
- Choice of public telephone number in areas within the United States and Canada where E911 is available
- Optional second public telephone number
- Caller ID & Caller ID blocking
- Call Forwarding, Call Waiting, Call Hold, and Call Transfer
- Unified voice mail and messaging
- Personal online account manager
- Three-way calling
- VideoPhone calling (requires yak Virtual VideoPhone)
- 911 service (basic 911 is available in Canada and enhanced 911 is available in selected areas in the United States)
- Local number portability (switch your existing phone number to yak; coming soon)
- Huge savings on international calling
- Information service (411) and operator assistance (0)

H.323 Video Call Solutions

H.323 solutions are kind of outdated, but still useful for personal videoconferencing. SIP is basically the replacement to H.323, but there are still uses for H.323. One of the main reasons H.323 is no longer well liked is because it is not firewall friendly for the corporate environment, and it requires a lot of special configuration for the enterprise environment. As we discussed in Chapter 5, there are several hardware-based H.323 solutions that can be used for video calls for the home user. Many of the video telephone devices can have their BIOS flashed to support SIP or H.323, but rarely both. This allows us to use hardware-based video telephone solutions along with software-based video call solutions together for specific video call needs or requirements. The free solution for H.323, which is basically NetMeeting, is no where near as good as PolyCom PVX if you want a good H.323 video call solution. H.323 solutions are not firewall friendly at all, and needs to be configured per each vendor solution and per Appendix A.

H.323 Based Video Call Solutions	Rating	Version	Price	Comments	Windows	Apple / Mac	User video windows
PolyCom PVX	5	8.0.1	\$150	(4)(19)	■		2
Notes:							
(4) Is a SIP based VoIP solution with video capabilities							
(19) This is a H.323 compatible solution							

PolyCom PVX

PolyCom PVX is the best commercial video call application if you want to connect to H.323 hardware video telephone devices or SIP video telephone devices. Of course if you have a need to connect to a business videoconferencing system, like those from PolyCom or Tandberg, then PolyCom PVX is your application. PolyCom PVX has a very nice user interface and loaded with features that you would need for a H.323 and SIP video call client. Be warned, if you do not meet the minimum computer requirements, PolyCom PVX will not make the video call and you will have no indication this is the issue. I have listed the minimum system requirements so you can see what is needed. As a general rule of thumb if you have a Pentium 4, 2GHz system or faster, you will be good for all the video

call functions. PolyCom PVX is not firewall friendly, and must be configured for H.323 or SIP per the port settings in Appendix A.



Image is from a Logitech 5000 webcam.

Minimum System (PC) requirements:

- H.263 video PIII 1GHz, P4 1.2GHz and above, 1800+ Athlon XP
- H.264 video P4 1.5GHz and above, 1800+ Athlon XP
- People+Content P4 2.2GHz and above, 2200+ Athlon XP
- OS supports Windows XP SP2
- Other Microsoft DirectX 10 software requirements Windows Media® Player 10
- Memory 256 MB RAM (512 MB recommended)

One of the tests I performed with the PolyCom PVX software was to make a video call with a video telephone, in this case the BlackCrow PCV-103 video telephone connected to my television. I was able to make a H.323 video call between PolyCom PVX and the BlackCrow BCV-103 and the call quality was very good. The following screen shot is my television hosting the video call with one of my computers using a Logitech 4000 (manual

focus) webcam on a cloudy day. I used the same test pattern on both so you can compare this image to other images. Also note that the image in the bottom right is what you are sending from the BlackCrow, cropped and in reverse.



Here is the BlackCrow image before the video call. Notice the image appears in reverse, but when transmitted it does come across in the correct way.



This is a full-screen view of the Polycom PVX solution on my laptop with the Philips SPC900HC webcam of yours truly. If you were in a video call the image you would be sending would be in the lower right hand corner.



- www.polycom.com/products_services/1,,pw-7953,00.html
- VideoCallTips.com rating: 5

Features of PolyCom PVX

- Conforms to International Telecommunications Union (ITU) H.264 video coding standard
- Strict adherence to ITU standard ensures industry wide interoperability across Polycom and with other standard compliant manufacturers.
- Advanced, full-screen, full-motion video up to 30 fps
- High resolution people video up to VGA (640x480)
- Additional Annex support for better H.263+ video
- Supports Polycom Siren™ 14 kHz audio
- Receives 14kHz audio from group systems

- Codes and transmits 14kHz
- Requires 14kHz capable headset
- G.722.1—Wideband audio with low bandwidth consumption allows more bandwidth for higher video quality
- Automatic Gain Control
- Supports IP calls up to 2Mbps
- OS determined IP Precedence and DiffServ settings for optimal video quality through network edge equipment
- Video Error Concealment delivers smooth, clear video over IP networks by concealing the deteriorating effects of packet loss
- Integrates directly with Microsoft® collaboration infrastructure
- Registers and authenticates with Microsoft LCS 2005
- PVX users can be added to Microsoft Messenger's buddy list
- Presence information sent to LCS indicating video buddies' availability
- Convenient dialing to mail addresses
- Full screen mode—sit back and enjoy the video conferencing
- Individual windows for local video, remote video, and content can be located and sized independently to fit unlimited user preferences
- Video-only mode optimizes desktop layout for other applications with thin toolbar for video control
- Single window with PIP
- Great for drag-and-drop PIP, allowing near and far end to be on separate monitors
- Or, video on one screen, desktop applications on the other

Chat-Room-Based Video Call Solutions

Chat-room-based video call solutions truly should be used only by adults. So if you have children and you want or expect them to make video calls with family and friends, a chat-room-based video call solution is not for you, though of course it is your decision. Being a father and knowing what I do about computer security and the issue with predators and pedophiles, chat-room-based solutions are suited for Adult Use Only! Statistics show that 65 percent of all predators initiate a conversation with a child in a chat room. IRC Chat should also be included in this and if you are a concerned parent, do not use it, and block all chat-room-based solutions if you have children in your home that will have access to these solutions.

Of course not all solutions are created equal and some have Parental Controls like PalTalk Chat, which allows you only to show G-rated content, but in reviewing these solutions over the past couple years, many solutions have a policy of appropriate use. But I do not trust someone else's policy, I trust my own controls when it comes to children. If you are an adult, then you are free to use what you want. Only two solutions had good enough video to be considered and they are CUWorld and EyeBall Chat, but since they are chat-room-based, I only rated them a 3 due to the possible exposure. Remember in Chapter 4 I discussed in some detail parental control and monitoring software if you are going to allow a child unrestricted access to the Internet. This goes for chat-room-based solutions as well. Be sure you understand who may use these products before you select a solution. All chat-room-based solutions get the following label: **Parental Guidance: Highly recommended**

Chat Room Based Video Call Solutions	Rating	Version	Price	Comments	Windows	Apple / Mac	User video windows
CamFrog	2	3.7	\$50	(2)	●		2-12
CUWorld	3	7.0.59.1	\$4.95/\$14.95	(2)(5)	●		2-22
DKMessenger	2	4.5.3	\$9.95/\$99.95	(2)	●		2-12
iSpQ Video Chat	2	7.5/7.2	\$39.95	(2)	●	●	2
Liwe	2	7.2.32	\$49.00	(2)(5)	●		2-6
NuPhone	1	1.1	Per minute	(2)	●		2-12
PalTalk	2	8.3	\$39.95/\$59.95	(2)(16)	●		2-6
Notes:							
(2) Based on Chat Rooms - Highly NOT recommended							
(5) Requires Microsoft Internet Explorer							

CamFrog Pro

CamFrog is a video call client that is based on the use of public chat rooms. You add your contacts and IM them to start a private video call. You can also meet people from the various chat rooms and add them to your contacts list. As we stated many times, chat rooms are dangerous for children, so this product is in the Not Recommended category. As you can see by the following screen shot, with the Pro version you can have a lot of video windows. CamFrog is not firewall friendly, and will need ports configured per Appendix A.



- www.camfrog.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

Features of CamFrog Pro

- Pro users can view up to 100 video windows in video chat rooms. CamFrog is the only webcam software with Camshare technology that allows multiple SUPER FAST video windows. Some CamFrog rooms have hundreds of users with super fast video, it's incredible!
- See *huge* live video windows, resize video windows to any size.
- Locate what room a user is in.
- Add cool text effects to your video windows.
- Send files to other Pro users. Sending files works behind firewalls and routers.
- Make your IM and chat windows transparent so you can easily see the video behind them.

- Remotely access your webcam from another computer with a password. See what's going on at your house while you are away via super fast streaming video. Show a time log of when you last received an instant message from someone.
- Keep a history log of all video chat room and one on one video chats, plus keep a history of all IM messages.
- Drag your contacts to the desktop to see when your friends come back from being “away.”

CUWorld

CUWorld is a web-based video call solution with multiple cost plans. CUWorld is chat-room-based video call solution that can allow private rooms for one-on-one conferences or multiuser video calls depending on your membership. You can also have video calls with your “cupals” for private video calls. The quality of the video and amount of people you can have video calls with is limited by each plan.

For the Guest account you only get 7fps (slow) and up to four users; for Club you get 20fps (good) and up to 11 users; and for VIP you get 30fps (best) and up to 22 users. The VIP solution has some serious quality, but at a premium cost. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. CUWorld is firewall friendly since it uses Internet Explorer, and can be used just about anywhere.



- www.cuworld.com
- VideoCallTips.com rating: 3
- Parental Guidance: Highly recommended

Features of CUWorld Memberships

<u>Features</u>	<u>Guest Member</u>	<u>Club Member</u>	<u>VIP Member</u>
Select your membership level: All levels include unlimited visits	FREE	\$4.95 30 days	\$14.95 30 days
Full Screen Video with Picture in Picture			✓
Private Rooms User created, password protected			Up to 15 people for 6 hours
Scan 22 Videos 22 windows in a room at once			✓
Access to Member Rooms	✓	✓	✓
New VIP Members can create high quality music streaming rooms			✓
Access to Private Rooms	✓	✓	✓
ZAPI - Control User Created Rooms		✓	✓
No advertisements Premium memberships removes ads		✓	✓
Contact your MSN Messenger contacts via CUpals		✓	✓
New Extended in-conference times	20 mins	3 hours	6 hours
Create your own Member Room Moderate your own room, Zap out unwanted visitors	Up to 4 people for 20 mins	Up to 8 people for 2 hours	Up to 15 people for 6 hours
New Add video to your CUpals chat	✓	✓	✓
New Upload a picture to personalize CUpals	✓	✓	✓
Private 1 on 1 rooms	✓	✓	✓
New Better Video Quality up to 30 frames per second - motion picture quality! with new CUWorld 7 client	Good Quality Up to 7 fps	High Quality Up to 20 fps	Highest Quality Up to 30 fps
Improved Capacity Select send/receive rates as high as 1.3Mbps	40/240	96/384	384/768
View More Videos new conference room features	Up to 4 Windows	Up to 11 Windows	Up to 22 Windows
Skins to choose from	Sample Skins	10 Skins	15 Skins

DKMessenger

DKMessenger is a solution that offers multiple plans and features. The DKMessenger client has chat rooms that you can browse for other users. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. DKMessenger is nothing fancy and the client is rather complicated to use and configure. DKMessenger also does not release the webcam when minimized, so it is not friendly to use with other video call solutions. DKMessenger is not firewall friendly.

- <http://dkmessenger.com/>
- VideoCallTips.com rating: 1
- Parental Guidance: Highly recommended
- Parental Guidance: Highly recommended

Features of DKMessenger

Feature	Free	Public	Professional	Business	Enterprise
Text Messaging	X	X	X	X	X
Video	X	X	X	X	X
Internet Phone	X	X	X	X	X
Buddy List		X	X	X	X
Groups		X	X	X	X
File Transfer		X	X	X	X
File Sharing		X	X	X	X
App Sharing			X	X	X
Whiteboard			X	X	X
DKMeeting				X	X
User Management				X	X
DKMessenger Server					X
Proxy Server					X

ISpQ

ISpQ is a video call solution with Windows and Mac clients. ISpQ is based on chat rooms and has no parental controls. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. ISpQ is not firewall friendly.

- www.ispq.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

Features of iSpQ

- High resolution multiperson video chat
- Safe and large community with room monitors
- Better than phone quality sound, without a headset
- Easy communication with friends and family
- Shared Internet and wireless compatible
- Thousands online now with detailed photo profiles
- Realistic Video Chat—Meet face-to-face with three other people at the same time, no matter what distance separates you. With better than telephone-quality audio, you can hear your friends and family clearer than ever before.
- Photo Instant Messaging—Snap a photo from your webcam and send it in real-time to other community members. With the all-new PhotoIM feature, you can now send webcam photos to your MSN®, Yahoo!®, ICQ®, and AIM® messenger buddies.
- Photo Profiles—Browse photos and details of community members in their online profile; create your own profile to entice other people to contact you. You can even import a photo from your computer.
- Public & Private Chat—Pick your place to chat from the dozens of public themed rooms (popular rooms are Friends & Family, Adult Chat, Hearing Impaired, Couples Room, Gay Men Chat). You can also create your own private chat area.

- V-Mail (Visual Mail)—Take your picture and iSpQ will send it to anyone with an e-mail address. The recipient will see your smiling face without any plug-ins or additional downloads.
- Higher-Quality Video—Clear and vivid video is bigger and faster than the competition (video resolution of 320x240 is 400% larger and can have a frame-rate of up to 15fps for broadband users).

LivVE

LivVE is Windows-only video call client. LivVE is a video community where you can host events in a chat room format. These events can be general or adult in nature. As we stated many times, chat rooms are dangerous for children and so this product needs parental guidance if used by children. Being a member gets you more access to rooms and events. LivVE is firewall friendly.



- www.livve.com/
- VideoCallTips.com rating: 2
- Parental Guidance: Highly recommended

Features of LivVE

- Variable size multicam video chat
- Superior audio quality

- Plain text chat
- Mplayer style classic games
- Whiteboard drawing
- Browse the Web inside of LIVVE
- Create your own profile
- Create public and private chat rooms
- Participate in LIVVE sponsored events
- Host your very own events and shows
- Access LIVVE using speeds from 26.4–56k, ISDN, Cable, DSL, T1, T3, and higher
- Unlimited access 24/7/365

PalTalk Plus and x-treme

PalTalk is a chat room and Multi-IM video call solution. Like several other solutions you can see your AIM, ICQ, MSN, and Yahoo! contacts and make video calls with them if they are also using PalTalk. PalTalk is a chat room model and has parental controls that does allow you to specify that only G-rated chat rooms may be seen and used. As we stated already, chat rooms are dangerous for children and so this product needs parental guidance if used by children. The paid versions do not have any advertising banners. PalTalk users can purchase Vonage VoIP services as a part of an agreement between PalTalk and Vonage. PalTalk is firewall friendly.



- www.paltalk.com/
- VideoCallTips.com rating: 3
- Parental Guidance: Highly recommended

Features of PalTalk Plus

- Blue nickname
- No pop-ups
- Crystal clear voice
- Up to 6 video windows
- Full motion video

Features of PalTalk x-treme

- Green Nickname
- No pop-ups
- Crystal clear voice
- Unlimited video windows
- Expandable video windows
- Crystal clear TV quality video

	Free	Deluxe	Ultimate
BENEFITS			
Maximum Room Capacity	200	500	1,000
Make money! Conduct business in your own chat room		✓	✓
Free X-treme service (green nickname)		✓	✓
24/7 support in Help Rooms	✓	✓	✓
24/7 support live chat with support staff		✓	✓
ADVERTISE			
Direct web access using a unique URL		✓	✓
Always open & visible chat room listing		✓	✓
Serve your own 468x60 Banners		✓	✓
Priority chat room listing in main category			✓
Multiple chat room listings main and subcategory			✓
Palcast (listen only)			✓
SECURITY			
Only those with the room password may access		✓	✓
Assign room admin(s) to co-manage while you are away	✓	✓	✓
Define the content of your room with a room rating			
G - General Audience including minors.	✓	✓	✓
R - Adult Audience, sexually explicit language restricted.		✓	✓
A - Adult Audience, sexually explicit language allowed.			✓
Make your room invitation only with a nickname access list		✓	✓

PalTalk also offers Premium Meeting Rooms; Deluxe and Ultimate for large meeting needs. Features of the Premium Rooms are:

Summary

In this chapter we covered the available commercial (for a fee) video call solutions that are readily available. They include solutions that are for one-on-one video calls, multiuser video calls, multi-IM video calls, SIP and H.323 video call solutions, and chat room video call solutions. The categories helped to separate the solutions so that they could be better compared against similar solutions and some even appeared in multiple sections since they had multiple capabilities. This chapter shows that a few commercial video call solutions really seemed to be better than the rest, and all the solutions that rated a score of 4 or 5 could coexist with other solutions to provide you a suite of video call applications for your specific needs.

Part III: Advanced Videoconferencing

Other Videoconferencing

Solutions in this chapter:

- Company Videoconferencing
- Web Videoconferencing

Company Videoconferencing

We have covered everything about personal videoconferencing and now it is time to touch on what is available for the business environment. So, what is the difference between what we already discussed and business videoconferencing? Business videoconferencing is personal videoconferencing on steroids, with the cost and features to go along with it. Business videoconferencing is the Ferrari of videoconferencing solutions. These systems have much better quality and are designed for serious videoconferencing needs. They are often good enough to think the people are in the room next to you.

We will not go into too much detail about business videoconferencing, because that is a book in itself. If you are interested in learning more about business videoconferencing, check out the book, *Videoconferencing: The Whole Picture*, by James R. Wilcox. The main point we want to get across in this section is that there are a couple of leaders in the business videoconferencing space and they have just about every feature you might want or need in a business videoconferencing solution. Another point is to avoid ISDN systems if you are starting from scratch, because it is pretty much dead technology, though it is still widely used in the corporate world. There are better IP-based solutions with bandwidth being far cheaper than when ISDN ruled the data world.

The main thing to keep in mind about business videoconferencing is that it is high-end, expensive, and focused towards the business and corporate world, not the home or small business user. The part that we are most interested in is how personal videoconference users connect to these business videoconferencing systems with something in our home or small office that is cost effective. Basically you will need a video telephone device or a webcam with some H.323 or SIP compliant software that enables you to connect to one of the business videoconferencing systems from home or small office to your main office where the videoconferencing system resides. Each provider will have their own solution for the home or small office user. The best option available currently for this function is PolyCom's PVX software that we will touch on in this chapter and was also discussed in Chapter 7. Most of the business videoconferencing solutions are purchased through a reseller that will help you with everything you need, including installation, support and service contracts.

PolyCom

PolyCom is one of the leaders with many options from the highest-end solutions to desktop software that enables a home user to connect to one of the higher-end solutions. PolyCom offers three solution areas—Conference Rooms, Offices, and Desktops—to fit every need of the enterprise or small office.

PolyCom 8000 (Conference Rooms)



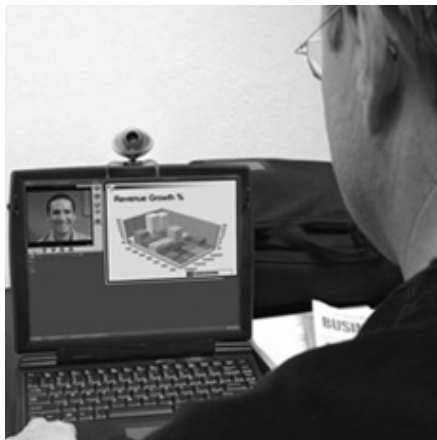
PolyCom 3000 (Office)



- www.polycom.com

The unique offering that PolyCom has that we are concerned with in this book is the PolyCom PVX software client that provides an inexpensive solution to connect to any H.323 or SIP videoconferencing solution like we discussed in this chapter and Chapter 5. This software bridges the gap between high-end systems and video telephone devices and is currently the best software available to interface with company videoconferencing solutions or video telephone devices.

PolyCom PVX (Desktop)



Images Courtesy of Polycom

PolyCom PVX Requirements

- A PC with Intel Pentium 42.0GHz or higher processor
- Microsoft Windows XP
- Internet Explorer® 6.0 or later
- Microsoft Direct X 9.0b or later
- Windows Media Player 9.0 or later
- A USB webcam (Logitech's high-end webcams recommended)
- Broadband connection: minimum 128Kbps upload required

Polycom PVX Features

- H.264 technology and CD-like audio quality with Polycom Siren™ 14 audio
- H.323 and SIP standards environment
- Integrated AES encryption for secure calls
- Works with standard USB webcams or operates without a camera in view-only mode
- Available in 12 languages

TANDBERG

TANDBERG is one of the leaders with many options, from the highest-end solutions to a public video call kiosk that enables a user to connect to one of the higher-end solutions. TANDBERG offers five solution areas: Large Groups, Medium Groups, Small Groups / Offices, Individuals, and Public to fit every need of the enterprise or small office needs. TANDBERG also makes units that are directly compatible with Cisco's Call Manager VoIP solution for easy integration.

TANDBERG 8000 MXP (Large Office)



TANDBERG 3000 MXP (Medium-Sized Office)



Photos courtesy of TANDBERG.

TANDBERG 1500 (Small Office)



TANDBERG 1000 (Small Office)



Photos courtesy of TANDBERG.

TANDBERG 150 MXP (Individual)

TANDBERG Compass (Public)



Photos courtesy of TANDBERG.

- www.tandberg.net/products/video_systems/index.jsp

HP Halo

Hewlett-Packard has the Ferrari of videoconferencing systems. Halo is the highest-end solution available with a price tag to go along with it. Developed jointly by HP and DreamWorks Animation SKG (Shrek) this videoconferencing solution is the absolute best. At a cost of US\$550,000 per room and a monthly maintenance cost of US\$18,000, this is only for serious videoconferencing users like large corporations. I have seen this solution in action and it is absolutely incredible in quality to the point you could see if someone cut himself shaving. You can see the slightest of expressions and it is absolutely fluid like you were looking at them through glass.

- www.hp.com/halo/index.html

Aethra

Aethra is another videoconferencing provider that offers a wide variety of solutions for just about any need. Aethra offers many more models than we have listed in this section along with audioconferencing equipment and some specialty videoconferencing devices like a briefcase videoconferencing solution for those James Bond types. Aethra has also announced

a partnership with Radvision to broaden their videoconferencing solutions. This will include 3G gateways to enable cell phone video to integrate with Aethra products.

Supernova X



Photo courtesy of Aethra.

Vega X5



Photo courtesy of Aethra.

Vega X3

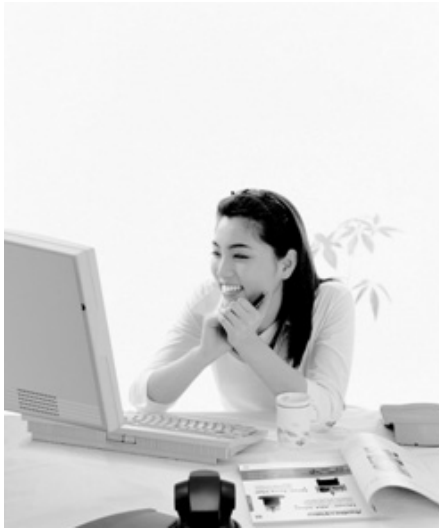


Photo courtesy of Aethra.

Maia Star



Photo courtesy of Aethra.

Video-Payphone



Photo courtesy of Aethra.

- www.aethra.com

LifeSize

For a list price of only US \$11,999, LifeSize Room(tm) includes a high-definition camera, a high-definition codec, a high-definition conference phone (LifeSize Phone(tm), also available as a standalone product), and a remote control. The highlights of the system are:

- High-Definition Video (1280 x 720)
- Better Quality at Any Bandwidth
- High-Definition Audio—2X Room Coverage
- Fully Integrated Conference Phone
- Embedded 4-Way Multipoint

LifeSize Room



Photo courtesy of LifeSize.

- www.lifesize.com/

Other Videoconferencing Providers

Here is a list of many other videoconference solutions for your reference.

AliceStreet

AliceStreet is a unique 3D videoconferencing solution for presentations.

- www.alicestreet.com/

GlowPoint Video

GlowPoint offers several solutions for videoconferencing as well as the GlowPoint Instant Video Anywhere (IVE) solution for a Windows soft videophone option that we mentioned in Chapter 7.

- www.glowpoint.com/

ImaJet

ImaJet offers two videoconferencing solutions and partners that provide on-demand Web-based videoconferencing.

- www.imajet.com/

MyGlobalCam

MyGlobalCam offers a peer-to-peer solution using ActiveX controls that can be integrated with any Windows or Web-based application using Internet Explorer or a browser that can run ActiveX controls.

- www.myglobalcam.com/

Planet

Planet offers several videoconferencing solutions for just about any need.

- www.planet.com.tw/index.php

Radvision

Radvision is a provider of videoconferencing equipment to be used with other videoconferencing equipment; they specialize in the backend of the videoconferencing infrastructure. In Chapter 9 we discuss the future of video calls and Radvision is one of the providers of a gateway for 3G cell phones to have a video call with a computer, for example.

- www.radvision.com

Satellite Communication Systems

SCS offers worldwide videoconferencing over satellites for those who have the need to work anywhere.

- www.satellite-commsys.com/

Sony

Sony offers videoconferencing solutions that are specific to certain verticals like the Medical industry.

- www.sonybiz.net/

Wavethree Session

Session is a Windows and Mac monthly hosted service for videoconferencing.

- www.wave3software.com/

VidSoft

VidSoft makes a client/server solution for Windows and Pocket PC devices and also has a hosted service.

- www.vidsoft.de/

Web Videoconferencing

Web conferencing is mainly used for training or sales presentations where you use your Web browser, connect to a Web conference Web site, and view a presentation with a few or even hundreds of participants. Web conference participants can reside anywhere in the world and attend over a broadband connection or within a corporate network. Web conferencing does not contain any video options. Web videoconferencing adds video to a Web conference providing you a more interactive solution allowing participants to see the presenter and potentially one another.

Web videoconferencing enables everyone to see body language and expressions and provides the ability to hold up things that all the participants can see, like an actual product, or for the presenter to show something specific to the participants. Web conferencing or Web videoconferencing has basic options like desktop sharing, viewing Microsoft PowerPoint presentations, markup, whiteboard, and chat, for the participants to ask questions, and all the features needed to control the conference. Participants usually connect audio by making a telephone conference call and if the solution is internal to a company can even use VoIP for the audio portion. Web videoconferencing is a truly collaborative tool whereas the solutions in Chapters 6 and 7 are for one-on-one video calls or multi-user video calls with some conferencing or collaboration capabilities. The main difference between solutions we already discussed in Chapters 6 and 7 and this chapter are features and the ability to have hundreds of participants.

We are often asked, “How do I have video calls with multiple people?” Well, the answer is: it depends on how many people you want to communicate with. We defined early in the book that personal videoconferencing was one-on-one, but as we discussed in Chapters 6 and 7, it can be roughly up to four users, with some exceptions, on your typical broadband connection. So how do you have video calls if you need to conduct a training session or give a presentation with lots of people watching? We have limits to what we can do with

our home broadband connections and we have tried to convey that home broadband is best used for one-on-one, but you could join a very large Web videoconference in order to watch a presentation from the company president or for a training presentation, for example.

Basically, Web videoconferencing is a one-to-many video call, meaning one person is sending a lot of people his or her video and all the attendees can see the conference leader's video. Unfortunately, the attendees are limited in what video they can send to the conference leader. Like in personal videoconferencing, you are also limited to what home broadband can handle and thus are limited to roughly four to twelve simultaneous video sessions per Web videoconference. Everyone, however, can send text messages and participate with voice via a telephone conference call that is part of a Web videoconference. Since you will not know what the end user's broadband connection speed is, you should take this into account when you decide how many participants in a Web videoconference you will allow to receive video. Testing and trial and error will also show you how many users are practical for your Web videoconference calls. Know that the number of users you can have will improve over time as the solutions develop and as home broadband connections get faster and as video call technology gets better.

The Web videoconference solutions do, however, enable the presenter or presenters to control who can send video. The presenter or conference leader, for example, could change the people allowed to send video to any of the Web videoconference participants, so in effect, they could be able to see each of the people in the Web videoconference at one time or another during the Web videoconference as needed. To fully understand the options behind Web conferencing, consider reading *The Web Conferencing Book* (AMACOM, ISBN: 0-8144-7174-9) by Sue Spielman and Liz Winfeld.

Combining Personal Videoconferencing with Web Conferencing

There is a clever way to expand the capabilities of Web conferencing without video to add video by using what we discussed in Chapters 6 and 7 to combine two solutions to make a Web video conference solution. Though our first recommendation would be to use one of the solutions with integrated video, but you should know that this is another option depending on your needs. The Web videoconference solutions with integrated video will provide you far more control over the video and provide a better Web videoconference experience because everyone will be able to at least see the presenter and a couple of the participants.

You could for example use Skype, MSN Messenger, or SightSpeed to add video to a non-video Web conference solution if all the participants were logged on to the video call

solution. For example; if you had 10 users in a Web conference, you could also have all ten participants and the leader using MSN Messenger and when the conference leader wanted to see a participant, he or she could initiate a video call to the active participant and they could see one another to better interact. Of course, the other participants could only listen in using the telephone conference portion and would not see any video image unless they were the active talker in a video call with the presenter. They could, however, have a video call with each other during the Web conference to discuss something to do with the Web conference or formulate a question to ask.

Web Videoconferencing Solutions

Two solutions have fully integrated video in a Web conferencing solution and work with both Windows and Mac. There are many Web conferencing solutions, but we will discuss only three that have full-function Web conferencing with video capability. Adobe purchased Macromedia in 2005 and is one of the better solutions, as is WebEx for true Web videoconferencing. Both of these offer a service option so you do not need anything but a Web browser and/or client software, and of course a webcam, to have a Web videoconference. Everything is hosted by the service provider and so all that you need is to pay the service costs. We also discuss two other solutions: WebDialogs Unyte, which offers a maximum of four-person Web videoconference solution and Microsoft Live Meeting, which currently does not offer video, but we know that it is coming. It will include the use of MSN Messenger 8.0 as a part of Live Meeting to offer video in the future.

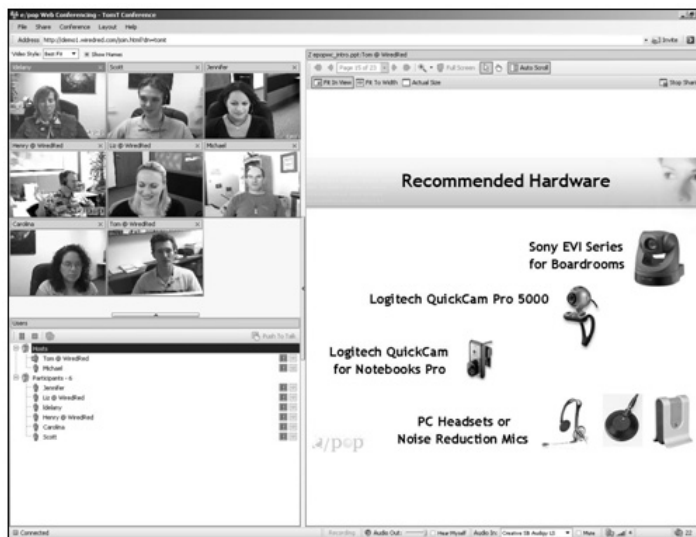
WiredRed e/pop Web & and Videoconferencing

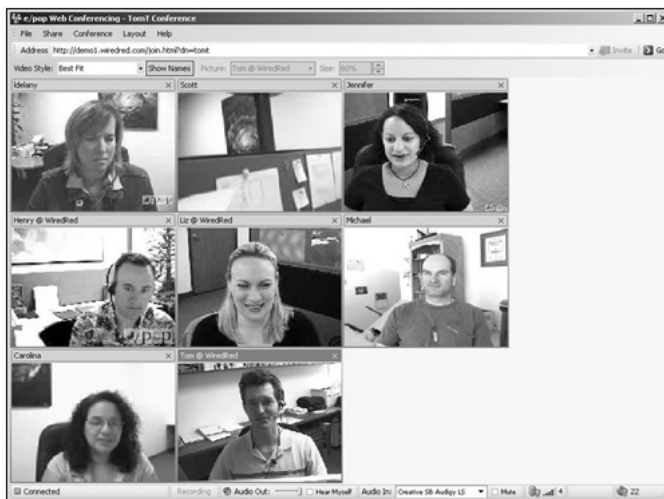
WiredRed has a solution called *e/pop* that is a Web conference tool and has the option for adding one-to-many video or many-to-many video. This was the best solution we tested and we were impressed with how easy it was to control the video of the Web conference and we had eight people on the Web videoconference call. Remember, broadband connections are far faster for download than upload and if the solution supports it, it can send as many users as your connection can handle. *e/pop* can handle 12 users on the screen for a Web videoconference depending on the size of the video window, which is completely controllable by the presenter. Let's say you have 25 users on a Web videoconference call; the presenter would control which participants would be viewed for all the participants on the conference. Unless you have a small Web videoconference, you would not have or most likely not want all those people on the screen at once due to confusion and bandwidth consumption.

e/pop is designed mostly for the corporate environment as it is licensed software, but they also have a few options for a hosted service so that you could use the service on a

month-by-month basis if you needed this capability. It is available in on-premise software and fully hosted service offerings. e/pop is primarily used by business, government, and educational networks for sales presentations, online customer meetings, training, customer service, telecommuting work, and worldwide virtual team meetings. e/pop is also used by service providers and other sponsors for friends and family videoconferencing such as U.S. overseas troops, evening home video calls for traveling employees, and more.

e/pop provides traditional Web conferencing capabilities, plus fully integrated high-quality video. Users can share PowerPoint presentations and documents completely on the fly (no pre-processing required), whiteboards, Web browsers, applications, and their entire desktop. e/pop is unique in its capability to seamlessly include multiparty, fully interactive video, including videoconferencing sessions with 10 or more participants, plus the capability to record and play back multipoint video. New users simply select Play All, and everyone with a webcam (or video input source) is fully interactive. Advanced users can avail themselves of a variety of video layouts, including picture-in-picture, tiled, and floating. The software automatically adjusts video size, quality, and frame rate. This makes e/pop ideal for day-to-day meetings where users develop viewing and productive working preferences.





Features

- On-premises software or monthly hosted service
- On-the-fly document and PowerPoint presentation sharing (no pre-processing required)
- Browser, application, and desktop sharing
- Whiteboard, chat, ink chat, and annotation
- Multipoint, full-duplex (fully interactive) VoIP conferencing
- Multipoint, full-duplex (fully interactive) videoconferencing
- Easy play-all video start
- Multiple video layouts ? tiled (easy default), picture-in-picture, floating
- Record and play back, including multipoint video sessions
- Taskbar, Outlook, and Microsoft Office quick-start tool buttons — one-click videoconference!
- Easy installation, SSL/TLS security, even PKI integration (on-premise software version)
- Comprehensive security, user, feature, and bandwidth controls (on-premise software version)
- Server-side XML API (on-premise software version)

Specifications

- Windows 2000 or later
- Internet Explorer v5 or later; Netscape v7 or later; or Firefox 1.0.3 or later
- Broadband connection required, DSL, cable modem, or better

Pricing

Hosted service:

- US\$350 per month for 5-user hosted service with unlimited minutes
- US\$500 per month for 10-user hosted service with unlimited minutes
- US\$900 per month for 25-user hosted service with unlimited minutes
- For 26 or more users contact WiredRed for pricing

Yearly software license:

- US\$3,000 per year for 5-user software license
- US\$4,800 per year for 10-user software license
- US\$9,600 per year for 25-user software license
- For 26 or more users contact WiredRed for pricing

- www.WiredRed.com
- 1-858-715-0970

Adobe Macromedia Breeze

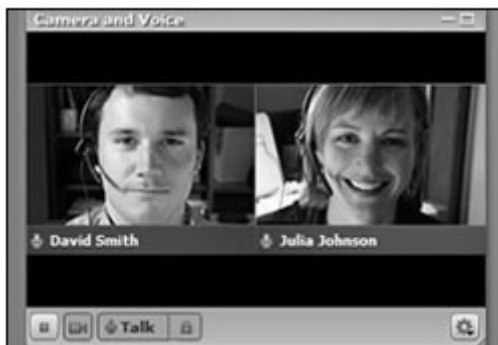
Breeze Communication Server 5.0 is the core server and it uses communication applications Breeze Meeting, Breeze Presenter, Breeze Training, and Breeze Events that make up the Breeze Web videoconferencing solution. To be a client, you must have the Macromedia Flash plug-in for your browser, which most people have already installed so most people already have the browser client software they need to participate in a Breeze Web videoconference.

On-demand presentations are pre-recorded presentations that use a presentation application like Microsoft PowerPoint that can include video to provide a presentation that can be downloaded or viewed at any time. For example, if I wanted to do a short introduction on video calls, I could make it in Microsoft PowerPoint and have it on one of my Web sites as an “on-demand presentation.”

The main portion we are interested in is the Breeze “Live Online Meetings” that can include an actual video call with participants. Breeze Meeting supports Windows and Mac clients and also has a plug-in for Microsoft Outlook so you can initiate a quick meeting from within Outlook if your company owns the full product suite. Breeze supports multiple videoconferencing participants, but like any audio and video application over broadband, you will be limited in how many can participate with video before your bandwidth gets used up. The main features Breeze includes is the capability to share your desktop with any application you want and have a Web videoconference meeting with many participants, so a one-to-many Web videoconference meeting where the participants can send you chat, voice, and video. The video codec used is from On2 Technologies, the same one used for Macromedia Flash and the video used by Skype.

Breeze can be used two ways: corporations can purchase and set up their own Web conferencing solution and license the software; or those of us who want to host an occasional Web videoconference can subscribe to their service and use Breeze Meeting as a hosted service to host a Web videoconference meeting on demand. Breeze enables the presenter to control who can send video, which is limited to a maximum of four participants to control bandwidth. Breeze has two options for a meeting:

- Virtual Classroom Only the presenter can send video.
- Virtual Meeting All participants can send video (audio is via a conference call).





Here is a list of the Breeze audio and video features:

Functionality	Participant (viewing)	Presenter (and Participants with enhanced rights to the Camera and Voice pod)	Host
Pause broadcasting of your audio or video to attendees		✓	✓
Select the broadcasts that you want to receive	✓	✓	✓
Stop broadcasting your audio or video to attendees		✓	✓
Stop the broadcast of an individual participant's audio or video to all attendees			✓
Change broadcast video and audio settings		✓	✓
Broadcast audio and video without approval		✓	✓
Invite participants to broadcast audio and video			✓
Broadcast audio and video with approval	✓		

Breeze has the following Web conferencing features:

- Hosted Service (annual, monthly or pay-per-use)
- Licensed software
- Branding to customize to your organization
- Presentation preparation tools

- Full screen
- File sharing
- Document viewing
- Application and desktop sharing
- Remote desktop control
- Microsoft PowerPoint support
- Microsoft Outlook integration for instant meetings
- Meeting recordings
- Chat-based Q&A
- Polling for Q&A
- Multiple presenters
- Participant permissions
- Attendee management
- Multipoint videoconferencing
- Internet audio broadcasting
- Whiteboard and annotation

Pricing

- US\$375 per month for 5-user license
- US\$750 per month for 5-user license
- US\$0.32 per minute per user for pay-per-use (500 users maximum)
 - One hour for 5 users would be US\$96
 - One hour for 10 users would be US\$192
 - One hour for 25 users would be US\$480
- www.macromedia.com/software/breeze/
- 1-877-226-0937

Breeze Presenter Content Viewers & Breeze Meeting Participants

Windows (98se, 2000, XP)	Internet Explorer 5.0, 5.5, 6.0 Netscape Navigator 7.1 AOL 9 Mozilla Firefox 1.0.3
Macintosh (OS X 10.2, 10.3, 10.4)	Safari 1.1, 1.2, 2.0 Mozilla Firefox 1.0.3
Linux	Mozilla 1.2
Solaris	Mozilla 1.4
Additional Requirements	Macromedia Flash Player 6.0.79 or higher Macromedia Flash Player 7 or higher for Linux and Solaris

Breeze Meeting Presenters

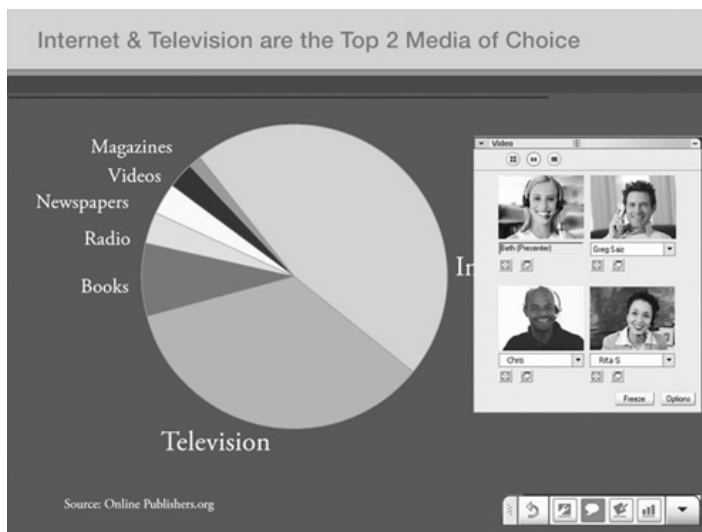
Windows (98se, 2000, XP)	Internet Explorer 5.0, 5.5, 6.0 Netscape Navigator 7.1 Mozilla Firefox 1.0.3
Macintosh (OS X 10.2, 10.3, 10.4)	Safari 1.1, 1.2, 2.0 Mozilla Firefox 1.0.3
Additional Requirements	Macromedia Flash Player 6.0.79 or higher

WebEx

WebEx is one of the leaders in Web conferencing and has options for video Web conferencing as well. WebEx has many of the same options as Macromedia Breeze. WebEx is only a service, so you cannot purchase their software. WebEx offers two Web conferencing services: WebEx MeetMeNow for up to 10 users and WebEx Meeting Center for up to 999 users. Video is also available for anyone with a webcam and uses the full Meeting Manager software that requires Java. WebEx requires a telephone conference line to be used for the audio portion of the Web videoconference.

WebEx can be configured in several ways for Web videoconferencing. It can be a one-to-many, so the presenter can send their video to all the participants, or it can be a one-to-one video (single-point) between the presenter and one participant or up to four participants (multipoint) sending video. If you have 10 to 999 users in a conference, the presenter can turn on and off video to have any combination of four participants with video transmitting to all the participants in the conference. Video is limited to four participants to

maintain video quality and for bandwidth consumption. WebEx also enables the participants to control how fast video is being sent so you can manage the bandwidth for the Web videoconference. The presenter has the capability of controlling who is able to send their video at any time based on a question or a message.



© 2006, WebEx Communications, Inc.

WebEx has the following Web conferencing features:

- Windows webcam support (with Meeting Manager)
- Apple webcam support (with Meeting Manager)
- Desktop sharing
- Control granting
- Rich annotation – whiteboard and edit tools
- Integrated audio (included free)
- Private chat
- Desktop, Outlook, and Instant Messenger integration (Yahoo, AIM)
- www.webex.com/
- 1-877-469-3239

Pricing for WebEx MeetMeNow

- US\$49 per month for maximum 10 users (unlimited meetings)
- US\$39 per month for maximum 10 users if purchased per year (unlimited meetings)

Pricing for WebEx Meeting Center

US\$75 for maximum 15 users per month (yearly contract required)

- Unlimited meetings
- Audio additional charge \$0.20 for toll free
- Audio additional charge \$0.05 for toll call
- Can add up to 999 participants for an additional charge

Features and Benefits

Presentation Sharing	Spontaneously share multiple presentations with full animations and slide transitions.
Application Sharing and Remote Control	Conduct interactive application demos or collaborate in meetings by handing control of applications to select attendees.
Desktop Sharing and Remote Control	Presenters can share their entire desktop in meeting and/or hand control of their desktop to individual attendees.
Share Any Document	Share not only PowerPoint, but also multiple documents or graphics, such as Word, Excel, PDF, and Visio.
Share Multiple Documents	Easily share multiple documents at the same time, such as Word, Excel, PDF, and Visio.
Rich Media Sharing	Enhance your meetings by sharing streaming multimedia enabling all attendees to see and hear video and audio files.
Record & Playback	Enables real-time recording of online meetings, and offline recording of any applications. Recording can be posted on a Web site for playback over the Internet.

Continued

Features and Benefits continued

Video	Enables videoconferencing with a simple desktop video camera. In addition, video from a VCR, DVD player, or camcorder can be streamed into the meeting.
Web Tour and Web Content Sharing	Conduct Web tours and share important information stored on the Web from within the meeting.
Microsoft® Office™ Integration	Instantly share MS office documents in a WebEx meeting with a single click to increase the convenience and simplicity of information sharing. Microsoft® Outlook™ Integration Schedule meetings and invite attendees from Microsoft Outlook quickly and easily.
Interactivity Tools	Engage with attendees by soliciting group or individual feedback. Universal Annotation tools enable all attendees to further provide input into the meeting content.
Meeting transcripts and notes	Instantly save a copy of the meeting transcript and any notes taken during the meeting.
File Transfer	Send attendees documents and files from within a meeting.
Integrated Audioconferencing	Fully integrated audioconferencing controls within the meeting enable you to control the participation of your attendees.
Internet Audioconferencing (VoIP)	Use Voice over IP (VoIP) technology when traditional audioconferencing is not practical. WebEx provides full duplex VoIP technology for cost-effective, high-quality audio for your meetings.
Secure Socket Layer (SSL) Encryption	SSL encryption provides multi-layered security of data and sessions to conduct interactive meetings with even the most confidential information.

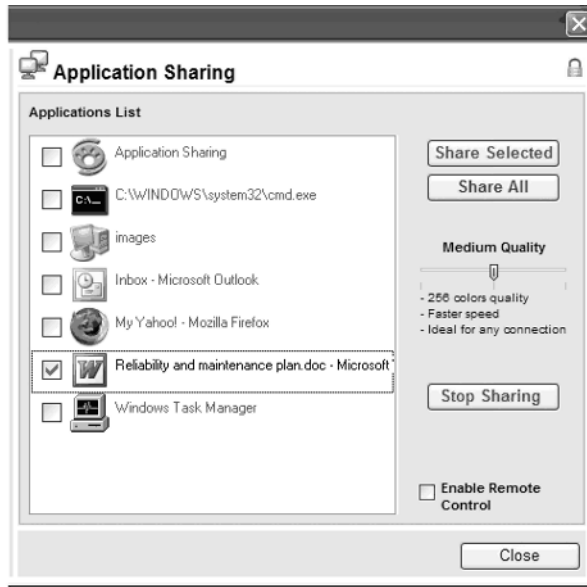
Cross Platform Support

Operating Systems:	Windows	Mac OSX	Linux	Sun Solaris
Minimum System Requirements:				
Processor	Intel or AMD Processor 400MHz	Power PC (G3)	Intel or AMD Processor 400 MHz	Ultra SPARC Processor
Memory	128MB RAM	256MB RAM	256MB RAM	512MB RAM
Connection	56k Modem	56k Modem	56k Modem	56k Modem
OS Versions:	95 ME NT 2K XP 2K3	10.2 10.3 Tiger 10.4	RHEL 3 SuSI 9 Turbo Linux JDS	8 9
Browser Support:				
Internet Explorer	5x.6	5.2		
Mozilla	1.4+		1.4+	1.4+
Firefox	1.0	1.0	1.0	1.0
Netscape	4.7, 7			
Safari		1.0 1.3 2.0		
Other:	JavaScript and cookies enabled	JavaScript and cookies enabled	JavaScript and cookies enabled	JavaScript and cookies enabled
	Active X enabled/unblocked for IE is recommended	10.2: Java 1.4.1_01	Java 1.3x	Java 1.3x
		10.3: Java 1.4.2_05	GNOME/KDE Windowing System	CDE Windowing System

WebDialogs Unyte

WebDialogs is a Web conference provider with three main plans: Meeting Central Executive, Meeting Central Enterprise, and Meeting Central Express, but they do not have any integrated video options for these three Web conference options. Unyte is a solution that integrates with Skype to give you one-on-one video Web conferencing and Unyte + gives you up to a four-user Web conference. This is an entry-level solution, but since WebDialogs has an enterprise Web conferencing solution, look for this solution to add more video options in the future.

- Application sharing
- Remote control
- Sharing with Skype contacts
- Sharing with non-Skype contacts



- www.unyte.net/

Pricing for Unyte +

- US\$9.95 per month for four users
- US\$99.95 per year for four users

Microsoft Live Meeting

Formerly known as Placeware, Microsoft purchased one of the well-known Web conferencing solutions. MS Live Meeting does not have integrated video, but can be used with MSN Messenger, which does have one-on-one video calls. MS Live Meeting is available only as a purchased license, so no service provider. At this time it does not really provide what we are looking for in Web videoconferencing. We covered it here because everyone always asks, “What about Microsoft?” We do know that Microsoft is integrating more video capabilities with MSN Messenger 8.0, but it will still be one-on-one video not multi-user or even one-to-many video Web conferencing. But being Microsoft, watch for them to add video as an option to Live Meeting in the future.

- www.microsoft.com/livemeeting

Other Web Videoconferencing Solutions

Arel Anywhere

Arel Anywhere is a video add-on for Microsoft LiveMeeting.

- www.arelanyware.com/Anyware/

eBoardroom

eBoardroom provides up to six video windows and your typical conferencing tools.

- www.e-boardroom.net/en/

GoodMood WIP

GoodMood WIP combines webcasting, videoconferencing, and WebTV tools into a single interface.

- www.goodmood.fi/

HearMe Video Conference

HearMe is a Web conference tool that relies on a Web-browser-based client that enables ActiveX controls such as Microsoft Internet Explorer.

- www.hear-me.com/

MegaMeeting

MegaMeeting provides several solutions for Web-based videoconferencing for up to 13 people and works with Windows, Mac and Linux.

- www.megameeting.com/

NeoTechSoft eMEETplus

NeoTechSoft eMEETplus provides up to 17 video windows with the c1000 product and two video windows with the L1000 product.

- www.neotechsoft.co.kr/English/

Virtexc3

Virtexc3 offers Web videoconferencing solutions for Web site integration and Web collaboration.

- www.virtexc3.com/

Summary

In this chapter, we touched on several of the leaders in the space of business videoconferencing and Web videoconferencing. We discussed some high-end solutions that are as good as looking through a glass window and some cost-effective solutions for home users to connect to business videoconferencing with PolyCom PVX and a webcam. We also discussed some cost-effective ways to add video to Web conference and discussed the two leaders in Web videoconferencing: Adobe and WebEx.

The Future of Video Calls

Solutions in this chapter:

- The Future of Video Calls
- Video Telephones
- Microsoft Windows Mobile Pocket PC Devices
- Video-Call-Capable Cell Phones
- Providers of Gateways for Cell-Phone-to-PC Video Calls

The Future of Video Calls

The future of video calls is an interesting topic, taking into account the following:

- Increased use of software video call solutions
- Increased use of hardware video telephones, with and without service providers
- Video calls between computer software and hardware video telephone devices
- Video calls between cell phones
- Video calls between cell phones and home computers

Yes, *Star Trek* and *The Jetsons* are here. With companies like Skype adding video to their Windows 2.0 versions, the number of people using video calls is fast increasing. We expect to see the growth in video call use equal what we have seen in the past two years with VoIP, and as people become more aware of video telephone devices offered by VoIP providers such as Vonage, Packet8, and ACN, video call use will expand even more. We expect to see the video telephone VoIP providers bridge the gap between their systems and computers just as they have with the VoIP softphones. The United States is among the last to adopt cell-phone-to-cell-phone video calls, but this area will be very popular among the younger users and the gap will be bridged to the older ones by using the cell-phone-to-computer video call solutions we are now seeing in Europe and Australia. You will be able to have a video call between two cell phone users if you are both equipped with the compatible models in the United States by the end of 2006 or early 2007. You can now make a video call with anyone with a computer, broadband Internet, a webcam, and free software, or to a person with a video telephone on their television. (We do not recommend satellite unless you have no other choice.)

I was talking to a person who works for a cable company and he was very interested in what I am doing with video call technology. He told me that the cable companies are looking to put some sort of video call technology into their cable boxes so customers can make video calls on their televisions or by using a video telephone with their digital phone service. The cable companies, of course, want to try to keep people from signing up for Vonage, Packet8, or ACN, since these vendors already offer, or in the case of Vonage, are about to offer, a video telephone option.

We can also expect to see more and more solutions working with each other over the next couple years, such as computer video call solutions working with hardware video telephone devices and video call cell phones. We will also see more computer video call solutions working with one another like AIM works with iChat AV and we can expect AIM to work with GoogleTalk with Google's investment in AOL. There are many computer video

call solutions and to better leverage each other's solutions and user base, they will probably merge and partner to consolidate the video call space. We expect to see some good stuff with SightSpeed because they have one of the best solutions and are SIP compliant in their audio, so they could bridge over to hardware video telephone devices, which we would really like to see them do.

The gap between hardware video telephone devices and computer video call solutions is the weakest link currently and we expect to see some major vendors make their solutions work together so that you can call from your computer to a user on a hardware video telephone or visa-versa. We also expect that the VoIP service providers in the future will enable you to make video calls between service providers to further expand the video telephone options they offer.

Video Telephones

As we discussed in Chapter 5, there are two types of video telephones, the ones that are service independent like the DLink 2000 and Black Crow and the ones that require you to use their service on each end like Vonage, Packet8, ACN, and WorldGate. What we expect will happen as these vendors use H.323- and SIP-compatible devices, is that they will introduce a video softphone or partner with an existing video softphone solution such as CounterPath or PolyCom. It is also possible that providers such as SightSpeed, Microsoft, Skype, and others will develop their solutions to work with these hardware video telephone devices so that you do not have to be a subscriber of the provider's service to place a video call with a person using one of these devices with or without a VoIP service provider. We are seeing this with the European cellular providers starting to implement cell-phone-to-pc video call solutions.

Bridging the gap between the computer and video telephone devices would be a major improvement for video calls, enabling people who do not have or like to use a computer to make video calls with people who do. You can call them on a computer or a dedicated video telephone or a video telephone connected to your television. The video call telephone vendors will need to bridge the gap of dedicated devices and the computer with or without the television to truly expand the market to everyone. Being able to call from your cell phone to your home video call equipment would also be logical, but we are probably a few years away from that.

Video telephones will be the most popular among the 20 percent of users that do not use computers regularly, such as senior citizens. SIP devices with video will be the way to go so that they can connect to any SIP-type device, like the VoIP telephone systems that you see at your typical company. Then all that needs to be added is video and they can use one of the many codecs.

It is going to be awhile before we see Dick Tracy watches, but for sure the video cell phones and video calls on a television are here and will only get more popular and more prevalent as time goes on. Many other devices can be utilized for personal videoconferencing, such as PDAs or handhelds. These devices have the capability of receiving video just like a computer, so wherever you are, your family, children, and friends can get in touch with you and send you video or pictures of the latest happenings.

Microsoft Windows Mobile Pocket PC Devices

Any Pocket PC or cell phone that runs a version of Microsoft Windows Mobile Edition operating system can run a version of Microsoft Portrait (<http://research.microsoft.com/mcom/portrait/>). With a Pocket PC camera from one of the providers below, you can have a video call with any other Pocket PC or a computer running MS Portrait over WiFi or possibly over a 3G broadband link. This application is not much to write home about; the real video call option for Pocket PCs are those that are Pocket PC cell phones like the Verizon XV 6700, also offered by Sprint as the PPC 6700. Before you wonder, there is nothing for Palm OS, only Windows Mobile Edition, but who knows, we may see something in the future.

If you want a couple of places to search for WiFi-enabled Pocket PC phones, try the following Web site: www.pdaphonehome.com/forums/forumdisplay.php?s=&forumid=62

Pocket PC Cameras

In December 2004, I did some testing of several Compact Flash (CF) and Secure Digital (SD or SDIO) cameras for Pocket PCs. Below is a picture of a video call I made on an iPaq 4705 using MS Portrait. Compact Flash is a better design for a Pocket PC camera, but they are now obsolete because they only work on the older Windows Pocket PC 2002 version. The newer versions of these Pocket PC cameras are designed to fit in the SDIO slot and have a serious drawback. SD slots are spring loaded, so when you insert an SD camera and you touch or bump it even slightly, the camera pops out making it basically worthless as a viable solution. The Compact Flash camera was better designed for this because the CF slot is not spring loaded and so does not have this pop-out issue, but it is bigger and so a dead technology. You can read my Pocket PC video call evaluation at www.skypetips.com/articles/pocketPC.html



Obviously, the best option is a built-in camera capable of video and that faces the user so that you can watch the screen and send video. Many Pocket PC phones and cell phones have cameras, but tend to put them on the back for taking pictures, making them unusable for a video call. The one application that runs on Windows Pocket PC is Microsoft Portrait, but it has not been updated since 2004, so it may not work on the newer models of Windows Mobile 2005 Pocket PC phones like the Verizon PPC 6700 (also available by Sprint). I have been unable to make a video call with my PPC 6700.

With Pocket PC phones having cameras in them, it is only a matter of time until one of the companies like Skype, CounterPath, SJPhone, or IP Blue comes out with a video call option. We expect Skype or Microsoft to be one of the first companies to provide a video call client for the Pocket PC. Until this happens, Pocket PC devices are not a viable option for video calls. The other option is when the cell phone companies in the United States—Verizon and T-Mobile being the current leaders—offer a video call solution as they do in Europe, the United Kingdom, Asia, and Australia. If the U.S. cell phone companies can provide video calls over the cellular 3G broadband network, they could install a video call software client onto their devices. My PPC 6700 has the power, just not the software. For now, in the handheld space, look at the options available from your cell phone provider if you want a mobile video call option. If you have a specific need and want to test the Pocket PC add-on cameras, here is the list of providers.

Cameras for Pocket PC 2003 or Later

- HP Photosmart Mobile camera (SD)
- Lifeview FlyCAM-SD 1.3M camera (SD)
- Pretec SmartCam
- Spectec (SD)
- Veo Photo Traveler 130S (SD)

Older Cameras for Pocket PC 2002

- HP Jornada Pocket camera (CF)
- SPECTEC SD camera (SD)
- Pretec CompactCamera (CF)
- Lifeview FlyCAM-CF 350K camera (CF)
- FlyJacket iCAM (SD)



Video-Call-Capable Cell Phones

Cell phones that can make video calls are going to be one of the largest growth areas in the next few years because so many of us have cell phones and it is a logical transition for this feature to be added. Do not confuse cell phones that can record and play back video clips with ones capable of performing a video call. The cell phone must be capable of sending and receiving video at the same time and the camera must be on the front of the phone (facing you) in order to record you talking to it. These cell phones must use the latest 3G

cellular network. Currently in the United States we can only perform what is called video messaging. This is where you record a short video clip on your cell phone and send it to another cell phone that plays back videos. It is not interactive at all. Several cell phones were designed to perform video calls and are available outside the United States and can work in the United States, but not for video calls.

By the end of 2006 or early 2007, U.S. cell providers will likely start offering video call cell phones like we see being used elsewhere in the world. Several providers outside the United States are starting to offer video call options for cell phones to computers and that is the first step in getting cell phones to be an integral part of the video call technology available today. Vodafone, Telstra, and T-Mobile are all starting to offer this cell-phone-to-PC-video-call option and expect it to grow to most of the cell providers in 2006 or 2007.

If you want to see what will hit the United States as far as video-call-capable cell phones, watch the European providers listed below to see what we can expect to see here in the United States within the next year or so. Many cell phones available overseas can be made to work here in the United States, but you will not get the video call option until the U.S. provider enables this functionality. We recommend that you wait until the service is available in the United States before you purchase a video-call-capable cell phone. A good Web site for the latest info on cell phones is www.phonescoop.com/

Motorola

Motorola A920 (Left) and Motorola A835

Both products are available in the United Kingdom.



Vodafone

Vodafone V801SA by Sanyo



Vodafone V-N701 by NEC



Vodafone V-SA701 by Sanyo



Vodafone 902SH from Sharp



Vodafone also has a new service available only in Portugal at the moment, but clearly the future of video calls is Vodafone Web VideoCall, which will enable you to make a video call from a cell phone to a computer.

Telstra-Australia

Telstra also has a cell-phone-to-computer video call service called “Mobile-to-PC video calling.”

- www.telstra.com.au/video/experience_m2pc.htm



Motorola
V3X



Samsung
SGH-Z510



Samsung
SGH-Z140



Nokia
N90



Nokia N70



Motorola
V975



Sony Ericsson
K600i



Samsung
SGH-Z500



NEC
N600i

T-Mobile

T-Mobile in the United Kingdom offers video calling for cell-phone-to-cell-phone users. Both users must use compatible cell phones.

- www.t-mobile.co.uk/Dispatcher?menuid=orphan_videocalling

T-Online, a German ISP, and T-Mobile, the cellular provider in Germany, announced in March that they too will be enabling cell-to-PC video telephony.

Nokia N70 (Left) and Sony Ericsson K608i



Photo of the N70 courtesy of Nokia.

MDA Pro (Left) and MDA Pro with Co-Pilot



Nokia

Nokia N92 (Left) and Nokia N80



Nokia N90



Photos courtesy of Nokia.

Nokia N71 (Left) and Nokia N70



Nokia 6680



Photos courtesy of Nokia.

Compare Nokia phones at the following Web site: www.nokiausa.com/phones/comparephones.

Nokia Video Call Stand PT-8

The Nokia PT-8 uses the Nokia 6630 3G cell phone to make video calls.

- <http://nokia-asia.com/nokia/0,,59050,00.html>



Photos courtesy of Nokia.

Providers of Gateways for Cell-Phone-to-PC Video Calls

Some providers have developed solutions to connect a home user on a PC to a cell phone user with a video cell phone. Dylogic is one such provider that hopes to bridge the gap between cell phone user and home PC video call user. We have provided this information for reference so that you can see what is coming for cell-phone-to-PC video call capabilities. Image courtesy of Dylogic.



Image courtesy of Dylogic.

- www.dylogic.com/sito/ArticlesDMD/mirial_carrier_server.html

IceMobile is another company working on technology for cell phones and video calls. Call2Video is their solution to enable video calls between cell phones and PCs.

- www.icemobile.com/

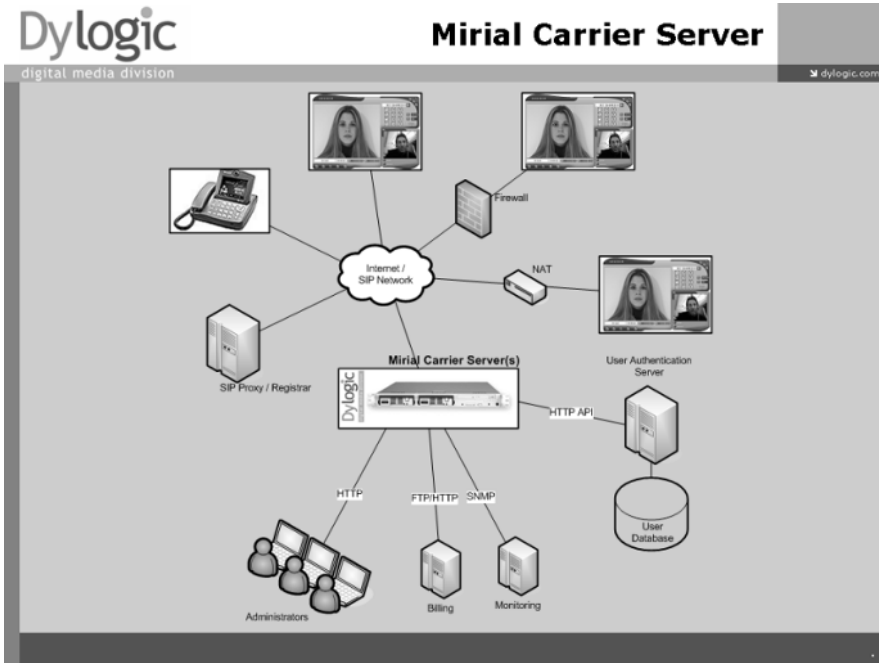


Image courtesy of Dylogic.

Summary

In this chapter, we discussed where video call technology is going. We predicted that the future will bring an increase in the use of video calls: here come *Star Trek* and *The Jetsons*! We discussed how the VoIP providers will be increasing their video telephone options and how cell phone providers will start to offer cell-phone-to-cell-phone video calls. We also discussed how the cell phone providers are starting to offer cell-to-computer solutions to bridge the gap of mobile-to-home-user video calls. We also discussed the Pocket PC space as a possible video call solution with or without the smart phone option. All in all, the video call space will be expanding a lot in the next year or two and will become a typical option to communicate in the years to come.

Appendix A

Firewall Port Information

The table on the following page is intended to assist you in configuring your DSL/Cable router, personal firewall, or corporate firewall so that your videoconferencing application works properly. If opening the ports listed in this table do not solve any issues, then you might try opening the entire range of ports for TCP/UDP 1024–65535 or add the system to the DMZ so it faces the Internet directly to see if you can get the video call solution to operate correctly. If you do open up these ports, be sure that your system is updated with all the latest patches and use a software Personal Firewall solution so your system does not get exposed to any unnecessary risk and infected with anything by being connected directly to the Internet.

The basic rule of thumb is a port needs to be opened only if it is an inbound port. Any outbound port or application will be automatically allocated, and you should not have to do anything unless you are in a complex network with enterprise firewalls. SIP, for example, is UDP Port 5060, and this port must be opened or “Port Forwarded” to allow the application to listen and wait for an incoming SIP call. These ports are the ones that need to be opened to allow the application to work correctly. Also, if you have a DSL/Cable router, many of these solutions will need to have UPnP enabled for voice to work correctly.

Tweaking the Technology...

Troubleshooting Ports

If you are unable to get the video call solution to operate correctly, you might try opening the Ports for TCP/UDP 1024-65535 on your hardware DSL/Cable router or hardware firewall. You can also add the system to the DMZ setting of the DSL/Cable router or hardware firewall. This should eliminate the hardware end being the issue of blocking any ports needed to establish the video call. You also may have to do this to each end until you get the solution to work. Use a basic network sniffer like NetPeeker or Ethereal to see what ports the video call solution is trying to use.

Table A.1 Listing of Ports for Software Video Call Applications

Video Call Solution	TCP Ports	UDP Ports	Comments
Apple iChat AV	5190, 5298 (TCP/UDP) 5220, 5222	5060 (SIP) 5190, 5298 (TCP/UDP) 5297, 5298, 5353, 5678, 16384- 16403	
AOL Instant Messenger Includes AOL Triton	5190 (login) 1024-5000	5190 (login) 1024-5000	Video currently only works between AIM 5.9 and iChat AV. Triton is not yet supported with iChat AV
CamFrog	6005	5000-15000	
Chatablanca	8000	8000	
ClearPhone		1050, 2048	
Clique Video Messenger		5432	
CounterPath EyeBeam		5060(SIP) 8000-8005	Typical SIP ports required
CUWorld	1503 7648-7649 5222-5223	7648-7649 24032	
DKMessenger	1177, 2074	1177, 2074	
EnVision SL	1503 (T.120) 1720 (H.323) 1731 (audio) 1024-65535	1024-65535	Typical H.323 ports required
EyeBall Chat	5500-5501, 5515	5700-5702	
eViewChat	80, 443, 389		Uses VPN to connect to the provider
Festoon	443	443	Very Firewall Friendly
FreeWorldDialup Communicator		5060 (SIP), 5082	
ICUII	2001-2002	2003	Can be changed

Continued

Table A.1 continued Listing of Ports for Software Video Call Applications

Video Call Solution	TCP Ports	UDP Ports	Comments
iNeen	3478	3478, 5004 5060 (SIP) 8000-8012 (voice) 10000 (STUN)	Typical SIP ports required
iSpQ Video Chat	2000-2002		Can be changed
iVisit		9940	
KwalityTel	3000-3010	5000-5010	
Livve	8000-9000		
Logitech VideoCall			No Special configuration required
Lycos Phone		5060(SIP)	
Microsoft NetMeeting	1503 (T.120) 1720 (H.323) 1731 (audio) 1024-65535	1024-65535	Typical H.323 ports required
Microsoft Portrait	8100 (listen)	8110 (video), 8120 (audio)	
Microsoft MSN Messenger	1503 (Whiteboard) 1863 (messaging) 6891-6900 (File Transfer) 6901 (Voice) 3389 (Desktop Assistance)	5004 – 65535 (Voice and Video)	Very Firewall Friendly, ports are assigned dynamically outbound Enable UPnP on your DSL/Cable router
Microsoft Windows Messenger	1503 (Whiteboard) 6891-6900 (File Transfer) 3389 (Desktop Assistance)	5004 – 65535 (Voice and Video)	Use MSN Messenger or Live Messenger 8.0 Very Firewall Friendly, ports are assigned dynamically outbound
NuPhone	80,443 14000-14020	15000-16999	
PalTalk			No Special configuration required

Continued

Table A.1 continued Listing of Ports for Software Video Call Applications

Video Call Solution	TCP Ports	UDP Ports	Comments
PolyCom PVX for H.323	1503 1720 (H.323) 1731 (Audio) 3230-3237	3230-3235	Typical H.323 ports required
PolyCom PVX for SIP	5060	5060	Typical SIP ports required
Qnext	5235-5236	5237	
SeenX	554 7070	555 7070	
SightSpeed		9000	
Skype Video (2.0)	80,443	80,443	Very Firewall Friendly Skype also assigns a UDP port for out-bound communication
Sony / GlowPoint IVE	5061 (SIP) 4000-5999	5061 (SIP) 4000-5999	
Spontania Video4IM	80, 443		Very Firewall Friendly Skype also assigns a UDP port for out-bound communication
Trillian	AIM - 5190 ICQ - 5190 Jabber - 5222 MSN - 1863, 6891 Yahoo - 5050, 5100 (webcam)		Uses the same ports as the native IM application Video currently only works between AIM 5.9 and iChat AV. Triton is not yet supported for video calls
TryFast			Uses the same ports as the native IM application
Vibe Phone			No Special configuration required See the Logitech Video Phone

Continued

Table A.1 continued Listing of Ports for Software Video Call Applications

Video Call Solution	TCP Ports	UDP Ports	Comments
VidSoft VidConference	1853	1853	
WigiWigi		43690	
Yahoo Instant Messenger	5050-5070 5061 (voice) 5100 (webcam)		5100 TCP is needed for 'Super' mode for video calls
Yak Virtual VideoPhone		3478-3479 5060-5061 8000-8001 8060-8061	Typical SIP ports required
ZoomCall			No Special configu- ration required

Table A.2 Listing of Ports for H.323 Hardware Video Telephone Devices

H.323 Video Call Devices	TCP Ports	UDP Ports	Comments
BlackCrow BCV-103	1720 15328-15333	15328-15333	H.323 Device
Dlink i2eye DVC 1000 / 1100	1720 15328-15333	15328-15333	H.323 Device
Dlink i2eye DVC 2000	1720 15328-15333	15328-15333	H.323 Device
InnoMedia MTA 5531 for H.323	1720 15328-15333	15328-15333	H.323 Device
InnoMedia MTA 5410 For H.323	1720 15328-15333	15328-15333	H.323 Device
LeadTek BVP 8770	1720 15328-15333	15328-15333	H.323 Device
LeadTek BVP 8750	1720 15328-15333	15328-15333	H.323 Device
VisiFone I	1720 15328-15333	15328-15333	H.323 Device
Vizufon 5000 for H.323	1720 15328-15333	15328-15333	H.323 Device

Continued

Table A.2 Listing of Ports for H.323 Hardware Video Telephone Devices

H.323 Video Call Devices	TCP Ports	UDP Ports	Comments
Vizufon 5300 for H.323	1720 15328-15333	15328-15333	H.323 Device
Vizufon 4500 for H.323	1720 15328-15333	15328-15333	H.323 Device
Vizufon 5500 for H.323	1720 15328-15333	15328-15333	H.323 Device
Wooksung 2100 for H.323	1720 15328-15333	15328-15333	H.323 Device

Table A.3 Listing of Ports for SIP Hardware Video Telephone Devices

SIP Video Call Devices	TCP Ports	UDP Ports	Comments
Grandstream GXV-3000	5060 (SIP) 5004 (RTP)	5060 (SIP) 5004 (RTP)	SIP Device
InnoMedia MTA 5550	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
InnoMedia MTA 5531 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
InnoMedia MTA 5410 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
InnoMedia MTA 5410S	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
LeadTek BVP 8762 (Wooksung)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Ojo	3478-3479 5010-5017 5060 (SIP) 5061 (SIP-TLS)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device

Continued

Table A.3 Listing of Ports for SIP Hardware Video Telephone Devices

SIP Video Call Devices			
Devices	TCP Ports	UDP Ports	Comments
UMEC (All)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
VisiFone II	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Vizufon 4500 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Vizufon 5000 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Vizufon 5300 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP) 5082	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Vizufon 5500 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Wooksung 2000	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device
Wooksung 2100 for SIP	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	5060 (SIP) 5061 (SIP-TLS) 5004 (RTP)	SIP Device

Video Call Software Solutions

The table on the following page is a full list of Video Call software solutions.

Table B.1 Video Call Solutions (A-F)

Video Call Solutions	Rating	Version	Free	Change	Comments	Windows	Apple / Mac	User Video Windows	Website
AOL Instant Messenger Includes AOL Triton	2	5.9/1.0.4.1	•		(1)	•	(b)	2	www.aim.com/
Apple iChat AV	5	3.0	•			(a)	•	2-4	www.apple.com/ichat/
CamFrog	2	3.7	•	•	(2)	•	•	2-12	www.camfrog.com/
Chatablanca	1	1.7	•		(2)	•	•	2-6	www.chatablanca.com/
ClearPhone	1	5.3.1/6.4.8		•	(1)	•	•	2-6	www.clearphone.com/
Clique Video Messenger	3	2.2.4.711		•		•	•	2	www.cliquevm.com/
CounterPath EyeBeam	4	1.5		•	(4)	•	•	2-5	www.xten.com/
CUWorld	3	7.0.59.1	•	•	(2)(5)	•	•	2-22	www.cuworld.com/
DKMessenger	2	4.5.3		•	(2)	•	•	2-12	www.dkmessenger.com/
EnVision SL	2	n/a	•	•	(6)(19)	•	•	2	www.sorensenvrs.com/options/envision_info.php
eViewChat	3	01.08.03		•	(18)	•	•	2-8	www.espresolutions.com
EyeBall Chat	3	2.2		•	(2)(16)	•	•	2	www.eyeballchat.com/
Festoon	4	0.1.3.213	•	•	(7)(8)	•	•	2-6	www.festooninc.com
FreeWorldDialup Communicator	3	0.99.1	•	•	(4)(16)	•	•	2	www.freeworlddialup.com/products/?p=communicator

Table B.2 Video Call Solutions (I-P)

Video Call Solutions	Rating	Version	Free	Charge	Comments	Windows	Apple / Mac	User video windows	Website
iCUll	2	7.6		•	(2)(16)	•		2	www.icull.com/
iNeen	3	1.1.3010n	•		(9)	•	•	2-5	www.ineen.com/
iSpQ Video Chat	2	7.5/7.2		•	(2)	•	•	2	www.ispq.com/
iVisit	3	3.5.4/3.5.3	•			•	•	2-8	www.ivisit.com
KwalityTel	3	1.0		•		•	•	2-4	www.kwalitytel.com/
Livve	2	7.2.32	•		(2)(5)	•		2-6	www.livve.com/
Logitech VideoCall	3	2.00.34.70		•	(5)	•		2	www.logitech.com
Lycos Phone	3	BETA	•		(4)	•		2	lycos.globe7.com/
Microsoft MSN Messenger	5	7.5.0324	•	•		•		2	messenger.msn.com/
Microsoft NetMeeting	2	3.01	•		(11)(19)	•		2	www.microsoft.com/windows/netmeeting/
Microsoft Portrait	2	2.3		•	(11)(12)	•		2	research.microsoft.com/mcom/portrait/
Microsoft Windows Messenger	0	4.7.3001	•		(11)	•		0	www.microsoft.com/windows/messenger/
NuPhone	1	1.1		•	(2)	•		2-12	www.nuphone.net/
PalTalk	2	8.3	•	•	(2)(16)	•		2-6	www.paltalk.com/
PolyCom PVX	5	8.0.1		•	(4)(19)	•		2	www.polycom.com/products_services/1,,pw-7953,00.html

Table B.3 Video Call Solutions (Q-Z)

Video Call Solutions	Rating	Version	Free	Change	Comments	Windows	Apple / Mac	User Video Windows	Website
Qnext	3	2.3.2 BETA	•		(13)(16)	•	•	2-4	www.qnext.com/universal_messenger.shtml
SeenX	2	1.2.1		•	(14)	•	•	2	www.seenx.com/
SightSpeed	5	4.5	•	•		•	•	2-4	www.sightspeed.com/
Skype Video (2.0)	4	2.0.0.103	•		(15)	•	•	2	www.skype.com/
Sony / GlowPoint IVE	4	4.4.1	•	•	(4)	•	•	2	sony.glowpoint.com/
Spontania Video4IM	5	0.8.5	•	•	(7)	•	•	2	www.video4im.com/
Trillian	2	3.1	•	•	(16)	•	•	2	www.ceruleanstudios.com/
TryFast	3	4.6	•	•	(16)	•	•	2-12	tryfast.com/
Vibe Phone	n/a	n/a	n/a	n/a	(17)	•	•	2	www.vibePhone.com/vsg/htdocs/products/video-phone/index.jsp
VidTel	n/a	n/a	•						www.festooninc.com
WigWigi / Vwho	4	ALPHA	•			•	•	2-12	wigwigi.com/
Yahoo Instant Messenger	3	7.5.0.647	•			•	•	2	messenger.yahoo.com/
Yak Virtual VideoPhone	3	1.1.3015c	•	•	(4)(9)	•	•	2-5	www.yakforfree.com/
ZoomCall	3	5.1	•			•	•	2	www.zoomcall.com/
Discontinued									
Video Call solutions									
3wVP	0	n/a			(11)			0	
NetVidea	0	n/a			(11)			0	

Table B.4 Discontinued Video Call Solutions

Video Call Solutions Notes:
(a) Can be used with AIM for a Mac-to-PC video call
(b) Can be used with Apple iChat AV PC-to-MAC video call
(1) Also has Mac and Linux versions available, but without video
(2) Based on Chat Rooms - Highly NOT recommended
(3) Offers an upgrade for additional features
(4) Is a SIP based VoIP solution with video capabilities
(5) Requires Microsoft Internet Explorer
(6) EnVisionSL is just a front end to Microsoft NetMeeting
(7) This requires Skype for the contacts list
(8) This requires GoogleTalk for the contact list
(9) This is an OEM version of the CounterPath EyeBeam SIP video phone
(10) Additional costs for PC to PSTN calls
(11) This product is 'end of life' and obsolete
(12) This solution has a Pocket PC version
(13) A Linux version is available
(14) No evaluation version available
(15) Additional telephone calling features available at an additional cost
(16) This is a multi-IM solution (AIM, MSN, Yahoo, etc.)
(17) Only available through partners like Logitech Video Phone for Broadband
(18) This solution uses a VPN to connect to the provider
(19) This is a H.323 compatible solution

Software Add-ons for Skype

The following is excerpted from Michael Gough's *Skype Me! from Single User to Small Enterprise and Beyond* (Syngress, 1-59749-032-6), which is a complete reference to using Skype.

Solutions in this chapter:

- Expanding Skype's Capabilities
- Voice Mail
- Recording Skype Calls
- Integrating with Outlook
- SMS Text Messaging
- Forwarding Your Skype Calls
- SkypeCasting
- Skype Web Toolbars
- Other Plug-ins

Expanding Skype's Capabilities

One of the powers of Skype is the ability it gives you to create add-on products to expand Skype's capabilities and add more features. This is accomplished through the application programming interfaces (APIs) and the clever ideas of developers worldwide. A perfect example of these add-ons is found on Skype's Personalize Skype Web page at www.skype.com/products/personalise.

Developers have joined with Skype to market and sell additional sounds and avatars for you to use with Skype. So if you have some ideas for selling Skype add-ons, have developed a new software solution, or have an idea to sell voice content such as news or weather, visit Skype's partner program Web site for more information at www.skype.com/partners/.

If you know of more products that are not covered in this chapter, send us an e-mail through our Web site at www.SkypeTips.com so we can add it to the list. Vendors, if you want us to rate your product, contact us through the site and send us an evaluation version of your product so that we can rate your product for our readers.

Voice Mail

Adding voice mail to Skype is one of the more popular features and requests. Since many of us leave our computers on all the time or want to get messages when we are not at the computer, voice mail of some sort is a good idea so that people can leave messages for us anytime.

Your Own Answering Machine

We obviously cannot talk in any depth about voice mail without discussing the fact that many of us already have existing standalone hardware answering machines or answering machines built into our cordless telephone base—or possibly we pay for an answering machine service through our telephone provider. I use an answering machine that is included with my cordless telephone base for both my Vonage and Skype voice mail. If you purchase SkypeIn, you get a free voicemail account, or you can purchase voice mail separately from Skype.

No matter what solution you have to capture messages, I think you will find that you'll end up with a combination of voice-mail options. For example, I have Vonage e-mail me my Vonage voice mails so I don't have to check Vonage for voice mail. I also get voice mail from users who call me or just want to leave me a message on Skype, and I use my home

answering unit for both Skype and Vonage; I can check it from home or from anywhere in the world for free using Skype. But on many occasions, a more robust voice-mail solution is needed, and that is what we discuss in the following section—software options for voice mail that integrates with Skype.

Pamela

Pamela, one of the premier voice-mail products for Skype, is loaded with features, especially the Pro version, which includes podcasting features. So if you are looking for a full-featured software answering machine solution with lots of features, Pamela is one to consider. You will see Pamela again in the “SkypeCasting” section because it can handle multiple areas.

Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free for Pamela Basic, US\$7.50 for Pamela Standard, and US\$17.50 for Pamela Professional

You can download Pamela from www.pamela-systems.de/.

Features of Pamela Basic

- Automatic answering of Skype chat messages
- Answering set dependent on Skype status (e.g., to answer only when Skype status is Away)
- Automatic answering of Skype calls
- Maximum recording time: 10 minutes
- Balloon notifications of Skype connection status
- Call back directly from Pamela
- Compatible with any sound card and USB phone
- Compatible with Windows 2000, Windows XP, and Windows Server 2003
- Easy recording of your greeting messages directly from within Pamela
- More than 30 languages included
- Send chat messages directly from Pamela

- Pamela can change Skype status automatically during a call (status type can be chosen)
- Record all audio files in native MP3 format (separate installation of codecs required)
- Recording and playback device can be selected by the user (and optionally synchronized automatically with Skype)
- User can select sampling rate and bit rate of audio recordings

Features of Pamela Standard

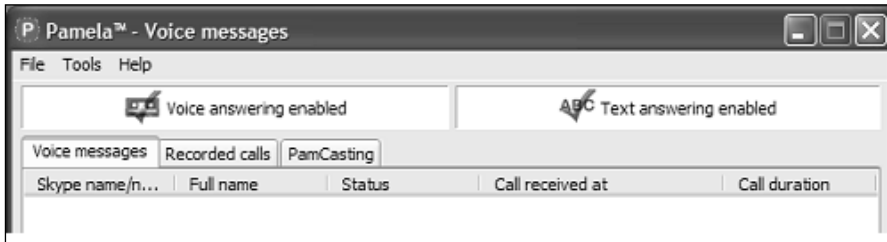
- Maximum recording time: 4 hours
- Automatic chat message confirmation of recordings (with indication of the duration and editable)
- Automatic chat message notification of call transfer to Pamela (editable)
- Detailed balloon notifications of contact status changes
- “I’m in a call” chat message sent with automatic hangup of new caller for undisturbed conversations
- Optical identification of new vs. played recordings
- Optional voice greeting mode with recording disabled
- Return of call to Skype during recording
- Pamela/Skype API Console (view only)

Features of Pamela Professional

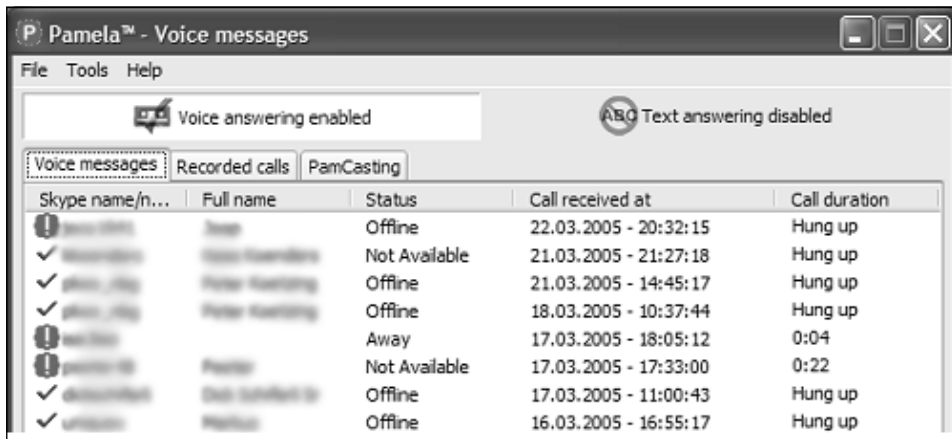
- Maximum recording time: Unlimited
- Pamela/Skype API Console (view and entry)
- Two-way call recording (automatically or manually) and full support for conference call recording
- E-mail forwarding of voice messages (automatic or manually)
- Full automatic podcasting support with XML file generation and optional automatic FTP upload (MP3 codecs required)
- Personalization of answering settings per contact (greeting and chat messages)

- Time scheduling function for activation and deactivation of Pamela
- SkypeAPI logging option

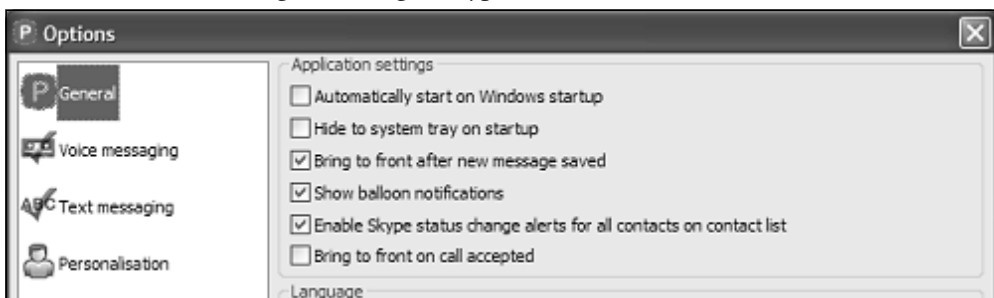
The following screen shows Pamela's basic operation:



The following screen shows the status of the users:



Pamela's General settings, showing a Skype-like interface:



Answering Machine by YapperNut (AMY)

AMY is a good option for an answering machine add-in for Skype if you do not use SkypeIn or the Skype voice-mail option. This solution integrates with a telephone gateway

device called the YapperBox that allows you to use your home cordless phones anywhere in your house with Skype and *not* have to sit at your computer.

Key Points

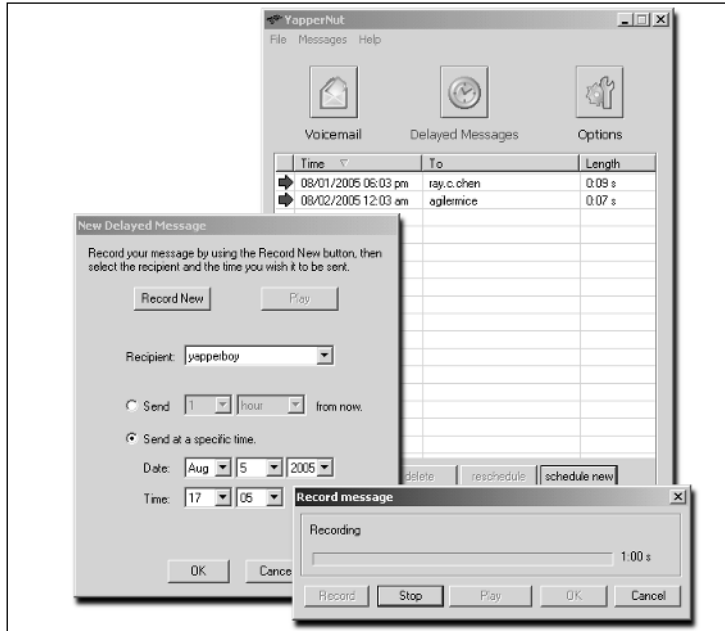
- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows XP only
- **Cost** AMY is free

You can download AMY from www.yappernut.com/us/en/ybFeatures.htm.

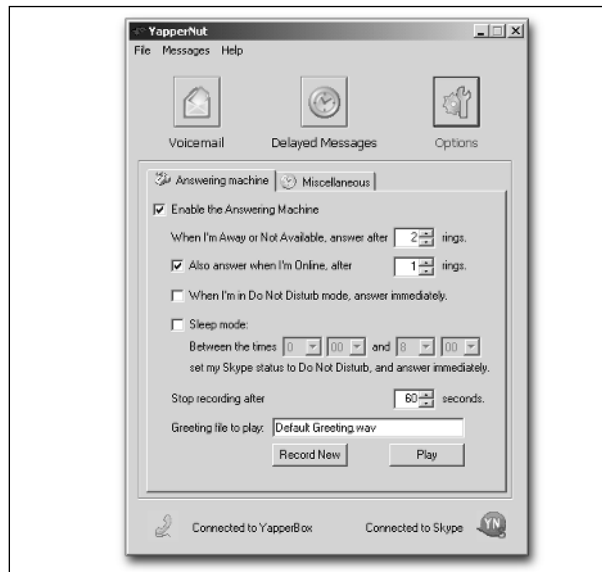
Features of AMY

- **Personalize your voice-mail greeting** Record your own greeting, copy one from a friend, rip it from a CD, or download some from the YapperNut Web site.
- **Customize voice-mail settings for various Skype modes** AMY gives you the flexibility to pick up (or not) during various Skype modes. You can also tell AMY how long to wait before answering.
- **Set AMY to auto-answer during certain hours** Does that pesky relative from overseas always wake you up in the middle of the night? AMY is smart enough to auto-answer during the night, or whenever else you want it to.
- **Forward voice mail to your buddies** Let the gossiping begin. Pass on your voice mail with a few simple clicks.
- **Seamlessly integrates with YapperBox** AMY works as a stand-alone software addition to Skype, but it is designed from the ground up to work seamlessly with YapperBox. Guess who makes both AMY and YapperBox? YapperNut!

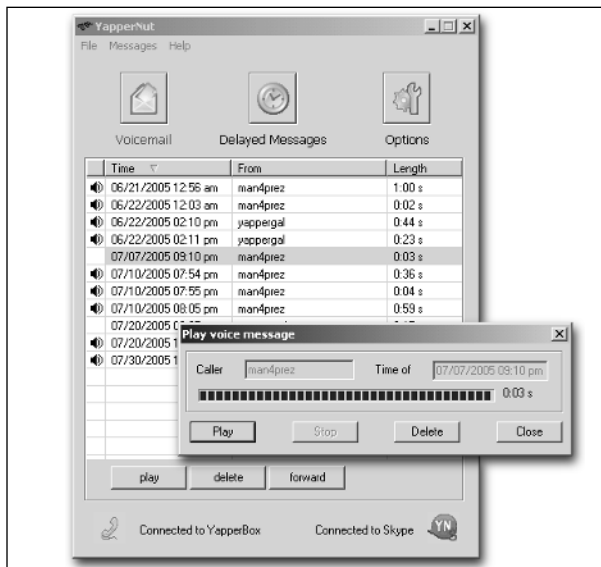
The following screen shows how to display messages and schedule a delayed message:



Some of AMY's answering machine settings are shown in the next screen.



Here's how to play your voice-mail messages:



SAM

Skype Answering Machine (SAM) is a good option for an answering machine add-in for Skype if you do not use SkypeIn or the Skype voice-mail option and want a basic answering machine solution.

Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Windows only
- **Cost** Free with ads and only basic SAM features; US\$5.00 for an ad-free version with all features and functions

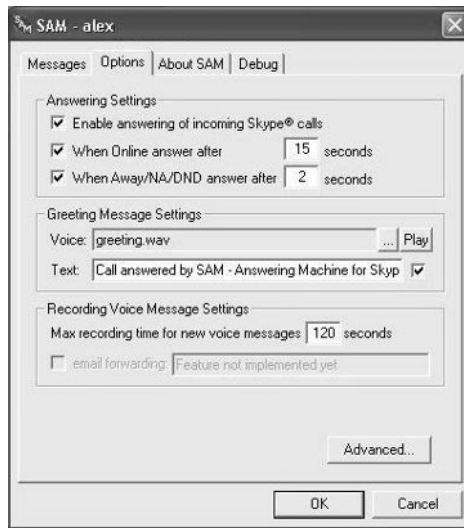
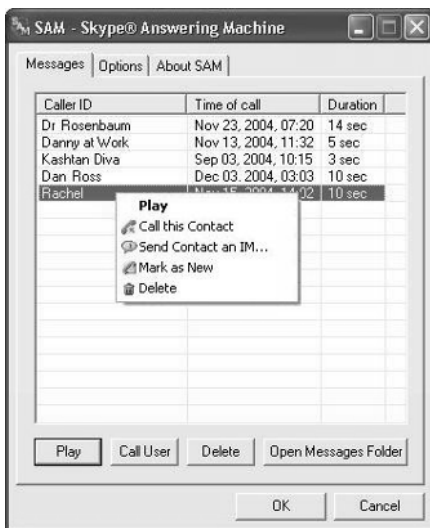
You can download SAM from www.freewebs.com/skypeansweringmachine/.

Features of SAM

- Uses a dedicated software audio device (included) for compatibility with all sound cards and USB phone devices
- Supports 24 languages for user interface
- User-configurable text and voice greeting messages

- User-configurable global answering mode: Enable or Disable
- User-configurable answering On or Off for Skype's Online mode
- User-configurable delay before answering incoming calls
- User-configurable voice message recording duration anywhere between 0 and 10 hours!
- Option for a separate set of configurations for non-buddy callers
- Notification of operational status using changing icons in the system tray
- Recorded voice message information: caller name, ID and Skype Online status, time of call, duration, indication if the message is new or has been heard
- User can "Force Answering of Call" by SAM while incoming call is ringing
- User can "Take Control over Call" from SAM while voice greeting is played and while recording the caller's voice message
- "Play All New Messages" with the press of one button when you return to computer
- Control of speaker volume (mute) of speakers while incoming call is answered
- Run multiple instances of SAM under different Windows users

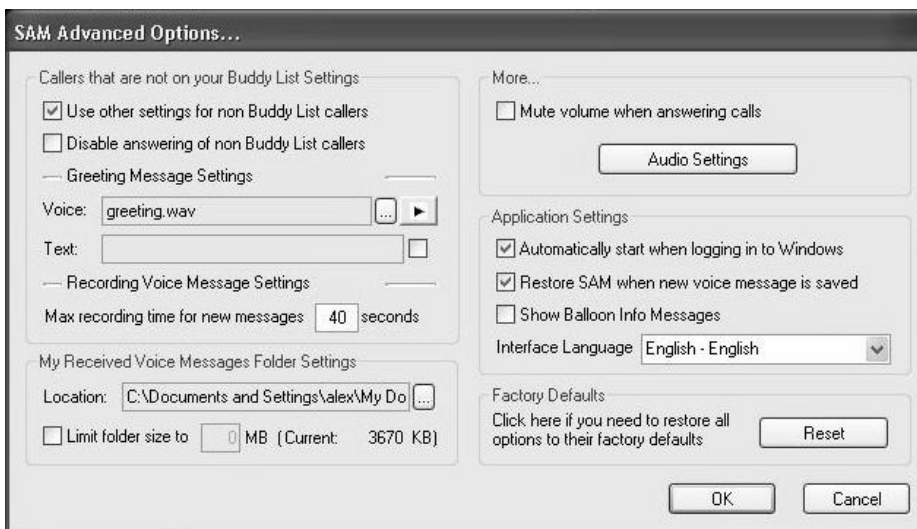
The following screens show SAM's basic operation:



Advanced Options Dialog Window

When you purchase SAM, you will have access to the following features:

- Enter the Advanced Options dialog window to select how you want SAM to handle callers that are not on your buddy list.
- Manage the Saved Messages folder by controlling its location and maximum folder size.
- For better privacy, mute the master volume while SAM answers calls so that people in your surroundings will not hear the message left on SAM.
- You can also select one of many languages as SAM's user interface.



Recording Skype Calls

Recording a Skype call has many applications. If you are preparing for a speech or presentation, for example, you might talk with a friend to practice your speech. I am often on the radio doing interviews on my video call legislation efforts, so I use SkypeOut to allow me to record my Skype calls and podcast them to my Web site. I can record the Skype call and then replay and edit it and listen to how it sounds before posting it on the Web. If your company has approved the use of Skype, you might use Skype just like a regular conference call device and record it so that others can listen to the conference call at a later time. There are many reasons to record your Skype calls, and the following solutions will help you do just that.

Hot Recorder

Hot Recorder is a basic Skype call-recording tool that also records GoogleTalk.

Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Hot Recorder Basic is free; Hot Recorder Premium is priced at US\$14.95

You can download Hot Recorder from www.hotrecorder.com.

Features of Hot Recorder Basic

- The Basic version is supported by advertisements (*no* popups)
- This version will allow you to enjoy all the advantages of Hot Recorder for free (record, add Emotisounds, play, file, share your conversations held over the Web, and use the voice mail for GoogleTalk and Skype)
- No spyware, no malware, no adware—guaranteed
- Proprietary format for audio calls

Features of Hot Recorder Premium

- The Premium version is 100-percent advertisement free
- Gives you the possibility to use and try the version of the audio converter for Hot Recorder
- Enjoy all the advantages of Hot Recorder (record, add Emotisounds, play, file, share your conversations held over the Web, and use the voice mail for GoogleTalk and Skype)

SkyLook

SkyLook is another basic recording tool for Skype calls that integrates with Outlook to store and manage your recorded calls.

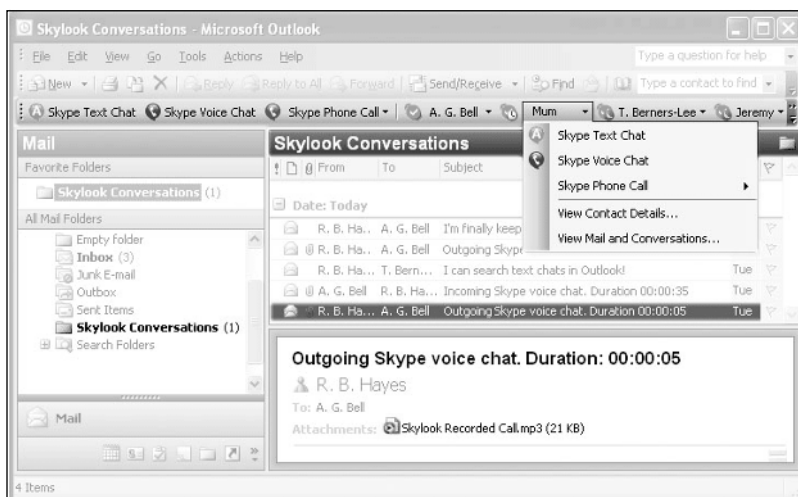
Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only with Outlook 2000, 2003, and XP
- **Cost** Free for a 14-day evaluation period; US\$14.95 for Hot Recorder Premium

You can download SkyLook from www.skylook.biz/.

Features of SkyLook

- Record Skype VoIP calls (both inbound and outbound) directly into Outlook items as MP3 attachments
- Automatically archive your Skype IM chats into Outlook
- Record Skype IM Chats straight into Outlook as mailbox items
- Manage your Skype VoIP calls and Skype IM chats
- Organizes all your Skype calls and Skype text chats together with e-mail and appointments
- Organize all communication items the way you organize e-mails
- See all communications with a particular contact in one place
- Rich integration with Outlook
- See your Skype contacts come online in real time inside Outlook
- See who is online in the SkyLook toolbar



PowerGramo

PowerGramo is a recording solution for Skype that allows you to record and replay any call. Also, the latest version of PowerGramo has dual-track capability, meaning that it will record the two sides of a call to different files so that they can be edited and adjusted independently. This is a nice feature, since the side with the recorder is usually louder than the other side of the call; dual-track would allow you to equalize the recording before posting it to the Web or letting others listen to it.

Key Points

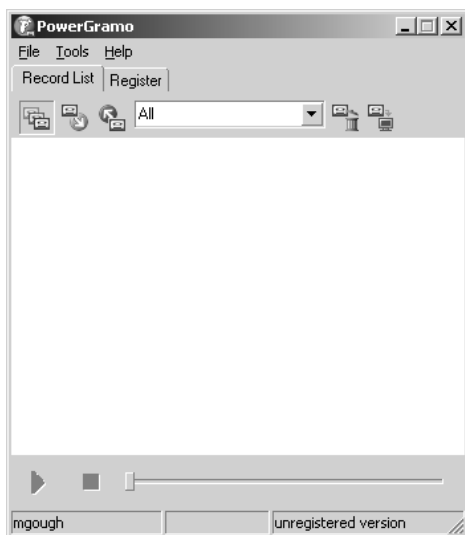
- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free with no tech support and without the ability to disable the “recording the call” message; US\$19.95 for a version with unlimited tech support

You can download PowerGramo from www.powergramo.com.

Features of PowerGramo

- Record whatever calls you have
- Option to alert other users they are being recorded
- Keep your calls in a safe place
- Share your calls with friends
- Get started in less than 3 minutes!
- Totally free for download

PowerGramo is equipped with a nice basic interface with Skype integration:



The free version sends the users an IM that indicates the call is being recorded. This option may be controlled in the fully licensed version.



Integrating with Outlook

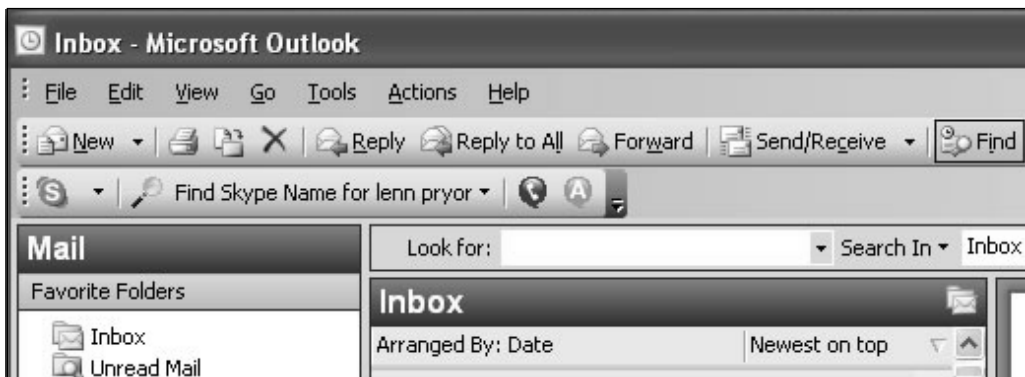
For Microsoft Outlook users, the ability to integrate Skype with all our personal information is an attractive feature. Since e-mail is so popular, being able to see which users are

online and call them directly from Outlook as you compose e-mail is a nice feature. Businesses tend to use Microsoft Office and Outlook exclusively, so this integration feature is very appealing to Outlook users who also use Skype. Why send an e-mail when you can see a user is online with Skype and you can have a quick call with them for free instead?

Skype for Outlook

If you are wondering where Skype got its Skype Toolbar for Outlook, it came from Peter Kalmström, a well-known developer for Outlook plug-ins who has developed many Outlook and Microsoft add-on solutions. I was one of the beta testers for Skype for Outlook, as it was called before Skype decided to use Peter's solution. See more information at www.kalmstrom.nu/.

The following screen shows you the Outlook Toolbar for Skype:



Look2Skype

Look2Skype is another add-on that gives you Skype integration with Microsoft Outlook.

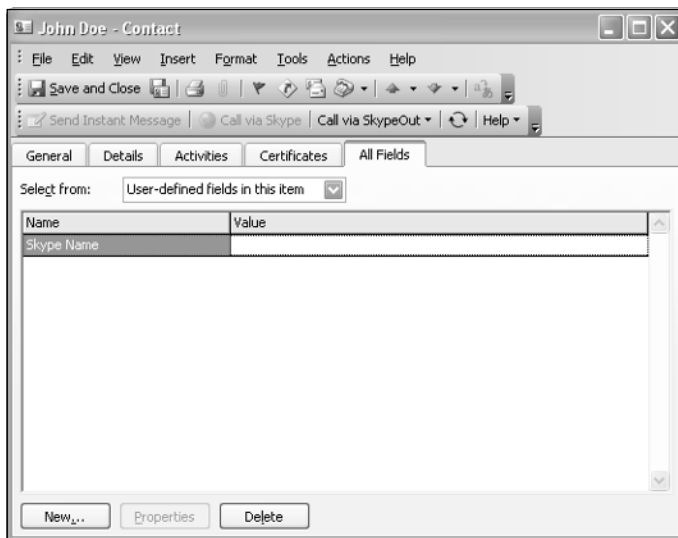
Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only with Outlook 2000, 2003, or XP
- **Cost** Free for a 30-day evaluation period; UK£14.99 for a version with one–nine licenses

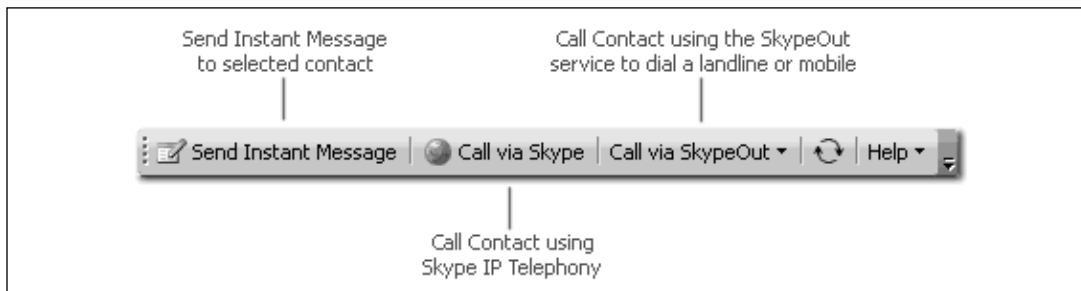
You can download Look2Skype from www.look2skype.com/index.htm.

Features of Look2Skype

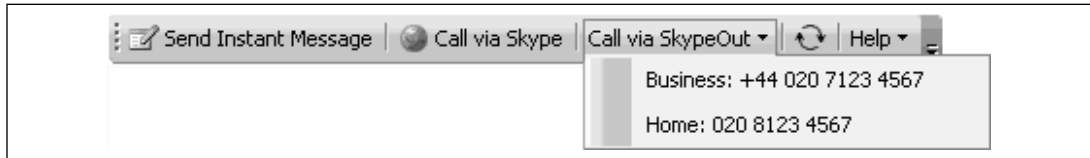
- **Automatically import Skype contacts in Outlook** Before you get started, you'll need to transfer all your Skype contacts into Outlook. Using the Import feature, Look2Skype will automatically create contact entries for each of your Skype contacts, containing Skype names and any other details your contacts used in creating their accounts.
- **Define Skype name for contacts** If you want to manually set up Skype names for your existing contacts, Look2Skype automatically adds a Skype Name field to each contact. Once you have defined the Skype Name, you can start to make direct Skype calls with your contacts from both your contact list and your inbox.



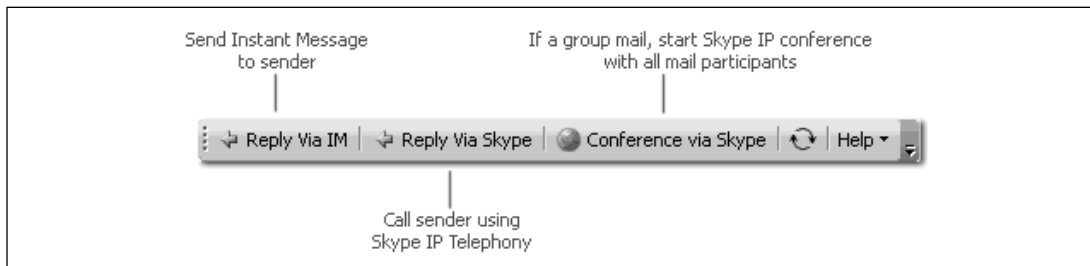
- **Instant access via Skype to your contacts from your Outlook address book** Once you've installed Skype, Look2Skype gives you to instant access to Skype features such as Skype IP Telephony, SkypeOut (calls from Skype to landlines), and Skype Instant Messaging.



- **Simplified SkypeOut, defaulted local dialing** SkypeOut gives you the prospect of cheap calls to landlines; but you need to add international dialing codes to all your existing phone numbers. Look2Skype enhances this feature by allowing you set a default local country code, which Look2Skype will use on all numbers that don't have an existing international dialing code.



- **Simplify communications—reply to e-mails via Skype** Look2Skype also allows you to respond to e-mails using Skype Instant Messaging and voice calls. If the sender of your e-mail has been set up in your contact list with both his e-mail address and his Skype name, you can quickly go from a slow e-mail conversation to a real-time voice or IM conversation.



SkyLook

SkyLook is another Skype Outlook integration that offers the ability to record calls and manage them directly in Outlook.

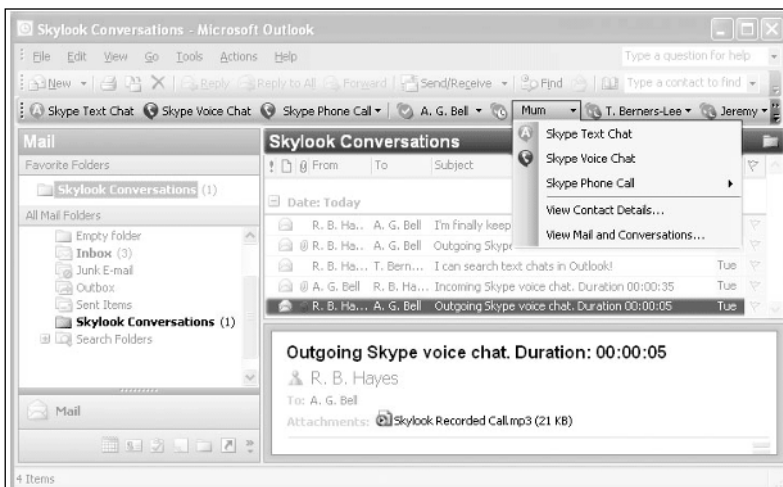
Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only with Outlook 2000, 2003, or XP
- **Cost** Pricing for SkyLook is free for a 14-day evaluation period, US\$24.95 for an academic user, US\$49.95 for a home user, and US\$99.95 for a business user

You can download SkyLook from www.skylook.biz/.

Features of SkyLook

- Record Skype VoIP calls (both inbound and outbound) directly into Outlook items as MP3 attachments
- Automatically archive your Skype IM chats into Outlook
- Record Skype IM chats straight into Outlook as mailbox items
- Manage your Skype VoIP calls and Skype IM chats
- Organizes all your Skype calls and Skype text chats together with e-mail and appointments
- Organize all communication items the way you organize e-mails
- See all communications with a particular contact in one place
- Rich integration with Outlook
- See your Skype contacts come online in real time inside Outlook
- See who is online in the SkyLook toolbar

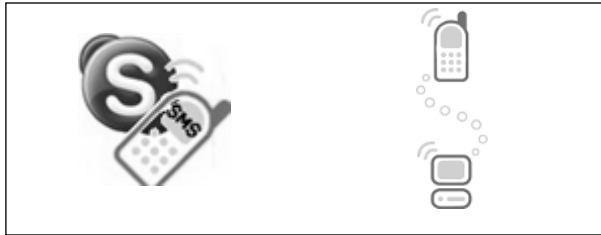


SMS Text Messaging

SMS text messaging provides an interesting way to integrate the cell phone network and the IM world, including Skype. This is popular among AOL, MSN, and Yahoo Instant Messenger users who have integrated their solutions with cell and Pocket PCs. Now Skype has an option to do the same.

Connectotel SMS to Skype

Connectotel SMS to Skype is a service that allows you to send a text message from a cell phone to a Skype user. Only the sender of an SMS message, in this case the cell user, pays for message delivery. Connectotel delivers these messages to Skype users for free and the service is in full production now.



Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free

Simple instructions are available from www.connectotel.com/sms/skype.html.

Features of SMS to Skype

SMS to Skype is a free service from Connectotel that allows GSM mobile phone users to send Skype instant messages to any Skype user. SMS to Skype is based on M-Mail, Connectotel's free SMS-to-e-mail service, established in 1999.

Connectotel Skype to SMS

Connectotel Skype to SMS is a service that allows you to send a chat message from Skype to a cell phone. Currently, the service is not available because the beta period is over, but expect it to become a pay-per-use service soon.

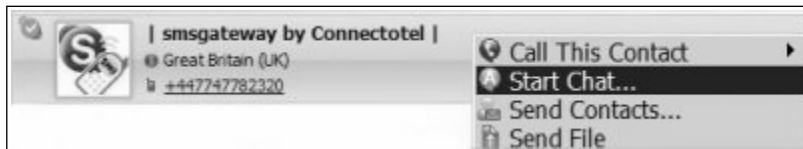
Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Pay-per-use when available

You can download Skype to SMS from www.connectotel.com/sms/skypetosms.html.

Features of Connectotel Skype to SMS

The Connectotel M-Mail service allows you to send SMS to e-mail from any GSM mobile phone. For information about M-Mail and its additional features, such as reply path, signature, aliases, memo, and SMSstore, please see the M-Mail FAQ.



Forwarding Your Skype Calls

This highly requested feature for Skype allows Skype users to forward any incoming calls to their cell phone, another Skype user, or another landline telephone number. The following call-forwarding software solutions are currently available.

iSkoot

iSkoot is the first call-forwarding solution and offers more than the Skype Call Forwarding option.

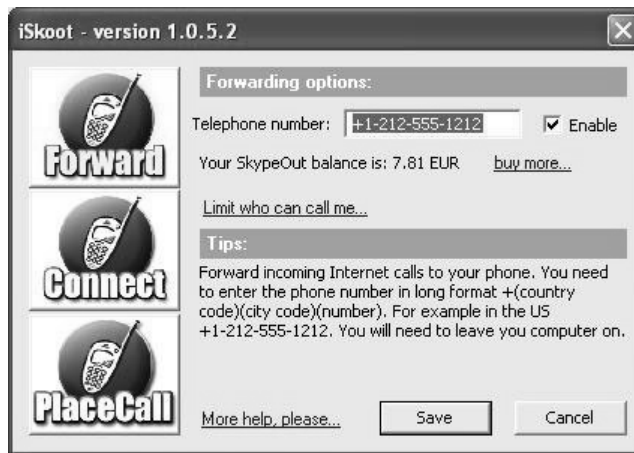
Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** US\$9.95 per year

You can download iSkoot from www.iskoot.com.

Features of iSkoot

- Automatically forwards calls from your PC to your phone, including your cell phone
- Calls your buddy's PC from your phone
- Switches a call from your PC to your phone without disconnecting



SkypeCasting

SkypeCasting is a new term that has been coined to refer to the act of doing an interview using a Skype call and podcasting it as an MP3 file on an RSS feed or to a Web site as an audio file. So if you have the desire to post Skype calls to a Web site or RSS feed, that's what this section is all about. We have provided several links to articles that discuss how to SkypeCast for your reference.

You can also use the recording solutions mentioned earlier, such as Pamela and PowerGramo, to record your Skype calls and interviews.

Skype Casting for Windows

Here's a brief list of articles written about SkypeCasting for Windows:

- An article on SkypeCasting written by Stuart Henshall and Bill Campbell of *Skype Journal*: www.henshall.com/docs/Skype%20Recording%20WinXp%2012202004.pdf
- Another Skype Journal article on SkypeCasting: www.skypejournal.com/blog/archives/2004/12/skype_podcast_r.php
- An article discussing SkypeCasting on a Mac: www.insanelygreatapps.com/2005/03/skype_nicecast_.html
- An article discussing SkypeCasting for Linux: www.henshall.com/docs/Skype%20Recording%20WinXp%2012202004.pdf

Virtual Audio Cable

Virtual Audio Cable (VAC) is a Windows multimedia driver that allows you to transfer audio (wave) streams from one application to another. It creates a pair of wave-in/out devices for each virtual cable. Any application can send audio stream to the Out device, and any other application can receive this stream from the In device. All transfers are made *digitally*, providing *no* sound quality loss. VAC is a “wave version” of the MIDI loopback cable such as MultiMid or Hubi’s Loopback drivers. Think of it this way: You can change your speakers or output device to feed into another program like a microphone. For example, you could play a previously recorded Skype call for someone else in a future Skype call.

Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free for Pamela Basic

You can download VAC from <http://spider.nrcde.ru/music/software/eng/vac.html>.

Features of VAC

- Up to 256 cables
- 1.100 milliseconds per interrupt
- Almost no sound latency, with maximal interrupt frequency
- Almost any PCM sound formats (sample rate, size, and number of channels); number of bits per sample is limited to 32, and number of channels is limited to 65,535
- Unlimited number of clients connected to each port
- Sound mixing (with saturation) between output port clients
- DirectSound output support under Windows 98/ME
- Synchronous mode transfer support to achieve maximal reliability
- Control Panel application to dynamically configure cables
- Audio Repeater application that transfers from any wave-in to any wave-out port

Pamela

Pamela shows up again for SkypeCasting because it is a full-featured product for this application as well. One of Pamela's features is the ability to record and post the recording to an FTP site, so it's a perfect tool for the SkypeCaster.

Key Points

- **User level** Intermediate and advanced
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free for Pamela Basic, US\$7.50 for Pamela Standard, and US\$17.50 for Pamela Professional

You can download Pamela from www.pamela-systems.de/.

Features of Pamela Basic

- Automatic answering of Skype chat messages
- Answering set dependent on Skype status (e.g., to answer only when Skype status is Away)
- Automatic answering of Skype calls
- Maximum recording time: 10 minutes
- Balloon notifications of Skype connection status
- Call back directly from Pamela
- Compatible with any sound card and USB phone
- Compatible with Windows 2000, Windows XP, and Windows Server 2003
- Easy recording of your greeting messages directly from within Pamela
- More than 30 languages included
- Send chat messages directly from Pamela
- Pamela can change Skype status automatically during a call (status type can be chosen)
- Record all audio files in native MP3 format (separate installation of codecs required)

- Recording and playback device can be selected by the user (and optionally synchronized automatically with Skype)
- User can select sampling rate and bit rate of audio recordings

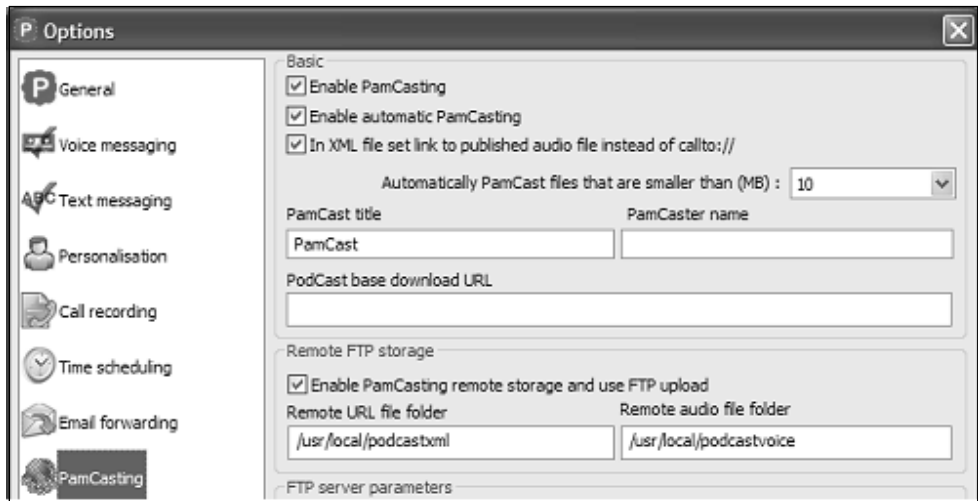
Features of Pamela Standard

- Maximum recording time: 4 hours
- Automatic chat message confirmation of recordings (with indication of the duration and editable)
- Automatic chat message notification of call transfer to Pamela (editable)
- Detailed balloon notifications of contact status changes
- “I’m in a call” chat message sent with automatic hangup of new caller for undisturbed conversations
- Optical identification of new vs. played recordings
- Optional voice greeting mode with recording disabled
- Return of call to Skype during recording
- Pamela/Skype API Console (view only)

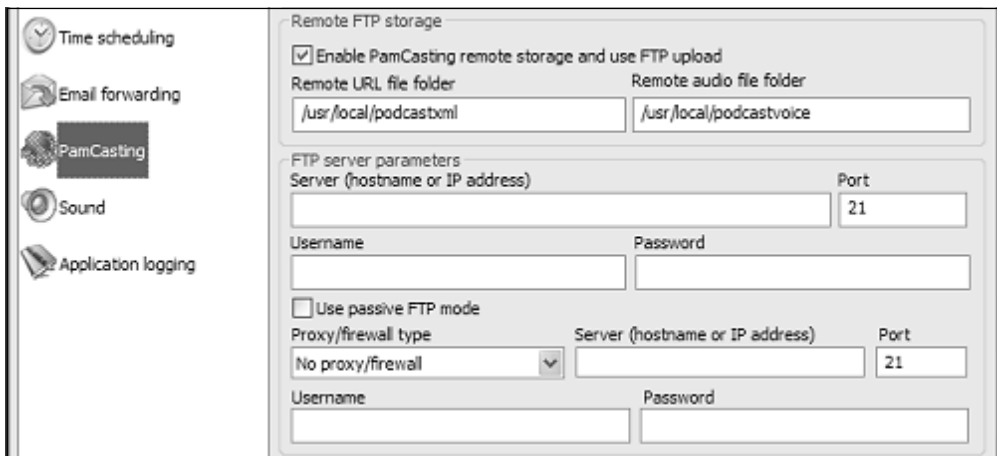
Features of Pamela Professional

- Maximum recording time: Unlimited
- Pamela/Skype API Console (view and entry)
- Two-way call recording (automatically or manually) and full support for conference call recording
- E-mail forwarding of voice messages (automatic or manually)
- Full automatic podcasting support with XML file generation and optional automatic FTP upload (MP3 codecs required)
- Personalization of answering settings per contact (greeting and chat messages)
- Time scheduling function for activation and de-activation of Pamela
- SkypeAPI logging option

The following screen shows the PamCasting options:



The following screen shows the automatic posting of the PamCast:



Nicecast for the Mac

Here is an add-on that allows Nicecast to record Skype calls for things like podcasts.

Key Points

- **User level** Targeted at intermediate and advanced users
- **Platforms** Apple
- **Cost** US\$40.00

You can download Nicecast from www.rogueamoeba.com/nicecast/.

Features of Nicecast

- Forget one-click purchasing
- Broadcast live events
- iTunes, anywhere
- Professional quality, amateur prices
- Adjustable quality settings, listener statistics, listing in the Stream Tracker, audio effects to enhance sound quality, and much more



Skype Web Toolbars

Skype has a browser plug-in for both Microsoft Internet Explorer and Mozilla Firefox that enables you to change your status, call any of your contacts, and call people using SkypeOut directly from your Web browser.

Key Points

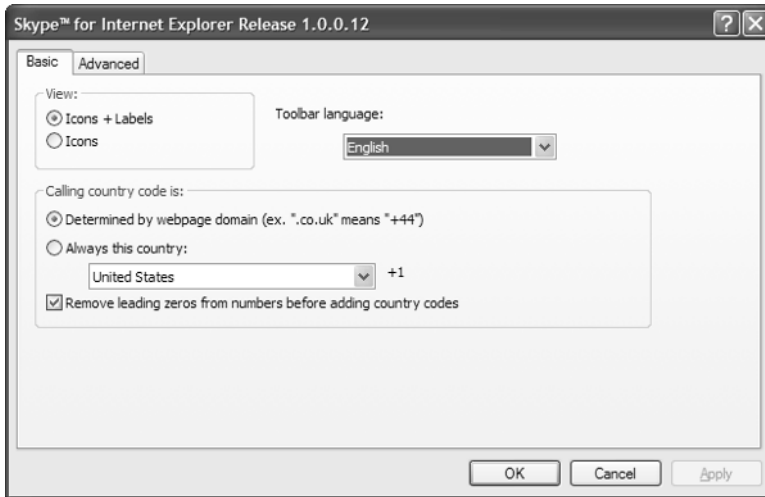
- **User level** Targeted at basic, intermediate, and advanced users
- **Platforms** Microsoft Internet Explorer and Mozilla Firefox
- **Cost** Free

You can download the Skype Web Toolbar at: <http://www.skype.com/products/skypewebtoolbar/>.

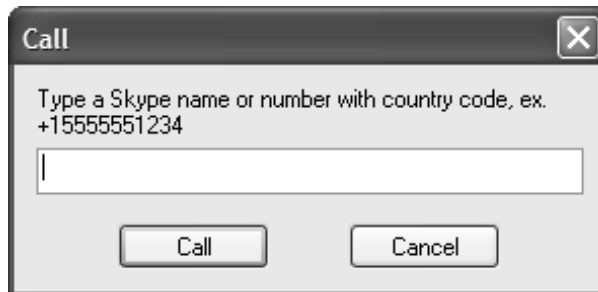
Here is a picture of the Microsoft Internet Explorer Toolbar.



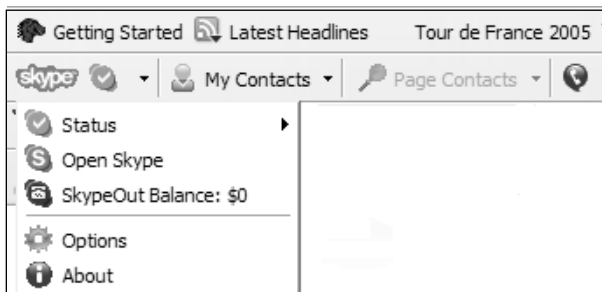
You can set options and the language you want to use.



Both Web Toolbars have the same options to call a SkypeOut number.



Here is a picture of the Microsoft Internet Explorer Toolbar.



Other Plug-ins

This section discusses other Skype add-ons to do various things—muting other music players, plug-ins for Mozilla Web browsers, and interfaces for Windows Media to other miscellaneous tools.

MuteForSkype Music Player Plug-in

MuteForSkype is an add-on that allows you to mute several music players when you make or receive a Skype call. It even “unmutes” the music when you are done.

Key Points

- **User level** Targeted at basic, intermediate, and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free

You can download MuteForSkype from <http://blog.vyvojar.cz/michal/articles/3494.aspx>.

Features of MuteForSkype

MuteForSkype works for the following music players:

- WinAmp
- Microsoft Media Player
- Sonique

You must install Microsoft .NET Framework 1.1 or later on your computer. You can download it from Microsoft at www.microsoft.com/downloads/details.aspx?FamilyId=262D25E3-F589-4842-8157-034D1E7CF3A3&displaylang=en.



MiTunes Music Player Plug-in

MiTunes is an add-on that allows control of your music applications directly in Skype, so when a call comes in iTunes is muted.

Key Points

- **User level** Targeted at basic, intermediate, and advanced users
- **Platforms** Runs on Microsoft Windows only
- **Cost** Free

You can download MiTunes from www.skypeteer.com/index.php?q=node/4.

Features of MiTunes

MiTunes for Skype works for the following music players:

- iTunes



Skypelt! Mozilla Mail and Thunderbird E-Mail Plug-in

SkypeIt! is an add-on for Mozilla and Thunderbird Mail that integrates your Skype users.

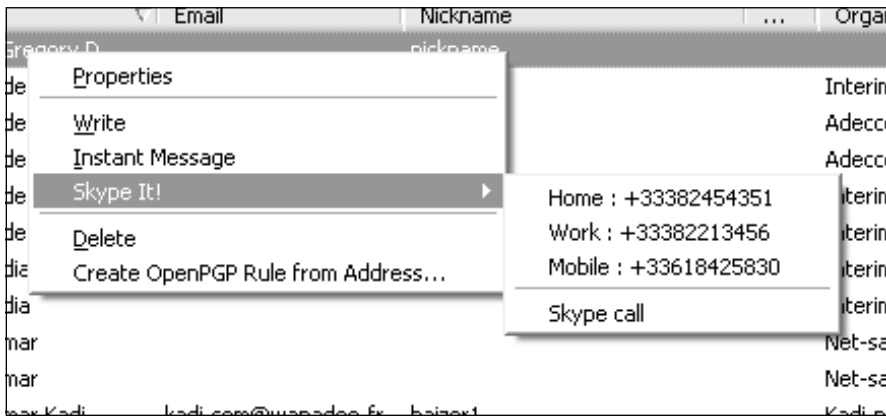
Key Points

- **User level** Targeted at basic, intermediate, and advanced users
- **Platforms** Runs on Microsoft Windows and Linux
- **Cost** Free

You can download Skypelt! from www.s3ven.freesurf.fr/index.php?1=EN&menuid=2g.

Features of SkypeIt!

- SkypeIt! is the first extension that allows you to call your contacts from Thunderbird and Mozilla Mail and both Windows and Linux!
- Its use is very simple. When a contact is selected in the address book with the right mouse button, the SkypeIt! menu shows all the phone numbers you can dial. If the contact uses Skype, you'll be able to call him for free by clicking **Skype call** if you have entered his Skype ID in his Nickname info.



Skype Interfaces

mcePhone for Skype

mcePhone for Skype adds the most common functions of Skype and makes them available in your Microsoft Windows XP Media Center 2005 and accessible using your remote control. So if you want a different interface and are running Windows XP Media Center 2005, give it a try. This is a perfect example of what can be done using the Skype API.

Key Points

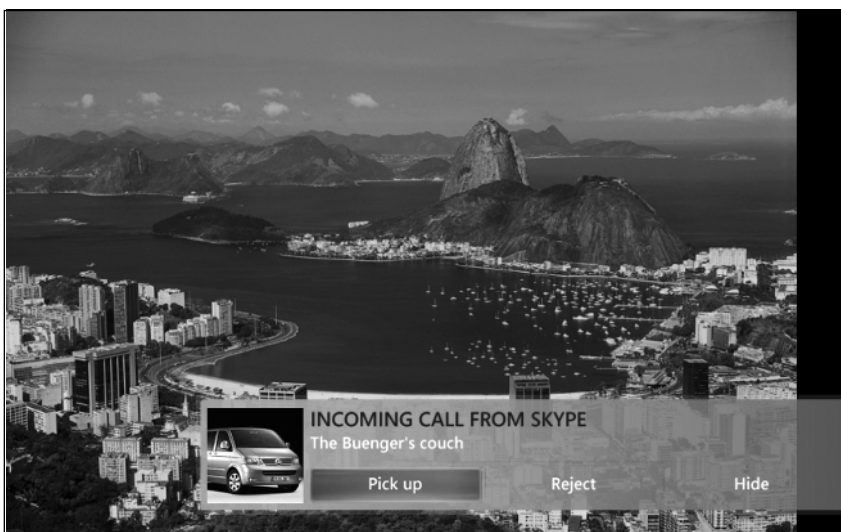
- **User level** Targeted at intermediate to advanced users
- **Platforms** Runs on Windows XP Media Center 2005 only
- **Cost** Free

You can download mcePhone for Skype at www.cbuenger.com/mcephone/.

Features of mcePhone

- Call any Skype user
- Call any “normal” telephone number (SkypeOut required)
- Accept incoming calls
- Listen to Skype voice mails
- Show all call lists from Skype (incoming, outgoing, and missed calls)

- Mute or pause any playing video, TV show, or music in your Media Center on an incoming call
- Show information about missed calls and new voice mails on Media Center startup
- Seamless integration into Windows XP Media Center with two skins to choose from
- Can be controlled by remote control—no mouse or keyboard required



Skype Forwarder

Skype Forwarder is another add-on for computers running Windows XP Media Center 2005 that gives you answering machine and call transfer capabilities.

Key Points

- **User level** Targeted at intermediate to advanced users
- **Platforms** Runs on Windows XP Media Center 2005 only
- **Cost** Free for a demo version; US\$19.95 for full version

You can download Skype Forwarder from www.twilightutilities.com/SkypeForwarder.html.

Features of Skype Forwarder

- Intelligently detects most voice modem types
- Complete telephone answering machine (TAM)
- Complete Skype Answering Machine (SAM)
- Transfers incoming telephone calls to Skype buddies
- Transfers incoming Skype calls to phone



Free Tools from Skypeteer

Key Points

- **User level** Targeted at intermediate to advanced users
- **Platforms** Windows
- **Cost** Free

You can download the tools from www.skypeteer.com/index.php?q=product.

Skypeteer Keep It Simple Status Indicator (KISSI) Plug-in

If you post somewhere, include an image tag to the location of the file, like this:



This is my status indication.

Skypeteer World Clock Plug-in

This version of Skypeteer has only one purpose—to show the local time of the user you are talking or chatting to in Skype. Because Skype has no real time zone information available, this product uses information from the Skype profile, like country and city. It's is not fully bulletproof, but it is a solution that works pretty well.

Skypeteer IE Extension Plug-in

With this extension you can send contacts a Skype IM with the correct information by right-clicking in a Web page.

Skypeteer Call Calculator

With this add-on you can calculate cost savings when you use Skype. You don't need to log into the Skype portal to see all recent calls.

Free Tools from s3ven

S3ven's freeware includes some more utilities and tools that can be used for Skype.

Key Points

- **User level** Targeted at intermediate to advanced users
- **Platforms** Windows
- **Cost** Free

You can download the tools from www.s3ven.freesurf.fr/index.php?l=EN&menuid=2&PHPSESSID=e1045d8a8a500ee1bdf2edc929ef0e52

Outlook Skype Plug-in

- This program adds a new toolbar to Outlook, so when you click a contact, the bar will show all the contact's phone numbers and will allow you to call him or send him an instant message with Skype
- Works on Outlook 2000 to 2003

Skype Tools Plug-in

Add ringtones and some other features to Skype.

Skyp2Out Plug-in

Export your Skype contacts to Outlook and choose what you want to export.

Skype Backup Tool Plug-in

Back up your Skype information and configuration to file and FTP servers.

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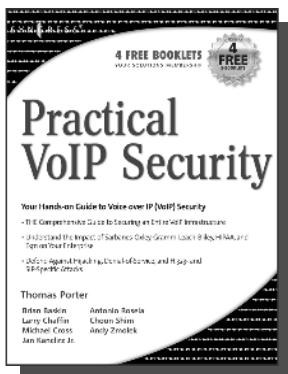
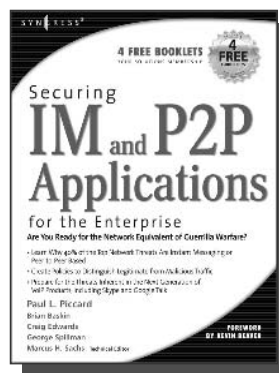
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