SYNGRESS®

Skype Me!

From Single User to Small Enterprise and Beyond

Read the First Book Available on Skype!

- Covers All New Features in Skype 1.4.0.71
- Written by Michael Gough of SkypeTips.com
- Special Foreword by Bill Campbell of *Skype Journal*

Michael Gough

This free preview of Michael Gough’s new book on Skype contains two complete sample chapters. Please see the full table of contents for a listing of all topics covered in the book.

Foreword
by Bill Campbell

You are going to love *Skype Me! From Single User to Small Enterprise and Beyond*. Here's why.

Michael Gough knows his stuff. Michael has also completed a remarkably difficult project around a remarkably cool product, Skype.

Michael is a busy guy. I have no idea where he found time to write a book. He delivers consulting services to clients of a Fortune 50 company where he works. He's been at it for 18 years. On the side, he is a Computer Security Consultant, presenting at conferences working with associations and groups advising agencies such as the FBI. Michael knows Skype. He is the man behind the hot Web sites **www.SkypeTips.com** and **www.VideoTips.com**. These sites are filled with helpful advice, product reviews, stories, and articles that make the hundreds of thousands visitors get a richer experience from the Skype Application.

What's remarkable about this book? A few months ago Michael first shared his idea in a message to me: "I am going to write a book to help home users, super users, small businesses, and large corporations understand Skype." I studied the outline. A few days later I sent a message back to him: "Michael, it can't be done." But I ate crow as I read the completed manuscript.

Michael has covered all that you need to know about Skype. His book will sweeten your Skype experience. It contains basic information for early adopters as well as technical tips for power users.

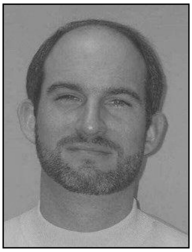
What's cool about Skype? What makes Skype such a remarkable product? How can it possibly reach out to touch individuals in such a wide spectrum from users in the home to a large corporation? The short answer is simplicity.

Skype's simple, subtle user interface hides a deep layer of rich functionality. It's so simple that my mom can use it. In fact, "Can mom use it?" is a question asked by members of the Skype development team every day. Skype is an application that even after over two years of daily use continues to "wow" me. Let Skype wow you, too.

Let this book help you quickly discover the hidden delights inside the Skype application.

—Bill Campbell
Technical Editor, Skype Journal
www.SkypeJournal.com

Technical Editor and Lead Author



Michael Gough is Host and Webmaster of www.SkypeTips.com, which was launched in January 2005 and receives more than 100,000 hits per month, and www.VideoCallTips.com, which receives more than 30,000 hits per month. Michael writes articles on Skype and related issues. He also explains Skype's options and instructions to users so that they can practically apply Skype at home and in the workplace. Michael also evaluates products for vendors and posts ratings on his Web site to provide feedback to vendors about feature improvements to Skype-related products. Michael is a Computer Security Consultant with 18 years in the computer technology field. Michael also hosts several other Web sites to help users understand how to make video calls to their families and friends.

Contributing Authors

Joshua Brashars is a telecommunications specialist in San Diego, California. Joshua spends most of his time tinkering with voice over IP applications, and the rest of the time works with Secure Science Corporation, breaking things apart. Joshua would like to thank his family, friends, Johnny Long, Lance James, and all of his hoodlum and hacker friends for their undying support.

Larry Chaffin (CISSP, PMP, JNCIE, MBCP, CWNP, NNCSE, NNCDE,CCNP, CCDP, CCNP-WAN, CCDP-WAN) is the CEO/Chairman of Pluto Networks and the Vice President of Advanced Network Technologies for Plannet Group. He is an accomplished author; he cowrote *Managing Cisco Network Security*

(ISBN: 1-931836-56-6) and has also been a coauthor/ghost writer for 11 other technology books for VoIP, WLAN, security, and optical technologies. Larry has more than 29 vendor certifications such as the ones already listed, plus Cisco VoIP, Optical, Security, VPN, IDS, Unity and WLAN. He is also certified by Nortel in DMS Carrier Class Switches along with CS100'S, MCS5100, Call Pilot, and WLAN. Many other certifications come from vendors like Microsoft, VMware, PeopleSoft, Avaya, IBM, and HP. Larry has been a Principal Architect around the world in 22 countries for many Fortune 100 companies designing VoIP, Security, WLAN, and optical networks. His next project is to write a book on Nortel VoIP and a new security architecture book he has designed for VoIP and WLAN networks.

Michael Cross (MCSE, MCP+I, CNA, Network+) is an Internet Specialist / Computer Forensic Analyst with the Niagara Regional Police Service. He performs computer forensic examinations on computers involved in criminal investigations, and has consulted and assisted in cases dealing with computer-related/Internet crimes. In addition to designing and maintaining their Web site at www.nrps.com and Intranet, he has also provided support in the areas of programming, hardware, and network administration. As part of an Information Technology team that provides support to a user base of over 800 civilian and uniform users, his theory is that when the users carry guns, you tend to be more motivated in solving their problems.

Michael also owns KnightWare (www.knightware.ca), which provides computer-related services like Web page design, and Bookworms (www.bookworms.ca), where you can purchase collectibles and other interesting items online. He has been a freelance writer for several years, and has been published over three dozen times in numerous books and anthologies. He currently resides in St. Catharines, Ontario Canada with his lovely wife Jennifer, his darling daughter Sara, and charming son Jason.

Dan Douglass (MCSE+I, MCDBA, MCSD, MCT) is the Special Projects Manager with a cutting edge medical software company in Dallas, Texas. He currently provides software development skills, internal training and integration solutions, as well as peer guidance for technical skills development. His specialties include enterprise application integration and design, HL7, XML, XSL, C++, C#, JavaScript, Visual Basic and Visual Basic.Net, database design and administration, Back Office and .NET Server platforms, Network design, including LAN and WAN solutions, all Microsoft operating systems, Mac OSX, FreeBSD and Linux. When he has free time, Dan teaches programming and database design and administration at a prominent Dallas university. Dan is a former US Navy Submariner and lives in Plano, TX with his very supportive and understanding wife, Tavish.

Michael Sweeney (CCNA, CCDA, CCNP, MCSE, SCP) is the owner of the Network Security consulting firm Packetattack.com. Packetattack.com specialties are network design and troubleshooting, wireless network design, security and analysis. The Packetattack team uses such industry standard tools such as NAI Sniffer, AiroPeekNX and Airmagnet. Packetattack.com also provides digital forensic analysis services.

Michael has been a contributing author for Syngress for the books *Cisco Security Specialist Guide to PIX Firewalls,* ISBN: 1-931836-63-9, *Cisco Security Specialist Guide to Secure Intrusion Detection Systems,* ISBN: 1-932266-69-0 and *Building DMZs For Enterprise Networks,* ISBN: 1-931836-88-4. Through PacketPress, Michael has also published *Securing Your Network Using Linux*, ISBN: 1411621778.

Michael graduated from the University of California, Irvine, extension program with a certificate in communications and network engineering. Michael currently resides in Orange, CA with his wife Jeanne and daughters, Amanda and Sara.

Technical Editor

Salman Abdul Baset is a first-year Ph.D. student in the Computer Science Department at Columbia University. His areas of research include multimedia and peer-to-peer networks, ubiquitous computing, network security, reverse engineering/hacking of programs, and privacy. He holds an M.S. in Computer Science from Columbia University and a B.S. in Computer System Engineering from Ghulam Ishaq Khan Institute of Engineering Sciences & Technology in Pakistan.

Contents

Part II: Taking Skype to the Next Level

Chapter 3

Getting Started Using Skype

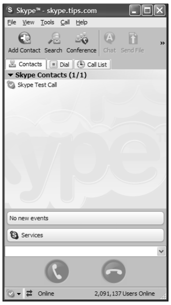
Solutions in this chapter:

- Signing Up As a User
- Adding or Searching for Contacts
- Starting a Chat
- Making a Test Call
- Making Your First Call
- Inviting Others to Join Skype
- Setting Your Status
- Advanced Settings

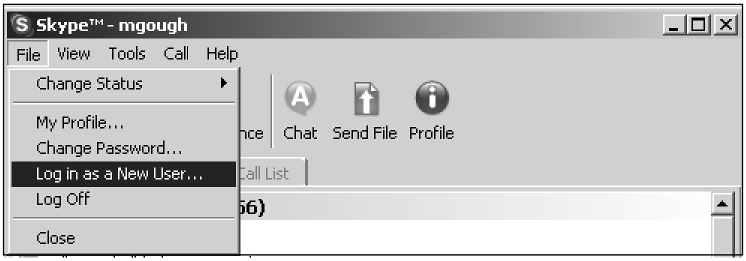
Signing Up As a User

We covered signing up as a new user during the installation process, but you might want or need to create multiple users or accounts at a later time. For example, you might want one account for you and another account for someone else in your household. Maybe you have a computer and a laptop, so you want to have a different account for each. Whatever your need, you can create and use multiple accounts in Skype.

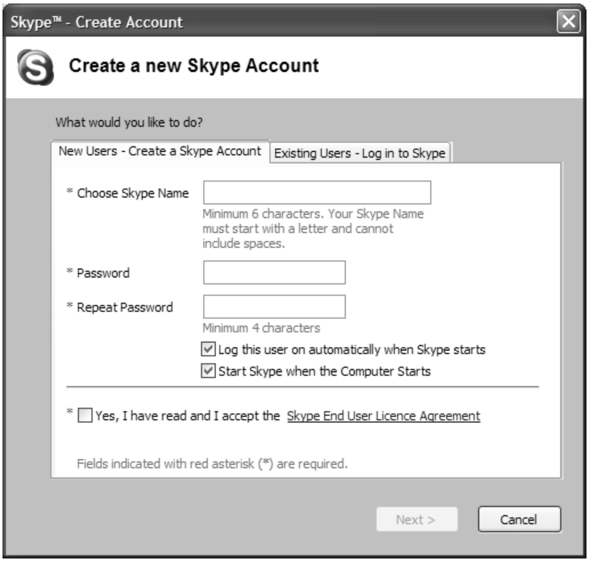
After Skype has logged you in, you will be presented with the following screen:



To create an additional account, select the **File** menu, and then select **Log in as a New User…**, as the following image indicates.



You will then be presented with the same screen you saw when you first signed up for your Skype account.



Skype™ - Create Account

Create a new Skype Account

What would you like to do?

New Users - Create a Skype Account | Existing Users - Log in to Skype

* Choose Skype Name

Minimum 6 characters. Your Skype Name must start with a letter and cannot include spaces.

* Password

* Repeat Password

Minimum 4 characters

☑ Log this user on automatically when Skype starts

☑ Start Skype when the Computer Starts

* □ Yes, I have read and I accept the Skype End User Licence Agreement

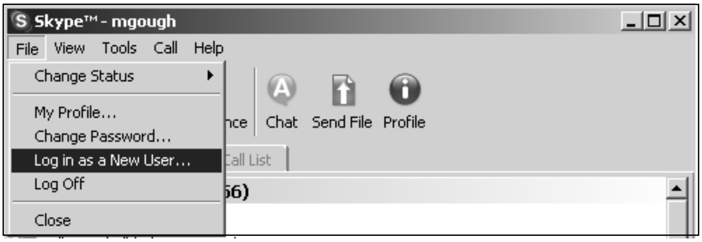
Fields indicated with red asterisk (*) are required.

Next > Cancel

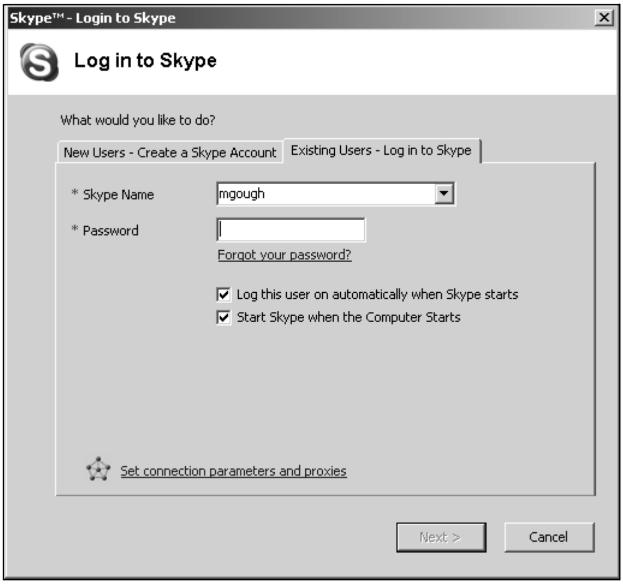
Select the **New Users – Create a Skype Account** tab. As we covered in Chapter 2 when you first signed up, create a new Skype name for yourself and follow the prompts. Once you are successful in creating a new account, Skype will log on the new user for you.

Switching between Users

If you have more than one user on your system, you will want to switch between these users from time to time. To switch between users you have created or allow any users who want to use their Skype accounts on your computer, select the **File** menu and then select **Log in as a New User…**, as the following image indicates.



You will then be presented with the following screen:


Skype™ - Login to Skype
Log in to Skype
New Users - Create a Skype Account
Existing Users - Log in to Skype
Forgot your password?
Set connection parameters and proxies
Next >
Cancel

What would you like to do?

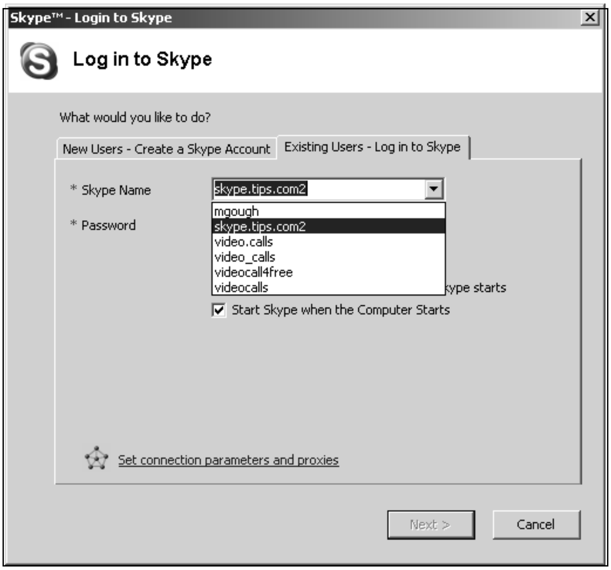
* Skype Name: mgough

* Password:

☑ Log this user on automatically when Skype starts

☑ Start Skype when the Computer Starts

Select the **Skype Name** drop-down box, and you will see a list of all users who have logged in to the computer.



What would you like to do?

* Skype Name: skype.tips.com2

* Password

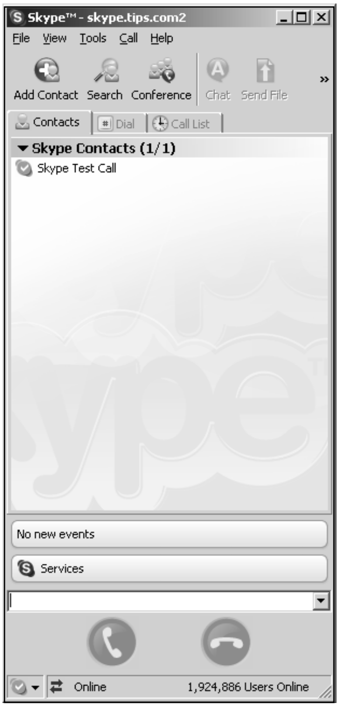
kype starts

☑ Start Skype when the Computer Starts

Select the user you want to log on, enter the correct password, and select **Next**.

Do not worry about the *Set connection parameters and proxies* link just yet. This is an advanced option that we'll cover later.

You will then be presented with the main Skype screen showing the user you selected is logged in.

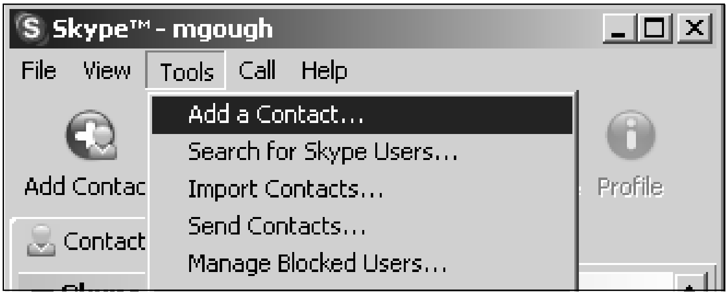


Adding or Searching for Contacts

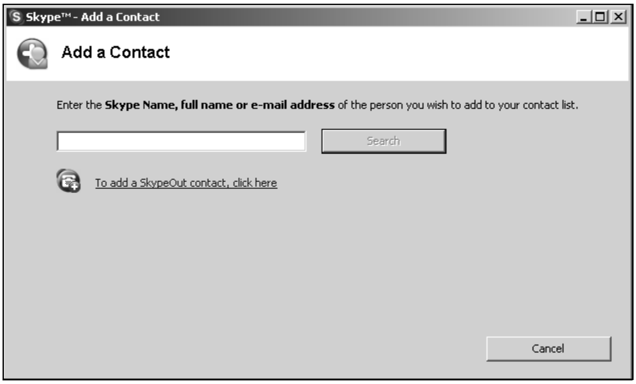
Now that you are up and running, you will want to add Skype users or search for Skype users with whom you want to communicate. You can verbally ask people you know for their Skype names, send them an e-mail, or search in the Skype directory for them. You can add users two ways: via Add a Contact for a known Skype name or by searching the Skype directory for users.

Adding Contacts

There are two ways two add contacts. One is to click the Add Contact icon or choose **Add a Contact** from the **Tools** menu.

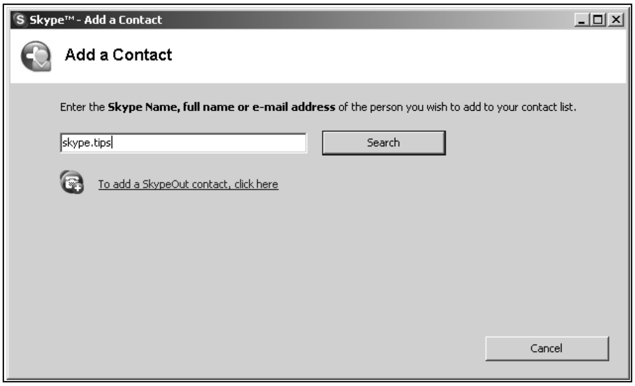


Select one of the two options to add a user, and you will be presented the following screen.



Enter the **Skype Name, full name or e-mail address** of the person you wish to add to your contact list.

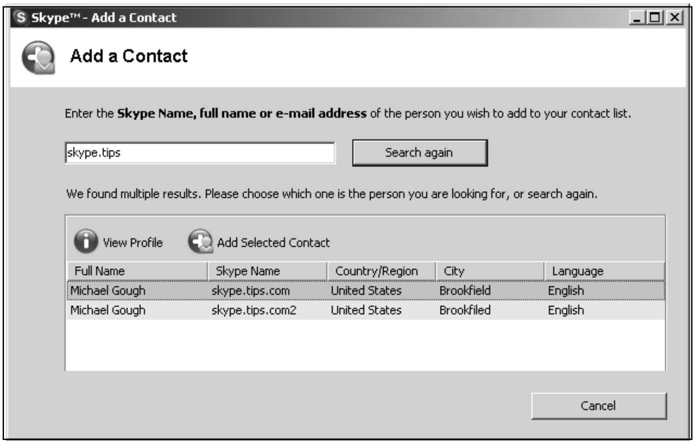
Enter the Skype name that you want to add and press the Search button.



Enter the **Skype Name, full name or e-mail address** of the person you wish to add to your contact list.

skype.tips

You will then be presented with the results of your search to validate the user you want to add.



Skype™ - Add a Contact

Add a Contact

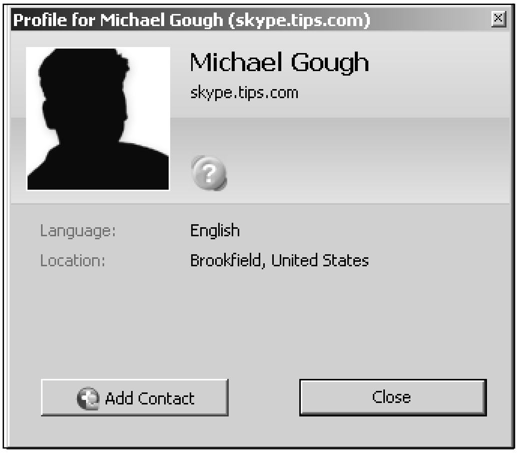
Enter the **Skype Name, full name or e-mail address** of the person you wish to add to your contact list.

skype.tips

We found multiple results. Please choose which one is the person you are looking for, or search again.

Full Name	Skype Name	Country/Region	City	Language
Michael Gough	skype.tips.com	United States	Brookfield	English
Michael Gough	skype.tips.com2	United States	Brookfiled	English

If more than one user is listed in the results, select one of them. At this point you may view the user's profile or just add the selected contact. You may also double-click the user's name and you will be presented with the following screen:



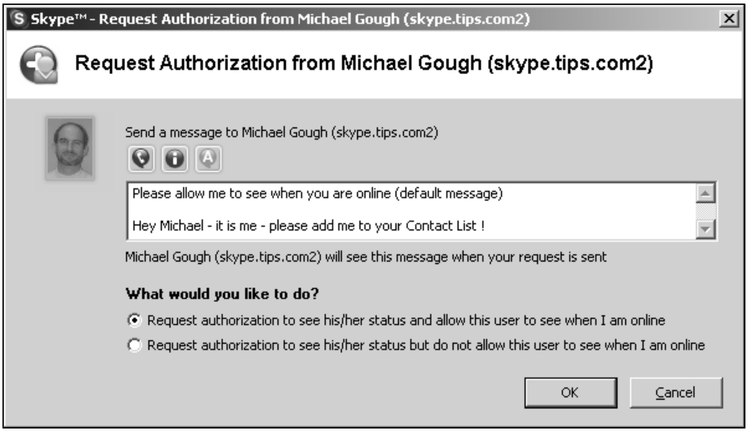
Profile for Michael Gough (skype.tips.com)

Michael Gough
skype.tips.com

Language: English
Location: Brookfield, United States

This screen will show you the contact's short profile so that you can verify that he or she is the person you want to add. You can click either the **Close** or, if you want to add the contact, click the **Add Contact** button.

Once you add the contact, you will be presented with the following screen.



Skype™ - Request Authorization from Michael Gough (skype.tips.com2)

Request Authorization from Michael Gough (skype.tips.com2)

Send a message to Michael Gough (skype.tips.com2)

Please allow me to see when you are online (default message)

Hey Michael - it is me - please add me to your Contact List !

Michael Gough (skype.tips.com2) will see this message when your request is sent

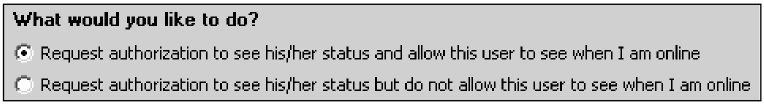
What would you like to do?

● Request authorization to see his/her status and allow this user to see when I am online

○ Request authorization to see his/her status but do not allow this user to see when I am online

You can send the contact a message letting him or her know who you are. I left the default message on the screen, but you may type anything you like in the message window.

You are then presented two choices for requesting authorization. Every time you ask a Skype user to add you to their contact list requires the user's authorization.



What would you like to do?

● Request authorization to see his/her status and allow this user to see when I am online

○ Request authorization to see his/her status but do not allow this user to see when I am online

The default option that is selected tells the person whom you are asking to add you to their contact list that you are online.

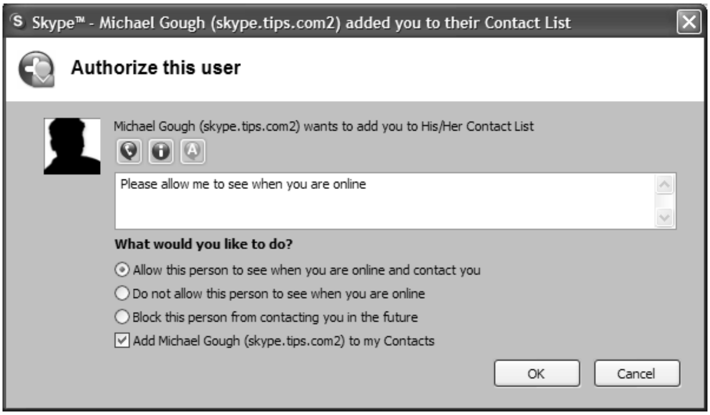
For more privacy, you can ask a contact to add you but not let them know when you are online. This is appropriate when you want to make calls to a person but not let them know every time you are online.

Understanding the Basics... Request Authorization

We recommend leaving the default selection when you request authorization and let your contact see when you are online, unless you desire more privacy and do not want to be disturbed.

After you send the request for authorization, you will be returned to the search result screen. Go ahead and close the window to return to the main Skype screen.

Your new Skype contact has been added and now will show up in your contact list as grayed out until the user approves your request for authorization. Your new contact will see the following screen to authorize you:



Skype™ - Michael Gough (skype.tips.com2) added you to their Contact List

Authorize this user

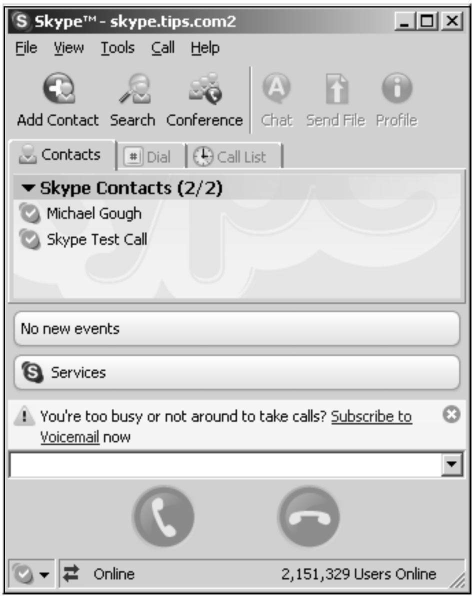
Michael Gough (skype.tips.com2) wants to add you to His/Her Contact List

Please allow me to see when you are online

What would you like to do?

● Allow this person to see when you are online and contact you
○ Do not allow this person to see when you are online
○ Block this person from contacting you in the future
☑ Add Michael Gough (skype.tips.com2) to my Contacts

Once the contact approves you, the icon next to the user will turn green, showing you that you have been approved and added to the other user's contact list.



Skype™ - skype.tips.com2

Skype Contacts (2/2)
Michael Gough
Skype Test Call

No new events

Services

You're too busy or not around to take calls? Subscribe to Voicemail now

Online 2,151,329 Users Online

Go ahead and repeat the steps we just described to add to your contact list all the people for whom you know their Skype contact names.

Understanding the Basics… Advertise Your Skype Name

You can add your Skype name to your e-mail signature so that anyone you normally communicate with will see you have a Skype name and can add you to their contact lists:

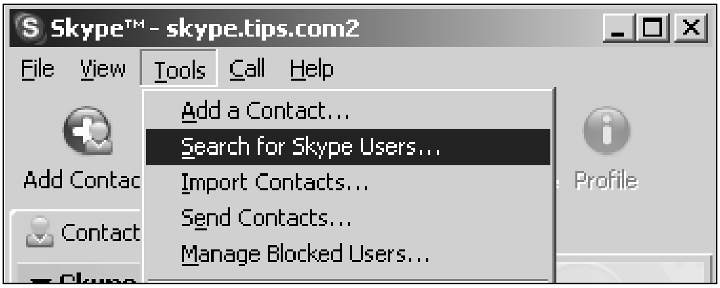
```
Skype = mgough
```

Searching for Contacts

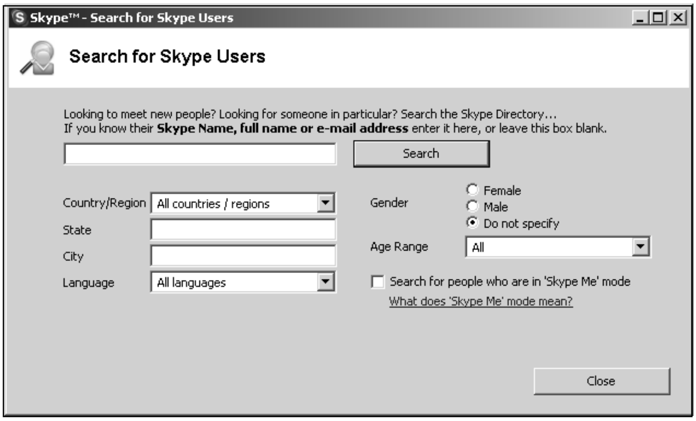
If you do not know your contact's Skype name, you can search the Skype directory for contacts using a simple search or and advanced search. Searches rely on the information a user adds to his or her profile. If your contact does not fill in all the profile entries, you will have difficulty locating that person.

Basic Search

There are two ways to start a basic search. One is by selecting the Search icon; the other is from the **Tools** menu.



Select one of the two options to add a user, and you will be presented with the following screen:


Skype™ - Search for Skype Users

Search for Skype Users

Looking to meet new people? Looking for someone in particular? Search the Skype Directory…
If you know their **Skype Name, full name or e-mail address** enter it here, or leave this box blank.

Search

Country/Region: All countries / regions
State:
City:
Language: All languages

Gender: ○ Female ○ Male ● Do not specify
Age Range: All

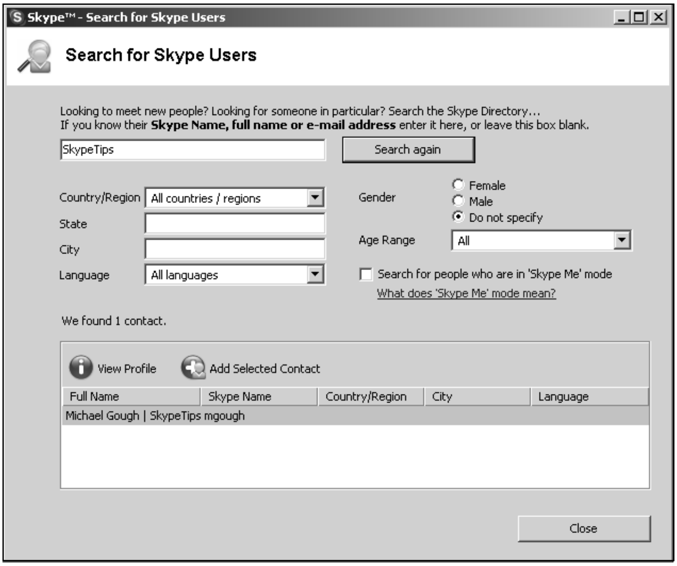
□ Search for people who are in 'Skype Me' mode
What does 'Skype Me' mode mean?

Close

Type the term you want to search for into the Search text box. You can search for three information items in the main Search box:

- User's Skype name
- User's full name
- User's e-mail address

Fill in what you want to search for and select the Search button, and your results will be returned. In the following screen I searched for SkypeTips, to return my username.



Skype™ - Search for Skype Users

Search for Skype Users

Looking to meet new people? Looking for someone in particular? Search the Skype Directory...
If you know their **Skype Name, full name or e-mail address** enter it here, or leave this box blank.

SkypeTips [Search again]

Country/Region: All countries / regions
State:
City:
Language: All languages

Gender: ○ Female ○ Male ● Do not specify
Age Range: All

□ Search for people who are in 'Skype Me' mode
What does 'Skype Me' mode mean?

We found 1 contact.

View Profile | Add Selected Contact

Full Name	Skype Name	Country/Region	City	Language
Michael Gough | SkypeTips mgough				

[Close]

Advanced Search

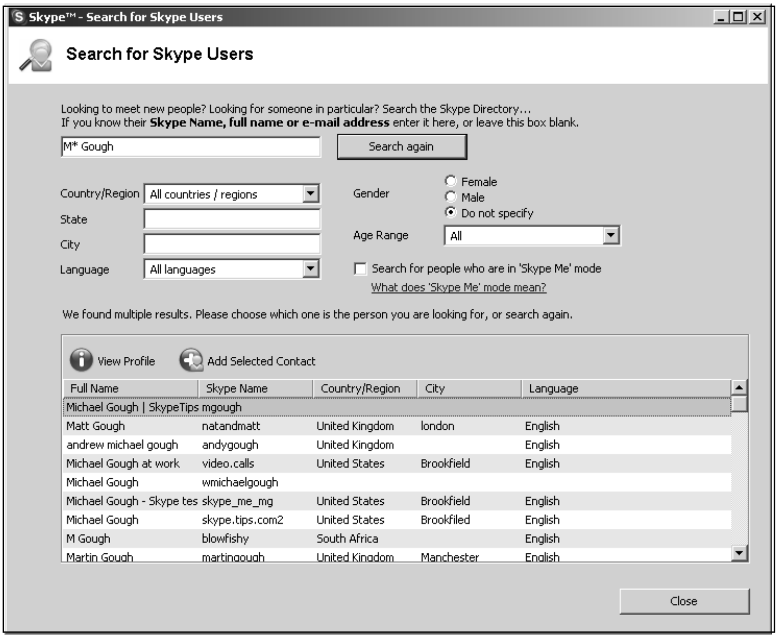
If the basic search does not locate the user you are looking for, you can use additional information items to search for a user:

- State
- City
- Language
- Gender
- Age range

Do not worry about SkypeMe mode at this time; we'll cover that a little later.

You can now search for a contact by any of the criteria shown on this screen. Keep in mind that you can only search for information the user has entered into his or her profile. If the user did not input a city, for example, you will not be able to locate him or her based on city.

You may also use the wildcard (*) option to search for all items. The wildcard option will return some interesting results. In the following screen, I typed in **M* Gough**. This returns the names of anyone whose first name starts with *M* and whose last name or Skype name is *Gough*.



Looking to meet new people? Looking for someone in particular? Search the Skype Directory...
If you know their **Skype Name, full name or e-mail address** enter it here, or leave this box blank.

M* Gough

Country/Region: All countries / regions
State:
City:
Language: All languages

Gender: ○ Female ○ Male ● Do not specify
Age Range: All
☐ Search for people who are in 'Skype Me' mode
What does 'Skype Me' mode mean?

We found multiple results. Please choose which one is the person you are looking for, or search again.

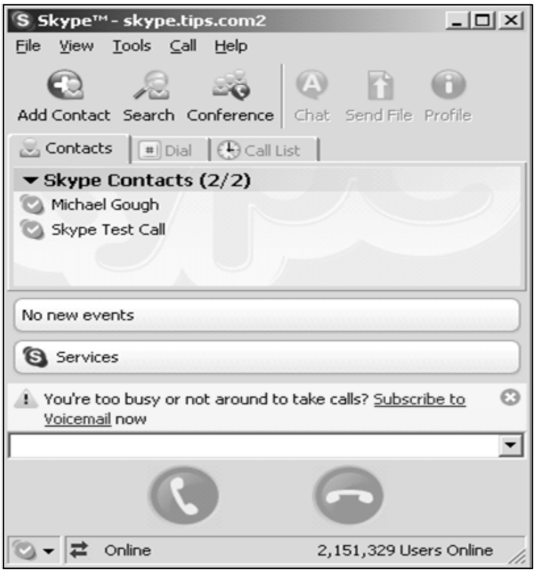
Full Name	Skype Name	Country/Region	City	Language
Michael Gough | SkypeTips	mgough			
Matt Gough	natandmatt	United Kingdom	london	English
andrew michael gough	andygough	United Kingdom		English
Michael Gough at work	video.calls	United States	Brookfield	English
Michael Gough	wmichaelgough			
Michael Gough - Skype tes	skype_me_mg	United States	Brookfield	English
Michael Gough	skype.tips.com2	United States	Brookfiled	English
M Gough	blowfishy	South Africa		English
Martin Gough	martingough	United Kingdom	Manchester	English

Use the various search options and the wildcard to find the Skype users you are looking to add to your contact list.

Starting a Chat

One of Skype's main features that you will use often is the Chat or IM feature.You will just say "Hi" or ask if someone is available for a voice call using the Chat option.

Before we start to explain how to start a Chat, we first need to discuss the selection of a contact in your list. Until now your contact list looked something like this.

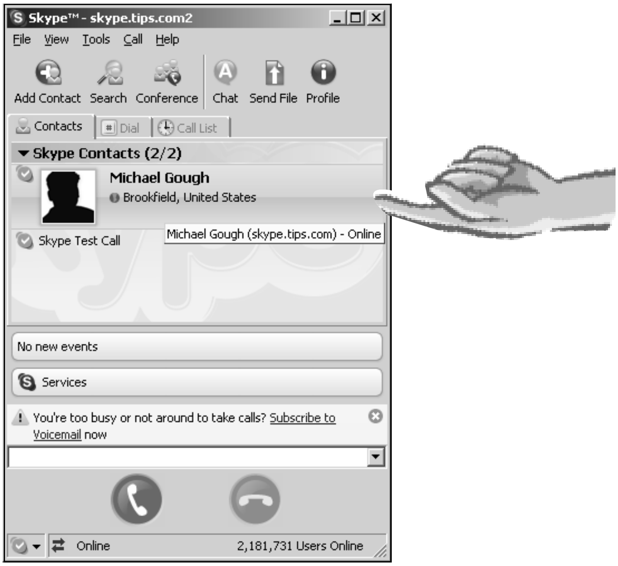


No new events

You're too busy or not around to take calls? Subscribe to Voicemail now

2,151,329 Users Online

When you select a contact in your list, the view will change to expand that user's information.



Brookfield, United States

Michael Gough (skype.tips.com) - Online

No new events

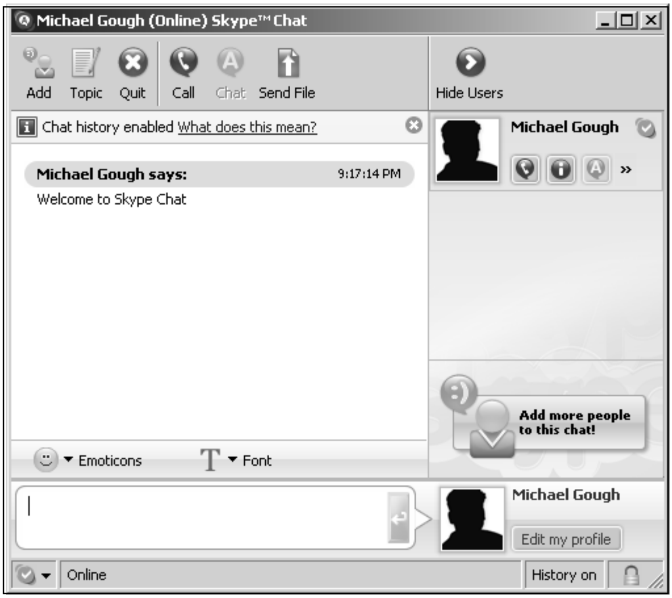
You're too busy or not around to take calls? Subscribe to Voicemail now

2,181,731 Users Online

The Contact name expands to include some basic profile information about the user. At this point, you can also right-click on the user name to get a menu of actions.

To start a chat, find the contact you want, select the **name** with a single mouse click, and initiate the chat using one of two methods: Select the Chat icon at the top of the screen or right-click with your mouse on the **contact name**, and select Start Chat... . We will discuss how to adjust the Skype Options settings later in this chapter, but if you make the default for double-click a contact to Start Chat, you will also be able to initiate a chat by double-clicking your **contact's name**. Most IM tools such as MSN, Yahoo!, AIM, and others all use double-clicking to start a chat, so you will want to change this so that when you double-click a **contact** in your list it opens a Chat window and does not call your contact.

Once the Chat window is open, you can start typing your message, use emoticons, change the text, and invite other contacts to your chat.



Michael Gough (Online) Skype™ Chat

Chat history enabled What does this mean?

Michael Gough says: 9:17:14 PM

Welcome to Skype Chat

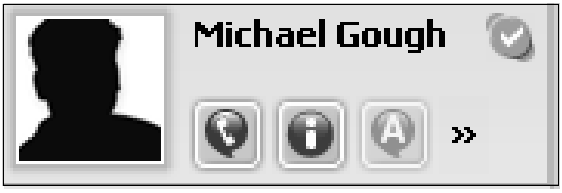
Notice the 🔒 icon in the bottom-right corner. This lock icon indicates that the chat session between contacts is encrypted with 256-bit AES encryption.

From within the Chat window you can also initiate the following actions by clicking these icons:

- Add Add a contact to your chat (multiparty chat)
- Topic Set the topic of your chat
- Quit Quit the current chat

- ☎ Call your contact
- ⇧ Send your contact a file

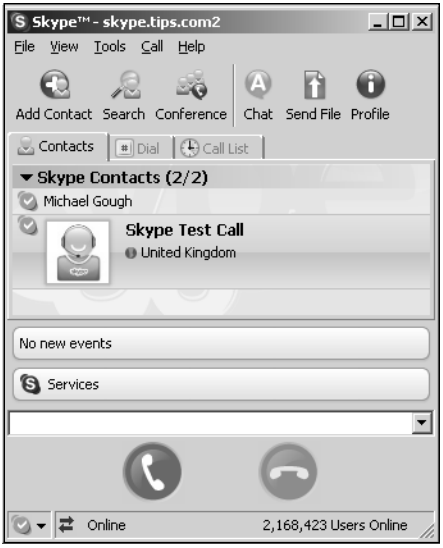
You can also view a contact's profile by selecting the ⓘ profile icon from the side of the Chat window.



Making a Test Call

Now that Skype is installed and you have added one or more contacts, it is time to make your first test call. Skype provides a test user called Echo123 that is added when Skype is installed.

Select the **Echo123** contact and you will see the following screen:



You can double-click the **contact name** to call, select the ☎ icon to call **Echo123**, or right-click the **contact name** and select Call This Contact. Call **Echo123** and you will be greeted with a message to start talking after the message, just like an answering machine. Once you complete your 10-second message, it will be played back to you so that you'll know whether Skype is working properly. If you hear your message played back, you are good to go!

You are now ready to make your first Skype voice call to a real contact!

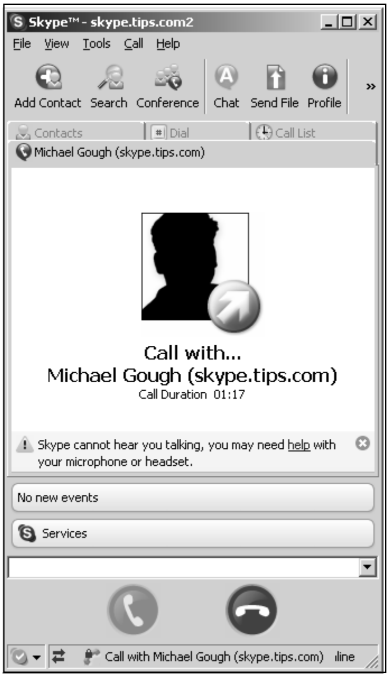
Making Your First Call

Now that you have completed the system test, you are ready to start talking with your family, friends, and colleagues.

Select a **contact** and either double-click the **contact's name** or use the ☎ icon to initiate the call. When you call someone and that person does not answer, you will get a busy signal or voicemail. Once a contact answers, you can do the following within a call:

- Chat
- Call another contact or make a conference call
- Send your contact a file
- View their profile
- Put the call on hold
- Mute or unmute the microphone

When you initiate a call to one of your contacts and they answer, you will see a screen that resembles the following:

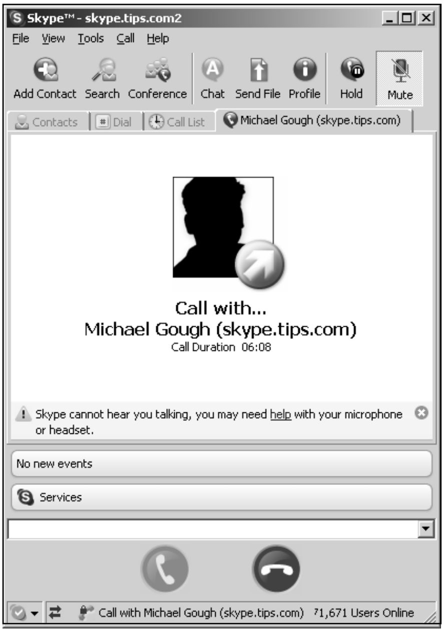


Call with...
Michael Gough (skype.tips.com)
Call Duration 01:17

Skype cannot hear you talking, you may need help with your microphone or headset.

Call with Michael Gough (skype.tips.com)

Expand the Skype window by selecting the right side of the window and dragging the window wider to the right to expose two additional icons. You should see the following screen.



Call with...
Michael Gough (skype.tips.com)
Call Duration 06:08

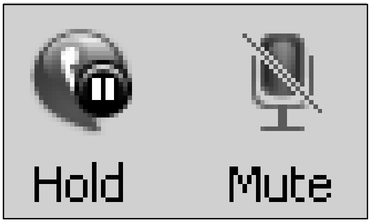
Skype cannot hear you talking, you may need help with your microphone or headset.

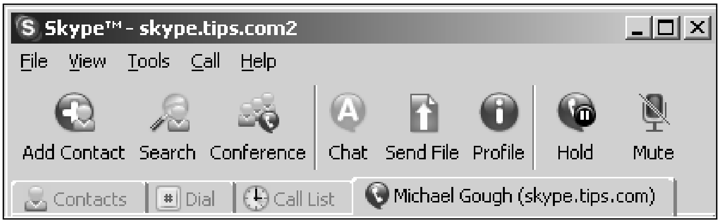
No new events

Services

Call with Michael Gough (skype.tips.com) 71,671 Users Online

Notice that you now have two more icons for putting the call on hold and muting the call.





In the bottom left corner of the screen, you should see the 🔒 icon. This lock indicates that the voice call session between contacts is encrypted with 256bit AES encryption.

Putting a Call on Hold

You can place the call on hold so that you can answer another call or attend to a task by selecting the Hold icon. You might want to do this to answer another call or to initiate a conference call, or for any other reason. To take the call off hold, select the Hold icon.

Muting and Unmuting the Microphone

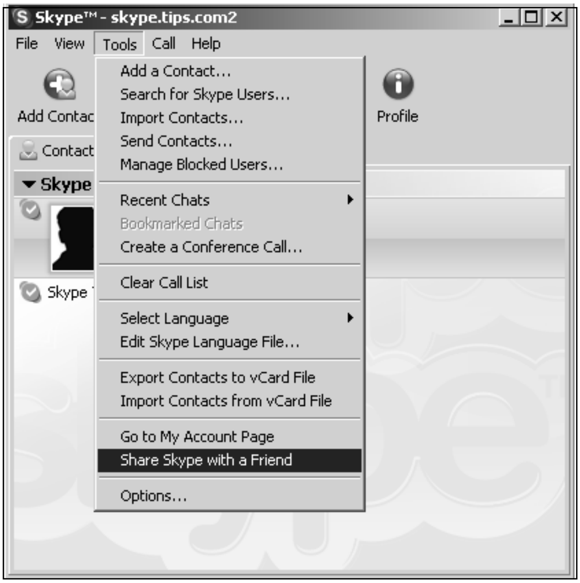
You can mute and unmute the microphone by selecting the Mute icon. You might want to do this to reduce feedback if you are using a microphone and external speakers, if you are just listening to a conference call, or if someone is talking to you in person and you do not want your call participants to hear what is going on. To unmute the microphone, select the Mute icon again.

Hanging Up the Call

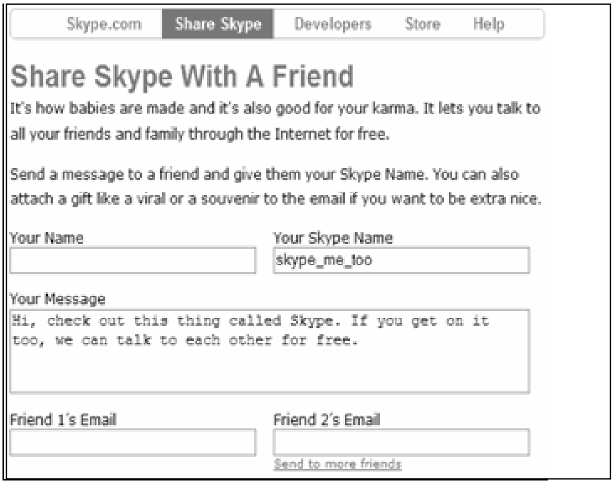
Either party can end the call by selecting the ☎ hangup icon.

Inviting Others to Join Skype

Since not everyone you know has or uses Skype, you might want to invite your family, friends, and colleagues to learn and use this great tool. Of course, you can ask them verbally or send them an e-mail, but Skype offers an automated way that will also provide the invitee a link via which he or she can download Skype. To do this, select **Share Skype with a Friend** from the **Tools** menu.



This choice launches your browser and takes you to the Skype Web site, where you can invite users to download and start using Skype via an e-mail Skype sends.



Share Skype With A Friend

It's how babies are made and it's also good for your karma. It lets you talk to all your friends and family through the Internet for free.

Send a message to a friend and give them your Skype Name. You can also attach a gift like a viral or a souvenir to the email if you want to be extra nice.

Your Name

Your Skype Name: skype_me_too

Your Message: Hi, check out this thing called Skype. If you get on it too, we can talk to each other for free.

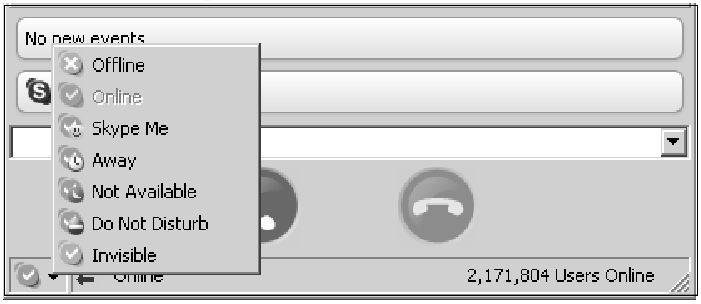
Friend 1's Email

Friend 2's Email

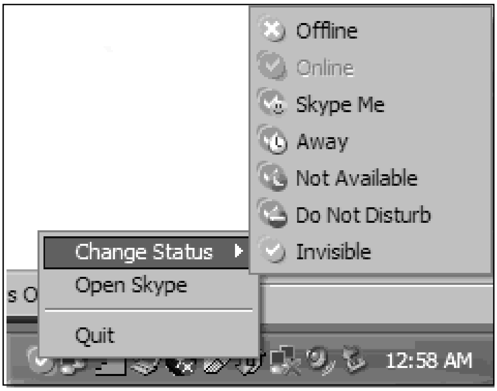
You can also send your family, friends, and colleagues an e-mail that contains a URL to the Skype download page, but the Skype invitation page makes it easy for you to invite users and get them familiar with the Skype Web site.

Setting Your Status

To let others online know your status (whether you're online or off), use the Current Status setting. You set your status by selecting the **drop-down box** indicated by the ✓▾ icon in the bottom-left corner of the Skype screen.



You can also set your status from the **Task Bar** icon in the bottom-right corner of your screen.



You are presented with seven status options:

- Offline
- Online
- Skype Me
- Away
- Not Available
- Do Not Disturb
- Invisible

Offline

The Offline status setting will make you appear to your contacts as though you are not online. They can, however, send you chat messages and call you.

- Indicates that you are offline (even if you're not)
- Contacts see you as offline
- You can be contacted via chat and calls

Online

The Online status setting changes your status back to normal online status and available for all features.

- Indicates that you are available and online
- Contacts can see that you are online
- You can be contacted via chat and calls

Skype Me

The Skype Me status setting makes you available for random chat, and anyone can call or chat with you *without authorization*. This setting overrides the authorization requests, so make sure that you really want this status setting because it means that anyone at any time can contact you from searches in the Skype directory. Privacy is basically disabled while this status setting is selected.

- Indicates that you are available and taking any calls from anyone, without authorization
- Contacts can see you are online and you can be "Skyped"
- You can be contacted via chat and calls

Understanding the Basics... Skype Me Status

Be careful using the Skype Me status option because it means that anyone can contact you any time, without authorization.

Away

The Away status setting tells your contacts that you are "away" and not at your computer to answer calls or chat. All features still work with this status setting enabled. This setting can be set manually and is automatically set to Away after you have not used your computer for a short period of time—five minutes by default. The status setting will return to Online once computer activity is sensed, only when it was automatically set by inactivity.

- Indicates that you are away from your computer for a short period of time
- Contacts can see you are online but away

- Automatically changes back to Online when computer activity is sensed
- You can be contacted via chat and calls

Not Available

The Not Available status setting tells your contacts you unavailable and not at your computer to answer calls or chat. All features still work with this status setting enabled. This setting can be set manually and is automatically set to Not Available after you have not used your computer for a long period of time—20 minutes by default. The status setting will return to Online once computer activity is sensed, only when it was automatically set by inactivity.

- Indicates that you have been away for a long period of time
- Contacts can see that you are online but are not available
- Automatically changes back to Online when computer activity is sensed
- You can be contacted via chat and calls

Do Not Disturb

The Do Not Disturb status setting tells your contacts that you cannot be disturbed. Your contacts cannot contact you, and chats and calls will not come through. You must change this status setting when you want your contacts to know that you are available again.

- Contacts can see that you are online but status is Do Not Disturb
- You can make outbound contacts
- You cannot be contacted

Invisible

The Invisible status setting makes it look as though you are offline. You can still be contacted when the status is set to Invisible.

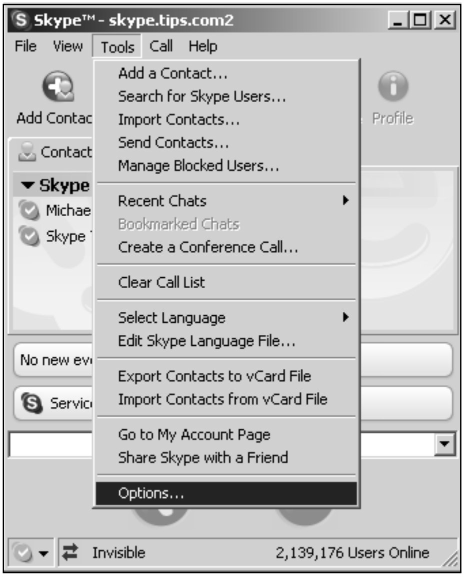
- Contacts see you as offline
- You cannot make outbound chats or calls
- You can be contacted

Basic Options

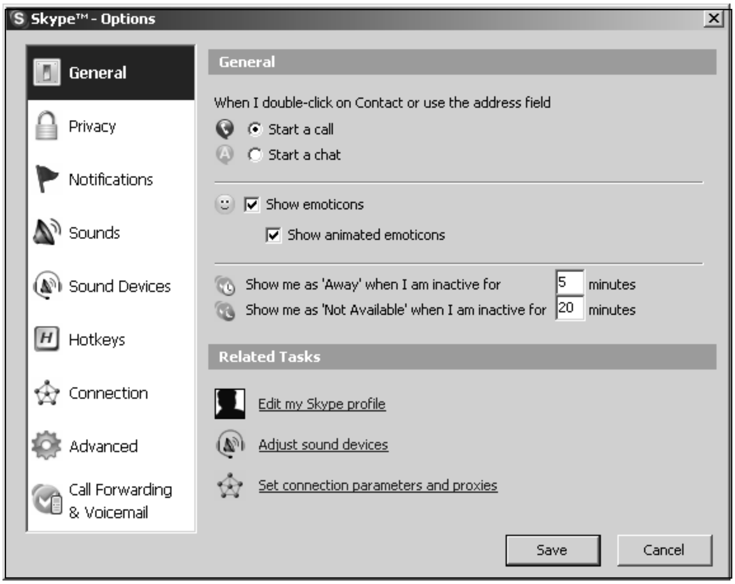
Now that you are up and running with Skype, we can explore the options available to better configure and customize Skype to your personal preferences. The following are the options that you can configure to meet your needs:

- General settings
- Privacy
- Notifications
- Sound alerts
- Sound devices (advanced)
- Hotkeys
- Connection (advanced)
- Advanced
- Voicemail (advanced)

We will not cover all these settings in this chapter, since we are only covering the basic settings at this point. The advanced settings are covered later in the book. To access the Skype Options settings, select the **Tools** menu, then select **Options**.



You will be presented with the list of options in the **General Options** tab.



General

When I double-click on Contact or use the address field

● Start a call

○ Start a chat

☑ Show emoticons

☑ Show animated emoticons

Show me as 'Away' when I am inactive for 5 minutes

Show me as 'Not Available' when I am inactive for 20 minutes

Related Tasks

Edit my Skype profile

Adjust sound devices

Set connection parameters and proxies

Save and Cancel Buttons

If you change a setting, you must do one of two things: Click the Save button to save your changes, or click the Cancel button to cancel your changes. You should do this at each of the Option tabs to save or cancel your settings. Some changes require you to restart Skype, so just follow the prompts.

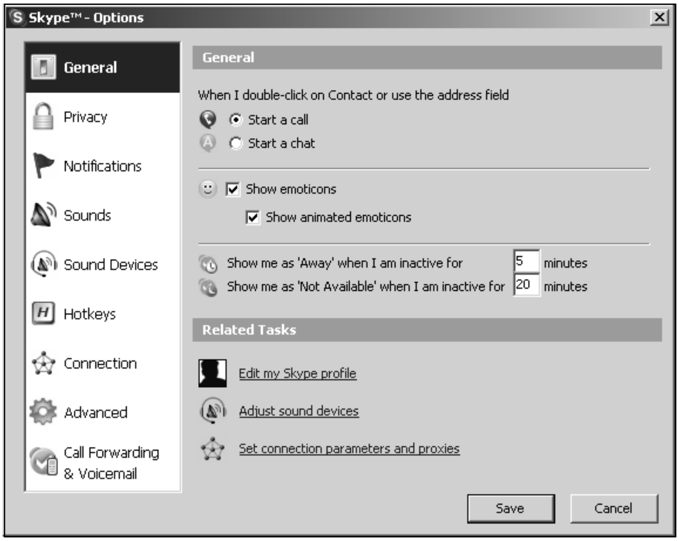
General Options

The General options tab allows you to set the following items:

- Double-click on a contact or use the address field
- Show emoticons
- Show me as away after *X* minutes
- Show me as not available after *X* minutes

Under Related Tasks, you will see:

- Edit your profile
- Adjust your sound devices
- Set connection parameters and proxy



General

When I double-click on Contact or use the address field

● Start a call

○ Start a chat

☑ Show emoticons

☑ Show animated emoticons

Show me as 'Away' when I am inactive for 5 minutes

Show me as 'Not Available' when I am inactive for 20 minutes

Related Tasks

Edit my Skype profile

Adjust sound devices

Set connection parameters and proxies

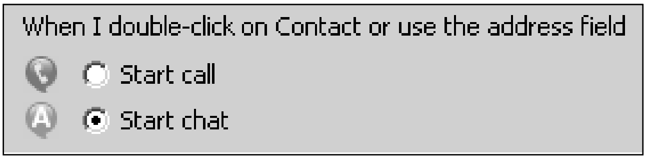
When I Double-Click a Contact Name, What Happens?

By default, when you double-click your mouse a contact name, Skype calls that contact. You might find that this is not the best option, because every time you double-click a user name accidentally, you will call that contact and then have to cancel the call. We recommend you change this setting to Start Chat. Then you can call your contact from within the Chat window by selecting the ☎ icon, as we discussed in Chapter 2.

If you are an MSN, Yahoo!, AIM, or other IM user, you might find it convenient to set Start Chat as your default.

Understanding the Basics... General Options

We recommend that you set the **Double-Click** option to:



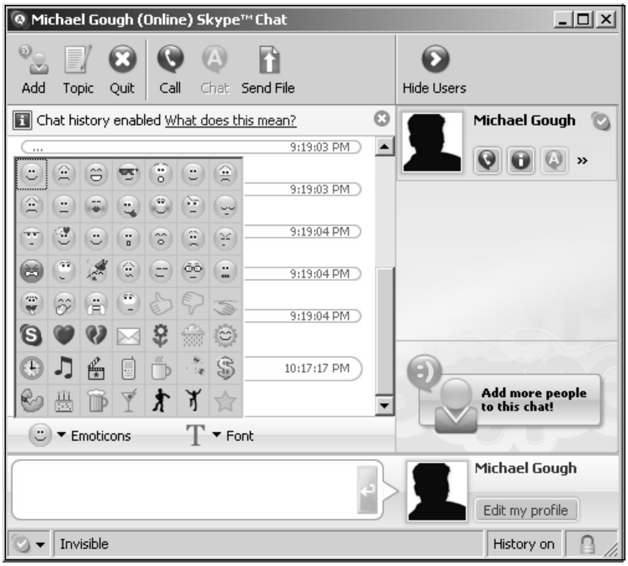
When I double-click on Contact or use the address field

○ Start call

● Start chat

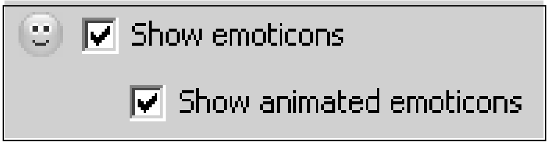
Show Emoticons

Emoticons are the cute little animated icons that appear in your Chat window when you select one of them from the menu. They help convey your feelings in an instant message. You will want to enable this setting unless you do not prefer to use emoticons.



Understanding the Basics... General Options

We recommend you set the **Emoticons** option to:

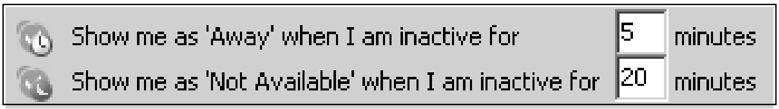


☑ Show emoticons

☑ Show animated emoticons

Show Me As…

There are two status settings that are automatic when you stop using your computer for a period of time. Skype will automatically set your status to one of the following:



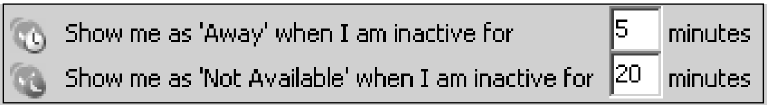
Show me as 'Away' when I am inactive for 5 minutes

Show me as 'Not Available' when I am inactive for 20 minutes

We covered what these two settings mean in Chapter 2. If you want to adjust these settings so other users do not think you are away or not available after the default period of time, you may set these to your desired state. If you set the Away value to 0 it will disable both these features.

Understanding the Basics… General Options

We recommend you set the **Show me as** option to:

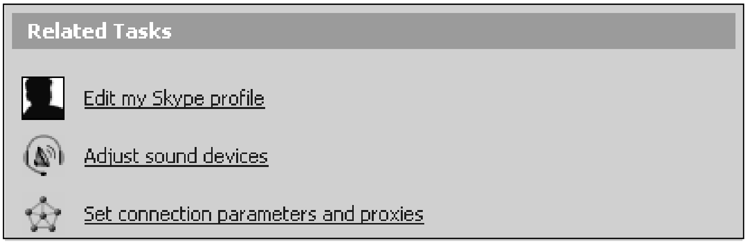


Show me as 'Away' when I am inactive for 5 minutes

Show me as 'Not Available' when I am inactive for 20 minutes

Related Tasks: Editing Your Skype Profile

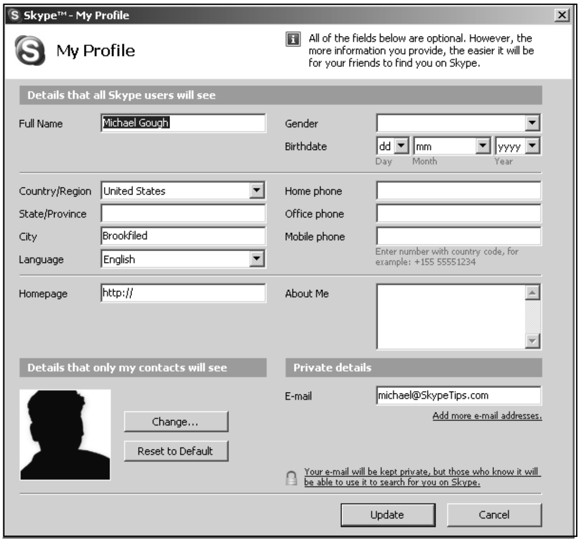
Skype lists several items that are related in the Related Tasks area. For the General tab, the following are listed.



We cover only editing your profile here, since *Adjust sound devices* and *Set connection parameters and proxies* are advanced settings we cover in the "Advanced Settings" section of Chapter 6.

The one related task that appears in the General tab is the Edit my Skype profile settings. This is where you add more information about yourself that you want published in the Skype directory. The information you enter here is public information, so take care not to enter information you do not want others to know about you.

When you select the Edit my Skype profile option, you will be presented with the following screen:


Skype™ - My Profile

My Profile

All of the fields below are optional. However, the more information you provide, the easier it will be for your friends to find you on Skype.

Full Name: Michael Gough

Country/Region: United States

City: Brookfiled

Language: English

Homepage: http://

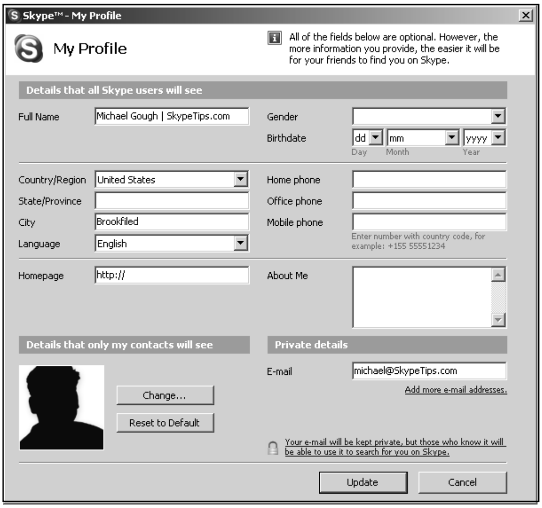
E-mail: michael@SkypeTips.com

Your e-mail will be kept private, but those who know it will be able to use it to search for you on Skype.

Details that all Skype users will see
Gender
Birthdate
dd
mm
yyyy
Day
Month
Year
State/Province
Home phone
Office phone
Mobile phone
Enter number with country code, for example: +155 55551234
About Me
Details that only my contacts will see
Private details
Change...
Reset to Default
Add more e-mail addresses.
Update
Cancel

As you can see by my profile, I choose to share very little information with the public. I prefer that people contact me through my Web site or send me e-mail. This way I can limit the number of people looking for other Michael Goughs in the world or people who think they know me but whom I don't remember.

What you put in here will be your personal preference. You can use the Full Name field to list something additional about you. Notice in the following screen that I have modified my Full Name to include my SkypeTips.com Web site. You need to close Skype and log on again for this information to be made available, or you can wait until the next time you restart your computer.


Skype™ - My Profile

My Profile

All of the fields below are optional. However, the more information you provide, the easier it will be for your friends to find you on Skype.

Full Name: Michael Gough | SkypeTips.com

Country/Region: United States

City: Brookfiled

Language: English

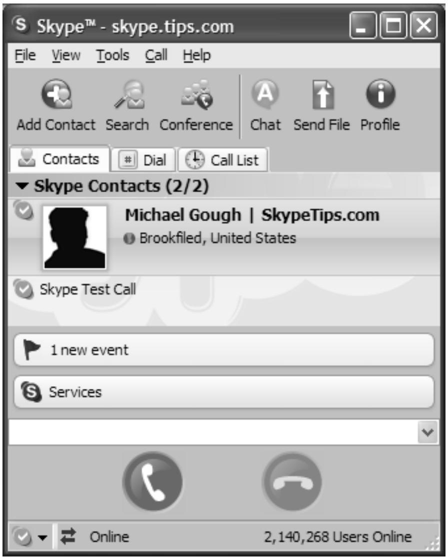
Homepage: http://

E-mail: michael@SkypeTips.com

Your e-mail will be kept private, but those who know it will be able to use it to search for you on Skype.

Details that all Skype users will see
Gender
Birthdate
dd
mm
yyyy
Day
Month
Year
State/Province
Home phone
Office phone
Mobile phone
Enter number with country code, for example: +155 55551234
About Me
Details that only my contacts will see
Private details
Change...
Reset to Default
Add more e-mail addresses.
Update
Cancel

This is what your contacts will see when they select your name (Chapter 6 explains in detail how to use the fields in this dialog box):



This way you can customize what your contacts see next to your name on their contact list, or in my case my SkypeTips.com Web site.

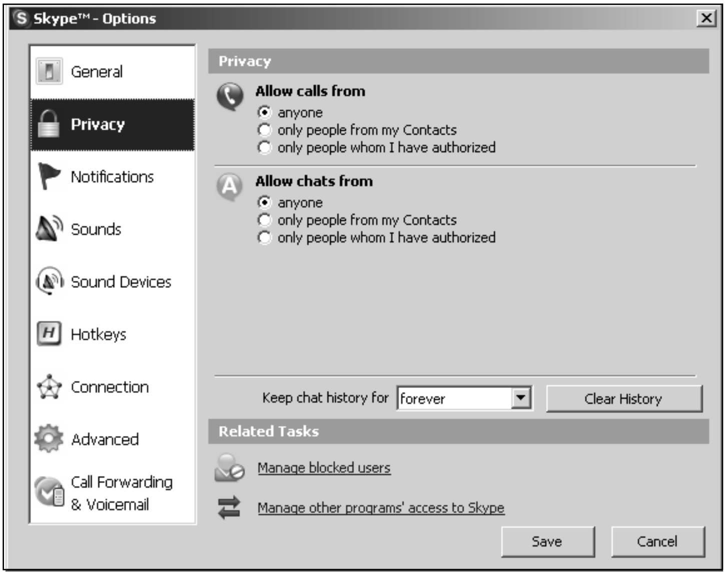
Privacy Options

The Privacy Options tab allows you to set the following items:

- Allow calls from
- Allow chat from
- Allow SkypeIn calls from (advanced)
- Keep Chat History

Under Related Tasks, you will see:

- Manage blocked users
- Manage other programs' access to Skype (advanced)



Allow calls from
● anyone
○ only people from my Contacts
○ only people whom I have authorized

Allow chats from
● anyone
○ only people from my Contacts
○ only people whom I have authorized

Keep chat history for forever

If people do a search and find you in the Skype directory, these settings will control what they can do upon selecting you as a new contact. The following is a list of possible settings:

- Anyone can call or chat
- Only people from my contacts list can call or chat
- Only people whom I have authorized can call or chat

It is important that you understand the differences among these three settings so that you make the best choice for your situation. The three settings have different meanings in terms of the way people can chat and call you. Do you want anyone to initiate a chat or call you before or after authorization, or do you want only people in your contacts list to be able to chat or call you?

Anyone Can …

If this option is selected, anyone can send a chat message or call you after they send you a request for Authorization. However, also be aware that they can chat and call you *before* you authorize them, as a part of asking you for authorization. Others can use this setting to explain to you who they are and why you should authorize them.

Only People from My Contacts Can …

If this option is selected, only people you have added to your contacts can send a chat message or call you. Users will be alerted that you are "not a contact" in their main Skype window if they attempt to chat or call you. They must of course be authorized first or you must have requested authorization from them. If you are privacy conscious and do not want to be contacted by a user until you add that user to your contact list, this is the best setting to choose. Also, if you once authorized a contact and later removed the person from your contacts list, that user will be unable to chat to or call you. When a contact sends you a request for authorization, the chat and call features will be disabled.

Only People Whom I Have Authorized Can …

If this option is selected, potential contacts cannot chat or call you until after you have authorized them and added them to your contacts. Users will be alerted that they are "not authorized to call" you in their main Skype window if they attempt to chat to or call you. If you delete a contact from your contact list with this option set, the user may still chat to or call you.

Understanding the Basics... Privacy Options

Here's a brief summary of the privacy options:

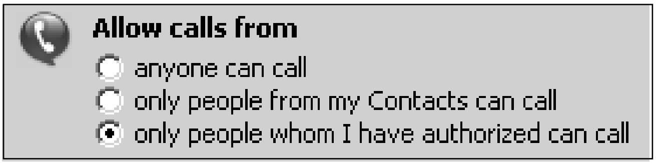
- For the most privacy, enable **Only people from my Contacts can...**
- For good privacy, enable **Only people whom I have authorized can...**
- For the least privacy, enable **Anyone can...**

Allow Calls From

This setting is where you set who can call you.

Understanding the Basics... Privacy Options

We recommend you set the **Allow Calls** option to:



Allow calls from

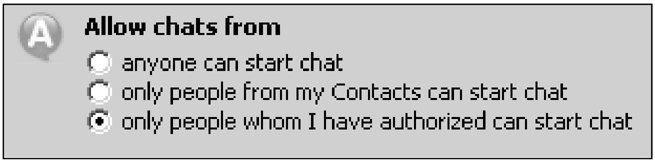
○ anyone can call
○ only people from my Contacts can call
● only people whom I have authorized can call

Allow Chat From

This is where you set who can chat with you.

Understanding the Basics... Privacy Options

We recommend you set the **Allow Chats** option to:



Allow chats from

○ anyone can start chat
○ only people from my Contacts can start chat
● only people whom I have authorized can start chat

Keep Chat History

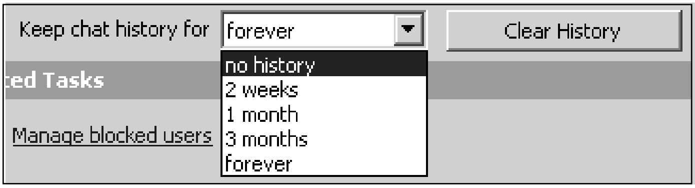
If you chat with your contacts, you might close the chat window and later want to remember what you chatted about. Skype gives you the option of saving your history for each chat for the following lengths of time:

- No history
- Two weeks
- One month
- Three months
- Forever

You may select whatever option you feel is best, but we would recommend changing this setting only after you understand Skype better and when you know that you do not want to save the chat history forever. Chat histories are stored unencrypted on users' machines.

Understanding the Basics... Privacy Options

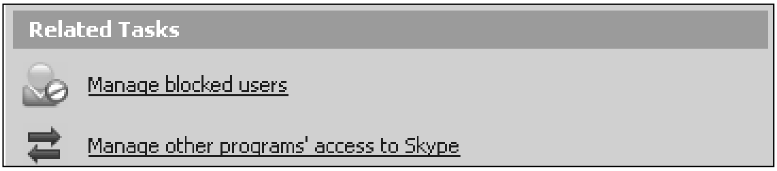
We recommend you set the **Keep chat history for** option to **Forever**.



Keep chat history for: forever

Related Tasks

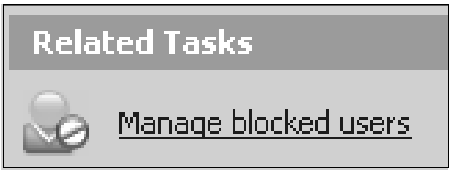
In the Related Tasks area, Skype lists several items that are related. For the **Privacy** tab, the following items are listed.



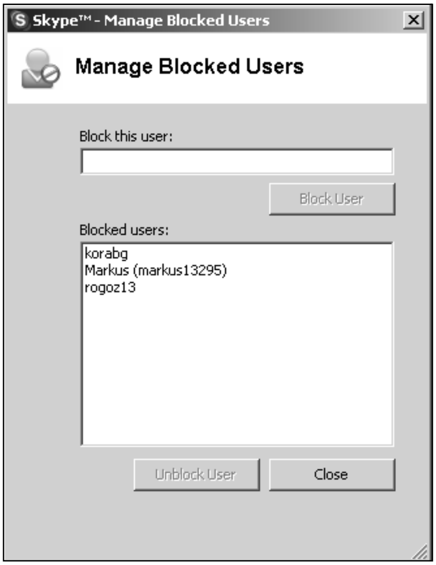
We cover only *Manage blocked users* here. *Manage other programs' access to Skype* is an advanced setting that we cover in the "Advanced Settings" section of Chapter 6.

Blocked Users

To access and manage your list of blocked users, use the **Related Tasks** area of the **Privacy** tab.

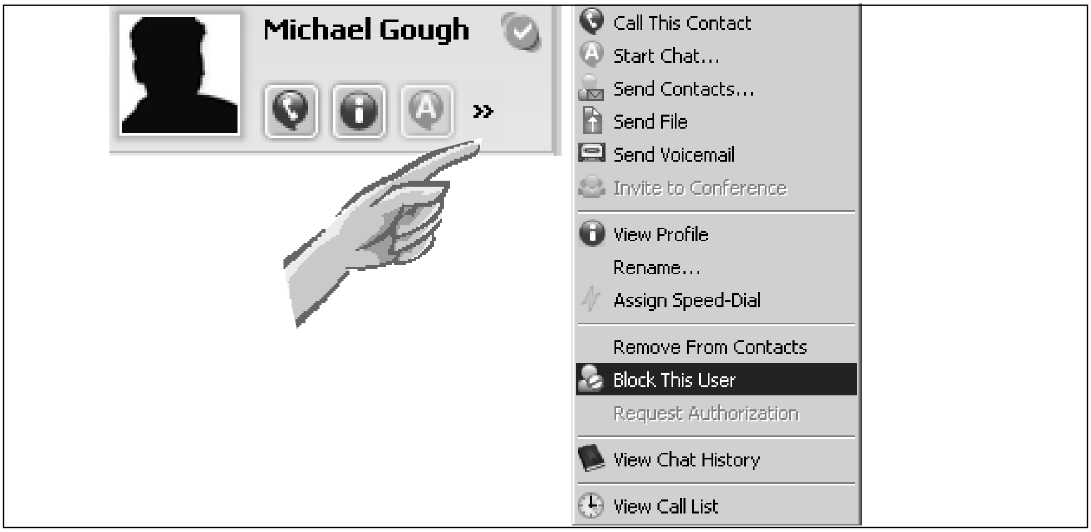


If there is a person or people you do not want to contact you or that have harassed you via a crank call, for example, you can block them by adding them to your Blocked Users list. This tab is where you manage the list.



korabg
Markus (markus13295)
rogoz13

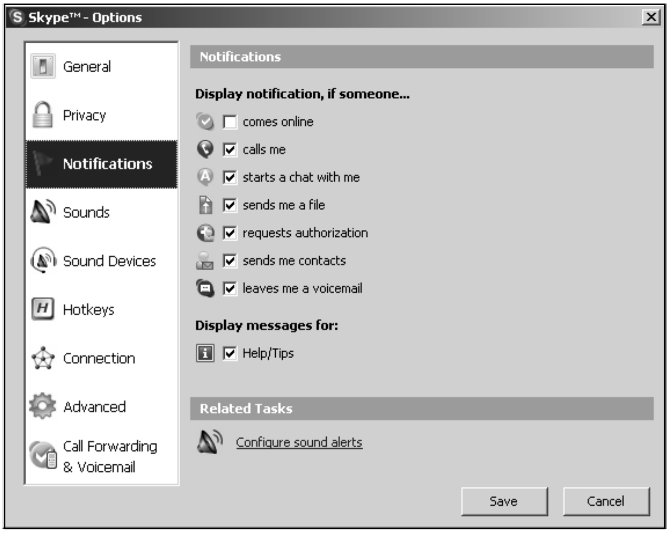
You may also initially block a user when you right-click his or her name in your contacts list. You can also access this list from within a chat window by selecting the » icon.



Notification Options

The Notification options tab allows you to display a notification if another Skype user does one of the following:

- Comes online
- Calls you
- Starts a chat with you
- Sends you a file
- Requests authorization
- Sends you contacts
- Leaves you a voicemail (advanced)
- Displays messages for Help/Tips



Notifications

Display notification, if someone...

- ☐ comes online
- ☑ calls me
- ☑ starts a chat with me
- ☑ sends me a file
- ☑ requests authorization
- ☑ sends me contacts
- ☑ leaves me a voicemail

Display messages for:

- ☑ Help/Tips

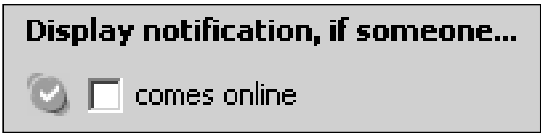
Related Tasks

Configure sound alerts

Only the *Comes online* setting is annoying when it's set. As users come and go, the notification pops up in the bottom-right corner of your screen and can be very active, since it will also notify you regarding users' status change from Away, Not Available, and others. We recommend leaving the other settings on by default so you know when an event happens.

Understanding the Basics... Privacy Options

We recommend you set the **Comes online** option to:



Display notification, if someone...

☐ comes online

Related Tasks

In the Related Tasks area, Skype lists several items that are related. For the **Notification** tab, the following are listed:

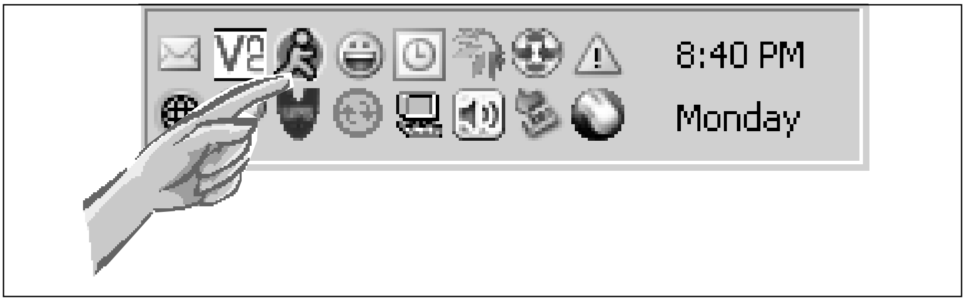
Related Tasks

Configure sound alerts

Configure sound alerts is an advanced setting that we cover in the "Advanced Settings" section of Chapter 6.

Tasks Bar Icon

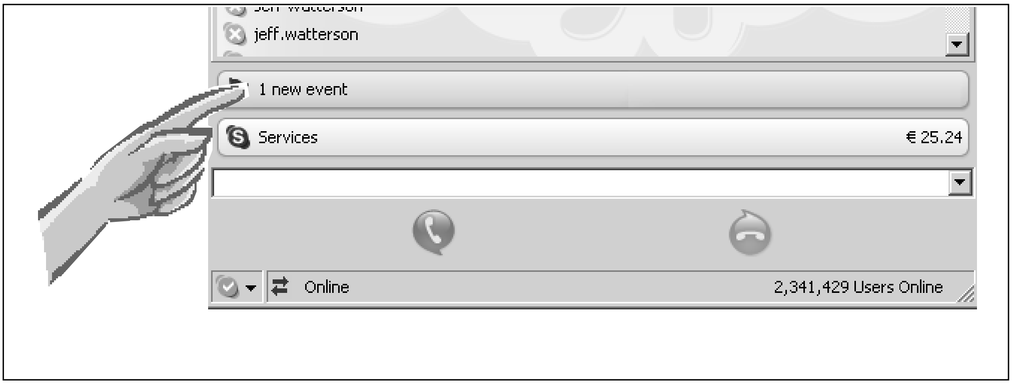
When an event has happened that you missed, the ✓ icon in the Windows Task Bar will flash with a caution icon like this ⚠. This notifies you that you have a missed call.



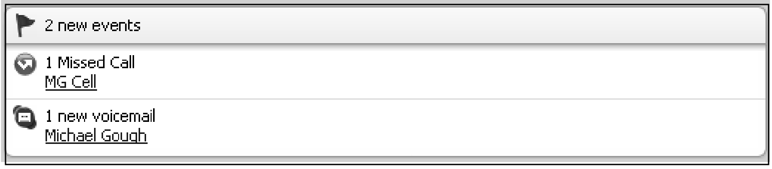
Events

Skype notifies you of any events in the main Skype window, such as missed calls or if someone has left you voicemail message.

Within your main Skype window, you will see a message in the **Event** window:



This message will tell you how many events you have. To check an event, simply select the yellow tab and it will expand to show you the specific events from each user.

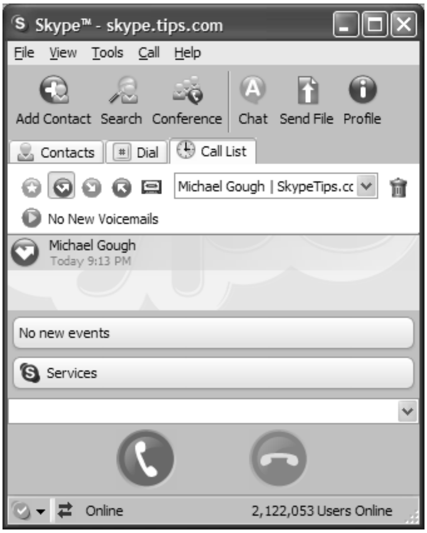


2 new events

1 Missed Call
MG Cell

1 new voicemail
Michael Gough

You'll see if you have a missed call or someone has left you voicemail (more on that in the "Voice Mail" section of Chapter 6). When you select the specific event, it will take you to all the events related to that contact.



Michael Gough | SkypeTips.cc

No New Voicemails

Michael Gough
Today 9:13 PM

No new events

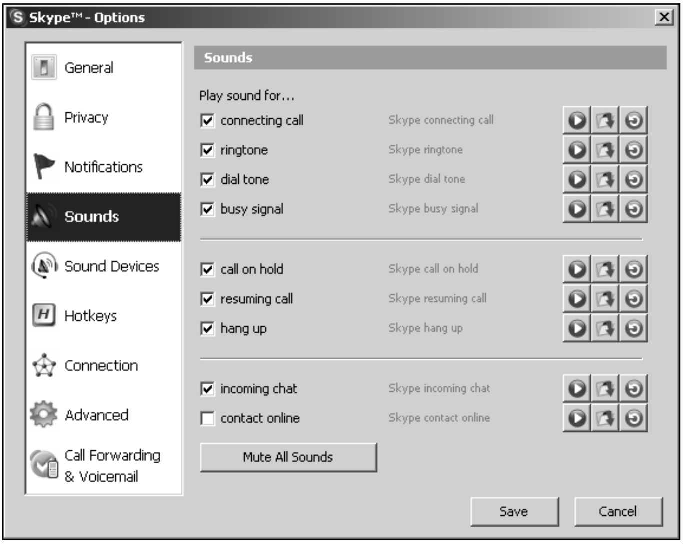
Online 2,122,053 Users Online

Here you can listen to your voicemail or delete the event by selecting the trash 🗑 icon.

Sound Alerts

The Sound Alerts option allows you to set the sounds that play for certain events. Next to each option are three icons:

- ▶ Play the sound
- 📂 Select a different sound file
- ↺ Reset the sound to Skype default



Sounds

Play sound for...

☑ connecting call	Skype connecting call
☑ ringtone	Skype ringtone
☑ dial tone	Skype dial tone
☑ busy signal	Skype busy signal
☑ call on hold	Skype call on hold
☑ resuming call	Skype resuming call
☑ hang up	Skype hang up
☑ incoming chat	Skype incoming chat
☐ contact online	Skype contact online

Mute All Sounds

The default sounds are a good place to start, but if you tend to change sounds to your liking, feel free to customize Skype to play sounds the way you want.

Understanding the Basics... Privacy Options

We recommend you deselect the **Play sound when contacts come online** setting:

☐ Play sound when contacts come online

You may also choose **Mute All Sounds** and rely solely on the visual alerts to let you know what Skype is doing. We do not recommend this choice, however, as you could just as easily mute your sound card or turn off your speakers if you do not want Skype to make sounds as you use it.

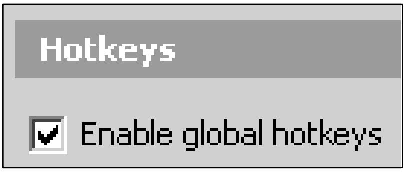
Hotkeys Options

Many users still like to use the keyboard to control certain functions of their computer. Skype allows you to set several hotkeys for the following actions:

- Answer call
- Ignore call

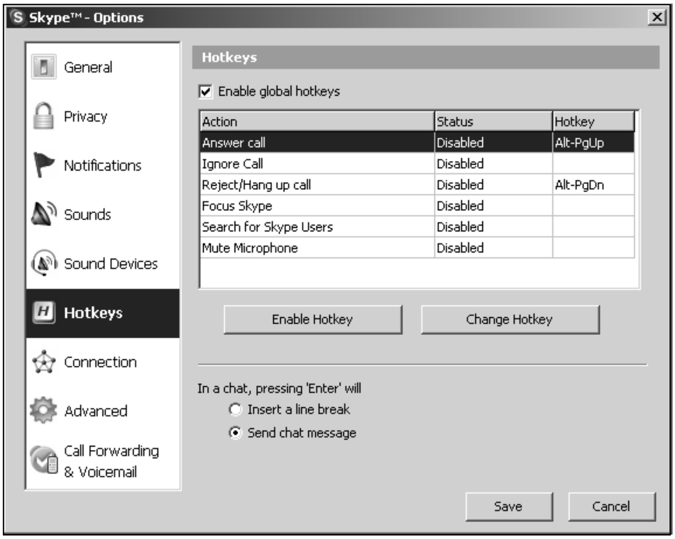
- Reject/hang up call
- Focus Skype
- Search for Skype users
- Mute microphone

If you want to use hotkeys, you first have to enable them by selecting the **Enable global hotkeys** check box.



Hotkeys

☑ Enable global hotkeys



Skype™ - Options

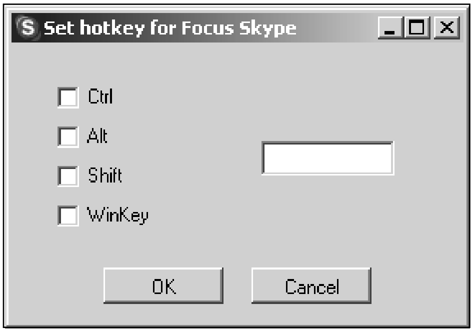
Hotkeys

☑ Enable global hotkeys

Action	Status	Hotkey
Answer call	Disabled	Alt-PgUp
Ignore Call	Disabled	
Reject/Hang up call	Disabled	Alt-PgDn
Focus Skype	Disabled	
Search for Skype Users	Disabled	
Mute Microphone	Disabled	

In a chat, pressing 'Enter' will
○ Insert a line break
● Send chat message

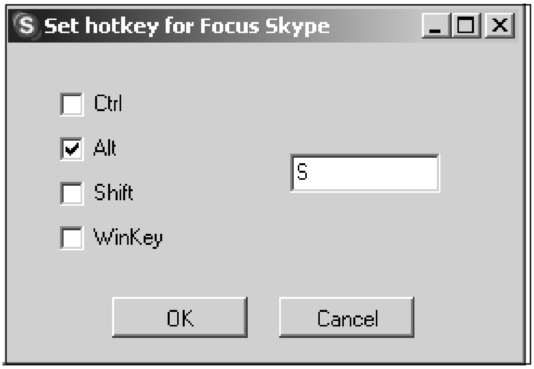
After you enable the hotkeys, you can set or change them to what you want. First, set the hotkey combination you want. Select the Change Hotkey button and you will be prompted with the following screen:



Set hotkey for Focus Skype

☐ Ctrl
☐ Alt
☐ Shift
☐ WinKey

Fill in the hotkey combination you want to use. In the following example, we will set Focus Skype to **Alt + S**.



Set hotkey for Focus Skype

□ Ctrl

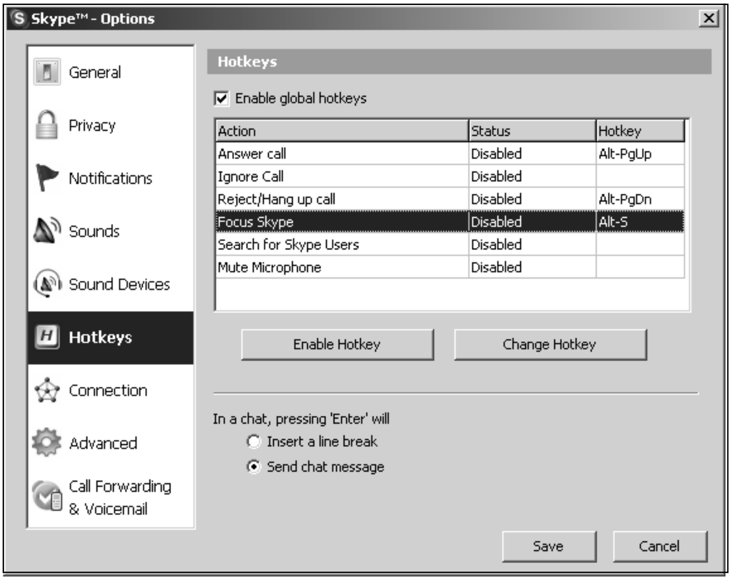
☑ Alt

□ Shift

□ WinKey

S

Now when you press the **Alt + S** key combination, the main Skype window will appear.



Skype™ - Options

Hotkeys

☑ Enable global hotkeys

Action	Status	Hotkey
Answer call	Disabled	Alt-PgUp
Ignore Call	Disabled	
Reject/Hang up call	Disabled	Alt-PgDn
Focus Skype	Disabled	Alt-S
Search for Skype Users	Disabled	
Mute Microphone	Disabled	

In a chat, pressing 'Enter' will

○ Insert a line break

● Send chat message

Now you must select the Enable Hotkey button to activate your setting.

Understanding the Basics… Hotkeys

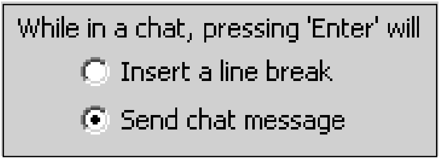
Be sure to test your hotkey combination to see whether any of the applications you normally use have the same combination you want to set for Skype.

While in Chat, Pressing Enter Will …

When you use chat, the default action when you press **Enter** is to send the chat message to your contact. If you like, you can change this action so that when you press **Enter**, you only create a new line in your message instead of sending the message. If you do this, you will have to use your mouse to send the message by selecting the **Enter** icon in the chat window.

Understanding the Basics...
While in Chat, Pressing Enter Will...

We recommend leaving the default to **Enter** sending the chat message:



While in a chat, pressing 'Enter' will

○ Insert a line break

● Send chat message

Chapter 13

Skype Firewall and Network Setup

Solutions in this chapter:

- A Word about Network Address Translation (NAT) and Firewalls
- What You Need to Know about Configuring Your Network Devices
- Ports Required for Skype
- Using Proxy Servers and Skype
- How to Block Skype in the Enterprise

A Word about Network Address Translation and Firewalls

When the Internet began, the creators didn't envision the type of growth that we are experiencing today. During the last 10 years, the number of hosts on the Internet increased by more than 50 times.[1] In order for each Internet device, or host, to communicate on the Internet, it must have a unique internet protocol (IP) address. The addressing scheme for the Internet allowed for billions of IP addresses, but now most of them are allocated.

The Internet's popularity results in a maximum number of available IP addresses. Homes and offices around the world are now connecting many hosts at a single location and it is not possible for every single device to have its own public IP address. To accommodate the limited amount of addresses, a new standard called IPv6 has been developed. Until IPv6 is finalized, other methods are needed to allow for allocation of public addresses to more people. The most effective solution is called network address translation (NAT), defined in the request for comments 1631 (RFC 1631).

NAT is a special type of router that has several different implementations. One popular method of implementation allows for the use of special, unroutable IP addresses on private or internal networks. The private addresses are translated to a public host address, which allows communication over the Internet. Three blocks of the unroutable, or private, IP addresses are defined in RFC 1597 and RFC 1918. The private addresses are reserved by the Internet Assigned Numbers Authority (IANA), the organization that is responsible for all IP addresses. The private addresses are represented in Classless Inter-Domain Routing (CIDR) notation as:

- 10.0.0.0/8
- 172.16.0.0/12
- 192.168.0.0/16

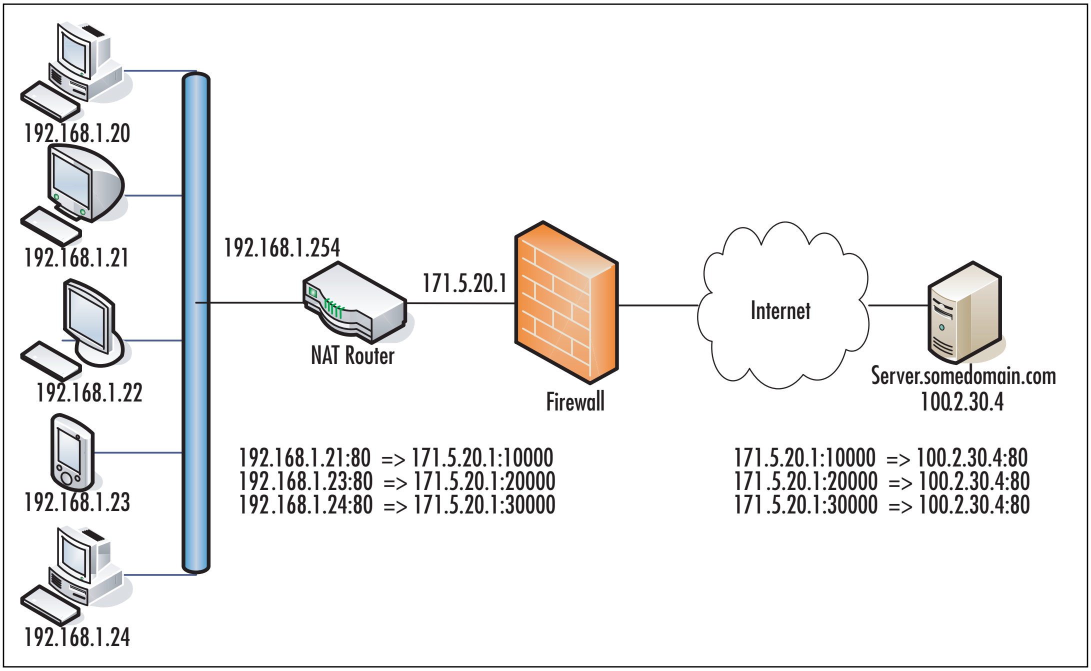
These address blocks cannot communicate directly with public addresses on the Internet and must be translated.

NAT utilizes a mechanism in the Transmission Control Protocol/Internet Protocol (TCP/IP) stack called multiplexing to enable these private addresses to establish communication over the Internet. Multiplexing makes it possible for a single device to establish and maintain several simultaneous connections with one or more hosts using different TCP and User Datagram Protocol (UDP) ports. This architecture allows an implementation where a single public IP address can service the needs of an entire network of hosts, a many—to-one relationship.

NAT routers keep a table of internal address and port combinations, as well as the public (global) IP address and port used to establish the remote connection. External hosts do not see the internal address, but instead use the public IP address to respond to requests. When responses are sent back to the external IP address and port of the NAT router, it translates the response and relays it back to the internal address and port that originated the request.

Firewalls are Protocol layer rules engines. A firewall can be hardware or software based, and many routers include basic firewall functionality as an additional feature. A typical firewall provides a list of rules that are evaluated sequentially against the header data in the packet being processed. As each rule is examined against the packet header, the packet will be blocked, or the next rule will be evaluated. This process continues until the packet is blocked or all rules have been examined.

A proxy server is similar to a firewall, but it works at the Application layer. Proxy servers have packet-filtering features. Packet filtering allows examination of the actual data being transmitted within the packet itself. Packet filters are available on Windows XP, Windows 2000, and Windows Server 2003 products as part of the advanced features of the TCP/IP configuration. However, because Skype encrypts the data it transmits, packet filtering is an ineffective means of managing Skype traffic. Proxy servers handle the requests for each protocol, whereas firewalls merely forward the traffic. If the proxy server is disabled, no traffic is allowed to pass. If you disable a firewall, you are turning off all rules processing and allowing all traffic to pass, which is not a recommended practice.



In the preceding diagram, a single external IP address is exposed to the Internet. When hosts on the private network make a request, the following occurs:

1. The host initiates a request for the remote destination address and port.
2. Since the address is remote, the router handles the request.
3. The NAT router adds the entry for the internal host IP address and port to the translation table.
4. The NAT router assigns a new port on the external interface IP address for the internal client and adds it to the translation table.
5. The NAT router then initiates a connection to the remote host on the external network, through the firewall, substituting a new source port and IP address in the IP packet header.
6. The remote host responds to the request to the external address and port.
7. The firewall compares the IP address and port with the list of firewall rules. If the IP address passes the IP address test, the port is checked. For Skype, this would be a UDP port, or if UDP is blocked, TCP port 443 or TCP port 80.
8. The router uses the translation table to translate the response from the remote host from the external address and port to the original internal address and port of the host that initiated the request.

Home Users

We strongly recommended that home users obtain a basic peer-to-peer-friendly, broadband router with firewall capabilities. In addition to a hardware-based router/firewall, you should always use a software-based firewall on each client machine. Windows XP has built-in firewall software that is enabled by default after you install Service Pack 2. Other options for software-based firewalls include products by McAfee, Symantec, and Zone Alarm. Skype should work right out of the gate on most home networks without requiring any further configuration. For home users, no modification is needed.

Later in this chapter, we discuss how to improve the quality of the communication, which could require minor configuration settings on your firewall.

Small to Medium-Sized Businesses

Small to medium-sized businesses must use discretion to determine whether to use a simple implementation, as discussed for home users, or to provide a more robust firewall solution, such as the Symantec Firewall/VPN Appliance, Cisco Pix, or other SOHO solution.

Regardless, we suggest that small and medium-sized businesses use software-based firewalls on each network client to provide an additional layer of security.

Large Corporations

Larger corporations must ensure that the many routers used on the LAN allow Skype traffic over UDP to pass to other clients on the LAN if they want to use Skype effectively.

To better understand how Skype communicates, you need to get a picture of how the Skype network is organized. There are three basic roles in the Skype communication infrastructure. The roles consist of the following:

- Skype client or peer
- Supernodes
- Login servers

A Skype client is your computer running the Skype software. Supernodes are just Skype peer nodes that are not behind a firewall or have unrestricted access to the Internet. Supernodes come and go depending on the needs of the overall network. Any Skype client node can become a supernode if it is not behind a NAT router or blocking firewall and has sufficient CPU and bandwidth capacity.

Understanding the Basics… Avoid Becoming a Supernode

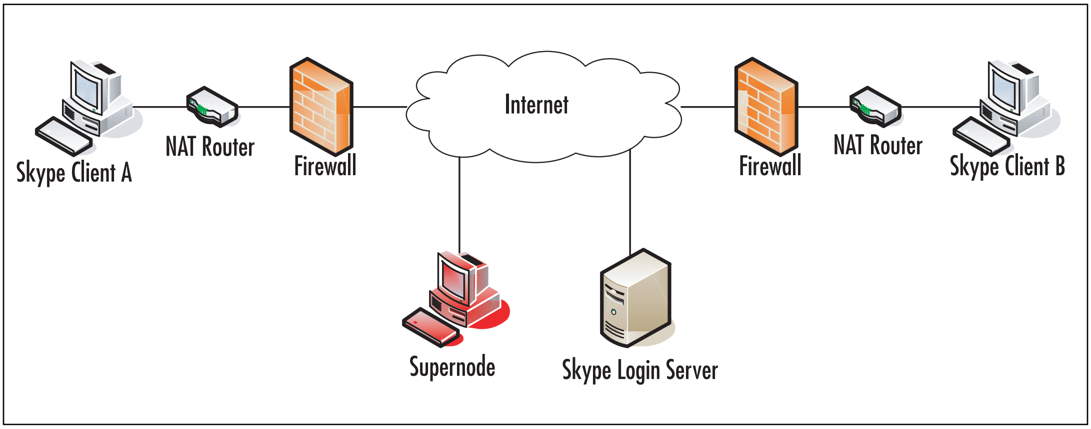
To avoid a Skype client from becoming a supernode all that is required is for the client to be behind a NAT device or a corporate firewall device.

If a Skype client is behind a NAT router or firewall, the Skype client cannot establish a direct connection to another peer. In these situations, the supernode peers act as relaying agents to help Skype peers behind firewalls or NAT routers establish connections to other peers that are behind firewalls or NAT routers. Skype peers tend to connect to supernodes that are in relative proximity to their locations on the Internet. By connecting to nearby supernodes, Skype reduces utilization and decreases the latency in response times, thus providing a fast and scalable communication network.

Understanding the Basics…
Avoid Relayed Calls or File Transfers

To avoid a Skype call or file transfer from being relayed, the firewall must allow a P2P connection.

When Skype starts, it determines whether the client is behind a firewall or NAT router. If there is a firewall or NAT router, Skype determines the best method for communication via the firewall or NAT router using various UDP mechanisms. If no UDP ports are open, Skype will attempt to use TCP port 80, then TCP Port 443. Refer to the basic topology to get a picture of what happens next.



After Skype Client A determines how to navigate the firewall or NAT router, Skype contacts a supernode peer from its supernode list to attempt to log in. If for some reason there are no supernodes listed for the client, the client attempts to log in to the Skype login server. Once the client logs in, the supernode list may be updated with the current active list of supernodes.

Once the connection is established, you can place a call, begin to instant message, or transfer a file. The call starts with a search of the Skype Global Index to locate the target Skype user. Skype Client B will follow the same process to log in. If the target user, Skype Client B, is behind a firewall or non-P2P-friendly device, the supernode acts as the liaison to direct TCP traffic from client A to Client B and vice versa, thus allowing Skype Clients A and B to find and communicate with each other using one or more supernode peers to relay messages.

What You Need to Know about Configuring Your Network Devices

We'll now discuss configuring network devices in various environments.

Home Users or Businesses Using a DSL/Cable Router And No Firewall

To use Skype typical home users will not need to configure anything on their DSL/Cable routers with or without wireless unless they have an older DSL/Cable router that is not P2P friendly. Running NAT Check, discussed later in this chapter, and enabling the Technical Information in Skype's Advanced options will help you determine if your router is capable of a Skype P2P connection.

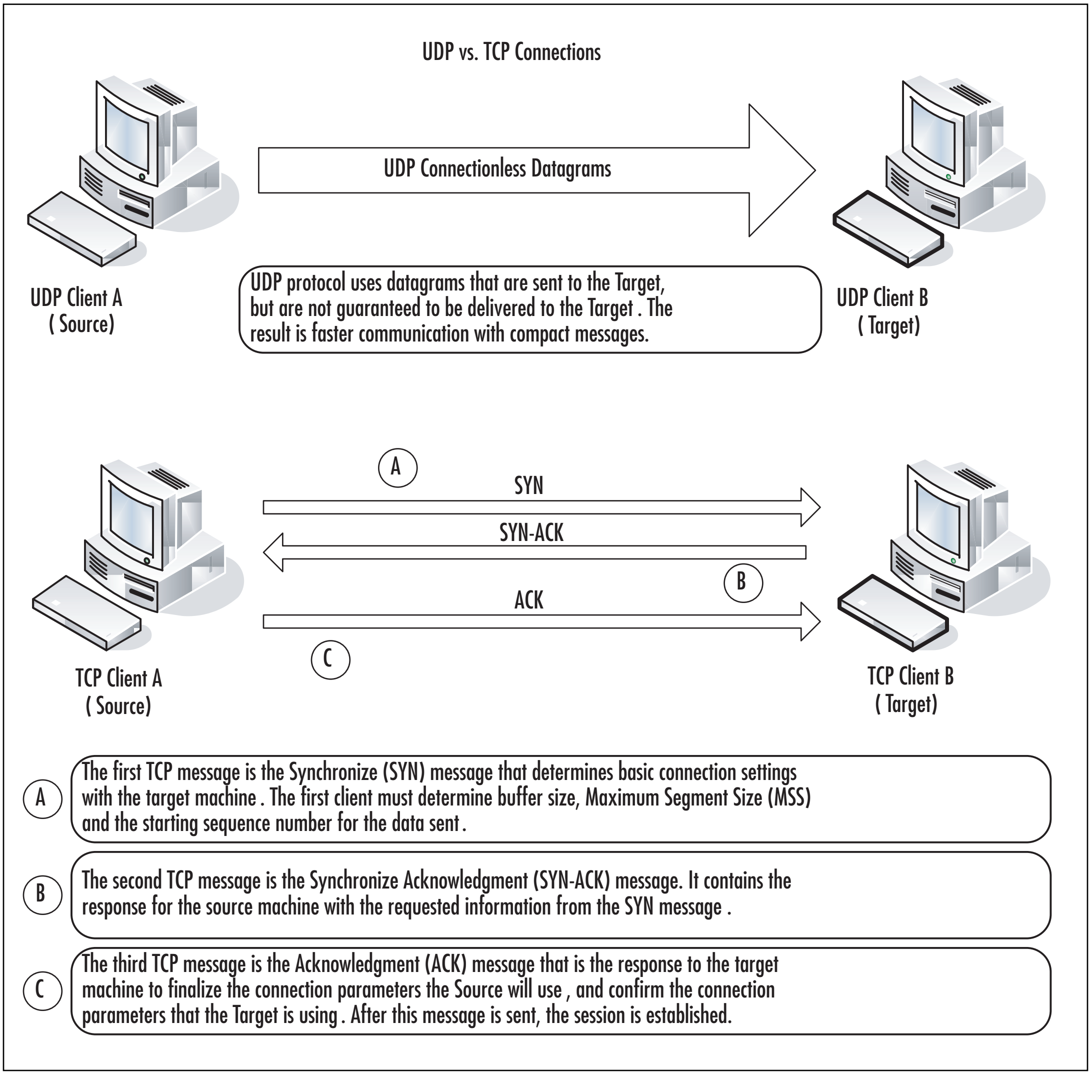
Small to Large Company Firewall Users

To provide the best performance on your network, you will need to tune your network to optimize handling of the Skype traffic. Skype leverages the use of UDP extensively to provide the best possible connection quality with its peers. The NAT translation table is a volatile table that ages old connections to free up room in the routing device's buffer for new connections.

It is important that the NAT routers hold the definition for UDP datagrams sent from the internal network for at least 30 seconds. The delay ensures that there is ample time provided for a response to the original request initiated from the client. The translation table should consistently map the internal host address and port number for UDP traffic in order to be reliably translated from the external address and port used to establish the communication. UDP has very little overhead, but it is prone to loss because it is not guaranteed to be delivered to the destination. Because it has little overhead, UDP is a faster method for communications.

TCP and UDP Primer

TCP requires a threeway handshake to verify that data reaches its destination, whereas UDP just sends that data and does not require acknowledgment of delivery. Because UDP does not require all of the overhead in the message structure, the messages are smaller, and UDP headers are always the same size. The UDP message structure makes the delivery much faster. Establishing communication sessions over TCP takes three trips instead of the one trip UDP requires. The TCP headers are much larger and vary in size, so there is more overhead to process each TCP message as well.


UDP vs. TCP Connections
UDP Connectionless Datagrams
UDP Client A (Source)
UDP protocol uses datagrams that are sent to the Target, but are not guaranteed to be delivered to the Target . The result is faster communication with compact messages.
UDP Client B (Target)
A
SYN
SYN-ACK
B
ACK
C
TCP Client A (Source)
TCP Client B (Target)
A
The first TCP message is the Synchronize (SYN) message that determines basic connection settings with the target machine . The first client must determine buffer size, Maximum Segment Size (MSS) and the starting sequence number for the data sent .
B
The second TCP message is the Synchronize Acknowledgment (SYN-ACK) message. It contains the response for the source machine with the requested information from the SYN message .
C
The third TCP message is the Acknowledgment (ACK) message that is the response to the target machine to finalize the connection parameters the Source will use , and confirm the connection parameters that the Target is using . After this message is sent, the session is established.

NAT vs. a Firewall

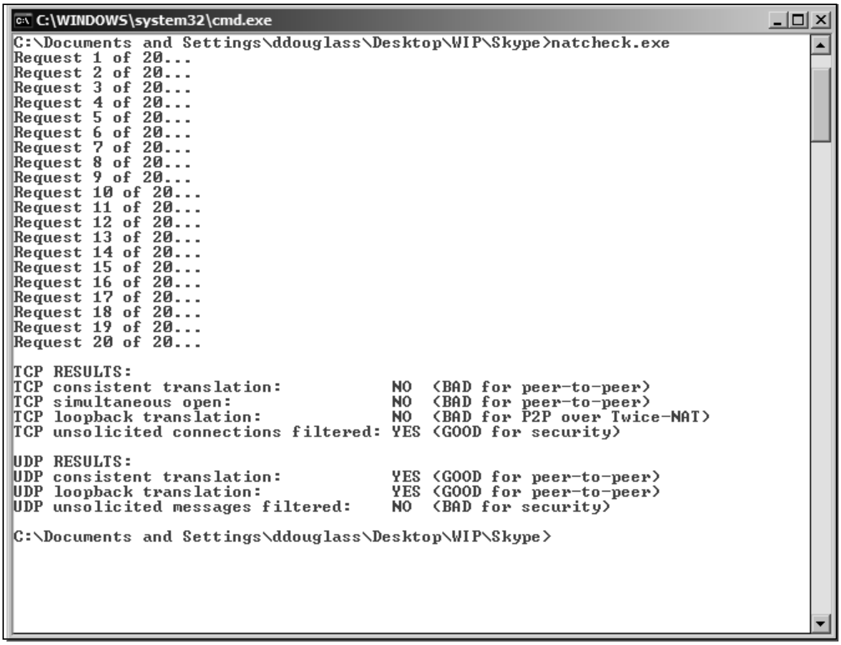
Remember, a NAT device just translates many internal IP addresses to one or more external routable Internet addresses. A firewall can also provide NAT functionality and includes additional intelligence to apply rules to the traffic that passes through the firewall. NAT devices such as a DSL/cable router may or may not have firewall functionality.

Skype also recommends that the firewall or Internet gateway support IP packet fragmentation and reassembly. Fragmenting the packets allows the stream of data to be broken into smaller packets that can be sent simultaneously over multiple ports to the destination. This packet fragmentation can dramatically improve quality and performance by allowing higher throughput, which in turn allows for more effective bandwidth. Some firewalls detect this type of parallel UDP communication incorrectly as port scanning and will block the host traffic. The result could be a degradation of Skype performance.

Skype references a tool called NAT Check by Bryan Ford. The tool can be located at http://midcom-p2p.sourceforge.net.

The tool can be used to determine how P2P friendly your network is. Ford has described the details on UDP communications over the Internet using NAT in an Internet draft. The paper is located at http://mirrors.isc.org/pub/www.watersprings.org/pub/id/draft-ford-natp2p-00.txt.

The following example shows the output from NAT Check for a relayed call:



```
C:\Documents and Settings\ddouglass\Desktop\WIP\Skype>natcheck.exe
Request 1 of 20...
Request 2 of 20...
Request 3 of 20...
Request 4 of 20...
Request 5 of 20...
Request 6 of 20...
Request 7 of 20...
Request 8 of 20...
Request 9 of 20...
Request 10 of 20...
Request 11 of 20...
Request 12 of 20...
Request 13 of 20...
Request 14 of 20...
Request 15 of 20...
Request 16 of 20...
Request 17 of 20...
Request 18 of 20...
Request 19 of 20...
Request 20 of 20...

TCP RESULTS:
TCP consistent translation:           NO  (BAD for peer-to-peer)
TCP simultaneous open:                NO  (BAD for peer-to-peer)
TCP loopback translation:             NO  (BAD for P2P over Twice-NAT)
TCP unsolicited connections filtered: YES (GOOD for security)

UDP RESULTS:
UDP consistent translation:           YES (GOOD for peer-to-peer)
UDP loopback translation:             YES (GOOD for peer-to-peer)
UDP unsolicited messages filtered:    NO  (BAD for security)

C:\Documents and Settings\ddouglass\Desktop\WIP\Skype>
```

Ports Required for Skype

We'll now discuss the ports that are required to use Skype.

Home Users or Businesses Using a DSL/Cable Router and No Firewall

To use Skype, typical home users will not need to configure anything on their DSL/cable routers or within the Skype software.

Small to Large Company Firewall Users

Skype uses UDP and TCP to communicate with other Skype clients. UDP is primarily used to establish connectivity and perform global directory searches. If the UDP ports above 1024 are open outbound, and you allow UDP replies to return through the firewall, you can improve Skype's voice quality and performance. Opening UDP ports could allow peers on your network to connect more efficiently by providing closer neighbors on the P2P network, thus reducing latency and improving call quality. Allowing more UDP ports also prevents internal contention of port translation in the NAT translation table.

In a perfect world, all outgoing TCP ports would be open through the firewall or Internet gateway. If it is not possible to open all outgoing ports, TCP port 80 should be opened. Using port 80 is a standard practice. When Skype attempts to log on, it first tries to connect using random ports. If Skype cannot connect, it attempts to connect via port 80. If port 80 cannot be opened, Skype attempts to use port 443. There is no guarantee that Skype will work through port 80 if the firewall or proxy server is restricting traffic to the HTTP. By restricting traffic to HTTP, the proxy server or firewall can scan the packets to ensure that the data is actually HTTP data. Skype does not use HTTP and will not function correctly through port 80 if traffic is restricted to HTTP traffic. If you receive errors #1101, #1102, or #1103 the firewall may be blocking port 80.

When Skype installs, it will select a random UDP port to communicate. This port setting is found in the Connection tab under Options and is an adjustable setting and stored in the shared.xml file on each computer and could be set the same for all users of Skype. If you want to avoid relayed Skype calls and relayed file transfers, you can open up the UDP port on your firewall that is specified in Skype to allow for better voice call quality and faster file transfers.

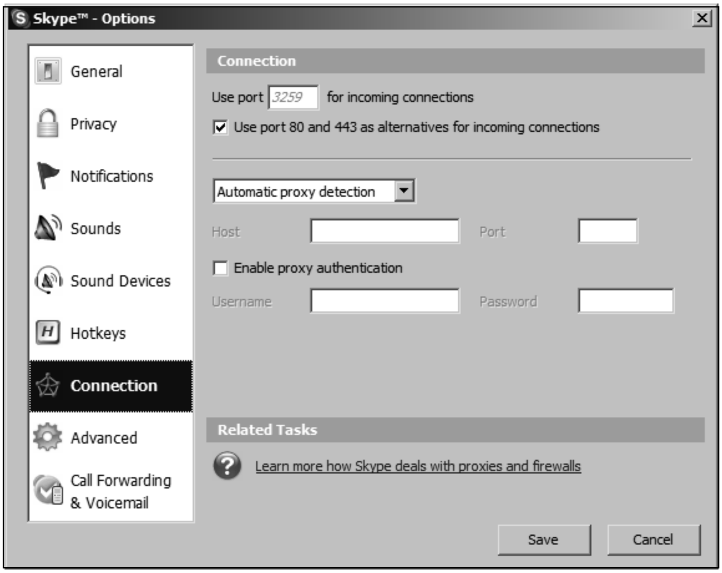
Understand that opening these UDP ports changes the normal corporate security policy, and proper approval and risks associated with opening anything on your firewall should be weighed prior to opening these settings. Discuss this issue thoroughly with your information security team on the impacts and what additional layers of security could be implemented to mitigate any risks, such as enabling a client-side personal firewall solution discussed earlier in this chapter. You could allow TCP and/or UDP inbound on the ports listed in Skype options for all clients internal to the firewall. If necessary, Skype will use TCP ports 80 and 443, respectively, to communicate with other Skype peers, and this will create relayed Skype calls and slow file transfers..

Skype's Shared.xml file

In a larger network, you can control the port for incoming connections by modifying Skype's shared.xml file in the following location:

- <Drive>\Documents and Settings\<UserName>\Application Data\Skype folder

The setting is found toward the end of the file under **config/Lib/Connection/ListeningPort**. By configuring all users to use the same UDP port, you can improve the quality of Skype conversations by opening a single inbound UDP port, if your network security policy permits this. If the traffic inbound on that port is high, you could logically segment the traffic by setting different groups of users to use a specific UDP port and opening multiple UDP ports inbound, while still maintaining some control over what ports are opened and to whom. Visit Dan Douglass's Web site at the following URL for scripts and utilities to help modify the shared.xml setting in a business environment: www.code-hatchery.com/skype.html.



Use port 3259 for incoming connections

☑ Use port 80 and 443 as alternatives for incoming connections

Automatic proxy detection

Host Port

□ Enable proxy authentication

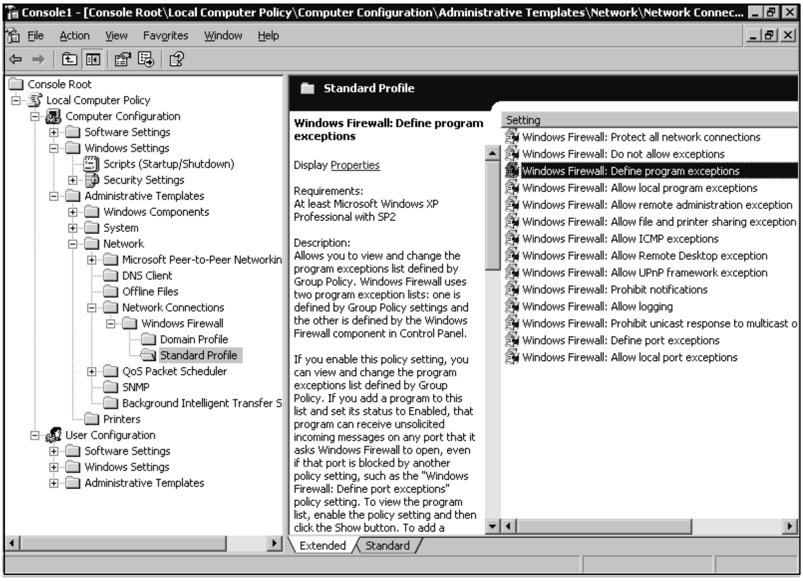
Username Password

Microsoft Windows Active Directory

In a typical Windows Active Directory-based enterprise, with clients running Windows XP Service Pack 2, you can set a Group Policy that allows you to enable the Skype traffic through the Windows Firewall on all client machines with little effort. This can be achieved via the following steps:

1. Open the **Group Policy Object Editor** console on the Active Directory Domain controller.

2. Locate the **Group Policy** setting found in **Computer Configuration\Administrative Templates\Network\Network Connections\Windows Firewall\Standard Profile**.


Console1 - [Console Root\Local Computer Policy\Computer Configuration\Administrative Templates\Network\Network Connec...
File
Action
View
Favorites
Window
Help
Extended
Standard

Console Root
- Local Computer Policy
  - Computer Configuration
    - Software Settings
    - Windows Settings
      - Scripts (Startup/Shutdown)
      - Security Settings
    - Administrative Templates
      - Windows Components
      - System
      - Network
        - Microsoft Peer-to-Peer Networkin
        - DNS Client
        - Offline Files
        - Network Connections
          - Windows Firewall
            - Domain Profile
            - Standard Profile
        - QoS Packet Scheduler
        - SNMP
        - Background Intelligent Transfer S
      - Printers
  - User Configuration
    - Software Settings
    - Windows Settings
    - Administrative Templates

Standard Profile

Windows Firewall: Define program exceptions

Display Properties

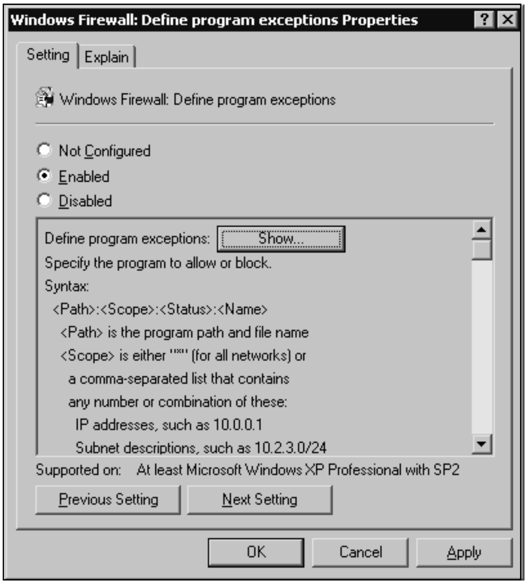
Requirements:
At least Microsoft Windows XP Professional with SP2

Description:
Allows you to view and change the program exceptions list defined by Group Policy. Windows Firewall uses two program exception lists: one is defined by Group Policy settings and the other is defined by the Windows Firewall component in Control Panel.

If you enable this policy setting, you can view and change the program exceptions list defined by Group Policy. If you add a program to this list and set its status to Enabled, that program can receive unsolicited incoming messages on any port that it asks Windows Firewall to open, even if that port is blocked by another policy setting, such as the "Windows Firewall: Define port exceptions" policy setting. To view the program list, enable the policy setting and then click the Show button. To add a

Setting
- Windows Firewall: Protect all network connections
- Windows Firewall: Do not allow exceptions
- Windows Firewall: Define program exceptions
- Windows Firewall: Allow local program exceptions
- Windows Firewall: Allow remote administration exception
- Windows Firewall: Allow file and printer sharing exception
- Windows Firewall: Allow ICMP exceptions
- Windows Firewall: Allow Remote Desktop exception
- Windows Firewall: Allow UPnP framework exception
- Windows Firewall: Prohibit notifications
- Windows Firewall: Allow logging
- Windows Firewall: Prohibit unicast response to multicast o
- Windows Firewall: Define port exceptions
- Windows Firewall: Allow local port exceptions

3. Select the Policy Setting for **Windows Firewall** to enable th**e Define program exceptions** policy.



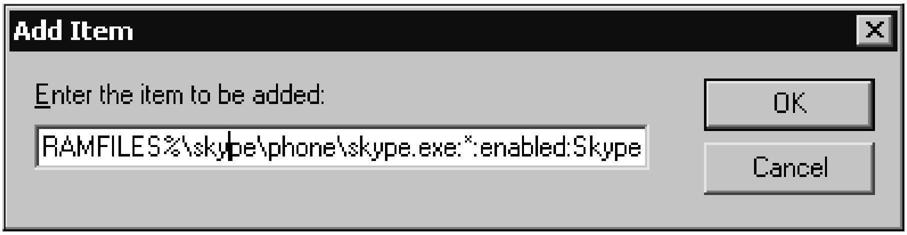
Windows Firewall: Define program exceptions

○ Not Configured
● Enabled
○ Disabled

Define program exceptions: Show...
Specify the program to allow or block.
Syntax:
<Path>:<Scope>:<Status>:<Name>
<Path> is the program path and file name
<Scope> is either "*" (for all networks) or
a comma-separated list that contains
any number or combination of these:
IP addresses, such as 10.0.0.1
Subnet descriptions, such as 10.2.3.0/24

Supported on: At least Microsoft Windows XP Professional with SP2

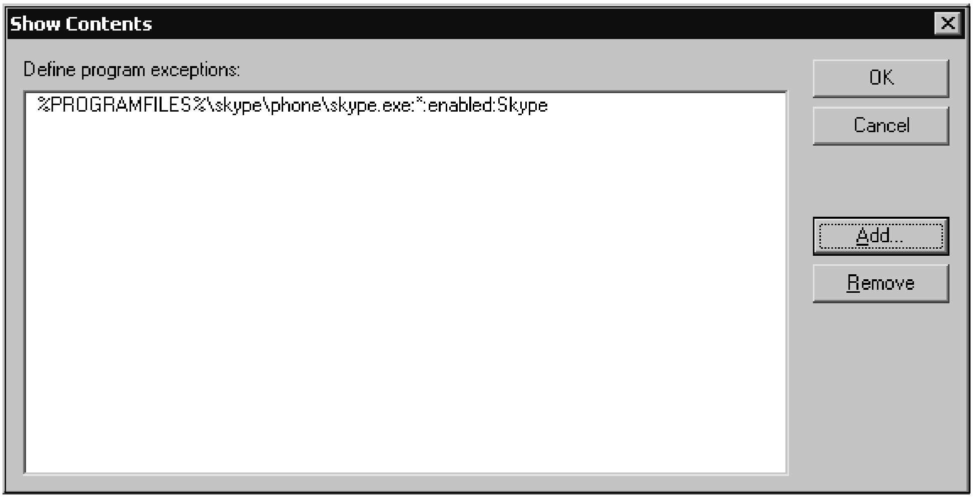
4. Next, click the **Show Button** that was enabled by the previous step.
5. Add a definition for a Program Exception as **%PROGRAMFILES%\skype\phone\skype.exe:*:enabled:Skype** and then click OK.



Enter the item to be added:

RAMFILES%\skype\phone\skype.exe:*:enabled:Skype

6. Click **OK** to close the Show Contents dialog box, then click the **OK** button to close the Windows Firewall: Define program exceptions Properties dialog box.



Define program exceptions:

%PROGRAMFILES%\skype\phone\skype.exe:*:enabled:Skype

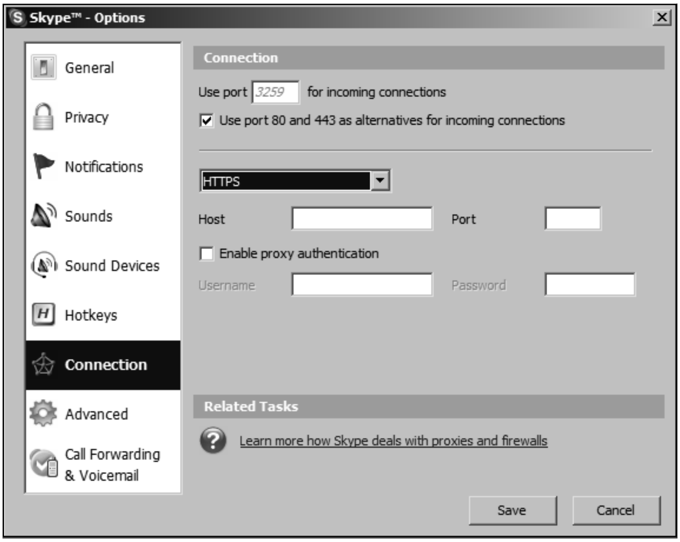
7. Allow time for the Group Policy to be refreshed. The time varies depending on the network settings. Allowing exceptions for Skype and opening up the recommended ports make it easier for Skype to establish reliable communications outside of your network. Other products, such as Norton Internet Security, McAfee Firewall Pro, and Zone Alarm Pro, have similar functionality. Visit Skype's Web site at http://web.skype.com/help_firewalls.html for the specific configuration of your product.

The same option can also be manually configured on each workstation in the enterprise by using the Windows Firewall applet in Control Panel.

1. Open **Control Panel** and double-click the **Windows Firewall** icon.
2. Click the **Exceptions** tab.
3. Tick the box next to **Skype**.

Using Proxy Servers and Skype

Many popular proxy servers are available on the market today. Skype supports HTTPS, SSL, and SOCKS5 proxy standards. Skype can optionally include authentication over proxies if the proxy server requires it. On Windows clients, Skype automatically uses the connection settings in Internet Explorer to identify the proxy settings that may be defined for that user on that computer. It is possible for the user to set Skype to use a manual configuration in the **Tools** menu, **Options**, and **Connection** tab settings.



Use port 3259 for incoming connections

☑ Use port 80 and 443 as alternatives for incoming connections

HTTPS

Host Port

□ Enable proxy authentication

Username Password

Learn more how Skype deals with proxies and firewalls

If you are using a SOCKS5 proxy server, it must allow unrestricted connections to the ports discussed in the ‘”Ports Required for Skype” section of this chapter. Most proxy server solutions provide packet-filtering features. As previously mentioned, enabling packet filtering and restricting traffic over port 80 to only HTTP could cause communication problems for Skype.

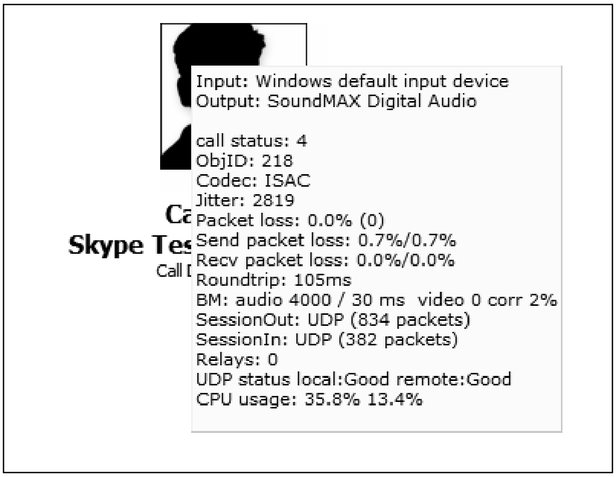
Many companies implement a wireless network, preferably using 802.11G, that directly connects to the Internet. If you want to then connect to company resources, you would VPN back into the corporate network just as you would from home or a hotel over the wireless network. The wireless network could allow for fewer restrictions on traffic for wireless clients while still allowing for stricter security on the wired devices. Refer to Chapters 2 and 10 for more information on wireless communication with Skype. You should also read the papers on wireless infrastructures at http://cisecurity.org/bench_wireless.html for more information on implementing wireless in your enterprise.

If you are experiencing , high latency or poor voice quality with Skype, you can troubleshoot your connection quality by using NAT Check or Skype's Display Technical Call info feature found in the Advanced options tab. To enable the tech support feature or edit the Config.xml file manually:

1. Exit Skype.
2. Locate the **Config.xml** file located in the **<Drive>\Documents and Settings\<User Name>\Application Data\Skype\<Skype user name>** folder and open it with Notepad.exe or a similar text editor.
3. Find the setting **config/UI/Messages/DisplayCallInfo**
4. Change the value from 0 to 1 and save the file.
5. Launch Skype.

Visit Dan Douglass's Web site at the following URL for scripts and utilities to modify the config.xml file setting in a business environment: www.codehatchery.com/skype.html.

Once you have enabled the **Display Technical call info** feature, you can make a test call to the Skype Test Call user. Once you have established the call, simply hover the mouse cursor over the user's avatar (picture), and you will see a tooltip-style popup with connection information:



```
Input: Windows default input device
Output: SoundMAX Digital Audio

call status: 4
ObjID: 218
Codec: ISAC
Jitter: 2819
Packet loss: 0.0% (0)
Send packet loss: 0.7%/0.7%
Recv packet loss: 0.0%/0.0%
Roundtrip: 105ms
BM: audio 4000 / 30 ms  video 0 corr 2%
SessionOut: UDP (834 packets)
SessionIn: UDP (382 packets)
Relays: 0
UDP status local:Good remote:Good
CPU usage: 35.8% 13.4%
```

Note that in this scenario, the relays count is 0 and the roundtrip time is 105ms (1000ms = 1 second). Since the Skype answering machine is open, the connection is very clean, and there is very little latency.

Display Technical Call Information

The following is detailed information about the Technical Call Information popup items shown in the preceding and following examples. An overview of this information is provided in the section titled "Using Skype's Technical Call Information" in Chapter 6.

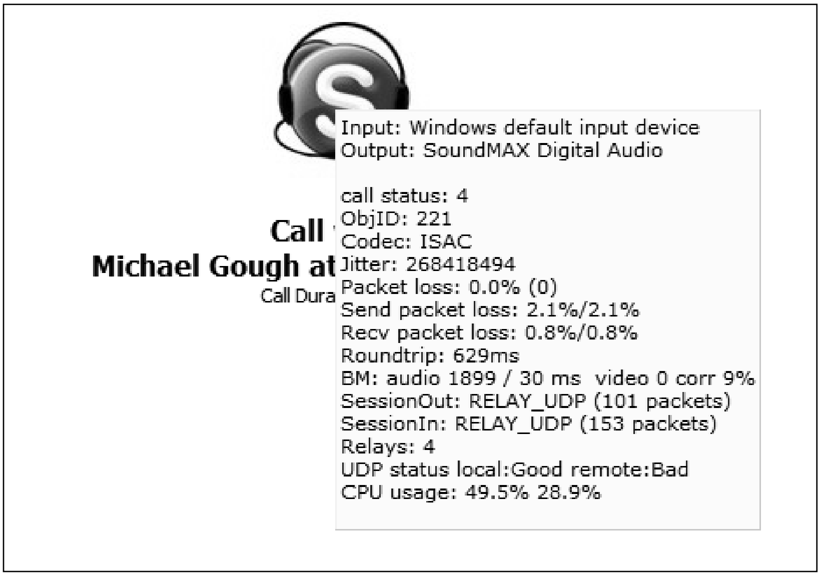
Call Status

- 0 = Hosting conference.
- 1 = ROUTING - call is currently being routed.
- ?? EARLYMEDIA - with the pstn there is possibility that before the call is actually established, the early media is being played. For example, it can be a calling tone, or it can be some waiting message (all operators are busy, hold on for a sec) etc.
- ?? FAILED - call failed. Try to get FAILUREREASON for more information.
- 3 = RINGING - currently ringing.
- 4 = INPROGRESS - call is in progress.
- 5 = ONHOLD - call is placed on hold by you.
- ?? FINISHED - call is finished.
- ?? MISSED - call was missed.
- 8 = REFUSED - call was refused.
- 8 = BUSY - destination was busy i.e. pressed hang up button.
- 10 = ONHOLD - call is placed on hold by other party.
- 13 = CANCELED (Protocol 2)
- ObjID: Ignore this information as it is not important.
- Codec: ISAC is always the codec in use
- Jitter: Network administrators need to look at jitter. Jitter is the variation in the time between each of the delivered packets of data arriving from the source to the destination. This could indicate a bandwidth bottleneck or heavy traffic from the source to destination causing some packets to arrive sooner than others. The common method for reducing jitter is to buffer data at the destination.
- Packet Loss: Network administrators need to be aware of packet loss. This is the total percentage of the packets of data that don't make it to or from each party in

the conversation. This should be low, but will be something if you are using UDP, since delivery is not guaranteed.

- Send packet loss: Network administrators should pay attention to this setting. This indicates how much data is not making it to the destination party in the call. If the Send packet loss is high, it means that something is causing the packets from getting to the remote client.
- Recv packet loss: Network administrators should pay attention to this setting. This indicates how much data is not making it from the other party in the call. If the Receive packet loss is high, it means that something is preventing the packets from getting to you from the remote client.
- Roundtrip: Normal users and Network administrators can get information from this. The higher the number is, the longer it takes for your voice to get to the other party and back. This should be low, and anything about 300ms starts to get choppy, reducing call quality. Look at SessionOut and SessionIN, or run NAT Check to determine why you are relaying.
- BM: This is related to the bandwidth and quality of the audio and is not important.
- SessionOut: Network administrators should look at this if roundrip values are high. This should say UDP. If it says TCP or RELAY_UDP, then you are not operating at the best performance. In this case look at UDP status remote. If it says remote:Bad, then the remote party is behind a firewall and cannot receive UDP traffic inbound from the supernode.
- SessionIn Network Admins should look at this if roundrip values are high. This should say UDP. If it says TCP or RELAY_UDP, you are not operating at the best performance. In this case look at UDP status local. If it says local:Bad, you could, at your discretion, open up the UDP port as discussed earlier in this chapter to allow inbound UDP traffic through the firewall inbound from the supernode.
- Relays: This is almost always 4, but 0 when you call Skype voice mail.
- UDP status: should always be local:Good remote:Good. If either are Bad, look at SessionIn/SessionOut to remedy.
- CPU usage: 35.8% 13.4% Total CPU usage of each processor by all running applications on the local machine. If this is too high, then the machine may be too overloaded to allow Skype to operate efficiently. Other applications will most likely be suffering as well.

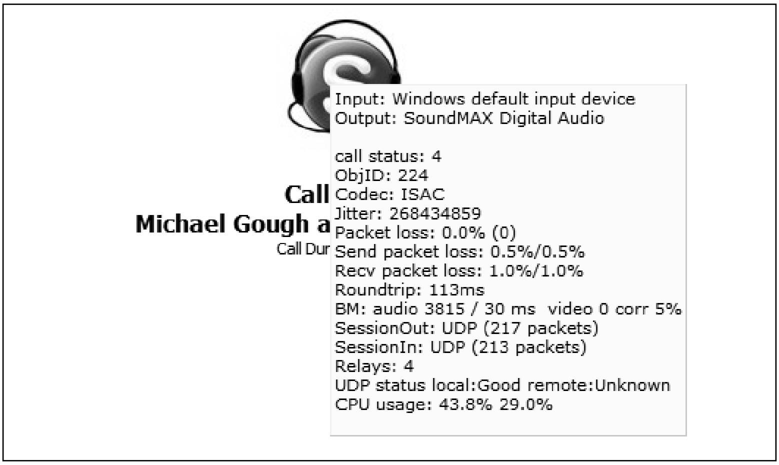
The next example is a call to a user on large corporate network where no inbound UDP is allowed back in through the firewall, and there is a very complex network infrastructure.



```
Input: Windows default input device
Output: SoundMAX Digital Audio

call status: 4
ObjID: 221
Codec: ISAC
Jitter: 268418494
Packet loss: 0.0% (0)
Send packet loss: 2.1%/2.1%
Recv packet loss: 0.8%/0.8%
Roundtrip: 629ms
BM: audio 1899 / 30 ms  video 0 corr 9%
SessionOut: RELAY_UDP (101 packets)
SessionIn: RELAY_UDP (153 packets)
Relays: 4
UDP status local:Good remote:Bad
CPU usage: 49.5% 28.9%
```

Note the difference in the SessionOut and SessionIn results. *RELAY_UDP*, and the UDP status *remote:Bad* show us that the remote location is the problem and that the UDP traffic is using a supernode to relay UDP information for each of the clients. The result of the relays is the long roundtrip time of 629ms, and therefore, there is a delay in transmitting the voice data to the remote client. Basically, it takes more than half a second for everything you say to get to the remote client, so the conversation is choppy and degraded. To improve this connection, the callers can use NAT Check to see if they are able to use UDP and troubleshoot the connection. If it is possible to open the UDP port inbound to the remote client in this scenario, the sessions can use a direct UDP or peer-to-peer connection, and the communication will be improve almost tenfold. See the following example, to the same caller, without the firewall restrictions:



```
Input: Windows default input device
Output: SoundMAX Digital Audio

call status: 4
ObjID: 224
Codec: ISAC
Jitter: 268434859
Packet loss: 0.0% (0)
Send packet loss: 0.5%/0.5%
Recv packet loss: 1.0%/1.0%
Roundtrip: 113ms
BM: audio 3815 / 30 ms  video 0 corr 5%
SessionOut: UDP (217 packets)
SessionIn: UDP (213 packets)
Relays: 4
UDP status local:Good remote:Unknown
CPU usage: 43.8% 29.0%
```

To summarize, if you have a bad connection, each client can run NAT Check and the Display Technical info to see who is having difficulty communicating. The findings can be confirmed with the configuration demonstrated in the previous section. To correct the issue, determine the UDP port the trouble client is listening on. Open that port inbound by defining a firewall rule. The rule should be specific to the client, so it might be something like *Allow: WAN * to LAN 192.169.1.21 UDP: 3259*, which allows all WAN IP addresses to communicate inbound to the private LAN address 192.168.1.21 over UDP port 3259.

Small to Large Companies

In most large companies, this will not be feasible and may possibly be against the corporate security policy and allowable network practices, but this does remain an option for small to medium-sized businesses that desire better communication quality and have the flexibility to modify their firewall rules. Some firewalls allow rules to be enabled during a specific time frame, and outside of that time window, the rule is disabled. If you are using Skype only during business hours, this type of feature would provide better security than leaving the port open all the time. With any modification to your firewall rules, be sure to check your corporate security policy and with corporate security and your network team to gain approval and to understand the potential risks that are associated with opening any ports on a firewall to an internal client. Additional layers of security should be implemented if this configuration is to be used. If any peer-to-peer communication is allowed, it is recommended that the clients have a personal firewall solution to further protect the systems from malicious activity.

How to Block Skype in the Enterprise

From a security or network administrator's point of view, the very same features that make Skype connect reliably through a restrictive firewall present a challenge to preventing or blocking Skype traffic on a network. Skype is very robust and can function with access to only port 80. Most corporations allow outbound Web traffic, so port 80 (HTTP) must remain open. Port 443 is the SSL port (HTTPS), and secure Web sites require this port to remain open. It is not as simple as blocking ports to prevent Skype from functioning.

Several tasks must be completed to block Skype in your enterprise. The first step is to block access to the Skype downloads to prevent the executable from even being installed on your client machines. This practice is referred to as *black listing*. This step is not entirely effective by itself, since some users might already have the Skype client installed or could bring the installation package from home on a CD or thumb/flash drive.

It is good practice to prevent unnecessary applications from accessing the Internet. The best way to achieve that is by blocking all ports on the firewall and then selectively allowing known traffic to pass, the ”deny all unless explicitly allowed” mentality. In addition, you may choose to restrict access to all Internet sites except those that have been approved by your organization. This is referred to as *white listing*, and although it requires more maintenance, it is much more secure.

Another method used to prevent communication over the Internet is to use packet filters. Packet filters examine the data inside the headers of transmitted packets. This information can be used to create rules to dump messages that contain headers that meet the filter criteria. Unfortunately, Skype data is encrypted, so packet filters are unable to examine the information in the data packets; therefore, packet filtering is useless. However, a new hardware device is purported to identify the signature of Skype communication and block Skype traffic based on that identification.

In a corporate enterprise environment, you may have other software solutions that allow the use of application filters on the desktops. This is another effective way to block Skype. The method of policies depends on the platform, but essentially, the concept is the same. When a user attempts to execute a program that is defined as disallowed, the process that monitors the client will prevent the program from executing. An example of this would be to use Microsoft Systems Management Server and define a restriction on the Skype.exe executable. Network Associates and Symantec have similar features built in to their groupware products.

Skype is very effective at finding ways to communicate with other Skype peers. There is no straightforward way to block Skype in the enterprise. The most effective method is to prevent the program from running at all or scan for it on all systems that are not approved and delete it from each system.

Endnote

1. “Number of Hosts Advertised in the DNS.” *Internet Domain Survey*, July 2005, www.isc.org (accessed October 4, 2005)