Communicator

Written in THINK C,
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VERSION 2.0

Introduction

Communicator lets you send sound and text messages to another Macintosh on a local area network. Simple, eh?

Features

- Record new sounds using internal microphone
- Send sounds or text message to any Macintosh on a local-area network
- Sounds are played in the background without interfering with your work
- No INITs are involved (only an application and a faceless background app.)
- Maintain a list of commonly accessed destinations for quick sending
- Resend the last text message or last sound
- Send to last destination (either text message or sound)
- Configure any receiver on the network (if permitted)
- Hold messages
- Save last message
- Set sound volume to play the sound
- Set record quality
- Last destination and text message saved over multiple launches
- Key equivalents for all major commands and dialog boxes
- Uses VERY small memory partition for receiver, takes from main (unused) memory to play sound
- **Caller identification (caller location is displayed, if requested)**

Where to get Communicator

Dumb question, you say? I ALREADY HAVE COMMUNICATOR! Not quite. The newest version is available by anonymous ftp at:

ftp.ee.mcgill.ca

I will also post the newest version on:

> sumex-aim.stanford.edu

in the /info-mac/comm directory.

Please check first to make sure you have the newest version before sending that bug report to me.

The Fine Print™

This program is provided as is; this means that the author cannot be held responsible for any damages, direct or consequential, caused by the use of this program. I have made every effort to eliminate any bugs from this software, but some may linger, in spite of any programming diligence I may have tried to observe. (Fine, fine print™: look, if your computer blows up, don't blame me, I didn't do it on purpose)

This program is copyright (©). This means that you cannot redistribute it for money (behind my back). I also do not permit any ShareWare bundling for a fee. You also cannot modify Communicator and then redistribute (keep your modifications to yourself, or e-mail me them).

Ughhh, that ShareWare guilt trip

My license agreement is quite simple: if you use this software you must pay for it. Try it out for a few days. Then show me that you like it by forking over that money. I'm ONLY asking for $10 (CDN), which I think is quite a bit on the reasonable side. Send the check or money order to:

> David Kabal
> 75 Percival Street
> Montréal West, Québec
> CANADA
> H4X 1T4
> Think that $10 is too much? Send me what you think it's worth. Or tell me why you don't think it's worth anything.

Installation

Files in the distribution
- Communicator
- Communicator Extension
- Communicator Manual (This document)

What you need:
- At least two Macintosh computers on a local area network (LocalTalk or EtherTalk)
- System 7 or better

Recommended:
- A sound input device (ie, that geeky looking mike)
- Lots of RAM (The more the better)
- Lots of sound files (check out the ftp sites).
- Porsche 944 (Not strictly necessary, but a nice addition to any computer user's collection)

Where to put 'em

Communicator consists of two parts; the sending part (Communicator) and the receiving part (Communicator Extension). These parts will generally **both** be installed on every Mac to which you want to send messages on your network. If you don't want a Mac to be able to send messages, don't put the sender part (Communicator) on that Mac. The same holds true for the receiver part (Communicator Extension), if you don't want them to receive messages. From this point on in this documentation a Mac that will be able to send messages will be called the **sender** and a Mac that can receive messages a **receiver** (no football pun intended). These two Macs could be one and the same.

To install, just place the *Communicator Extension* in the *Extensions* folder in the *System* folder. (Just drag it over the *System* folder and let System 7 take care of the rest.) Place *Communicator* wherever convenient. (ex. the *Apple Menu Items* folder for it to show up in the *Apple Menu*) You must restart your Macintosh to receive sounds.

Program linking

To get the two parts of the program, Communicator and Communicator Extension, talking, you must enable program linking between the two Macintoshes. First, go into the *Sharing Setup* control panel on both the receiver and sender (see above, if you still don't know what a receiver or sender is) and make sure that program linking is **ON**. Then go into the *Users & Groups* control

panel on the receiver. You have two options at this point. You can either enable **guest linking** or make an account for all would-be senders.

Guest linking allows ANYBODY on the network to link to ANY program on the receiver. This generally means that people can kill your applications and do other nasty things while you're using your Mac. **I don't recommend this unless you are sure you know what you're doing** and you have no enemies on the network. To enable guest linking, look for the user called <guest>. Double-click, or Open it and check (ie, put a cross in) the checkbox under Program Linking labelled "allow user to connect to programs on this Macintosh".

Setting up an account for each sender is a bit more lengthy, but also more secure. Make sure an account is set up for **each** user who needs to send to the receiver you are setting up. Do New User [⌘N] to create each user, if they don't already exist. Set the password for that user. Double-click or Open the user, set the password, if you haven't already. Check the checkbox under Program Linking labelled "allow user to link to programs on this Macintosh".

Phew… You're done. Clean up and away we go.

Cool, but how do I use it?

At this point maybe I'll go through some of the fundamentals.

Let's try out that dumb mike, NOW!

If you have a sound input device, you can just start up Communicator. (If it's already started up hit ⌘N or select 'New sound… ⌘N' from the menu.) It will put up the sound palette. Hit Record. Speak any required obscenities into the microphone. Hit the Save button on the palette (you can hit **stop** first, if you like, but save is FASTER). Hit ⌘B or select 'Send sound buffer to > New… ⌘B' from the menu. This brings us to our toughest concept of the day:

The program linking window
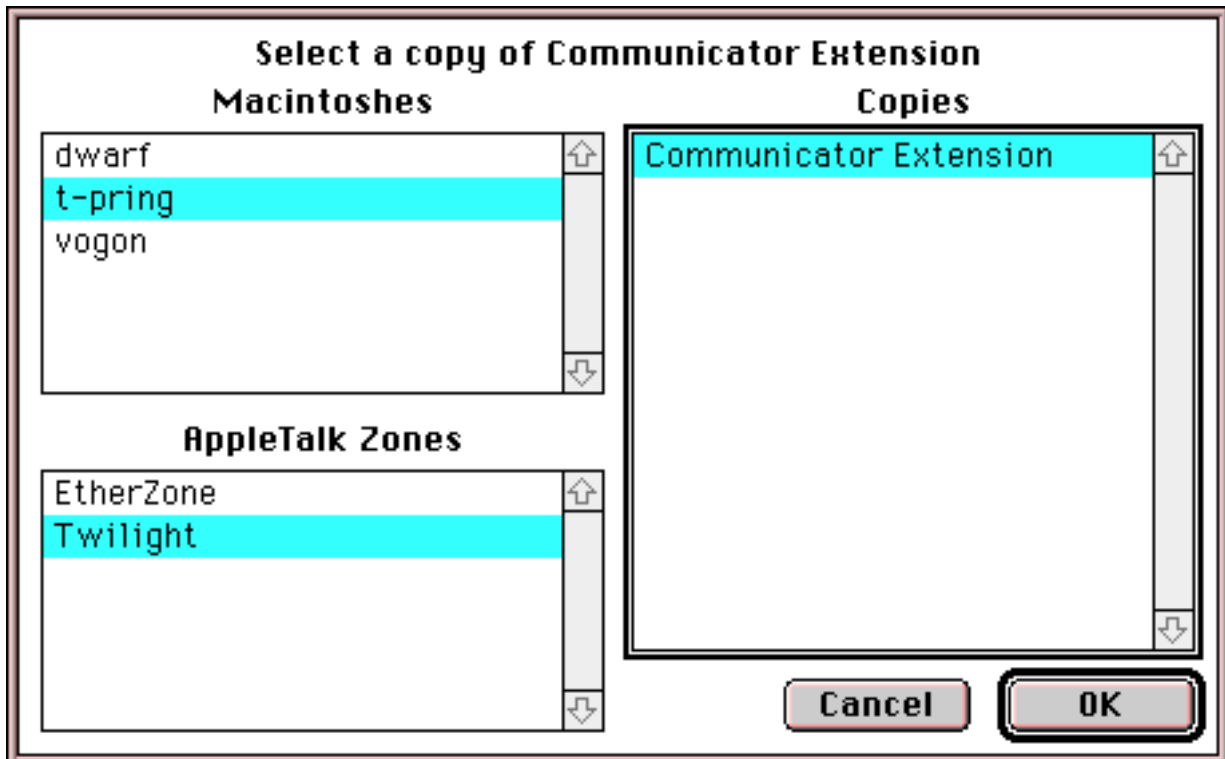
Before I explain this window you should inform yourself about your network's configuration. You should know which zone the person you want to send to is in (check with your network administrator, if you don't know) and the name of their machine.

A window will be put up asking you to select a Mac. Select the remote Mac's zone from the zone list. Select the remote Mac from the list of machines. Select Communicator Extension from the the applications on the right (actually, there should be only one application per machine on the right). If this is the first time you have connected to another Mac (in a session), you will have to type your name and password in the authorization box that comes up (hit ⌘G or hit the Guest button if you have enabled **guest linking**).

Ooooh, I can send files too?

Unfortunately, this is the only way of sending sounds if you do not have a built-in microphone (or MacRecorder, for the rich folks).

Easy way: This first method of sending a file is known to the techies as **drag-and-drop**, for people who like catch-phrases (try it at a party, "say does *your* application support ~"). To send a sound resource contained in a file to another

Mac, drop the sound file (actually, any file containing sound resources) onto the Communicator icon (drag it over the icon until Communicator turns black) and select the destination Mac in the program linking window that will come up. (if you select multiple files, you will boringly be asked a destination Mac for each one)

Challenging way: You can also open Communicator and then hit ⌘O or select 'Open sound… ⌘O' from the menu and then select the sound file (only Communicator sound files and Finder sound files are shown). Then hit ⌘B or select 'Send sound buffer to > New… ⌘B' from the menu to send it to the Mac you will then select (see *The program linking window*).

Text messages as well?

Yeah, I put in the ability to send text messages, so that you can get the spelling right when your boss says some weird name. Select 'Send text message to > New… ⌘T'. Type in the message. Hit OK or Enter and then select the receiver.

But what if I want to send it again (and again…)?

Glad you asked. Just select 'Send text message to > Last destination' or 'Send sound buffer to > Last destination ⌘L' to send the sound buffer, and new sound buffer or a text message to the last destination.

And that list of destinations you told us about?

The easiest way to add a destination to the list of destinations is to select 'Add last destination ⌘A' from the Destinations menu right after you send something (sound or text) to someone. You will be asked to name this destination (this name appears in the menu). Next time you can just select that name from the list of destinations as you send a sound or a text message. You can also add a brand-new destination to the destination list using 'Add new'. I also provide some general (and obvious) commands to manipulate this list in the Destinations menu.

Menu Reference

The following is a VERY brief listing of the commands and how to use them. I hate reading manuals so I assume you probably do to, but maybe this will speed y'all up when you're using Communicator (check out the hidden key equivalents).

Menu

About Communicator

Amusing command whose purpose is left up to the reader's imagination. Warning: this dialog box may contain a disturbing shareware plea and a **neat beep**. (By the way, that's me!)

File Menu

New sound… ⌘N

Record a new sound through a audio input device. (i.e. Apple microphone or MacRecorder) This command will not work (greyed out) on Macs without an sound input device (ie, the Mac IIcx, Mac II, Mac SE/30, Mac SE, Mac Plus, etc.). The sound, if you don't hit Cancel on the palette, will be put into the *current buffer*. Here's the keys you can use in the sound palette:

R or Down Arrow	Record sound
Up Arrow	Stop
Right Arrow	Play
Left Arrow	Pause
Return or Enter	Save
Escape or ⌘.	Cancel

Incidentally, if you hold down the Option key as the sound palette is opening, the built-in 60K recording limit can be overridden. Unfortunately, you WON'T be able to send the new sound that you record this way! (But you can save the sound to disk, using the Save sound… menu item.)

Open sound… ⌘O

Open a file (type: 'sfil') and load first sound resource in that file into buffer. You can then send the buffer or save it to another file.

Play sound ⌘P
Play the current sound buffer. (So you know what you'll be sending your boss **before** you get fired)

Save sound… ⌘S
Saves the current sound buffer to a sound resource file on disk. This can be used to play something later, or save sounds for other people on the network who DON'T have a sound input device (microphone) on their Mac.

Send sound buffer to >

Send the current sound buffer to a given destination. (menu is similar to figure below for text sending).

New… ⌘B

You will be asked to select a copy of Communicator Extension running on a machine on the network, in the program linking window. The sound buffer will be sent to that Mac. (See *The program linking window*)
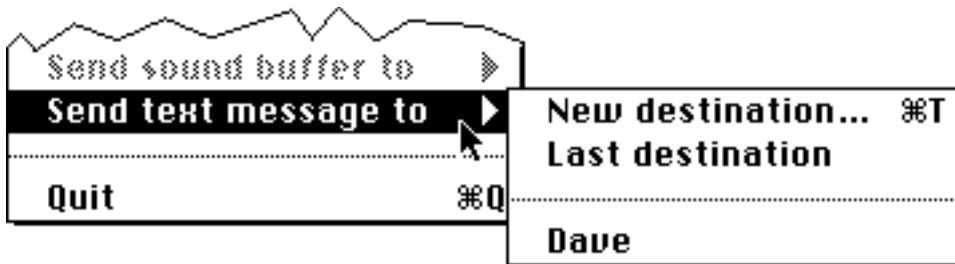
Last destination ⌘L

Send the sound buffer to the last destination that you sent somthing to (saved over multiple launches.)

ANY OTHER ITEM below Last Destination

Send to the destination that you previously created (see the destination menu to find out how to change this menu). For instance, selecting 'Dave' from the menu will send to the destination you created that is called Dave.

Send text message to >

New destination… ⌘T

Sends a new text message to a new destination. The last text message is already saved in the window that appears, so you don't have to retype it if you want to send it to a new destination. The following keys work in the text entry dialog box:

⌘Z   Changes text back to previous text message that was sent.
Enter & Shift-Return
        Clicks on OK to exit the text entry box. (Returns are entered in the text as line breaks)
Escape & ⌘.
        Cancels the current text entry and does not save or send it.
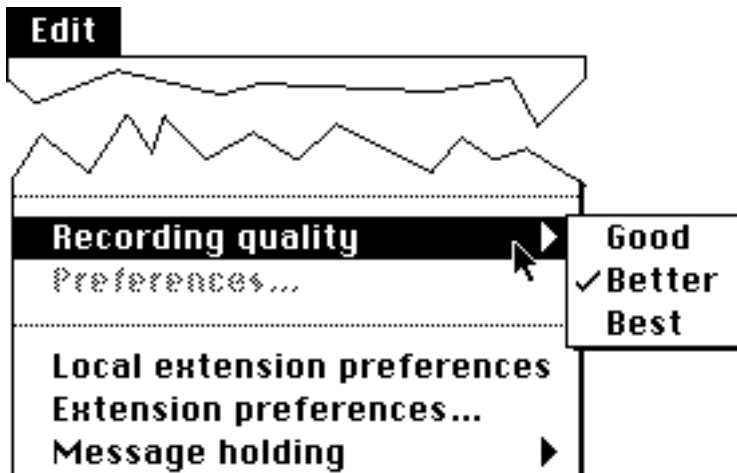
Last destination

Sends a new text message (see above for keys) to the last destination you sent something to.

ANY OTHER ITEM below Last Destination

Send a text message to the selected destination that you previously created (see the Destination menu, below, to find out how to change this menu).

```
┌──────────┐
│   Edit   │
└──────────┘

  Recording quality          ▶   Good
  Preferences...               ✓ Better
                                 Best
  Local extension preferences
  Extension preferences...
  Message holding            ▶
```
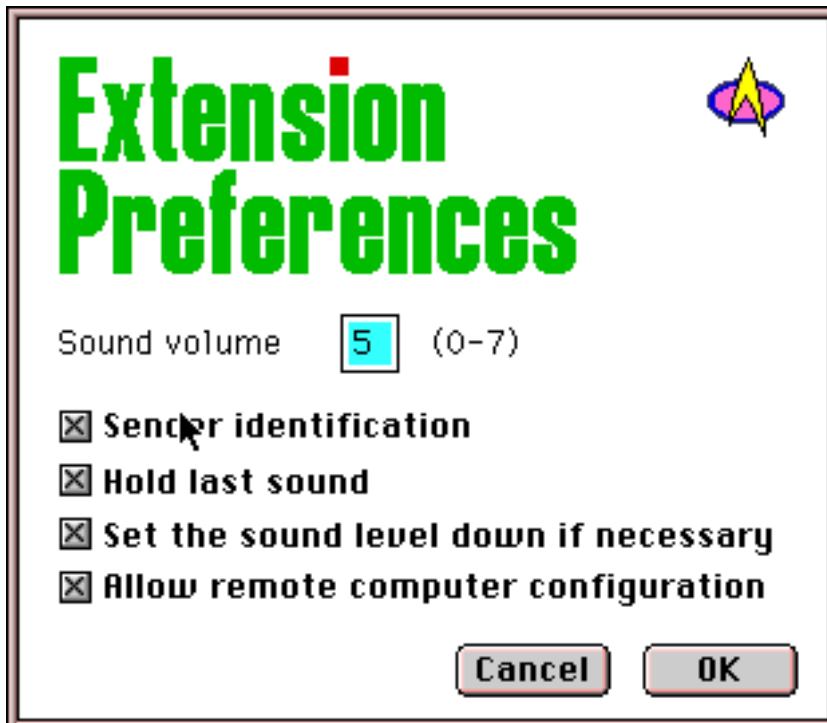
Recording Quality

Set the recording quality for the next sound(s) to be recorded (option is saved over launches). The higher the quality, the less time you'll have to record. This translates into the following, approximate times: 16 seconds for Good, 8 seconds for Better, and 2 seconds for Best.

Local Extension Preferences

Set the preferences for the local copy of Communicator Extension (ie, that which is running on the same computer as Communicator). Note: The Extension must have already started up for this item to work.

Sound volume specifies what volume you want the sound to play at on the machine you are configuring.

Sender identification shows you the machine name and location of the message sender in a window when a sound is received. When it appears after a sound is received, click on OK in this window and wait (about 15 seconds) for the sound to start playing.

Hold last sound saves the last sound in a file called 'Last sound received' in the Preferences folder (alias it out of the Preferences folder if you want to play it later). This is NOT the same as Message holding.

Set the sound level down if necessary makes the sound volume actually go down (weird?) if the specified sound volume is LOWER than the system volume on that Macintosh.

Allow remote computer configuration lets another computer change the preferences of the Communicator Extension you are configuring. Note: if you

uncheck this option for a remote computer you won't be able to undo it except from the computer whose configuration you are changing.

Extension Preferences…

Same as 'Local extension preferences' except you choose a copy of Communicator Extension to configure on ANY machine on the network. The window will take longer to come up as the remote computer must send back its configuration.

Message holding > On ⌘H and Off
Message holding holds all sounds for the local extension. They are played back when you turn off holding. The local extension should give back a message telling you the state of message holding when you do this (and how many sounds were received while on hold). Known deficiencies: A text message will effectively kill message holding. Message holding (actually, just the playback) probably only works on Macs equipped on with the Apple Sound Chip. All computers that can run System 7 except the Mac SE and the Mac Plus have the ASC, as far as I know. (tell me!)

Destinations Menu

```
┌─────────────────────────────┐
│ Destinations                │
│▸Add new…                     │
│ Add last destination   ⌘A   │
│ Remove destination      ▶   │
│ Clear all                   │
└─────────────────────────────┘
```

Add new…

Add a new destination to the list of destinations (displayed next to Send sound buffer to > and Send new text message to >). You use the program linking window to choose the destination. You are then asked for the name that will appear in the list of destinations. If you choose a name that already exists, it will be replaced. Do not choose a name that starts with . or ! (I really should check for this)

Add last destination ⌘A

Add the last destination you sent something to (text or sound). You are asked for the name to add to the list of destinations. This is the easiest way of adding items to your menu; first you send, then you add the destination to your menu as needed.

Remove destination >

Removes the name you select from the list of destinations.

Clear all

Remove all names from the list of destinations. This action is not reversible.

Other considerations

Size (sending it)

The longest sound file or buffer you can send is about 70K over LocalTalk, probably higher over EtherTalk. Communicator will just post an error if the sound you tried to send was too long. (Sorry, you can't send the entire soundtrack to the *Sound of Music*). This limitation translates into about 16 seconds of sound at Good Quality (6:1) on the Mac's built-in microphone. I hope to correct this limitation soon.

Memory (getting it)

If you don't have enough free memory to receive the WHOLE sound buffer when it comes, then it won't play. This means, if the Finder (under About this Macintosh…) reports 0K free, you ain't gonna get the sound. Communicator Extension will post some kind of useful information telling you something to that effect.

Carl Sagan

By the way, if you have **billions and billions** of sound resources in that one file you dragged and dropped onto Communicator, I only read in the first one in each file. Which raises the interesting question: "Which is the **first** one?". My interesting answer: "I haven't a clue". Better off just sending the files that have a single sound resource inside them, so you know which one will be loaded.

Bugs, comments, complaints

I'd really like to hear about any bugs you find in either Communicator Extension or Communicator. This version seems pretty solid, but I haven't tested it on all machines and all configurations. So PLEASE, e-mail me or send me a letter, I don't care if you haven't paid up, just tell me about the bugs so I can correct them. (Hell, you find a new one, I'll give you a guilt-free copy of Communicator, registered and everything)

As for any comments, go ahead, send me a wish list of features. Send me your life story, send me tickets to your country so I can come and visit and talk about Communicator. Here's some questions to help you get started with your comments: Do you really like Communicator? Should I hang up my keyboard and seek employment as a janitorial assistant in Iceland? How do you use Communicator? (ex, for fun, seriously or as a virus because it crashes everyones' machines)

Complaints… Hmmmm, OK: I agree to take them.But no flaming, just tell me what's wrong (and take it easy, I have a fragile ego to protect). I take criticism well, as long as I don't know where you live (just kidding). Feel free to send me your two bits worth (and your registration: $10 CDN).

How to reach me

e-mail is the best way, with letter mail a close second. By e-mail I'm:

davidk@citr.ee.mcgill.ca

By letter-mail I'm:

David Kabal
75 Percival
Montréal West, Québec
Canada
H4X 1T4

If you like to **finger** and **talk** to people I'm at:

davidk@prefect.ee.mcgill.ca (my Mac, weekdays, EST)
(call, we'll chat, I like meeting new people):

Techie stuff

OK, here's the bottom line for all you techies waiting for the inside information on how it works. IT DOESN'T! (hee, hee)

Actually, I use the new high level events to send the entire sound resource to the remote or local Mac. It's really not as hard as I thought it would be.

The remote receiver (Communicator Extension) is NOT AN INIT. It contains NO STARTUP CODE THAT USES UP YOUR SYSTEM HEAP. It's really one of those fancy background applications that runs under System 7 as if it were an INIT (kinda like, well, maybe.... File Sharing Extension). This background

application has a tiny, weeny partition (about 60K). When a new sound comes in, it gets the memory via temporary memory handles from spare memory not in anybody's partition. This means if you have used up all available memory with Adobe PhotoShop and a gillion byte picture you won't hear the sound! (You'll get some error message, though)

I suppose if anyone REALLY wants to see the source code (THINK C), I could obligingly put comments and all that sappy stuff in, and then send it out, but I want to establish that there is a demand before doing anything THAT drastic.

Oh, yeah, if you **must** change the sound that is played in front of every message, it's name must be "Prefix" and stored in the resource fork of Communicator. (Just don't distribute the changed version).

Credits

This program was entirely written by David Kabal with the invaluable technical and artistic support of William Phillipson.

This manual was written by David Kabal (so blame Will if you don't like it).

Comments and suggestions incorporated into this version were given by quite a few people. Thanks for the help!

Special thanks to: Michele Fuortes, Anders Liljegren, Michael Pilman and Richard Smith for the suggestions that (mostly) made it into this version of Communicator.