

The Complete Guide to
**GOOGLE
WAVE**



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with Adam Pash

The Complete Guide to Google Wave is a collaborative user manual authored and edited by Gina Trapani with Adam Pash, with contributions from a community of volunteers from CompleteWaveGuide.com.

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This book is dedicated to all the giants who let us stand on their shoulders.

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Introduction

Google Wave is arguably one of the most ambitious web applications ever created—and your first experience with it will be overwhelming and confusing. This guide can help. If you're not sure what Wave does and how it might fit into your workflow, you're in the right place.

In this book, you'll learn what Wave has to offer and how you can use it to get things done with your group. This preview edition of this book reflects what's available right now in the invitation-only Wave preview at wave.google.com. It's only November of 2009, and Wave is still very young and growing quickly. Still, even at this early stage, this rich collaboration tool has deep layers of fun and interesting functionality that will change the way you think about what can be done with your group in real-time on the web.

It's time to start making waves.

Meet Google Wave

Chapter 1 is a broad overview of what Google Wave is and what it's useful for. To dive straight into using Wave, skip ahead to Chapter 2, Get Started with Wave.

Google Wave is a new online communications tool that enables groups of people to edit and discuss documents simultaneously on the web. The Google Wave team says Wave is “what email would look like if it were invented today.”^[1] However, because Wave is mostly a document collaboration tool, the oversimplified email metaphor can mislead new users. The initial Wave experience can feel chaotic and confusing, but use cases for Wave abound.

Come on in and meet Wave.

Modernizing Email

Relative to the lifespan of most technology, email is ancient. Invented over 40 years ago, email predates the internet as we know it—and in fact was a crucial tool in the creation of the internet. Despite its age, email hasn't evolved much since the 1960s. Electronic mail is based on the paradigm of postal mail, a system of passing messages back and forth between senders and recipients. Wave makes a bet: surely there must be a better way to send, receive, preserve, and grow shared communiqués than via email.

Email's Problems

Email is simple, wildly popular, and works well—or else it wouldn't have stayed in such widespread use as long as it has. But email has serious drawbacks when used to manage a conversation within a group:

- **Email propagates multiple copies and versions of messages.** As soon as email is sent, the message's contents are locked in. It can only be copied, pasted, and sent on. For example, Kaylee types an email message, addresses it to Zoe, and sends it. A copy of that message stays in Kaylee's sent box, and another copy appears in Zoe's inbox. Zoe replies and optionally includes a copy of the original message in her response. A copy stays in her sent box, and yet another copy appears in Kaylee's inbox. Kaylee replies to Zoe's reply, adds a CC to Wash, and sends it. The Send button gets pushed only three times, yet seven copies of the same message appear in differing states for three people—each of them a dead, lifeless version of another. Email propagates copies of copies, storing each in a rudimentary filing system of “boxes.” Email was designed as a system of notification, not collaboration. Given that email was designed to imitate “snail mail”—where the ultimate destination was either the circular file or a filing cabinet—letters sent via email seemed destined for cold storage, not the cauldron of innovative workspaces.
- **There's no standard or easy way to embed rich content like maps, photo slide shows, or video clips in the body of an email.** Email's answer for anything that's not text is “The Attachment.” Whether it's a document, a photo, a video, a group survey, or a web page, email wasn't designed to incorporate interactivity or richness within the body of the message itself. You could include a link to a web page inside an email message, but sometimes those break or become unclickable, and they force the recipient to launch a web browser. While some email clients like Gmail or Microsoft Outlook can display rich message formatting with images and colors, or display attached files inline, there's no consistency. No one's email always looks the same.
- **To reply to a subsection of an email, you have to quote that section manually.** Kaylee sends Wash an email telling him about the engine upgrade project she's working on, then asks where the nearest place to stop for parts is, and how long it will take to get there. An email message is just a flat document, so it's not easy for Wash to respond to each question Kaylee has asked in a readable order. He could reply to her message and manually copy and paste just her questions and position his answers directly after them. But that's a lot of work—and most people don't do it. Often questions and individual points that need addressing via email get lost because there's no easy way to reply to a specific section of a message.
- **It's not easy to privately respond to specific people within a group email.** When the group finally does stop for parts, Badger emails them asking for a cargo drop-off. Zoe wants to ask the crew how they should negotiate payment. She can't reply to all because Badger will see it, so she has to manually edit the recipient list on the private email and create yet another copy of the message.

Since email's invention in the 1960s, the internet and then the World Wide Web were born, which gave everyone an instant electronic printing press. In the early days, web sites were just static documents that didn't change. As the web grew and the technology behind it progressed, web sites became interactive, ever-changing hosted applications, where you could store and update information, communicate with others, chat in real-time, and even check and send email. In a world where broadband is widely available and you can use blogs, Wikipedia, instant messenger, and hosted web applications that obviate the need for any software on your computer besides a web browser, email looks even more ancient.

While in practice Wave's purpose isn't a direct parallel to email's, understanding email's problems given the capabilities of the modern web is a good starting place for understanding what Wave can do.

Wave's Solution: Conversations as Live Documents

Rather than pass multiple copies of messages back and forth, Wave hosts a single copy of a conversation that all participants can edit and add to. Wave displays the latest version of the conversation to everyone in the group in real-time, even as it's changing. That means if Kaylee has the wave she sent Wash open on her computer, and Wash is typing his responses, Kaylee sees the wave change keystroke by keystroke.

CLARIFICATION: Capital "W" Wave refers to the whole product, Google Wave. Lowercase "w" wave refers to a hosted conversation that has one or more participants.

Wave treats an email conversation with multiple recipients and senders as a document with multiple editors and writers. If you can make the conversations-as-documents and documents-as-conversations leap along with Wave, the system makes 100% more sense.

QUOTE: "The goal of Google Wave is to collaborate INSIDE email rather than using email to ARRANGE to collaborate." —Wave user Marsh Gardiner^[2]

In other, smaller ways, Wave addresses the rest of the problems with email listed in the previous section. Using Wave, all the participants in a conversation have the ability to:

- Reply to a subset of a wave inline
- Add rich interactive media like videos, images, maps, and polls in-wave
- Play back and copy earlier versions of a wave, allowing you to revert to an older state of a given wave, or see how it changed over time

In theory, Wave is a big upgrade to email and document collaboration tools. The following table sums up the differences between "The Email Way" and "The Wave Way."

Element	The Email Way	The Wave Way
People	Sender or recipient	Participant
Messages	Copies	Single, hosted conversation
Rich Content	Attachments, links, HTML	Inline gadgets
Quoting/Commenting	Manual	Forum-like threading
Privacy	CC, BCC	Inline, private threads

Wave sounds great in theory, right? In practice, Wave introduces complexities that put off new users.

Wave's Downfall: A Universally Confusing Initial User Experience

Wave's biggest downfall is how overwhelming it can be for new users when they try it out. Parody web site EasierToUnderstandThanWave.com^[3] jokes that heady topics like radiocarbon dating, neoclassical economics, and polymodal chromaticism are easier to understand than Wave. The joke rings true because the initial Wave confusion is a nearly universal experience. The first waves you're bound to receive from your friends and co-workers, fresh on Wave, will say things like "I don't get it" and "This is weird," as shown in Figure 1-1.

There are a few good reasons for the initial confusion:

- **Conversation-as-document is a whole new paradigm with no existing precedent.** For most computer users, editing a Microsoft Word document and instant messaging are two very different activities. Wave fundamentally conflates messaging and document editing, so there's no obvious existing parallel for what you do in Wave to what you do now. It's not quite email, and it's not quite writing a Word document. Wave is both and neither, which can make it difficult to understand or place into your existing workflow.
- **Conversation trees, or non-linear message threads, are chaotic.** Forums, blog comments, email threads, and instant messaging sessions are all linear conversations, where the newest message appears at the bottom (or top) of the list. You read them in one direction, one after the other. Wave's inline reply capability turns a conversation into a tree that can grow any number of branches. When wave participants add new information to a wave on different branches at different times, the non-linear nature of the discussion can be overwhelming and feel unnatural.

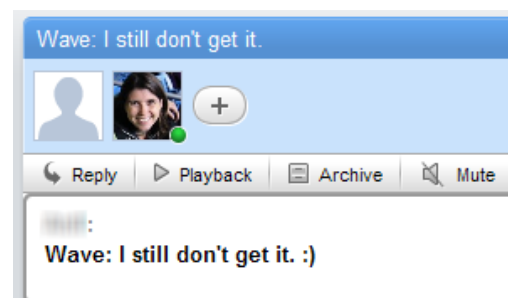


Figure 1-1. At first, Wave's purposes or parallels are unclear.

- **Document versioning is foreign (to non-programmers).** Software developers have been using file versioning tools like the one built into Wave for decades now. But most computer users don't version their files or use a feature like Wave's playback in any other context, so the need for it isn't obvious.
- **Wave isn't done yet, so it has huge gaping holes of missing functionality.** Basic functionality that you'd expect from a messaging and document editing platform are currently missing in Wave, which makes it seem less useful than doing those things "the old way."

QUOTE: "It seems as more people try [Wave], they agree that it's like a Segway for email." — Technologist Anil Dash^[4]

The confusing initial Wave experience may thwart its adoption. Wave's whiz-bang features are impressive, but may not be practical. Whether Wave actually gets adopted as widely as email or remains relegated to niche uses like the Segway remains to be seen. But plenty of people want in on the Wave preview, prepared with plenty of ideas about how they'll use it.

Potential Wave Use Cases

During Wave's invite-only preview, in a contest at Lifehacker.com, several interested users vied for invitations by describing how they planned to use Wave in their lives and work.^[5] Because it's so early in Wave's release, these are only *potential* use cases for Google Wave, not real-world scenarios, but all of them demonstrate a need for a real-time collaborative tool like Wave.

High school junior Sean said:

In my AP European History class, my fellow students and I are always struggling to keep up with taking notes. After each class we all email each other the notes that we took, and it's always up to us to compile all of the important info, and figure out the validity, etc. With Google Wave, we could have one master notebook, where we could verify all the info, highlight what will probably be the most important for the international exam, and just improve the process of studying completely.

A consultant for the Centers for Disease Control in Atlanta, GA, wrote in:

My group is supporting H1N1 vaccine distribution, including planning, shipping, and communication. We have a team here in Atlanta, Department of Health and Human Services people in DC, and the distributor, based in Dallas. Also, the team in Atlanta is spread over 4 campuses. We use email, intranet, shared drives, etc. to collaborate. We meet CONSTANTLY, leading to lots of meeting recaps, duplicated work, and wasted time. As the situation

changes (doses manufactured, quarantined, distributed, people infected, etc.), we are constantly updating plans and tracking numbers for reporting. Documents are stored in shared drives. Updates are sent via email. Wave would allow much easier tracking of changes to our documentation and communications. Before anything goes out the door, it has to be checked by 3-4 people after being worked on by another 3-4. If we could all work simultaneously on a message, it would greatly cut our time and thus get messages out to the public (or even to HHS, the distributor, or the manufacturers) much, much faster.

A Traffic Management Coordinator at the Philadelphia International Airport Control Tower said:

My job is to reduce departure delays and to maintain an efficient flow of air traffic into and out of the [airport]. Currently we utilize a Google Spreadsheet to share real-time departure and weather issues, airport construction updates, and snow removal operations with the airlines and other interested parties. I'm excited at the prospect of being able to embed real-time weather radar gadgets to provide users an up-to-the-minute graphical look at the weather. We currently use the chat feature on Google Spreadsheets but it appears that the more robust communication capabilities in Wave would greatly enhance our communication with the airlines. The ability to review conversations and data will help us to further reduce delays at Philadelphia International Airport. This will result in a savings of time for passengers, reduced fuel and operating costs for the airlines, and fewer complaints from both.

A reporter who covers government and politics at *The Arizona Republic*, an Arizona newspaper, said:

Google Wave will be enormously useful to reporters collaborating on stories. Currently a colleague and I are working on a story involving safety issues at Arizona prisons. This involves a lot of digging through records, interviewing people and transcribing the tapes, and writing up what we've found. Because we work in different offices, it can be hard to keep track of where each of us is in our reporting. Wave could help us organize our reporting and collaborate on the writing by making the process transparent in real time. With a couple more invitations, editors could follow our progress and insert questions into our stories. Lastly, there's great potential here for crowdsourcing. We could start waves seeking public input on our stories, and incorporate those questions and answers into our reporting. Because we could supplement our questions with documents and a variety of links, I see the potential for crowdsourcing much greater on Wave than it is (so far, anyway) on Twitter and Facebook.

Caregiver Mike said:

I am looking after an elderly lady named Liz. She is well at the moment but does suffer from spells of confusion and forgetfulness. Liz is a widow but has a large and caring family. Unfortunately they are spread all around the country (none live within a two hours' drive) and have families and jobs of their own... At the moment I send out a weekly group email detailing what's happened to Liz over the days of the previous week. The family then replies with any questions or suggestions, etc. Even with Gmail conversations, answering and replying to six responses and further ongoing replies back and forth becomes confusing and very time-consuming. Wave could greatly improve our communications. I would open a new wave at the beginning of each week, inviting all the family to it, and add content on an ongoing current basis. This would mean the family would be far more up to date than they are currently and their responses and queries would be spread out (and inline), far more manageable and more current. Also due to Wave playback, when someone has been away, catch up would be simple.

Bride-to-be Tiffany said:

I am coordinating my wedding with a dozen or so friends/family and various vendors, from all over the country. I live in Texas, the wedding (and my mother) is in Florida, my maid of honor lives in Massachusetts, you get the idea. Currently, we use the telephone and email to exchange ideas, sometimes Skype if we're lucky enough to be on at the same time. I also have a notebook where I paste pictures of inspiration, jot down links, sketch ideas that I will hold up to my webcam or snap a photo of the page to show others. Seriously. Wave would improve wedding planning SO MUCH. We can all share ideas and see who has jumped in on what jobs in what order. We can use plug-ins to embed venues, caterers, dresses. I can embed a Wave in my wedding blog, which I link to on theknot.com, a wedding planning site that connects you to all sorts of local and national wedding resources. We can Wave simultaneously, which will save us from typing a long response, only for someone else to send something else faster that changes what we just spent time writing (don't you hate it when that happens?). You know how the bride, her bridesmaids, and her mother all get when they start brainstorming and delegating. Imagine if we were all in the same room. It would get rowdy. This way, with Google Wave, it will be organized, documented, and editable. It will also be a great way for my fiancé to track our progress and see whose ideas are whose and approve or disapprove at will. It will make the perfect planning tool for the perfect wedding.

The Story Behind Wave's Name

Google didn't choose Wave's name for the reason you might assume—as a play on the idea of surfing the web. Its engineers were paying homage to writer and director Joss Whedon's brief but well-loved science fiction TV series, *Firefly* (2002–2003),^[6] and its follow-up film, *Serenity* (2005).^[7] In the *Firefly*/*Serenity* universe, characters send textual communications by “wave.” References to waves appear throughout the series and include lines such as “that’s why I waved you,” “just got a wave,” “I can send him a wave,” and “I read your wave.”^{[8][9]}

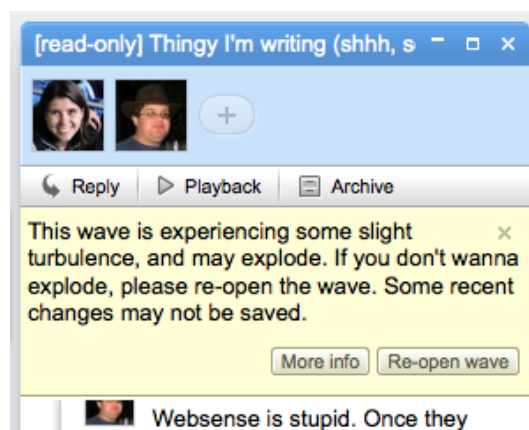


Figure 1-2. Error messages in the Wave preview refer to lines from the 2005 film, *Serenity*.

In Wave's preview release, two error messages draw from lines from the *Serenity* movie: “Everything’s shiny, Cap’n. Not to fret!”^{[10][11]} and “This wave is experiencing some slight turbulence, and may explode,”^[12] as shown in Figure 1-2. During Wave's unveiling at the Google I/O conference in May of 2009, the demonstration script contained several subtle but clear references to *Firefly* and *Serenity*.^[13]

In our own homage to both *Firefly* and the folks who built Wave, we'll use the *Firefly* universe as our go-to when discussing examples throughout the book. However, Wave's *Firefly* references are an in-joke. Wave will be best known for its attempt to upgrade email.

Federated and Open Source: How Wave is Not Proprietary to Google

No one owns email. The email protocol was developed not by a corporation with a singular interest, but by the IETF,^[14] an open standards organization made up of volunteers representing many companies and organizations. Therefore, the idea of moving your messages to Google Wave might feel like you're giving the search giant a monopoly on your communication. But even though it's continually referred to as “Google Wave” instead of just “Wave,” Wave is not proprietary to Google. Like email, Wave consists of several parts: a protocol, a server, and a client. The protocol itself is an open standard, created by but not beholden to Google, and free to all software developers to make products that utilize it.

Therefore, if Wave usage catches on, more Wave server and client software from many different companies and organizations may become available in the future—like web browsers and email programs have. The Wave protocol is federated and does not centralize

all information on Google's servers;^[15] like email, users on different Wave servers hosted at different companies will be able to communicate with each other using Wave, independent of Google.

In Wave's preview release, it is not yet possible to send waves between different servers. However, the server federation is a core part of the product's foundation and will definitely come to fruition.

Now that you know the impetus for Wave's development, it's time to get started with Wave.

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Get Started with Wave

Now that you know what Wave is, it's time to take it out for a spin. If you've already used Wave, skip ahead to Chapter 5, Dive Deeper into Wave.

The first release of Google Wave is a limited access, invitation-only preview. If you haven't used Wave yet, this chapter covers how to get an invitation to the Wave preview, set up your new Wave account, find your way around Wave, and create your first wave. You'll also find public waves to participate in, glory in your first wave experience, and learn the three different ways to update or edit a wave. Finally, this chapter discusses the best browsers to access Wave with and adjustments you may need to make for different environments.

Get ready to start putting Wave through its paces.

Get an Invitation to the Wave Preview

The Wave preview is not open to the public. It's accessible only to people who have received an email invitation to try out the system, so new users interested in Wave can't just go to the Wave homepage and register for an account. If you haven't been invited to Wave already, there are a couple of ways to get the golden ticket.

If Someone You Know is Already Using Wave

Google handed out over 100,000 invitations to the Wave preview on September 30th, 2009 via email to users who had expressed interest in trying it.^[1] Each person invited in the initial round also received eight invitation “nominations” to share with their own contacts. If someone you know is already using Wave and still has unused nominations, that person is your best bet. Ask her to nominate you for an invitation by entering your email address into her nominated invitee list. Note that the invitation won’t come instantly—it could take anywhere from a day to a few weeks. Google is working its way through the nomination queue at a rate that keeps pace with the Wave preview’s server capacity. However, a nomination from an existing Wave user is the speediest way to obtain an invitation.

If You Don’t Know Anyone Using Wave

If you don’t know anyone already using Wave who can nominate you, you’re still not entirely out of luck. You can request an invitation directly from Google at their aptly-named Request for invitation to Google Wave signup page.^[2] Slowly but surely the people who express interest in trying Wave are receiving invitations. But don’t wait. Interest in Wave grows by the day, so the sooner you request an invitation, the better.

Get to Know the Lay of the Land

Once you’ve snagged an invitation to Wave, you’re ready to register, log in, and go for a ride. Here are a few important details worth knowing before you jump in.

Your Google Wave ID Is Not an Email Address

When you register for your account at wave.google.com, you use your Google account credentials—i.e., your `you@gmail.com` or `you@googlemail.com` email address—to claim your new Wave ID. However, your Wave ID will be something like `you@googlewave.com`. Even though your `@googlewave.com` ID *looks* like an email address, it’s not: you can’t receive or send email from or to that ID. People can only wave you using that address.

The Anatomy of the Wave Client

Now that you’ve registered, it’s time to log into Wave and get your first glimpse of the Wave client. The default Wave view is a three-column, four-panel layout, as shown in Figure 2-1. From left to right, the first column includes the Navigation panel on top (like the Gmail sidebar with its links to your Inbox, Sent, and labels) and Contacts panel below it (like your Gmail Chat buddy list). The second column is the Search panel, which by default contains a list of active waves in your Inbox. The third column is where you can start a new wave or open an existing wave.

When a panel's contents are long enough to require it, the panel gets a scrollbar on its right side that's a little different than the scrollbars you might be used to. (You can see it on the open wave in the third column in Figure 2-1.) To use the scrollbar, click its up and down arrows to move it, or click and drag the entire scrollbar to scroll. See Chapter 6, Master Wave's Interface, for more on the Wave scrollbar.

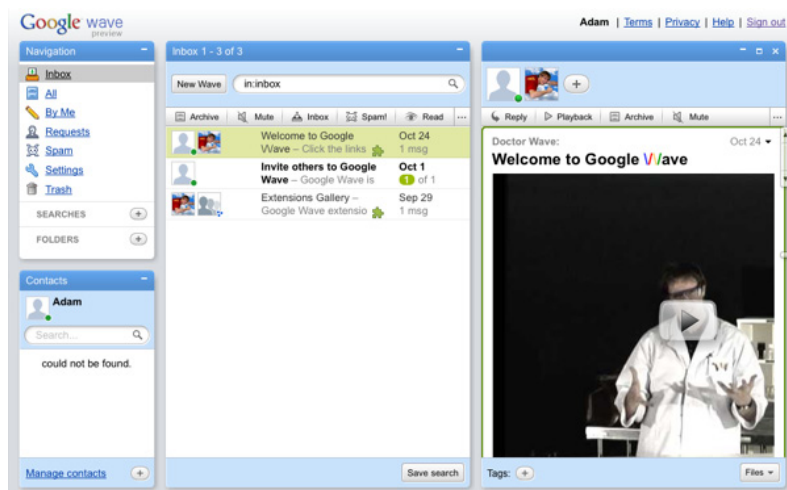


Figure 2-1. The default Wave client consists of three columns and four panels.

The Anatomy of a Wave

The Wave client layout may seem similar to a three-column email client. However, an individual wave is much different than an email message. Waves have more structural elements than flat email messages do, so there are new terms to describe them. We'll use this terminology throughout the book, so it's important to understand what the different elements of a wave are called from the get-go.

REMINDER: Capital “W” Wave refers either to the Wave protocol or the Wave client (i.e., Google Wave). Lowercase “w” wave refers to a hosted, threaded conversation that has one or more participants.

A wave is made up of distinct, threaded conversations known as *wavelets*. Participants can create multiple conversation threads within a wave, so a single wave can contain several wavelets. Each wavelet, in turn, is made up of a several distinct messages called *blips*. When you select a single blip, Wave outlines it in green. Blips are like a single message in the midst of an email thread in Gmail, except blips are editable by any participant in a wave.

In Figure 2-2, the wave contains two wavelets. The first wavelet has five participants and three blips; the second has only two participants and two blips. (The second wavelet has only two participants because one initiated a private conversation with the other to “bail” on the rest of the group without hurting their feelings.) When you click the New Wave link or button, you’re creating a wave that contains a single wavelet with a single blip, to which you can add content.

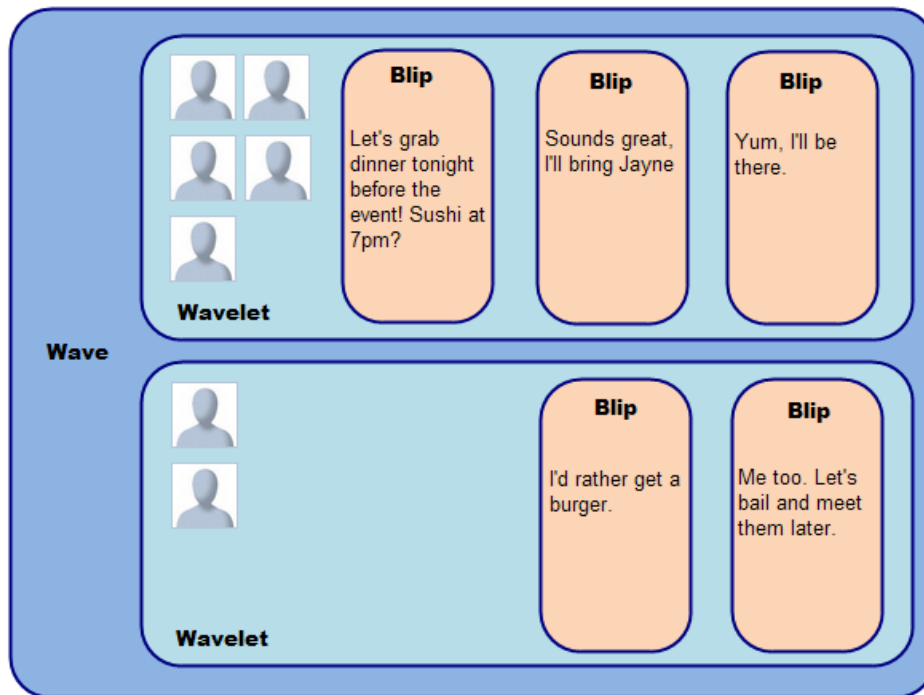


Figure 2-2. The anatomy of a single wave with two wavelets and five blips, adapted from the Google Wave API Overview.^[3]

Make Your First Wave

Wave is fundamentally a document collaboration tool, so it's not very fun or useful if you've got no one to wave. Chances are that whoever invited you to the Wave preview appears in your Wave Contacts list when you log in, so that person's a good first person to wave. Otherwise, you can try out Wave by participating in public waves.

If One of Your Contacts is Already in Wave

Wave uses your regular Google account's Contacts list, so if any of your existing Google contacts is also using Wave, those people automatically show up in your Wave Contacts list. (For more on Wave contacts, check out Chapter 3, Manage Your Wave Contacts.) If you don't have any contacts using Wave—that is, your Contacts panel is empty—you can still test out Wave. Skip to the next section to see how to join a public wave.

If one of your contacts is already in Wave, you can wave with that contact in a couple of ways:

- Click the New Wave button at the top of the Search panel (to the left of the search box), or click the New Wave link in the third column of the Wave client. Wave opens a new, empty wave in the third column. Type your first message and click Done. Once you do, Wave prompts you to add participants with a drop-down contacts menu, as shown in Figure 2-3. (This same menu displays any time you click the + (plus) button at the top of a wave.) Click a contact to add him or her to the wave.

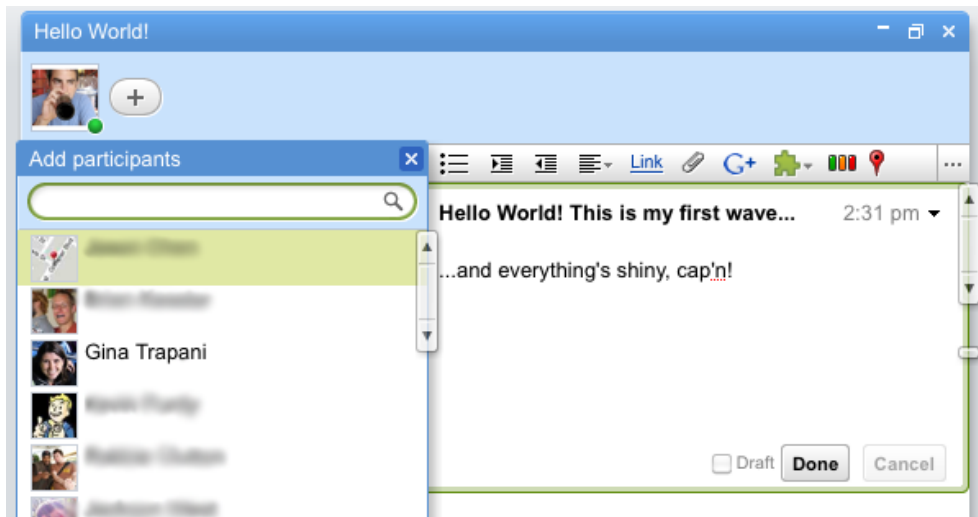


Figure 2-3. You can add new participants to a wave by clicking the + (plus) button.

- Alternately, in the Contacts panel, click a contact's icon, then click the New Wave button on their profile panel, as shown in Figure 2-4. Type your message, then click Done.

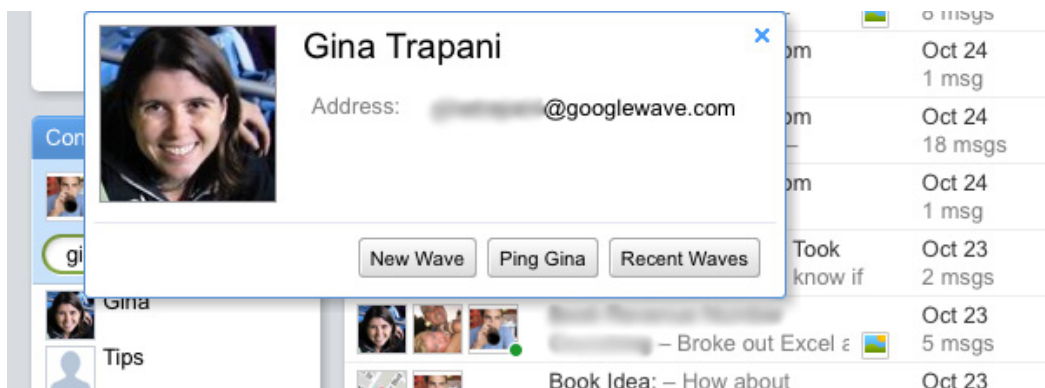


Figure 2-4. Search for contacts and start a new wave from the Contacts panel.

Once your new wave has another participant, you can see that person's icon in the light blue area near your icon at the top of the wave. That wave appears in the participants' Inbox(es) the moment you add them to the wave (even if you haven't typed a message yet). Once you start typing, other participants can enter and update the wave at the same time. Congrats, you're waving!

QUOTE: “I keep pushing the New Wave button, but it never plays Depeche Mode or The Cure.”—Wave user Andy Baio^[4]

Even after your wave conversation and updates are well underway, you can add any new contact to it at any time—again in a couple of ways. Let’s say you’ve already started a wave with Mal, but you realize halfway through that Inara might have something to add to the conversation. Make sure the wave you want to add a contact to is open, then either:

- Click the + (plus) button at the top of the open wave and simply search for the contact you want to add. Wave autocompletes your contact search results as you type, so once it finds the person you’re looking for, you can either press Enter to add that person to the wave, or click the contact.
- Or, drag and drop anyone from the Contacts panel over to your open wave to add him or her to the conversation.

Remember, your ability to add contacts to a wave at any point in your conversation is one of the great perks of Wave. If this were an email message, you’d need to CC a new contact to pull someone new into a conversation, then they’d have to piece together the conversation from the bottom up like some sort of esoteric puzzle. With Wave, the conversation is all laid out for your new contact, and she can even play back the wave from the beginning to catch up. (See Chapter 5, Dive Deeper into Wave, for more on Wave’s playback feature.)

If None of Your Contacts are in Wave, Go Public!

Wave is in a limited, invitation-only preview, so there’s a good chance that the first time you log into Wave you won’t have any contacts to wave, or the person who invited you isn’t online and the wave you create seems just like a sent email. Using Wave is the best way to understand how it works, so even if you don’t have anyone in your Contacts panel to wave real-time, you can still find and participate in public waves live any time of day or night.

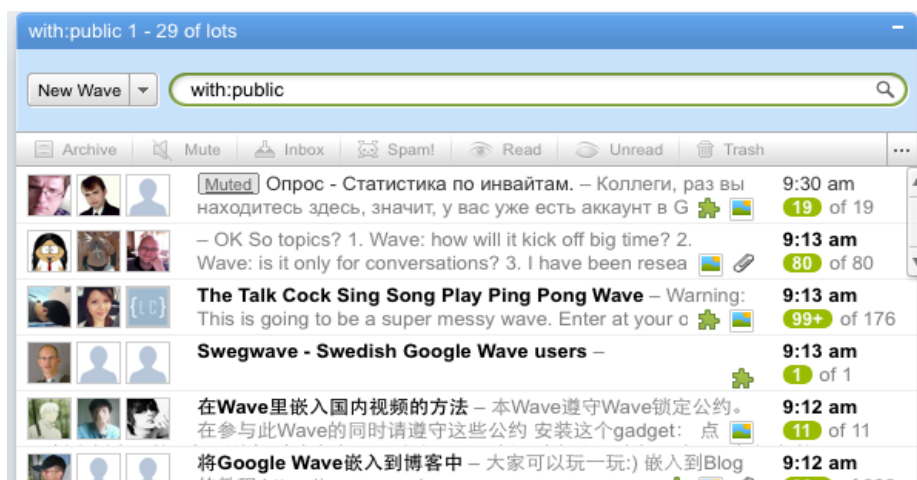


Figure 2-5. Find public waves using the `with:public` search operator.

Type the `with:public` search operator into the Wave search box (located at the top of the Search panel) and press Enter to find public waves that everyone on the server can see and participate in. As you can see in Figure 2-5, this results in a dense, moving sea of public waves that are updating in real-time, right in your Search panel. If you see a wave that looks interesting, click it to join in. It opens in the third column. The `with:public` operator returns a firehose of constantly updating waves, and while it's interesting to watch, you'll have better luck finding a public wave you want to join by adding a keyword to your public search, like `with:public Firefly`. (See more details on how to narrow your wave search results in Chapter 4, Find and Organize Waves.)

Once you start waving in real-time with other participants, you can't ignore Wave's most eye-popping feature: its ability to display multiple participants' cursors working live and in real-time in a given wave. You'll also notice comfortable similarities between how Wave works and how your current email and instant messenger tools work.

The Initial Wave Experience

Most people's first reaction to Wave's real-time updating capabilities is somewhere along the lines of, "Whoa!" Watching multiple people type into a wave, live on your screen, is an exciting, new, and sometimes disorienting experience. Not only does an individual wave update before your eyes, your Inbox shifts as the waves in it change. Also, the most common first use of Wave isn't document collaboration—it's chat.

Watch Multiple Cursors Type into the Same Wave

The first time you're reading or adding content to a wave at the same time one of your contacts is editing that wave, you'll notice something interesting: Wave displays a participant's changes to that wave in real-time, keystroke by keystroke. Within the blip, a colored cursor, labeled with the owner's name, moves through the text as that person types, as shown in Figure 2-6. Wave can show more than one cursor working within a given wave as well. Wherever you see this cursor on your screen is exactly where that user's cursor is on his screen. Active waves with lots of participants are a spectacle to watch, with multi-colored names typing text before your eyes.

Watching multiple peoples' cursors work on a single document at the same time is a new experience for most people. As you type, you may feel self-conscious knowing that your contacts can see your every typo in real-time. It's interesting to watch someone's thought process unwind as they add to a conversation; it can also be a time-sucking distraction to see every keystroke as it comes over the wire, versus receiving a finished chunk of text in one shot. More usefully, seeing cursors update live helps you avoid stepping on other participants' toes while you collaborate on a single blip.

For example, if you're working on a document with coworkers for a big presentation at work, you don't have to deal with frustrating workplace servers and document locking that restricts editing to one user at a time. In Wave, you can edit a document at the same time as any participant because that document is a single, hosted conversation, and you can see what your collaborator is editing by simply looking out for their cursor.

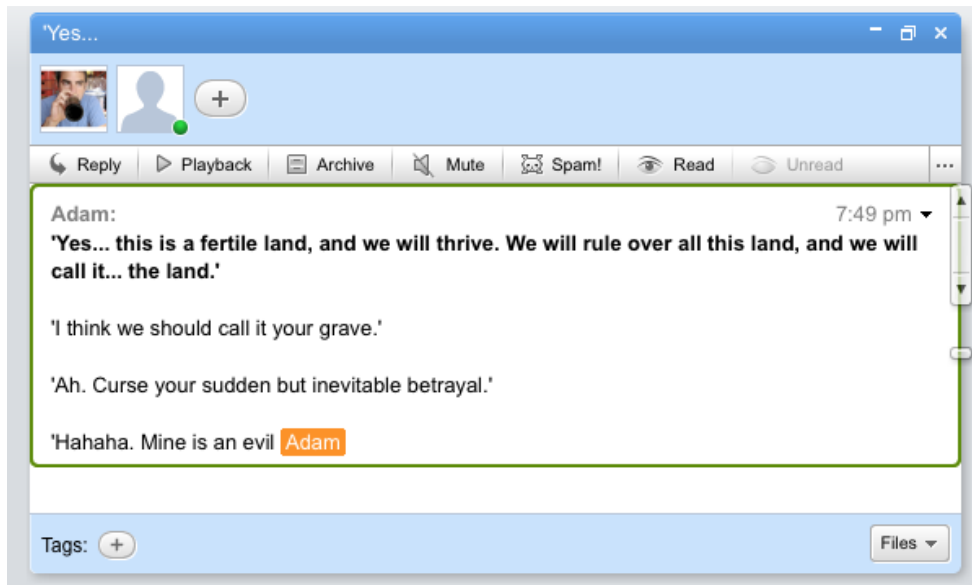


Figure 2-6. When someone else is editing a blip, you can watch their cursor move around in real-time as they type.

QUOTE: “A wave is a living thing, with participants communicating and modifying the wave in real-time.”—Google Wave API documentation^[5]

Live, multi-user document-editing is a feature that may be familiar to programmers who've used a special breed of collaborative text editors, but for most of us it's completely new, novel, and, yes, sometimes a little scary. If you never get used to the idea that someone may be watching you type—or you occasionally want the privacy of drafting a blip without someone looking over your metaphorical shoulder—Wave offers a Draft checkbox next to the Done button on every blip. Currently the Draft checkbox isn't available for use. But when Wave drafts are available, ticking that checkbox will let you complete typing a blip in private rather than displaying every keystroke as it happens.

New Message Notifications and Your Wave Inbox

Like an email client, Wave notifies you of new blips and changes in waves. In your Inbox, waves that have changed since you last looked at them display the blip subject and timestamp in bold text. Wave also highlights the number of changed, unread blips in green, as shown in Figure 2-7.

Figure 2-7 also shows that when you open an updated wave, you can identify unread or changed blips by looking for the vertical green bar in the left margin of the blip. Click an unread blip to mark it as read. The green bar fades away and the unread count changes in your Inbox.

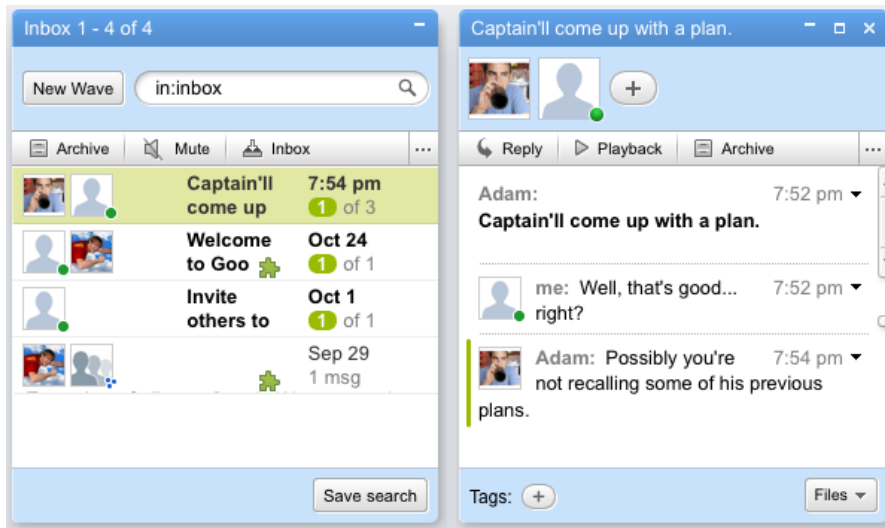


Figure 2-7. Unread waves are indicated in the Search panel by bold text and a green callout displaying how many blips are new or have changed. Inside a wave, a green line in the left margin of a blip indicates that it's new or has been edited.

Wave as Instant Messenger

At first, Wave can feel overwhelming, especially if you're trying to understand it as a type of tool you already know—such as email, a document collaboration tool, or instant messenger. Wave combines features from all three of those tools. During your first few Wave sessions, most likely you'll use Wave like an instant messenger—particularly if you start a Wave with another contact who's also online. You compose a blip, someone else replies, and pretty soon your conversation feels like a familiar, linear, IM conversation.

It's only natural that you'd use Wave like instant messenger when you're first getting started, but you're only scratching the surface.

On the other hand, if you're sending messages to contacts who aren't currently online and actively participating in the wave, Wave starts to feel a lot like email—especially if everyone replies to every blip directly after it, in a straight line. What you'll find, however, is that the more comfortable you get with different methods of replying to and editing content in a wave, the better you'll understand how Wave is different from email and instant messaging.

Three Different Ways to Update a Wave

You can update a wave in three different ways, and the method you choose varies depending on context. Sometimes you'll want to reply directly beneath a blip in response to that blip; other

times, when you want to reply to a single section of a particularly long blip, you'll want to reply to text inside a blip; finally, if you're collaborating on the contents of a single blip, for example, you'll just edit it directly.

Reply Below a Blip

Whether you're riding a wave with a friend or you've found a public wave to participate in, take a moment and read through the wave you've joined. See a blip you'd like to reply to? Hover your cursor over the bottom edge of any blip and a thin blue box with a blue arrow pointing down on the left appears, as shown in Figure 2-8. Click that box to reply to that individual blip. When you're done, just click the Done button.

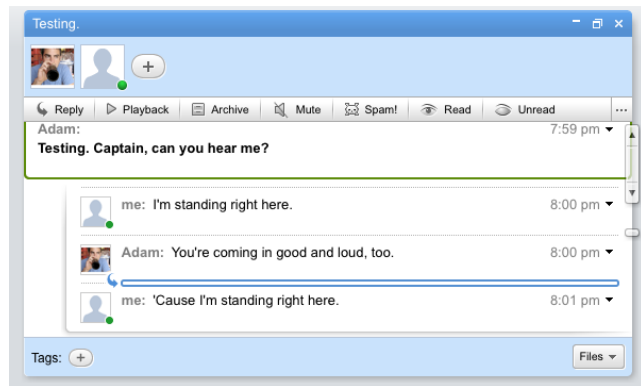


Figure 2-8. You can reply to any blip by mousing over its bottom edge and clicking the blue box. If you reply to a blip further up in the conversation, it displays as a nested blip.

You can reply this way below any blip, regardless of where it is in the flow of the wave. A lot of the time you'll reply to the most recent blip at the end of a wave, but if you reply to a blip in the middle of a wave, Wave displays your reply nested between the blips before and after it.

Reply Inline within a Blip

One of the more powerful features of Wave—and one that sets it apart from email—is that you can easily reply inline to any piece of text within a blip. Say for example that Kaylee has composed a long, 10-point argument detailing why she thinks Mal should pony up to buy a new catalyzer for the ship's engine. Rather than reading through the entire essay and replying to each point in another long, flat response, Mal can reply inline to any piece of text in Kaylee's original blip.

To reply to text inline, double-click the last word in the section of text you want to reply to. Wave displays a small box next to the highlighted text with Reply and Edit links. Click Reply, and Wave inserts a nested, inline blip exactly where the reply should be—next to the text it's referring to, as shown in Figure 2-9.

The official Wave documentation claims you should select the text you want to reply to and then double-click the selection,^[6] but that's not quite

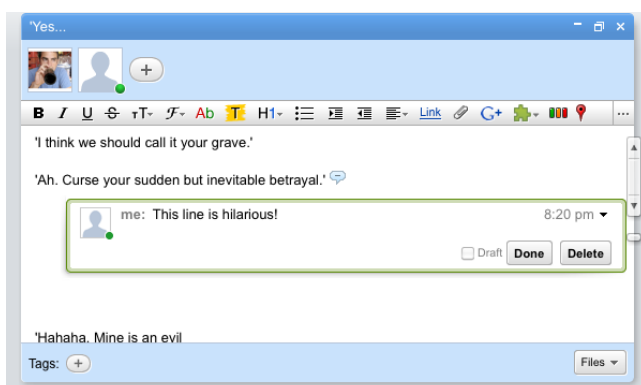


Figure 2-9. Reply to specific pieces of text within a blip.

accurate. If you select text and then double-click the selection, you're actually just highlighting the word you double-click, and Wave sets the cursor at the end of the word you double-clicked instead of at the end of your text selection. So skip the whole selection bit and just double-click the last word in the section of text you want to reply to.

Edit the Existing Contents of a Blip

What separates Wave from email even more than inline replies is that *anyone* can edit any part of a wave. You may have started a blip, but any wave participant can join in and edit any of the text you've written. You can edit the text of a blip in two ways:

- Click the blip's timestamp drop-down menu (the small down arrow next to the timestamp in the upper-right corner of the blip) and select **Edit this message**, as shown in Figure 2-10. Wave makes the blip editable and you can add your own text. (Note: you can also edit your own blips this way.)
- Alternately, you can double-click text—like you did when you were replying inline—but instead of clicking Reply, click the Edit button. The only real difference between starting your edit using the double-clicking method rather than the method in the previous bullet is that when you click Edit, Wave places your cursor directly at the end of the text you double-clicked.

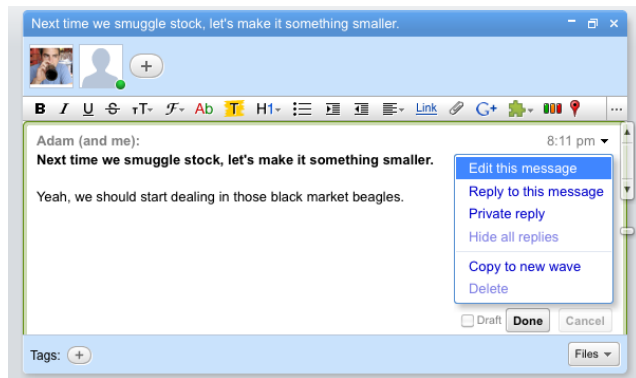


Figure 2-10. You can edit a blip at any time by selecting **Edit this message** from the timestamp drop-down menu—whether you initially wrote the blip or not.

Unlike other methods of participating in a wave, editing a blip's existing contents does not create a new blip. There's no outline of your text, no username displaying what text you added, and no special indentation showing an inline reply. Still, you can always tell when more than one person has edited a blip by looking at the top of the blip. Wave displays the icon and name of every participant who's edited that blip.

The Best Browsers to Access Wave

The advantage of using a web application to communicate is that you don't have to install any software—you can access it from any browser. However, with Wave, there are some caveats. Wave uses recently developed web standards, such as HTML5, to perform a lot of its behind-the-scenes magic. That means Wave provides a richer experience than you'd expect from a lot of web applications, but it also means you need to use a modern browser with full support for HTML5 to use Wave. Wave-compatible web browsers include:

- Google Chrome ^[7]
- Firefox 3.5+ ^[8]
- Safari 4 ^[9]

To get the richest Wave experience possible in supported non-Google browsers (i.e., Firefox and Safari), you should also install the Google Gears plug-in.^[10] When installed, Gears enables features like drag-and-drop image and file uploads from your desktop to your wave. (Google Chrome ships with Gears already installed.)

Chrome Frame in Internet Explorer

Take a quick look at the Wave-compatible web browsers listed in the previous section. Notice anything strange? The most commonly used web browser on the planet, Internet Explorer, doesn't have native HTML5 support, so it can't run Wave properly.

What do you do if you're in a restricted environment where Internet Explorer is your only option? Google has released an open source browser plug-in for IE called Google Chrome Frame.^[11] Chrome Frame puts Chrome's page rendering technology and JavaScript engine inside IE to run Wave and other HTML5 web applications. Chrome Frame won't kick in on every web site you visit. Web developers have the option to embed a piece of code in web pages that tells Chrome Frame to take over for IE—and that's exactly what Wave's developers have done.

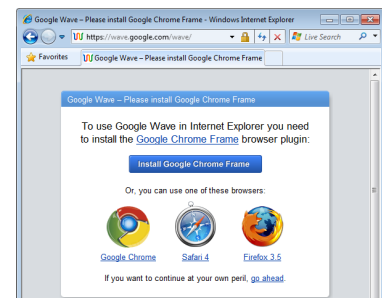


Figure 2-11. Wave prompts Internet Explorer users to install Google Chrome Frame to access Wave.

If you visit the Wave site using IE, you are encouraged to use another browser that supports HTML5, or to install the Google Chrome Frame plug-in for IE, as shown in Figure 2-11. It is a free download, but you need rights to install it on your computer, which may rule out some locked-down, corporate workstations.

Wave on Your Mobile Device

Any communication tool worth its salt needs to be accessible on mobile devices, and Wave is no exception. Happily, even at this early stage with its stringent browser requirements, Wave offers a compact, touchscreen-friendly mobile version that mostly works in current modern mobile browsers, including the default browsers on the iPhone, iPod touch, and Android devices.

For example, when you first visit Wave in Mobile Safari on the iPhone, a warning appears telling you that your browser isn't supported. However, if you tap the "go ahead" link, not only does Wave load, it loads fullscreen, without any of Safari's interface visible,^[12] as shown in Figure 2-12. If you add a Wave bookmark to your homescreen, every time you launch Wave it also loads fullscreen, like a standalone application.

Wave also loads in Android's built-in web browser after you tap the "go ahead" link. But be warned: when Wave tells you your browser isn't supported and you click "go ahead" anyway, there's a risk that certain waves won't open or that they will misbehave.

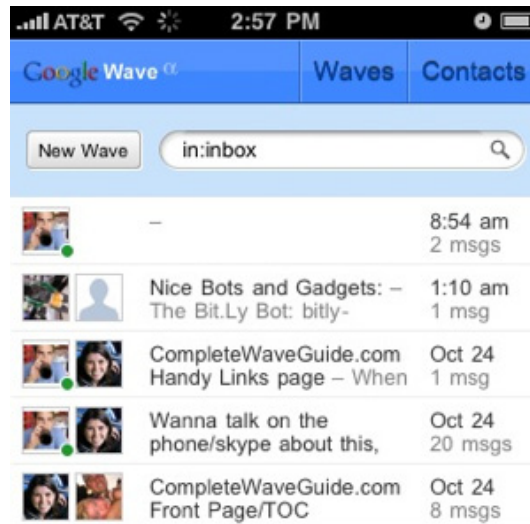


Figure 2-12. When you run the Wave client on your iPhone, Wave removes all traces of Mobile Safari to give you a fullscreen experience.

Wave Site-Specific Browsers

Site-specific browsers (or SSBs)^[13] are special web browsers built to run single web applications.

Waveboard^[14] for Mac is one such SSB for Google Wave that offers Wave integration to your Mac desktop with a dedicated icon, unread wave counts on the Dock, and Growl notifications. Waveboard is currently in beta and requires Google Gears. (Because Google Gears is compatible only with Mac OS 10.5 as of this writing, 10.6 users need an unofficial Gears build.) Waveboard is also available as a dedicated Wave client for the iPhone, adding an integrated browser for opening external links inside the app.^[15]

Similarly, Waver,^[16] an SSB that runs anywhere Adobe AIR does (Windows and Mac), puts the mobile version of Wave into a separate window on your desktop.

You've created your first wave, and you know how to contribute to a wave. Now it's time to beef up your Wave Contacts list and set up your Wave profile to make more collaborative magic happen. Head into the next chapter for more on finding and contacting people on Wave.

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Manage Your Wave Contacts

A collaboration tool like Wave is only as good as the collaborators using it with you. In this chapter, you'll learn how to manage your Wave contacts.

The Contacts panel is but a small element in the lower-left area of the Google Wave client, but it holds the key to what makes Wave go: people. You know how to make waves, but the magic happens when others participate in them with you. As Wave rolls out to more people—including your friends, family, and co-workers—you'll want to add them to your waves. Here's how to add, remove, and contact people you want to communicate with in Wave, and how to set up your Wave profile.

Add and Remove Contacts to Wave

Your Wave Contacts list is a subset of your Google account's existing Contacts list. Anyone who signs up for Wave using a Google account that's already in your Gmail Contacts list shows up in your Wave Contacts panel automatically. You can also add and remove people from your Wave Contacts list by hand.

Add Someone to Your Wave Contacts List

You can add people to your Wave Contacts list only if they already have a Wave account. During the invitation-only Wave preview, that's a limited number of people. If someone you know has a Wave ID, you can add him or her to your Wave Contacts list in several ways,^[1] depending on the context:

- **Inside a wave:** If you've joined a wave with someone who isn't currently one of your contacts, adding them as a contact is simple. Just click the contact's icon displayed at the top of the wave and then click the Add to contacts button displayed in the Contact profile pop-up, as shown in Figure 3-1. Your new contact instantly joins the top of your Contacts list.



Figure 3-1. Add a wave's participant to your Contacts list by clicking that contact's icon and then clicking the Add to contacts button.

- **From the Contacts panel:** There are two methods for adding a new Wave contact from the Contacts panel in the lower-left area of the Wave client. Both require that you know the Gmail address or Wave ID of the person you'd like to add. (Either works, as Wave automatically recognizes and converts Gmail addresses to Wave IDs—e.g., `mal@gmail.com` becomes `mal@googlewave.com`).

If you enter the ID of your desired contact directly into the Contacts search box, Wave informs you that the contact could not be found (among your current contacts), then asks you if you'd like to add that user to your Contacts list. Click the Add to contacts button and you're set.

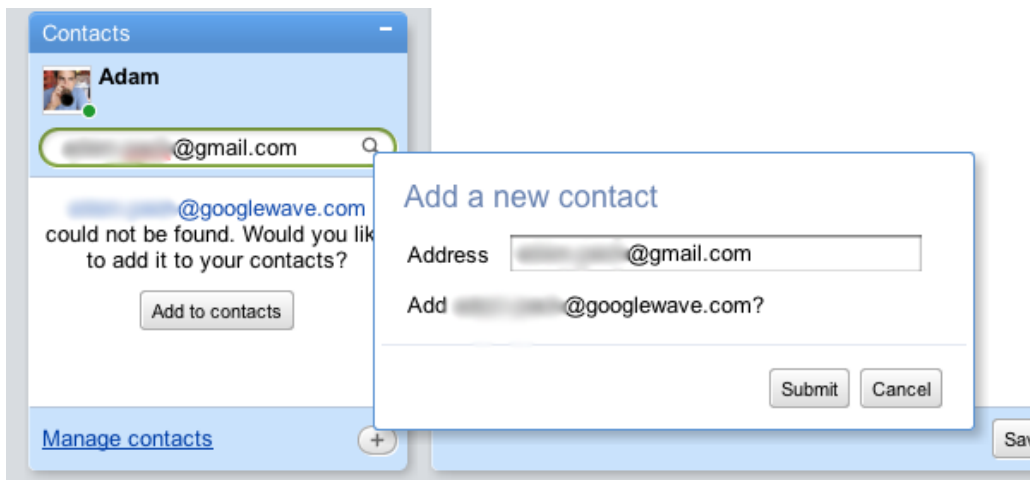


Figure 3-2. If you already know someone's Gmail address or Wave ID, you can add that person as a contact from the Contacts panel.

Alternately, click the + (plus) button in the lower-right corner of the Contacts panel to launch the Add a new contact pop-up, as shown in Figure 3-2. Again, just enter the Gmail address or Wave ID of the user you want to add, and—assuming that person has a Wave account—it asks you to confirm that you'd like to add that user to your contacts. Click Submit to confirm.

- **From your Google Contacts manager:** As we mentioned earlier, Wave automatically pulls in contacts from your Google account, which means that every one of your Gmail contacts that's also using Wave appears in your Wave Contacts list automatically. It also means that you can manage your Wave contacts through the Google Contacts interface.^[2]

Click the Manage contacts link at the bottom of the Wave Contacts panel to access Google Contacts. There you can add a new contact by clicking the + (plus) button in the upper-left corner of the page. Google Contacts opens a New Contact form, where you can add your new Wave contact's name and Gmail address or Wave ID, along with additional contact information like phone number, address, birthday, and more, as shown in Figure 3-3.

You can also edit information for any of your contacts in Google Contacts^[3] by searching for the user in question, opening their information panel, and adding or removing any bits of info you like.

Figure 3-3. You can add a new contact or edit existing contacts' information in Google Contacts.

Remove Someone from Your Wave Contacts List

If you've decided, for whatever reason, that you want to remove someone from your Wave Contacts list, you can only do so by entirely deleting that user from Google Contacts. Here's how to do it:

1. Click the Manage contacts link at the bottom of the Wave Contacts panel, which opens Google Contacts in a new window.

2. Find the contact you want to remove by either entering the contact's name or Google username (his username is the *you* portion of the `you@googlewave.com` address) into the Google Contacts search box.
3. Once you've found the contact you're looking for, click that contact's name in the middle column of Google Contacts to display his contact information.
4. Click the Delete contact button in the upper-right corner of the contact information panel, as shown in Figure 3-4.



Figure 3-4. Permanently remove a contact from your Wave Contacts list by deleting that contact in Google Contacts.

Keep in mind that Google Contacts is the central contact management tool for all Google applications associated with your Google account, so removing a Wave contact using Google Contacts also removes that contact from every Google application you use, from Gmail and Picasa, to Google Voice and Chat.

Remove a Participant from an Individual Wave

It's not difficult to accidentally add a contact to a wave that you hadn't meant to include her on. Chances are your boss isn't interested in joining a wave with your friends in which you're discussing where to go out this weekend, for example, and you'll want to remove her the minute you realize the mistake. If you were composing an email, you'd simply remove the accidental contact addition before you sent the email, but because Wave is so different from email, removing a contact has larger implications.

Removing your boss from the wave you hadn't meant to include her on is innocent enough, but you wouldn't want just anyone to be able to kick you off any wave on a whim. Remember, Wave doesn't propagate copies of every blip the same way email copies every message; a wave is a single, collaboratively edited document, so if you were removed from a wave, it would, in theory, completely disappear from your Inbox or archive of read waves.

This presents a bit of a problem, and frankly, it's one that the Wave team has yet to address. Within a wave with several participants, you can have a private conversation with one or more participants inline (see Chapter 5, Dive Deeper into Wave, for more). You can also copy a wave

into a fresh wave to which you can add (or not add) whomever you like. However, currently there is no way to remove a contact from a wave once she has been added—with the exception of bots. But let's not get ahead of ourselves; we'll discuss bots more in Chapter 8, Wave Bots.

Ping a Contact

Sometimes you want to initiate a quick back-and-forth with a contact, especially if you can see she's online. In the pre-Wave world, you'd use instant messenger to do that. Sure, every piece of communication in Wave is real-time, but you don't want to compose a full-on wave to ask someone a quick question. Further, the pop-up notification of a new instant messenger session is still a useful mechanism for getting a contact's attention. That's where Wave's ping feature comes in.

A ping is the easiest way to start a quick exchange with one or more Wave contacts.^[4] You compose your ping's message in a smaller, chat-like window (unlike waves). Much like IM, a new ping pops up and flashes its contents on its recipients' screens and browser tabs.

To get someone's attention in Wave with a ping, click his name in the Contacts panel to open his Contact information pop-up. Then, click the Ping *User* button (where *User* is that contact's name).

The ping panel appears near the top of your window, pulled down with enough room for you to type a short ping message, as shown in Figure 3-5. The ping panel is minimized to the top of your recipient's Wave client, but it flashes green to indicate an active, incoming ping. The text of your ping also flashes in your recipient's browser tab.

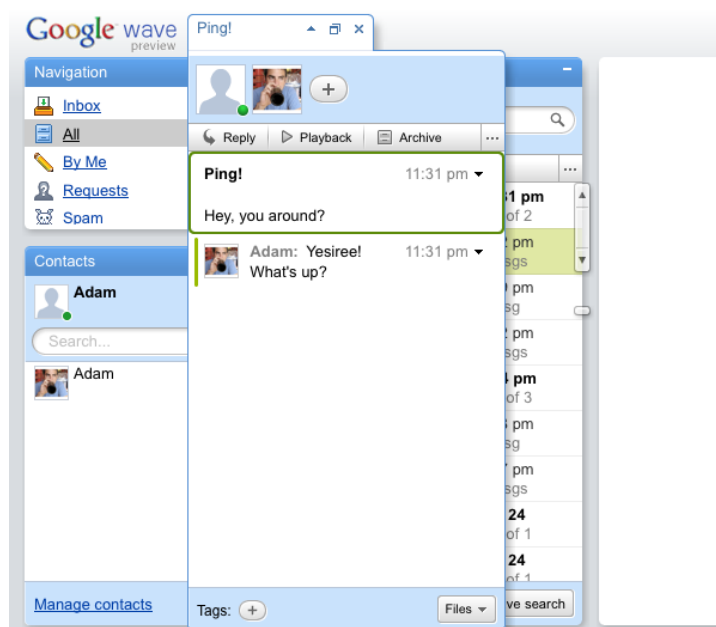


Figure 3-5. Quickly start a wave with other participants by pinging them.

Apart from its location and smaller size, a ping looks—and acts—like a regular wave. If your contact is offline when you ping him, Wave displays that flashing, minimized ping to him the next time he logs in.

While you're chatting back and forth with a contact in a ping, the conversation stays out of your Wave Inbox. Once you close the ping, that conversation is added to your Inbox as a regular old wave. If you'd like to view a ping in a larger wave panel from the start, click the Expand button at the top of the ping panel. (It's the middle icon that looks like the Restore button on Windows computers.)

In-Wave Pings

You can also ping a contact from a wave. If you've already got a wave open with a contact you'd like to ping, click your contact's icon at the top of the open wave and, as before, click the Ping *User* button.

However, when you start a ping from inside a wave, the ping displays inside that wave for both you and whomever you're pinging—it does not pop up an attention-getting notification. An in-wave ping is a handy way to have an off-topic or private back-and-forth with one or more participants without involving every other wave participant. In fact, an in-wave ping behaves very much like a private reply. For more on private replies, see Chapter 5, Dive Deeper into Wave.

Add More Participants to a Ping

You can add other participants to a ping the same way you add them to a wave: click the + (plus) button at the top of the ping (next to the contact icons) and search for the contact(s) you want to add. Because pings “minimize” when they're not active, you can't drag and drop contacts to a ping from the Contacts panel.

When to Ping?

In much the same way as you might start a chat with someone inside Gmail rather than send an email, you ping someone to start a quick, real-time exchange. Pings work best when you want to have a quick chat, or get someone's attention in Wave if you see that he or she is online.

If a Wave user is online, Wave adds a small green dot to the lower-right corner of that person's icon anywhere it appears in the Wave client—from the Contacts panel and Search panel to open waves, as shown in Figure 3-6. If you see a green dot on a contact's icon, they'll see your ping straightaway.

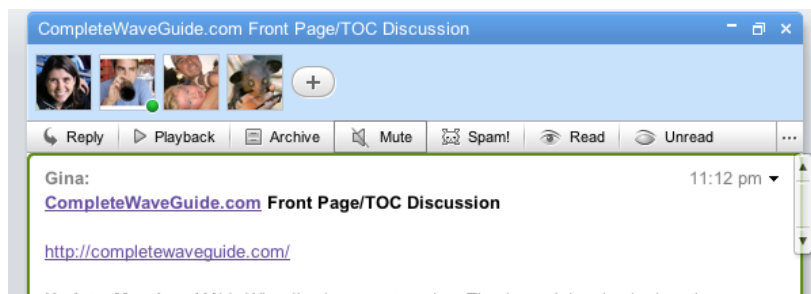


Figure 3-6. You can see which participants—or which of your contacts—is online by looking for the green dot in the lower-right corner of the contact icon.

Edit Your Wave Profile

Your Wave profile contains identifying information about you: your name, photo, web site, and a status message. Other users see your profile information in the pop-up that appears when they click your icon in the Contacts panel or at the top of any wave.

To edit your Wave profile, click your icon or name at the top of the Contacts panel, and then click the Edit Profile button on the Profile pop-up. This opens a wave where you can set your profile information, as shown in Figure 3-7.

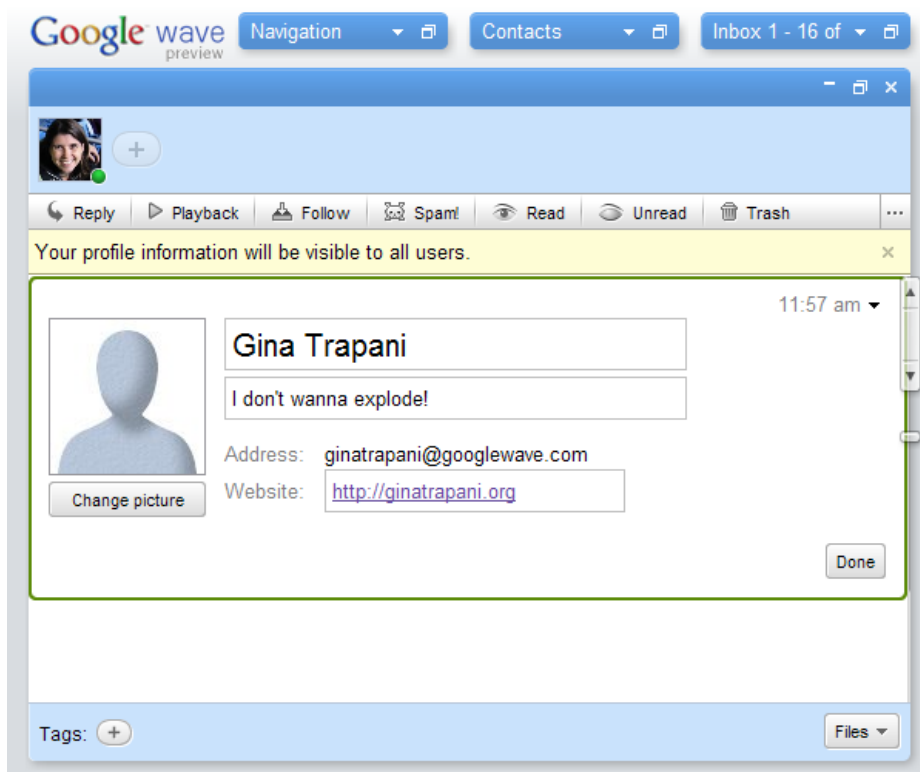


Figure 3-7. Edit the information that people see about you in Wave by editing your Wave profile.

In this wave, you can set how your name appears to other Wave users, your Wave icon photo, your web site, and your Wave status message, which appears next to your icon and name on the Contacts panel.

NOTE: When the Wave preview first launched, Wave used the details listed in your Google Profile (located at <http://profiles.google.com/>) to populate your Wave profile. If you used Wave before November 12, 2009, some of that information may have pre-populated your Wave profile.

Set Your Wave Status

To add a little more personality to your Wave pop-up profile, you can set a status message that becomes visible to your Wave contacts—much like you can in Google Chat or other instant messaging applications. While not integrated with any other Google service (yet), you can use the status message for traditional, functional purposes, like telling your contacts that you're busy (handy because Wave doesn't let you set generic statuses like "busy" or "away"), or you can just use it to remind them that "Everything's shiny, Cap'n."

To set your status, click your name or icon at the top of the Contacts panel and type your desired status message into the text box below your name, as shown in Figure 3-8. Press Enter or close the Contact pop-up to set it. Your status will persist through Wave sessions and remain set even if you log into Wave from different computers.

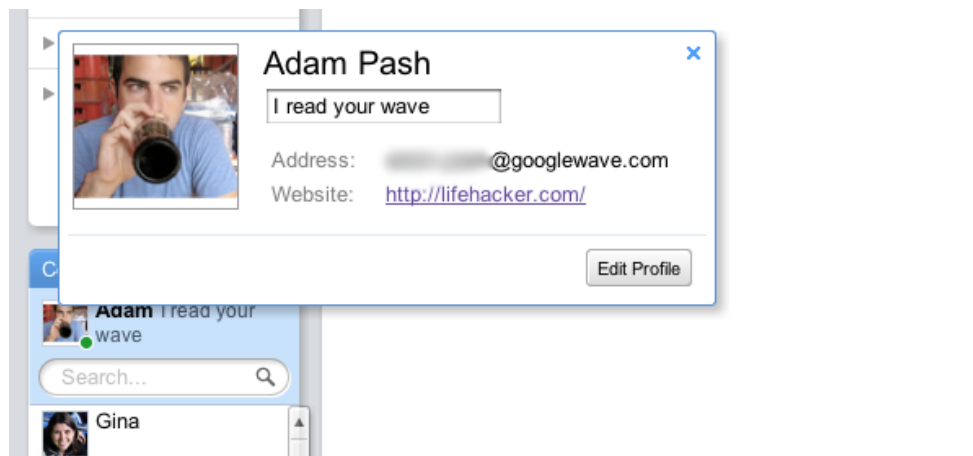


Figure 3-8. Set your status by clicking your contact icon in the Contacts panel.

Once you've made a few dozen waves, go to the next chapter to learn how to find and organize your waves.

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Find and Organize Waves

Now that you're up and running with Wave, learn how to manage a busy Wave Inbox.

Once your Inbox is teeming with quickly updating waves, it's time to get good at finding and organizing important information. Google Wave's search box, tags, folders, follow, and archive controls can help you keep your Inbox under control. Like Gmail, you can move waves out of your Inbox by archiving them, or unfollow chatty waves to turn off their unread content notifications. You can file waves in your personal folders and sub-folders to organize them in your Wave client, or label a wave with tags that all its participants can see. Like all Google products, the search box is front and center in Wave, and Wave provides several special search terms that can help you narrow results in useful ways. Once you've crafted your favorite searches, you can save them for reuse and filter waves based on those criteria.

Reduce Wave Inbox Clutter and Unwanted Notifications

Once you're participating in a significant number of active waves, your Inbox gets busy fast. Every time a wave updates, it moves to the top of your Inbox and its subject line turns bold. Wave's instant, real-time notifications are a double-edged sword: wonderful when you're waiting for important updates, terrible when new information you don't care about distracts you. The Archive and Unfollow buttons can help you clean out your Inbox and silence chatty waves one by one.

Archive Waves

Wave's Archive feature works just like it does in Gmail: when you archive a wave, it is moved from your Inbox to "All" waves. The wave is still findable and accessible by clicking the All link on the Navigation panel, but it doesn't appear in your Inbox. If someone updates an archived wave, however, it reappears in your Inbox as a wave with unread content.

To archive a wave, select it and click the Archive button on its toolbar. To archive several waves in one shot, hold down the Shift key to select multiple consecutive waves in the Search panel at once. Then click the Archive button on the Search panel's toolbar.^[1]

To "unarchive" a wave and move it back to your Inbox, select it and click the Inbox button on the Search panel.

Unfollow and Follow Waves

Ever get added to an email chain you don't care about—but that just won't stop showing up in your Inbox with reply after reply? In Wave, to stop getting notifications that a particular wave has updated, you can "unfollow" it. Select the wave and click the Unfollow button on its toolbar. An unfollowed wave still updates as participants edit it, but you won't get a notification that there's new content to read. If you search for that wave, its contents and all its updates are still available, even though you didn't get every new change notification. Unfollowed waves have a special gray Unfollowed label on them when they appear in the Search panel, as shown in Figure 4-1.

In the Wave preview, there's no way to remove yourself from a wave someone else added you to. If someone adds you to a wave you don't care about, unfollow it to opt out of its update notifications.

TIP: Search for waves you've unfollowed using the `is:unfollowed` operator.

Similarly, if there's a public wave in your Inbox that you want to get new notifications about, select it and click the Follow button. This has the same effect as if someone added you individually to that wave: any time it updates, it appears as a new wave in your Inbox. Click the Unfollow button in a wave to unfollow it.

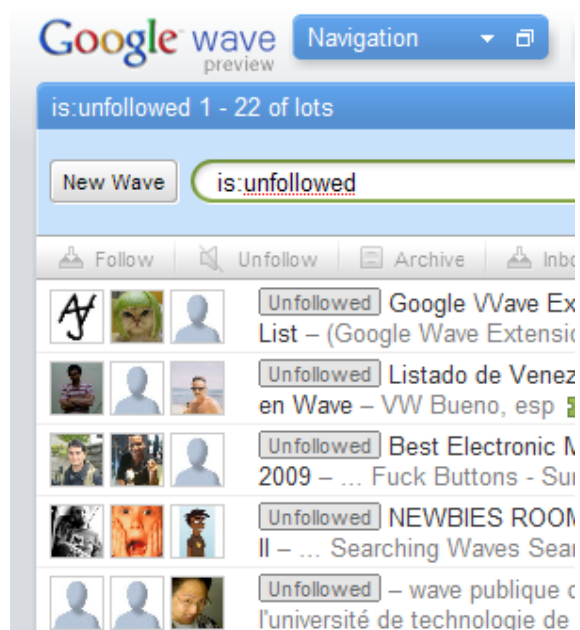


Figure 4-1. Unfollowed waves are displayed with a gray Unfollowed system label when they appear in search results.

NOTE: Follow and Unfollow replaced Wave's Mute feature in mid-November of 2009. If you used Wave before then, your Muted waves are now listed as Unfollowed.

Mark Waves Read or Unread

Like Follow/Unfollow and Archive, there is also a Read and Unread button on the Wave toolbar in both the Search panel and in an open wave. When you click the Read button, a wave does not appear bold or with new blips in the Search panel. When you click the Unread button on an open wave or selected wave(s), all the blips in those waves get marked as unread, and the wave becomes bold in the Search panel.

TIP: Hold down the Shift key to select multiple consecutive waves in the Search panel, then click the Follow, Unfollow, Archive, Read, or Unread button to perform the action on several waves in one click.

There is currently no way to mark individual blips within a wave as unread. To mark an individual blip as read, select it.

File Waves in Folders (and Sub-folders)

Like most email clients (except Gmail!), Wave offers a traditional folder system for filing your waves.^[2] To create a new folder, go to the Navigation panel, click the + (plus) button next to Folders, and type the name of your folder. The name can be as long as you like, and can contain spaces and special characters (such as punctuation).

To create a sub-folder, click a folder's drop-down menu and select Add Folder. The sub-folder appears indented beneath its parent folder, as shown in Figure 4-2.

To delete or rename a folder, click its drop-down menu and select Delete or Rename. (Know that you cannot delete folders that have sub-folders in them unless all of the sub-folders have been deleted first. The Delete item does not appear in a parent folder's drop-down menu until its sub-folders are deleted.)

From the same folder drop-down menu, you can also customize the order of your folder list and assign colors to folders.

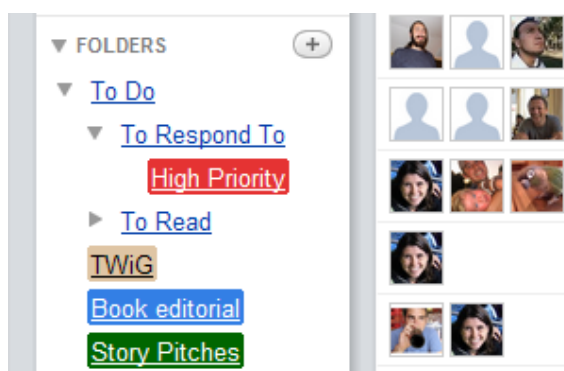


Figure 4-2. You can create and color folders and sub-folders to organize the waves in your Wave client.

To move a wave into a folder, go to the Search panel and select the wave. Click the Move to button on the toolbar, and then select the destination folder from the list.

TIP: The Move to button is on the far right of the toolbar, so in narrow windows it can get cut off. If you don't see it, click the ... (ellipses) button to expand hidden toolbar buttons.

If your browser has the Google Gears plug-in^[3] installed, you can drag and drop a wave or several waves from the Search panel onto a folder name.

TIP: Hold down the Shift key to select multiple consecutive waves in the Search panel, then click the Move to button to file several waves in a folder at once.

When you move a wave to a folder, you're transferring it from its current folder to the destination. A wave cannot be in more than one folder at a time. Also, the folders you create are private—only you can see and use them.

If old-school folders are too limiting and private for your purposes, use tags instead.

Tag Your Waves

Tags provide a more free-form way to “file” your waves. Unlike folders, you can add as many tags to the waves you participate in as you want. Also unlike folders, everyone who is participating in the wave can see those tags, add to them, and delete them. Tags do not appear on your Navigation panel. They show up only at the bottom of open waves, and in the Search panel on each wave listed there.

To add a tag to a wave, first open the wave. On its bottom panel, click the + (plus) button to the right of the word Tags, as shown in Figure 4-3. Enter a tag and press Enter. To add another tag, repeat. You can add only one tag at a time, and tag names can have spaces in them. To remove a tag, hover over it and click the red X that appears.

Like hash tags on Twitter, or bookmark tags on Delicious, your wave's tags are “public” in the sense that anyone who can see that wave can also see its tags. Already the Wave community is coming up with common tags for organizing public discussions, like WaveDiscuss and WaveHelp. Search for `with:public WaveDiscuss` to see them—and learn about more advanced search techniques like this in the following sections.

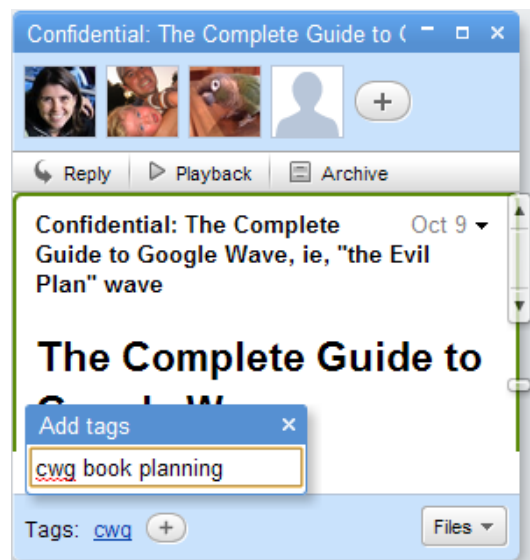


Figure 4-3. Click the + (plus) button next to Tags at the bottom of a wave to tag it.

Search Your Waves

Wave puts a deep repository of live-updating information at your fingertips, but it's a complete mess unless you know how to find what you're looking for. The Wave search box, much like Google's web search box, is the key to getting exactly the results you need. Basic keyword searches return waves that contain those terms, while advanced search terms can pinpoint specific waves based on recipients, tags, and other attributes.

Basic Search Techniques

Common search engine conventions you're already comfortable using in Google and Yahoo web search work in Wave as well. To search for waves that contain a keyword like "browncoat," just enter `browncoat` into the search box and press Enter. To find all waves that contain the words "Kaylee" or "browncoat," separate the keywords with an uppercase "or": `Kaylee OR browncoat`. If you want waves that have both the words "Kaylee" and "browncoat" in them, enter `Kaylee browncoat`. (This query returns the same results as a search for `Kaylee AND browncoat`. By default, adding words to your query narrows results to only waves that contain all the terms.)

GOTCHA: Wave doesn't recognize special search characters like square brackets, parentheses, currency symbols, the ampersand, the pound sign, and asterisks. It also doesn't recognize partial or similar matches, so a search for "travel" does not find "travels," "traveler," or "travle."^[4]

To search for an exact phrase like "I don't wanna explode", enclose it in quotes. This works well for proper names, too: a search for "Joss Whedon" does not return waves with just the words "Joss" in them, or even waves that mention "Joss" in one place and "Whedon" in the other.

The minus sign also excludes waves that match certain criteria from your results. If you want to find waves that mention Firefly but not Buffy, you'd search for `Firefly -Buffy`.

These basic search techniques get you pretty far. But Wave's real search power comes in its special search terms that return waves based on participants, tags, folders, and other attributes.

Advanced Operators: Find Waves by Title

The format of Wave's advanced search operators is `operator:value`.^[5] Just as you can search the web and narrow results using a query like `site:completewaveguide.com Firefly`, you can do the same with Wave. The trick is knowing which operators do what.

By default, a basic keyword search looks in the title and body of the waves you participate in. To limit your search to just wave titles, use `title:keyword`. Enclose multiple words in quotes.

For example, to search all your wave titles for the word “Reavers,” search for `title:Reavers`. To search for all wave titles with the words “space opera,” search for `title:“space opera”`.

Because you can associate captions with images in Wave, you can also specifically search the contents of captions. (Read more about adding images with captions to your waves in Chapter 5, Dive Deeper into Wave.) To search image captions, use the `caption:keyword` operator. For example, to search waves that contain images with “Gina Torres” in the caption, search for `caption:“Gina Torres”`.

Advanced Operators: Find Waves by Participants

Waves are collaborative documents and conversations, so you’ll want to know how to find waves by the people involved in them. These search operators help you find wave participants based on their role in the wave: whether they’ve created it, been added to it, or contributed to it. In this list, *name* doesn’t refer to a person’s full name; it’s the first part of his or her Wave ID. That is, if the Wave user’s ID is `zoe@serenity.com`, replace *name* with *zoe*.

You can also use the keyword `me` to refer to yourself. For example, if your Wave ID is `you@example.com`, you could find waves you created using `creator:you@example.com`, or the shorter, simpler `creator:me`.

Here is the full list of Wave search operators that find waves based on their participants.

Search Operator	Returns
<code>creator:name</code> or <code>from:name</code>	Finds all waves created by <i>name</i> .
<code>participant:name</code> or <code>with:name</code>	Finds all waves where <i>name</i> is a direct participant (<i>name</i> may be a user or a group).
<code>contributor:name</code> or <code>by:name</code>	Finds all waves where <i>name</i> edited at least one message.
<code>to:name</code>	Finds all waves where <i>name</i> is a participant, but not the creator.
<code>onlyto:name</code>	Finds all waves where <i>name</i> is the only participant, beside the creator.
<code>onlyby:name</code>	Finds all waves where <i>name</i> is the only contributor.
<code>onlywith:name</code>	Finds all waves where <i>name</i> is the only participant (<i>name</i> is either your own, or a group you belong to).
<code>dfrom:name</code>	Finds all waves with a direct message from <i>name</i> or waves with only two participants, where <i>name</i> is a contributor.
<code>dto:name</code>	Finds all direct messages to <i>name</i> , or waves with only two participants, where the other participant is also a contributor.
<code>is:note</code>	Finds all waves in which you are the only participant.

Advanced Operators: Find Waves by Location or Read State

You may want to find waves based on what folder they're in, what tag they have, or whether or not they're read, unread, followed, or unfollowed. Here's the full list of advanced Wave search operators that return waves based on location and state.

Search Operator	Returns
<code>is:read</code>	Finds all waves where all messages within the wave (including all private replies) have been read.
<code>is:unread</code>	Finds all waves with at least one message that has not been read.
<code>is:filed</code>	Searches only waves that have been filed in your folders.
<code>is:unfiled</code>	Searches only waves that have not been filed (and are either still <code>in:inbox</code> or only <code>in:all</code>).
<code>is:unfollowed</code>	Searches only waves that you've unfollowed.
<code>is:followed</code>	Searches only waves that you are following.
<code>has:tag</code>	Finds all waves with any tag.
<code>tag:name</code>	Finds all waves with the tag <i>name</i> .

USE CASE: During the writing of this book, the writers and production team used Wave tags and a saved search as a book-specific filter. We agreed to tag all book-related waves “cwg” (short for CompleteWaveGuide.com). Then, by saving a `tag:cwg` search, it was easy to see if any updates on book-related waves had occurred.

Advanced Operators: Find Waves by Attachments

To narrow your search results to waves with file attachments, use these advanced operators.

Search Operator	Results
<code>has:attachment</code>	Finds all waves with an attachment.
<code>has:document</code>	Finds all waves with a document attached.
<code>has:image</code>	Finds all waves with an image attached.
<code>has:gadget</code>	Finds all waves containing any gadget.

Advanced Operators: Find Waves by Language

Although it's not documented in Wave's official search documentation, Wave can also search waves by what language they're written in with the `lang:lang_abbrev` operator. For example, `lang:en` returns waves written in English. To see only public waves not written in English, use the `with:public -lang:en` operator. Use this operator with caution: because it is undocumented, its behavior could be unpredictable (especially with waves that contain multiple languages).

The more you use Wave, the more you'll notice that advanced searches for waves are baked into its interface. For example, your Inbox is the results of an `in:inbox` search. The Trash is just results for an `in:trash` search.

You can even see recent conversations with a specific person by clicking the Recent Waves button on the Contact pop-up—that displays results for a `with:name` search, where *name* is the contact in question.

Combine Wave Search Operators into Useful Recipes

Wave's search capabilities are most powerful when you chain criteria together to see custom lists of your waves. Here are just a few useful Wave search recipes you can try:

- **Search public waves with `with:public`:** To find public discussions about almost anything, search using the `with:public` operator, which returns waves with `public@a.gwave.com` as a participant. For example, to search all public waves for the word "browncoats," use `with:public browncoats`.
- **Create an only-to-me Inbox with `onlyto:me is:unread`:** See unread waves in which you and the creator are the only participants. This is a great way to find waves you probably need to respond to.
- **See "Sent" waves with `creator:me -is:note`:** See all the waves you've created and added others to participate in; this set of results creates something loosely akin to an email program's Sent box.
- **See waves you've created for private use with `is:note`:** Even though Wave is a collaboration tool, you can still create waves and add no other participants, whether you're in the process of drafting something to share later, or just keeping some "notes to self." The `is:note` operator returns only waves you've created, and in which you're the only participant.

Once you tweak your favorite searches to fit your needs, you can save them for reuse.

Saved Searches and Wave Filters

Now that you've concocted your favorite wave queries, you can save them for reuse on the Navigation panel. To do so, enter your query in the search box and press Enter to run it. At the bottom of the Search panel, click the Save search button, then enter a name for your search in the Title field. Click the Submit button to save it, as shown in Figure 4-4.

Once you've saved a search, it appears on the Navigation panel under Searches (just above Folders). Like folders, you can click a search's drop-down menu to edit the query or its name, move it up or down the saved searches list, or add a color to it. Also like folders, you can create a new saved search by clicking the + (plus) button next to Searches on the Navigation panel.

Search Details

Title

Query

Filter Actions

☒ Archive ☒ Mark as read

Figure 4-4. Click the Save search button in the lower-right corner of the Search panel to name a query and save it under Searches on the Navigation panel.

Filter Incoming Waves Based on Search Criteria

The Save search pop-up also contains another interesting and powerful section: Filter Actions. Like email filtering rules, here you can tell Wave to automatically perform actions on waves that meet the search criteria in the Query field.

In the Wave preview, there are only two available filter actions: Mark as read and Archive. By checking the Archive box on a saved search, you're telling Wave to automatically move any waves that meet the search criteria out of your Inbox. By checking the Mark as read box on a saved search, you're telling Wave to mark those waves as read. (Automatically checking a wave as read has a similar effect as muting a wave in that you're suppressing unread notifications, except that the state of these waves is read, not unfollowed.) Checking both boxes means new waves that meet your search criteria are both archived and marked as read.

With only Mark as read and Archive, the Wave preview's filter actions are very limited right now. Hopefully a fuller set of actions will become available and wave filtering will be as robust as Gmail's.

Mastering its search capabilities is a major part of getting the information you need out of Wave. In the next chapter, you'll learn how to make rich waves worth searching for.

References

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2. [Google Wave Help: How do I use folders to organize my waves?](#), Google.com
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4. [Google Wave Help: What's the best way to search for waves?](#), Google.com
5. [Google Wave Help: What are the advanced search terms for Google Wave?](#), Google.com

Dive Deeper into Wave

You've created and participated in waves, filled in your Contacts list, and saved reusable searches for waves. Now it's time to dig into Wave's advanced features.

Google Wave is fundamentally a document-centric system, so you want to make good-looking waves with colors, font styles, headings, and other word processor-like styles. You can enhance your waves even more by adding links and YouTube videos, attaching files, and creating photo slide shows, and by adding interactive gadgets like maps and Yes/No/Maybe surveys.

This chapter also describes other advanced features, like how to spell check waves, copy waves, play back wave revisions, make a wave public, and send a private reply.

By the end of this chapter, you will have graduated from a beginner to a competent Wave user.

Format Your Waves

Wave offers light, word processor-like document formatting such as font faces, colors, headers, and bullet points to make your waves more readable and professional. When you're composing or editing a wave, select the text you want to format and use the edit toolbar buttons shown in Figure 5-1. Keep in mind that toolbar buttons can get cut off if your wave is in a narrow area. If that happens, click the ... (ellipses) button to expand the rest of the buttons into a drop-down menu.

REMINDER: A wave's toolbar has different buttons on it when you're viewing the wave versus when you're editing it. Make sure you're in edit mode to use text formatting features from the toolbar. With the wave open, select the blip you want to edit, and either click the blip's timestamp drop-down menu and select Edit this message, or press the Ctrl+E keyboard shortcut to switch to edit mode.

Figure 5-1 shows a wave's edit toolbar, and examples of Wave's text formatting abilities. From left to right, a wave's edit toolbar buttons let you:

- Bold, italicize, underline, and strike through text
- Select one of 14 font families (from Arial to Verdana)
- Assign a text color or a highlight (behind-the-text) color
- Choose one of four heading levels (of various sizes) or the default text size
- Create a bulleted list
- Indent or outdent paragraphs, and align text left, right, or center

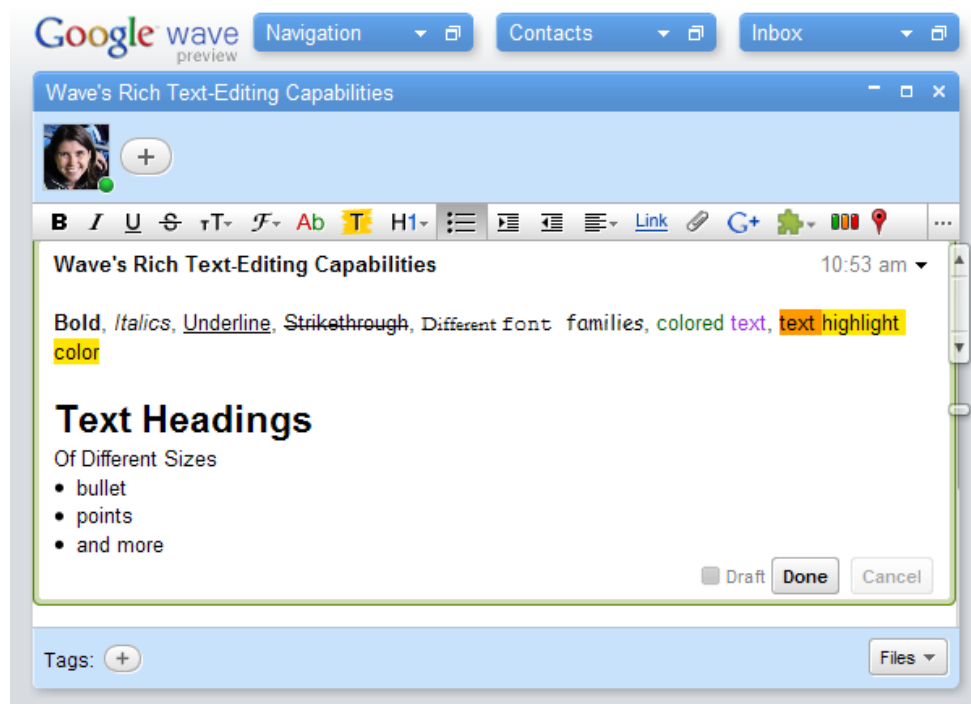


Figure 5-1. Wave offers several rich text editor controls to format the contents of your wave.

The rest of the edit toolbar's buttons, from the Link button on, insert various types of interactive content to your wave.

Insert Links into Waves

To add a link to a web page in your blip, select the text you want to link. Then, click the toolbar's Link button (or press Ctrl+K, as listed in the wave editing shortcuts table in Chapter 6, Master Wave's Interface). In the pop-up, enter the web page address in the URL or Wave ID field, as shown in Figure 5-2.

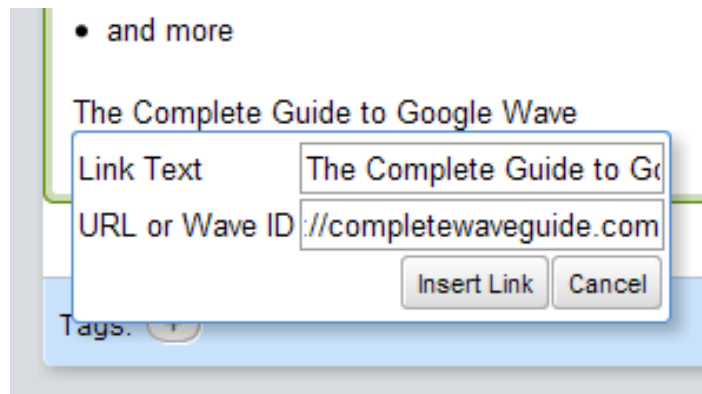


Figure 5-2. Select the text you want to link, click the Link button on the toolbar, and enter the web page's URL into the pop-up.

Not only can you link to external web sites in a wave, you can also link to other waves, wiki-style. While technically you can enter a Wave's ID into the URL or Wave ID field shown in Figure 5-2, extracting a Wave ID is not an intuitive process. There's a much easier way: first, while you're editing your wave, search for the wave you want to link to in the Search panel. Then, drag and drop it into the wave that you're editing to add the link.^[1] Remember that participants in your wave can open the linked wave only if they're participants in it as well. When others click the link to the wave, it opens in the current wave panel.

Add Links, Images, and YouTube Clips Directly from Google Search Results

Another way to add links and other web content to waves is via a Google search panel built into Wave. Click the blue G+ button on a wave's toolbar. From the pop-up, you can search the web for regular pages, images, and video clips. (Books and More appear on the menu in the Wave preview, but they're listed as "unimplemented.") Click the tab to specify the type of content you want, enter your search terms, and press Enter. The results appear in the panel, each with an Add to wave link next to them. Click Add to wave for the desired results to insert them into your wave.

Web page links show up as plain links. Images appear as thumbnails in your wave. Video results can appear as either a link to the video, or, with an extra click, an embedded video player.

To include a video player in your wave, while you're editing it, click the G+ button, then click the Video tab and search for "Serenity trailer." You'll get several results for the film trailer on YouTube. Click Add to Wave on the video of your choice. Initially it appears as a link with a small lightbulb icon next to it. Click the lightbulb and select Embed video from the drop-down menu to place the full YouTube player inside the wave, as shown in Figure 5-3.



Figure 5-3. After you insert a video search result into your wave, click the lightbulb icon next to it and select Embed video to include a full player.

This embedded video player is the first example we've seen of a Wave gadget: an interactive bit of web content in-wave. (This chapter describes built-in gadgets in the section titled "Add Built-in Gadgets to Your Waves" or you can become a Wave gadget expert by reading Chapter 7, Wave Gadgets.)

Remove an embedded video player from your wave the way you do any gadget: in edit mode, hover over the player to display its drop-down menu in the upper-right corner, and then select Delete. (But see the "gotcha" mentioned in the upcoming "The Maps Gadget" section.)

Attach Files to Your Waves

Like email, you can attach files to your waves, including images. There are two ways to add a file or image to a wave:

- If your browser has the Google Gears plug-in installed, you can drag and drop files from your computer directly into your wave. (Gears comes with Google Chrome for Windows, and it's freely available to install for Firefox, Internet Explorer, and Safari for Mac.)

- Or, click the paper clip icon on your wave's toolbar, and then select the file you want to upload using the Open Files dialog box.

Except for images, most file types appear in the wave as an attachment, represented by a large icon. Figure 5-4 shows what a spreadsheet, Microsoft Word (.doc) file, a PDF, and a regular image look like as file attachments in wave.

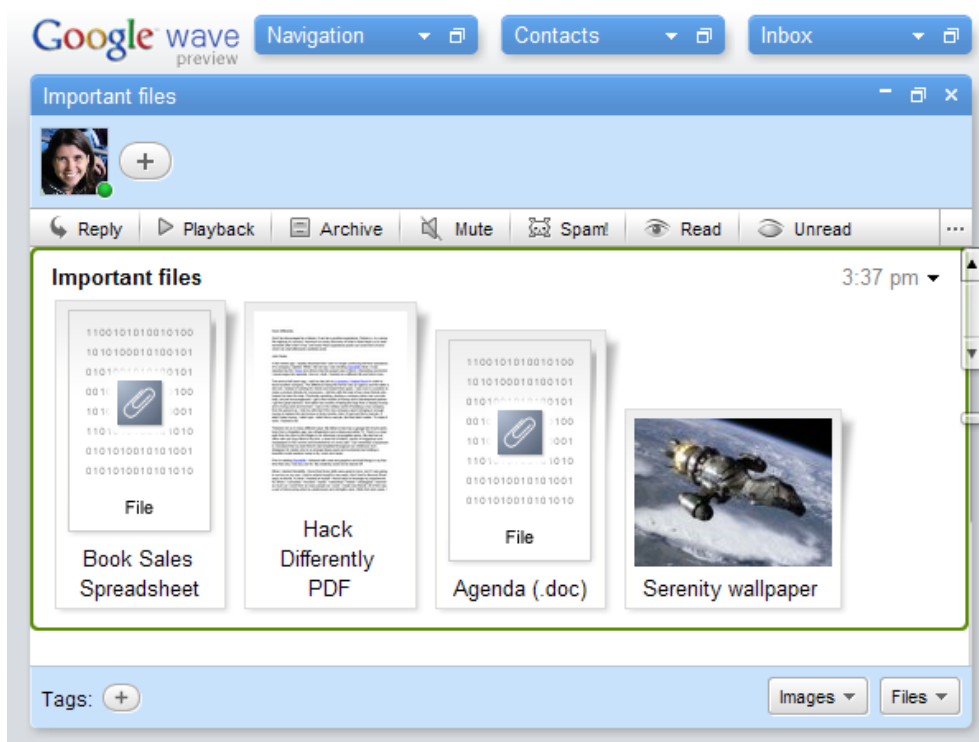


Figure 5-4. File attachments appear as thumbnails in-wave. PDF and image files display previews of their contents, while other file types (like Word or Excel documents) appear as generic attachment icons.

Every file type has a caption or descriptive text included with it. By default, it's the name of the file without the extension. Anyone participating in the wave can edit that caption, but it does not change the file name. If you click a file to download it, the downloaded file name will be the original name the file had when it was uploaded, not the edited caption.

Google limits file attachments to 20MB in size. Additionally, uploaded photos may lose quality. According to Google Wave's help section^[2]:

All photos you upload will be downsampled—downsampling is the process of making a digital image smaller by removing pixels. Waves containing large files tend to load more slowly, so we've implemented this process in an effort to keep Google Wave nice and speedy.

This means that Wave isn't suited for exchanging high-resolution photos or hosting large files. However, Wave positions itself as a photo-sharing tool for viewing web-quality photos online. It offers the benefit of collaborative photo captions and a sleek slide show for viewing photo collections.^[3]

Share Photos in Wave

One of the biggest advantages of sharing photos with others in Wave is the ability to collaborate on photo captions. For example, after a wedding, if both sides of the family add all their photos to a shared wave, different family members can add the names of who appeared in each photo to the captions, depending on who knows who. Like edits to regular wave text, caption updates happen real-time, and you can watch wave participants change them live.

TIP: You can find images based on their caption text by using the `caption: "your search terms"` search operator.

Once photo captions are set, you can view a set of photos in-wave as a slide show.

Play a Photo Slide Show in Wave

When you add a photo to a wave, their thumbnails appears in-wave, much like the thumbnail view in Mac's Finder or Windows Explorer. When you're done editing the wave, you can click an image to view it at its full size. Wave's background color goes black, and the full-sized image appears mid-screen. Click the white X in the upper-right corner to close the image.

If you have multiple images in a wave, an Images button appears next to the Files button at the bottom of that wave. Click the Images button and select View as slide show to easily flip through the photos at their full sizes, as shown in Figure 5-5.

In slide show mode, image thumbnails appear at the bottom of the screen. You can click the Play button on the left to move through the images automatically. Alternately, you can click a thumbnail to see it full size, or use your arrow keys to move forward or back

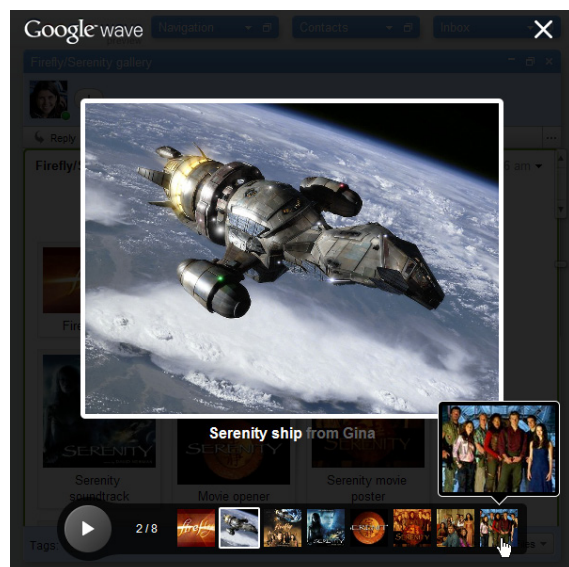


Figure 5-5. When there are multiple images in a wave, click the Images button at the bottom of the wave and select View as slide show from the menu to play an auto-forwarding slide show of the images.

through the slide show. In slide show mode, you cannot see wave text or edit photo captions. To exit the slide show, click the white X in the upper-right corner of the slide show.

A slide show isn't the only kind of rich, custom content you can add to your wave.

Add Built-in Gadgets to Your Waves

A Wave gadget is a custom interactive control you can add to your waves. Anyone can create gadgets that do a variety of things, and you can install the gadgets you want to use. Chapter 7, Wave Gadgets, covers how to install gadgets and some of the best third-party gadgets worth checking out. To get started using gadgets, there are two useful default gadgets built into Wave: the Maps gadget and the Yes/No/Maybe gadget.

The Maps Gadget: Watch Your Collaborators Zoom and Pan Real-time

The lead engineers who built Google Wave are the same engineers who built Google Maps—so it's no surprise that Wave has an excellent Google Maps gadget that puts an interactive map in your wave. On this embedded map you can pan and zoom, add points to locations, draw lines from one location to another, and fill polygons to highlight areas on the map. In edit mode, as you zoom, pan, draw, and switch between Map, Satellite, and Hybrid mode, if your wave's participants are online and have your map wave open, they'll see those changes as you make them live.

To add a map to a wave, while you're editing the wave, click the Maps gadget button (the red pinpoint) on the toolbar. A map of your location's general area appears in-wave. To find a specific address or location, search Google Maps by using the search box at the bottom of the Maps gadget. Click a result, and then add that pinpoint to your map by clicking the Create copy on map button, as shown in Figure 5-6.

You can also add location markers to the map by hand. In edit mode, zoom and pan to the location you want to point out, and click to add a marker there. Set the title and description in the pop-up box. Your map can include as many location markers as you want.

The Maps gadget also lets you add lines and filled polygons to your map. Click the Line and Polygon buttons to the right of the search box at the bottom of the Maps gadget while you're in edit mode. Then click the map to start drawing. The Hand button switches you back into pan and zoom mode.

When you're finished adding information to your map, zoom and pan to the area you want your collaborators to see when they open the wave, and select Map, Satellite, or Hybrid mode. Then click the Done button (or press Shift+Enter) to save your changes. This is the state that your participants will see the map in. While they're viewing the map, they can zoom and pan to

see other parts of the map, and you will not see that activity. (A Return to shared view button lets you or your participants snap back to the saved, shared state of the map.) If a participant switches into wave edit mode and changes the state of the map, draws on it, or adds markers, the rest of the participants can see that activity real-time.

To delete the Maps gadget, make sure you're in edit mode, and then hover over the gadget. From the drop-down menu that appears in the gadget's upper-right corner, select Delete.

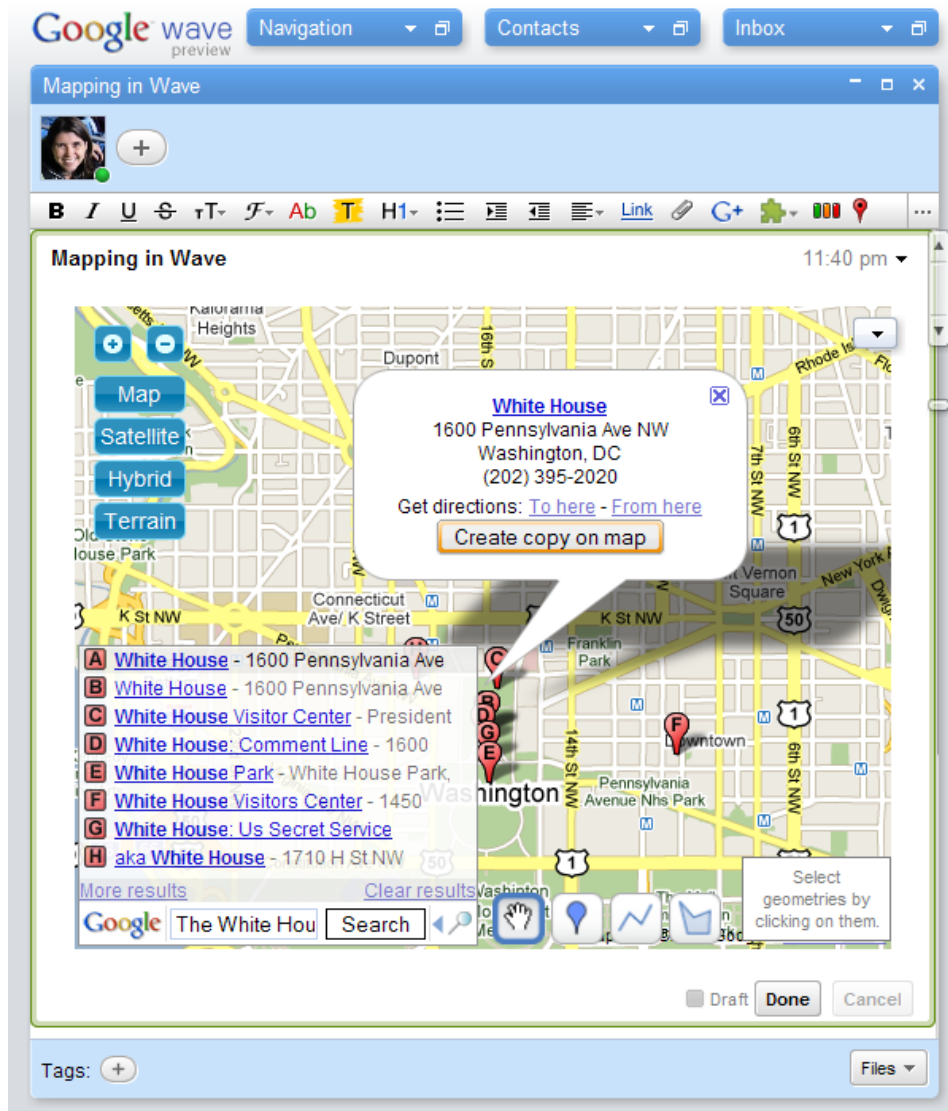


Figure 5-6. To add a point to your map, search for a location, click the desired result, and then click the Create copy on map button.

GOTCHA: If you add a gadget to a blip and then close the wave, when you re-enter edit mode for that blip, the gadget drop-down menu may not appear when it should. Chalk this up to a bug in the Wave preview.

The Yes/No/Maybe Gadget

The Yes/No/Maybe gadget helps you survey a group and tally responses to a simple question, such as “Will you make it to the party?” To add the Yes/No/Maybe gadget to your wave, click its button on the toolbar. (It appears to the left of the Maps gadget button, and its icon contains three small boxes colored green, red, and yellow.) Above the gadget, type your question. When you’re done editing the wave, add your participants to it.

To respond to the question, you and your participants click either Yes, No, or Maybe at the top of the gadget. When you do, your user icon appears in the appropriate column, and the gadget automatically tallies the total responses for each, as shown in Figure 5-7. To add a note to your response, click the Set my status link. That text appears next to your name in the response. You can change your response by clicking a different answer.

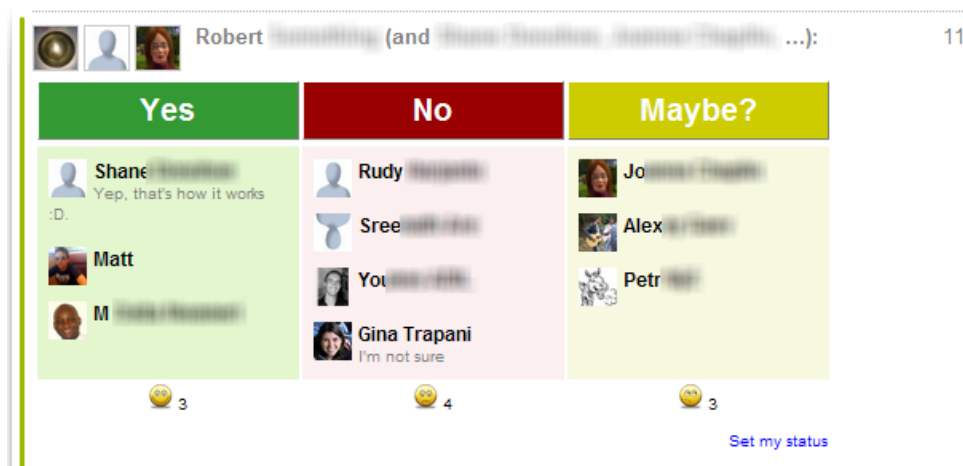


Figure 5-7. The Yes/No/Maybe gadget asks a question of a wave's participants, and then tallies the responses in columns.

To delete the Yes/No/Maybe gadget, make sure you're in edit mode, and then hover over the gadget. From the drop-down menu that appears in the gadget's upper-right corner, select Delete. (But see the “gotcha” mentioned in the previous “The Maps Gadget” section.)

Spell Check Your Waves

Wave includes an automatic spell check feature that overrides any spell checker available in your web browser. As you type in Wave, misspelled words appear with a red underline. To correct the spelling, hover over the underlined word and click the drop-down menu that appears. Select the corrected spelling in the list, as shown in Figure 5-8.^[4]

If the word is spelled just how you intended, you can ignore the red underline. Alternately, select your “misspelling” from the bottom of the correction suggestion drop-down menu.

Wave's interface is available in U.S. English only. However, the spell checker understands and offers correction suggestions in more languages^[5] than just U.S. English, including Arabic, Czech, Danish, Dutch, French, German, Hebrew, Italian, Polish, Portuguese (Brazil), Russian, Spanish, and Swedish.

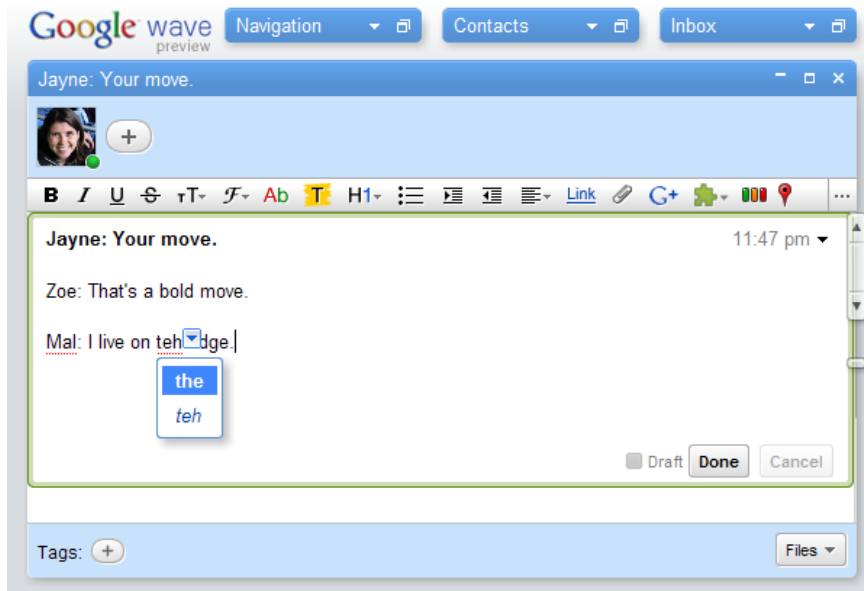


Figure 5-8. Wave's built-in spell checker suggests corrections to misspelled words in a drop-down menu.

Copy Waves

One of the main advantages of using Wave over email is that Wave doesn't create multiple copies of a message—everyone included in the conversation updates it in a single place. However, there may be cases where you *do* want to make copies of waves, to share with different groups of people. For example, if your team is creating a document to present to the boss eventually, you might not want the boss to see the wave's past versions, or inline discussion blips. Once the wave is complete, you can copy it to a new, final wave, and add the boss to that one.

To copy a wave, click any blip's timestamp drop-down menu and select Copy to new wave. Only the contents of the blip you copied get transferred into the new wave; none of its replies or past revisions are included.

Play Back Wave Changes Over Time

One of Wave's most powerful features is its ability to replay the entire history of a wave's changes from creation to its current state. Every time you click the Done button (or press Shift+Enter) to complete an update or reply to a wave, Wave saves a snapshot of the document state. That version of the wave appears as one frame in its playback.

To play back a wave, open it in view mode, and then click its Playback button. A slider appears at the top of the wave, with rewind, back, forward, and fast-forward buttons on its left. Just beneath the slider, a yellow bar tells you when the wave was created, and how many revisions there are (as well as which one you're looking at). For example, if you click the Playback button in a wave that you created on October 1st that has 33 revisions, the yellow bar reads, "You started the wave on Oct 1" on the left, and "1 of 33" on the right, because you're viewing the first of 33 revisions.

To navigate between versions in playback mode, use the buttons on the left of the slider or the slider itself. Move one revision forward or back using the middle two buttons, and fast-forward or rewind to the beginning or end of a wave's history with the outer buttons. As you move through its versions, changes to the wave from the previous version are highlighted in yellow and red text, as shown in Figure 5-9.

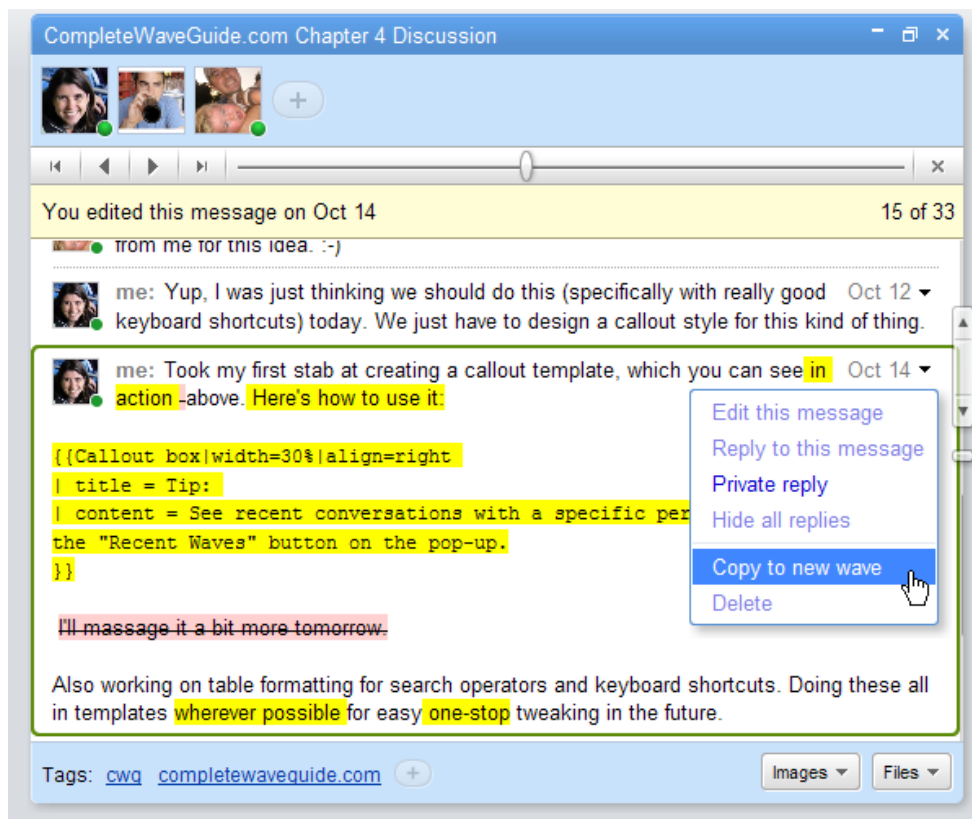


Figure 5-9. When you play back a wave's edit history, you can see added text in yellow, and deletions struck through with a red background. You can copy any past incarnation of a wave into a new wave.

Playback is an advanced feature for power users—it is familiar to software developers who use version control systems—but there are two everyday use cases for it.

Playback Use Case: Conversational Catch-up

Playback's main purpose is to help Johnny-come-latelies catch up on what they missed when they've been added to a wave after it's progressed through multiple changes. For example, if three co-workers are collaborating on a wave, and then add a fourth person to it, that last person is coming in on a fully developed conversation or document. To catch up with what happened in sequence, Wave's playback functions as an instant replay. The fourth person can go back to what the wave looked like when it started, and watch what changes and contributions got added to it over time to make better sense of the conversation.

Playback Use Case: Restore a Past Revision

An alternate use of playback is to restore a past version of a wave. While Wave doesn't let you roll back a wave to a previous state (yet), you can resurrect an old version of a wave by copying a past revision to a new wave. In playback mode, on any revision, you can select Copy to new wave to create a whole new wave populated with that revision's contents, as shown in Figure 5-9.

Make a Wave Public

Instead of adding participants to your wave one by one, you can make a wave accessible to everyone on the Wave server by making it public. To make a wave public, there's no one-click button; instead, there's a trick. Add the `public@a.gwave.com` Wave ID to your Contacts list the way you would any other contact: click the + (plus) button in the lower-right corner of your Contacts panel, and enter `public@a.gwave.com` in the address field.

Even though Wave says "User does not have a Google Wave account" and the Submit button is disabled as shown in Figure 5-10, press Enter anyway. The public contact (which represents a user group of everyone on the server) appears in your Contacts list.

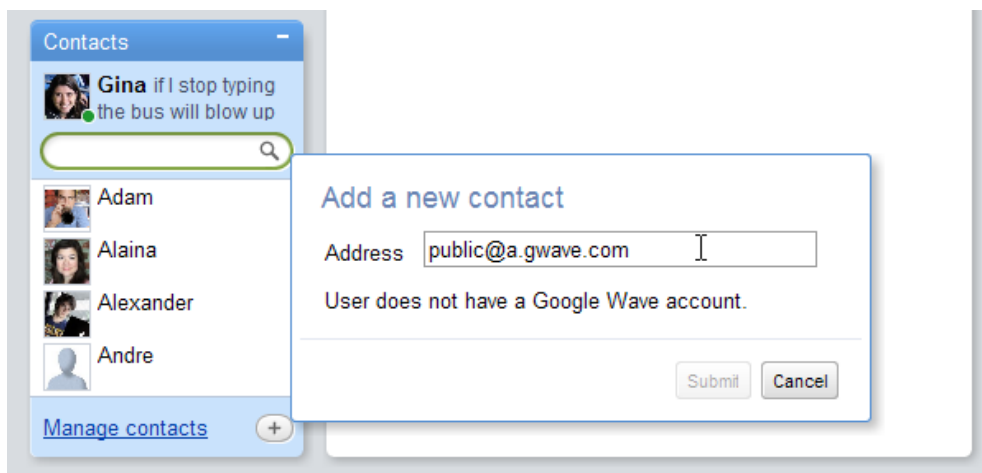


Figure 5-10. Wave tells you "User does not have a Google Wave account" when you try to add `public@a.gwave.com` to your Contacts list. Press Enter anyway to add it to your list.

GOTCHA: You can add `public@a.gwave.com` to your Contacts list only by using the + (plus) button at the bottom of the Contacts panel, not by entering the ID into the search box.

Once `public@a.gwave.com` is in your Contacts list, to make any wave public, add it as a participant. Now your wave appears in search results for `with:public`.

Be prepared: Public waves can accumulate a large number of blips (into the hundreds), and as a result, become unusable. When you try to open a very active wave with more than a hundred blips, Wave is more likely to throw an error message. If you do get the wave open, playback isn't likely to work correctly, especially if participants have added bots and gadgets, which can slow things down. People searching for public waves, especially at this early point in Wave's roll-out, often haven't been in Wave long enough to know what's good Wave etiquette and what's not, and things turn into a free-for-all. If you want your public wave to stay useful and intact for long, you'll have to look after it, garden off-topic blips, delete slow or broken gadgets, and remove unwanted bots.

GOTCHA: The `public@a.gwave.com` contact may not stay in your Contacts panel the way other contacts do. If you use Wave at another computer or from another browser, you may have to add `public@a.gwave.com` to your Contacts list again by hand.

Because dealing with the evasive `public@a.gwave.com` contact has so many pitfalls, someone developed a Wave bot to make things easier. Add `easypublic@appspot.com` to your Contacts list, and it will stick. Then, add the Easy Public bot to any wave to make it public. For more information, see Chapter 8, Wave Bots.

Send a Reply Only Certain People Can See

A group of friends are going to a movie that you're not interested in, and you want to ask one friend in the group if she wants to do something else with you—without letting the rest of the group see your conversation. In Wave, you can send a reply within a large wave that only certain people can see.

To send a private reply, click a blip's timestamp drop-down menu and select Private reply. A new, inline blip with an additional blue heading that contains its participants appears inline. Type your private message, and then add the people you want to include in the usual way. If someone is a participant in the parent wave but not the private reply, he or she cannot see the reply.

Now that you have a full sense of what's possible in Wave, the next chapter will show you how to use Wave's interface more efficiently.

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3. [Google Wave Help: How do I share photos in Google Wave?](#), Google.com
4. [Google Wave Help: How does the spell checker work in Google Wave?](#), Google.com
5. [Google Wave Help: In what languages does the spell checker work?](#), Google.com

Master Wave's Interface

You know how to use Wave, this chapter contains tips for becoming an expert at navigating Wave's interface.

If you've gotten this far, you're ready to go beyond Google Wave's default layout and its point-and-click buttons and menus. In this chapter, you'll train your fingers to use keyboard shortcuts to get the most common Wave tasks done without the inefficiencies of the mouse. You'll customize the Wave client layout to optimize it for your netbook as well as your widescreen monitor. Finally, you'll get intimate with Wave's interface, which is packed with visual cues and hooks into its different features.

Competent Wave users, it's time to graduate to a Wave black belt.

Get to Know Wave's Keyboard Shortcuts

The fastest way to use any software is straight from the keyboard, eliminating as many time-wasting reaches for the mouse as possible. Like Gmail and Google Reader, Wave comes with a host of keyboard shortcuts for navigating and editing waves as well as controlling in-wave image slide shows.^[1]

Navigation Shortcuts

Move around in a wave and scroll any panel using the following keyboard shortcuts. Mac users: substitute Cmd for the Ctrl key.

Shortcut Key	Action
Up / Down Arrows	Moves you up and down the blips in a wave.
Home	Takes you to the first blip in a wave.
End	Takes you to the last blip in a wave.
Space	Takes you to the next unread blip in a wave.
Ctrl+Space	Marks all blips as read when focus is on the Wave panel.
Page Up / Page Down	Scrolls a panel up and down a page at a time.

Wave Editing Shortcuts

Edit and reply to blips with these keyboard shortcuts. Mac users: substitute Cmd for the Ctrl key.

Shortcut Key	Action
Enter	Replies to a blip at the same level of indentation.
Shift+Enter (view mode)	Replies to a blip at the end of a wave. The new blip appears at the same indentation level, at the very end of the wave.
Ctrl+E	Edits a blip.
Shift+Enter (edit mode)	Ends your blip editing session (same as the Done button).
Ctrl+B	Bolds/unbolds selected text.
Ctrl+I	Italicizes/unitalicizes selected text.
Ctrl+U	Underlines/removes underline from selected text.
Ctrl+K	Adds a link.
Ctrl+[n]	Makes the current line a heading, where [n] = 1 through 4 for different heading levels.
Ctrl+5	Adds bullets.
Ctrl+6	Removes formatting from text.
Ctrl+7	Left-aligns text written in left-to-right languages.
Ctrl+8	Right-aligns text written in right-to-left languages. Note that this is not the same as choosing the right alignment button from the wave's toolbar; it is for right-to-left languages like Hebrew or Arabic.

Image Slide Show Navigation Shortcuts

When you're viewing a wave that contains multiple images, from the Images menu at the bottom of the wave, select View as slide show. (Sadly there's no keyboard shortcut to launch a slide show—yet.)

Once you're in the slide show, navigate the photos using these keyboard shortcuts.

Shortcut Key	Action
Right	Moves to the next slide.
Left	Moves to the previous slide.
Down / Page Down	Moves to the next set of thumbnails.
Up / Page Up	Moves to the previous set of thumbnails.
Home	Moves to the first slide.
End	Moves to the last slide.

Start Small with the Most Useful Shortcuts

A compiled list of keyboard shortcuts like the ones in the previous sections can be overwhelming to the point of confusion. As with learning keyboard shortcuts for any program, start small with the ones that perform the most common actions and are easy to remember, such as Enter to reply to a selected blip, and Shift+Enter to finish editing your current blip. Ctrl+I, Ctrl+U, and Ctrl+B (to italicize, bold, and underline text) all work the same way they do in your word processor. Ctrl+E is easy to remember because it lets you Edit a selected wave.

Once you've got the basic, easy-to-remember shortcuts down, move onto a few more and repeat.

Wave Interface Conventions

Not only is Wave audacious in its attempt to reinvent email, it also takes some bold bets with new interface controls and visual cues that are unconventional and therefore unintuitive to new users. In this section, you'll learn how to recognize the ways Wave denotes things such as blip states, wave status, tags, and folders. Then, you'll notice the Wave buttons and menus that are tucked away in less-than-obvious places. Here are a few visual cues and interface conventions worth pointing out as you get more comfortable in Wave.

The Non-Standard Wave Scrollbar

The scrollbar on the right side of Wave's panels works a bit differently than the scrollbar in your web browser. Like most scrollbars, you can drag it up and down to scroll, or click its up and down arrows to move it. Unlike most scrollbars, the Wave scrollbar's height doesn't change. It's always the same, small size, which puts its up and down arrows in close proximity to one another, as shown in Figure 6-1.

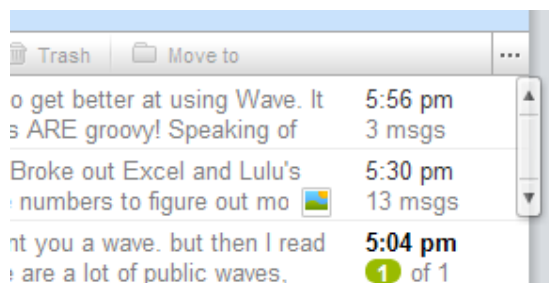


Figure 6-1. Unlike the scrollbar in your web browser, Wave's scrollbar is the same height no matter how long the list it's scrolling, which keeps the up and down arrows always the same short distance away.

Google's intention is to benefit people accessing Wave on mobile devices or netbooks with a limited mousing area, but it has thrown off some preview users.^[2] Google explains "the deal" with the scrollbar in Wave's Help section:^[3]

You might find that the scrollbar in Google Wave behaves a little differently from scrollbars in other Google products. To use it, you can drag the bar or you can use the arrows on either end of it—clicking the arrows without moving your mouse allows you to very quickly scroll up and down the page.

Even at this early stage, at least one developer has created a Google Chrome extension that reverts Wave's custom scrollbars to Chrome's native scrollbars.^[4]

Green Bars, Outlines, and Dots

Green is a very important color in Wave—it indicates activity, online status, unread, and selected blips. The green dot on a contact icon means that person is online. When you select a blip, it gets a dark green border around it (and you can perform actions on it with keyboard shortcuts). A lighter green vertical line in a blip's left margin means it's unread. (Press the spacebar or click to select the next unread blip in a wave, and watch its green vertical line fade.) A flashing green bar at the top of your Wave client alerts you to an incoming ping, or a change to a minimized wave. The number of unread blips in a wave are highlighted in green when that wave is listed in the Search panel.

The Wave Timestamp Drop-down Menu

In the upper-right corner of every blip, Wave displays the date or time of that blip with a small down arrow next to it. This is the timestamp drop-down menu. Click the arrow to reveal all the things you can (and can't yet) do with a wave, from Edit this message, Reply to this message, Private reply, Hide all replies (disabled as of writing), Copy to new wave, and Delete. The Delete item is disabled for the parent wave—that is, the first blip in the wave. Every other blip can be deleted using this item.

The disabled Hide all replies item suggests that toggling every inline blip to expanded and collapsed view in one shot will be available at some point. Right now you can click the +/- (plus/minus) speech bubble at the top of any inline blip to hide or show it.

The ... (Ellipses) Toolbar Button

Wave's toolbars are packed with buttons that take up some width, and with three panels across, smaller screens and narrow windows can cut buttons off. That's when Wave collapses the displaced buttons into a drop-down menu you can access from the ... (ellipses) button, on the far right of the toolbar, as shown in Figure 6-2.

Similarly, Wave collapses a long list of wave participants into an expandable + (plus) button with a label that tells you how many more participants there are, like the “1 more” label shown in Figure 6-2. To see the full list of participants on the wave, click the small + (plus) sign to expand it.

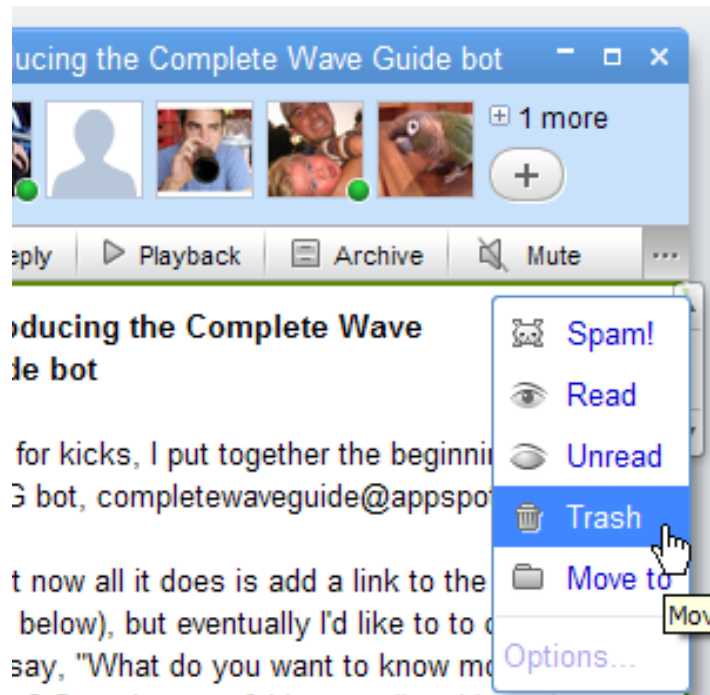


Figure 6-2. When there's not enough horizontal room to display all toolbar buttons, Wave collapses hidden items into a drop-down menu available from the ... (ellipses) button.

Panel Manipulation Buttons and the “Window Shade” Pulldown

Wave provides panel manipulation buttons in the upper-right corner of an open wave's blue top bar, as shown in Figure 6-2. From left to right: the Minimize button shrinks a wave and docks it at the top of your Wave client, next to the Google Wave logo. The Maximize button minimizes all the panels except the open wave, filling the entire screen with it. The Close button (which looks like an X) closes the wave.

The Navigation, Contacts, and Search panels have only the Minimize button available—not Maximize or Close. When you minimize one of those panels, they dock at the top of your Wave client, in the space next to the Google Wave logo.

When a minimized panel or wave is docked at the top of the screen, a small down arrow gives you a “window shade” pull-down view that slides down over whatever appears in the main area of the screen. Click it to access what's in that list without rearranging your current workspace. In Figure 6-3, the Search panel is minimized to give the open wave more room for viewing and editing. But when you click the down arrow on the docked Search panel, it pulls down over the wave's contents.

You can also expand and contract the width of any Wave panel. Hover your cursor along the edge of any panel, and your pointer changes to indicate that you can click and pull that panel wider or narrower. This same technique works between stacked panels, like Navigation and Contacts: you can make Contacts taller while making Navigation shorter by clicking and dragging the Contacts panel's top edge.

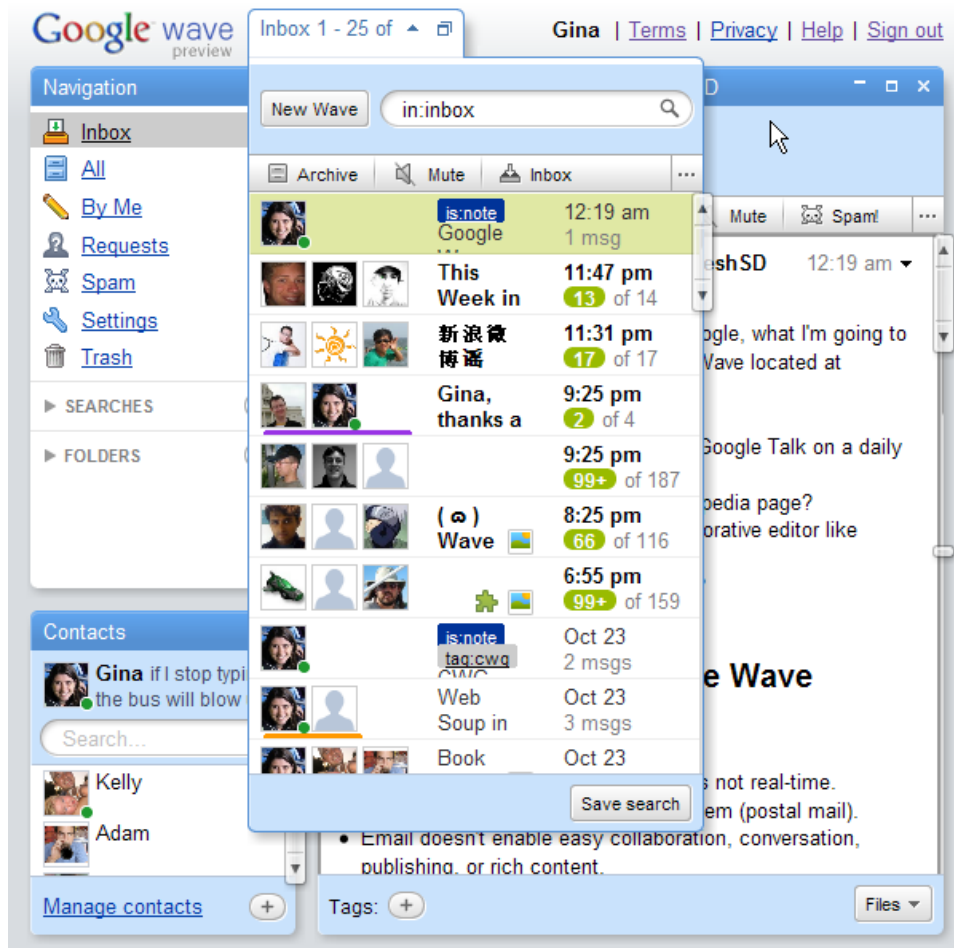


Figure 6-3. Use the down arrow button to pull down minimized panels window-shade style.

Customize the Wave Interface

Now that you know how to minimize Wave panels, if you prefer a certain Wave layout, you can bookmark a Wave URL that restores that layout automatically when you visit Wave. You can also customize the order, size, and layout of the Wave client's links and panels. Finally, you can open multiple waves at once to multi-task on a big screen.

Bookmark Your Preferred Wave Layout

Netbook owners or those who keep Wave open in a small window appreciate the ability to minimize unneeded Wave panels and maximize the reading or writing area on the wave they're currently working on. To load Wave with certain modules minimized by default, you can use a Wave URL that contains the `#minimized` parameter. For example,

```
https://wave.google.com/wave/#minimized:nav,minimized:contact
```

launches Wave with the Navigation and Contacts panels minimized. The

```
https://wave.google.com/wave/#minimized:nav,minimized:contact,  
minimized:search
```

URL minimizes Navigation, Contacts, and Search panels, as shown in Figure 6-5.

While you're looking at Wave URLs, the observant will notice that every individual wave has an ID that appears in your browser's address bar when you click the wave. This means you can bookmark or IM a link to a wave to anyone who can see it. (That is, you can share a link to a public wave to anyone with a Wave account; but sending a wave's link to someone not participating in it generates a message saying they don't have access to it.)

Reorder and Color Navigation Panel Links

From the Inbox down to the Trash, every link in Wave's Navigation panel is configurable. You can assign it a custom color or move it up or down the list. The default links are Inbox, All, By Me, Requests, Spam, Settings, and Trash. Each is a system-generated link to a specific search—for example, Inbox runs an `in:inbox` search, By Me runs a `by:me` search, and so on. (Only the All link doesn't display search results for waves: it shows you every wave you have access to, unfiltered.)

To rearrange the links, or to assign an individual link a custom color, click the link to select it (it turns green), then click the down arrow that appears on the right. A drop-down menu appears that lets you move the link up or down the list, or set a color, as shown in Figure 6-4.

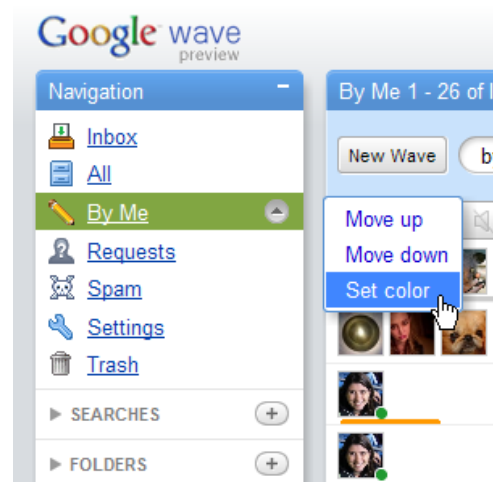


Figure 6-4. Select a link on the Navigation panel and click the down arrow that appears to move the link up and down the list, or to assign a color to it.

TIP: The Searches and Folders drop-down menus have additional items. See Chapter 4, Find and Organize Waves, for information on folders and searches.

Open Multiple Waves

To open multiple waves, Ctrl+Click the waves you want in the Search panel. Mac users, use Cmd+Click for the same effect. If the Search and/or Navigation and Contacts panels are open, Wave stacks the clicked waves on top of one another in the right column.

However, if the other panels are minimized as shown in Figure 6-5, Wave maximizes the first wave you open across both columns. Then, when you Ctrl+Click or Cmd+Click to open more waves, Wave pushes the first wave you opened into the right column, and stacks the rest on the left as shown.



Figure 6-5. Windows users can Ctrl+Click to open multiple waves. Mac users can Cmd+Click to open multiple waves.

What Does THAT Do?

The preview release of Wave is still in an unfinished state, so a few items in its interface act as placeholders for functionality that's either on its way or not needed yet.

Navigation Panel: Requests

The Requests link on the Navigation Panel will list “Waves from untrusted parties or sources.” Presumably this means that once the Wave server federation is in place, you'll be able to see incoming waves from people on other Wave servers here. In the preview release, nothing is listed in the Requests area because no one can wave at you from other servers. (Even if you have a Wave developer sandbox account, you cannot wave users on the Wave preview.)

Navigation Panel: Settings

The Settings link on the Navigation panel lists system settings waves. Right now one of those waves is “Under Construction,” but another is available and working. As discussed in the next chapter, the Extension Settings wave under Settings is where you can view and uninstall Wave gadgets.

Navigation Panel: Spam

One of the big problems with email that Wave wants to solve—or avoid as much as possible—is spam. Still, Wave includes a Spam! button on the Search panel and wave toolbar that lets you mark waves as spam. When you do, that wave is moved from your Inbox to the `in:spam` search results listing that you can see when you click the Spam link in the Navigation panel.

Now that you're a verifiable Wave expert, see how Wave extensions in the form of gadgets and bots let you do more in Wave.

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4. [Google Wave Native Scrollbars Extension](#), UniformedOpinion.com

Wave Gadgets

You know all the ins and outs of Wave's built-in features. Now it's time to enrich your waves with third-party gadgets.

In Chapter 5 you started adding rich content to your conversations with Google Wave's built-in Maps and Yes/No/Maybe gadgets. That's a good start, but there's a whole universe of gadgets available for Wave. In this chapter, you'll learn how Wave extensions enable developers to create—and users to enjoy—new functionality beyond what's available in Wave by default, specifically through the use of gadgets.

Wave Extensions: Gadgets and Robots

Wave extensions are add-ons that enhance your waves with new features and functionality.

^[1] If you've ever used any Gmail Labs features,^[2] Wave extensions are very similar—they add functionality to the Wave client, normally accessible through a button inserted on your edit toolbar when you install the extension. While Gmail Labs add-ons can be developed only by Google employees, Wave extensions can be developed by anyone. As a result, an impressive handful of extensions are already transforming Wave into an even richer experience.

Wave extensions come in two flavors: gadgets and robots (aka “bots”). We'll cover robots in more detail in the next chapter; right now, let's take a closer look at gadgets.

What's a Gadget?

Wave gadgets are small applications you can insert inside any wave to extend the default functionality of the wave. In fact, in Chapter 5 you learned how to use two of Wave's built-in gadgets: the Maps gadget and the Yes/No/Maybe gadget. As you saw, when you insert a gadget into a wave, all participants in that wave share access to the gadget and can interact with it.

The gadget fun doesn't end with those two pre-installed gadget extensions, though. Even at this early stage in Wave's development, busy programmers have created gobs of great gadgets to provide you with even more clever ways to interact, share, and collaborate with other wave participants. You just need to know where to find them and how to insert them into your waves.

Like many aspects of Wave, you can insert gadgets into a wave in a couple of different ways. If you've installed a gadget extension—like the Maps or Yes/No/Maybe gadget extensions—you've already seen how easy inserting a gadget in a wave can be. While you're editing a blip, just click the gadget button on the edit toolbar to insert it where your cursor is. Other gadgets, however, cannot be installed as extensions accessible from your edit toolbar (not yet, anyway). Never fear; you can still insert those gadgets in a wave. In the following sections, we'll show you how to install both types.

Gadget Extensions

As mentioned earlier, both gadgets and bots (you'll learn more about bots in the next chapter) fall under the category of *extensions*. At this early stage in Wave's development, however, the naming conventions, as well as the process of installing and using extensions, are a little blurry. Most of the time, when you install an extension, the extension adds a new button to the Wave client's edit toolbar^[3]—like the built-in Maps and Yes/No/Maybe gadget buttons. When a gadget extension is installed, you can click the new button any time you're editing a blip to insert that gadget. You can, however, add gadgets (or bots) to a wave on a case-by-case basis, without installing an extension at all.

First, let's take a look at how to install a persistent extension—the kind that adds a button to your toolbar and is always available when you log into your Wave client. Then we'll detail how to add gadgets to individual waves on a case-by-case basis.

Install a Gadget Extension

In this section, you'll learn how to install extensions to the Wave client that show up every time you log into Wave. Wave provides two different methods of installing such extensions. The first is simple but limited only to extensions featured by Google, while the second requires a little more legwork but allows you to install any extension you want.

Install a featured extension from the Extensions Gallery: When you logged into Wave for the first time, you should have had a wave in your Inbox from Doctor Wave, the fictitious mascot for Google Wave who welcomes you to your account. Inside that message is a link to an Extensions Gallery^[4] highlighting a handful of gadget extensions you can install on your Wave client, including the already installed Maps and Yes/No/Maybe gadgets.

TIP: Strange as it may seem, the Extensions Gallery isn't accessible through any easy-to-find Settings shortcut as of this writing, so you need to find your Welcome to Google Wave message and click the Google Wave extensions link that's inside to add the Extensions Gallery wave to your Inbox. Use "welcome to google \\/\\ave" with:doctorwave@googlewave.com to find it in a jiffy.

Once you've found your way to the Extensions Gallery, installing featured gadget extensions is a breeze. Each gadget is listed as a puzzle piece displaying the gadget name, what it does, a small logo or screenshot of the gadget in action, and an Install button, as shown in Figure 7-1. Click Install and confirm the installation. The extension adds a button to your Wave edit toolbar that allows you to easily insert the newly installed gadget into any wave with the click of your mouse.

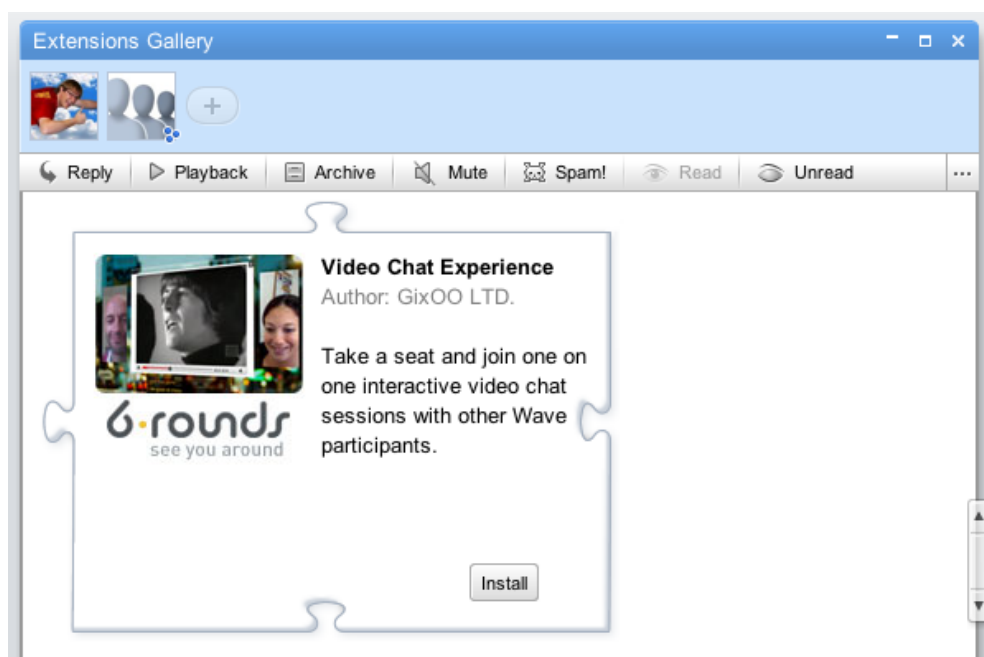


Figure 7-1. Extension installers add buttons to your Wave edit toolbar that allow you to easily insert gadgets into a wave.

Install an extension that isn't featured: Anyone can develop a Wave extension, which means there are a lot of extensions available that you can't yet install through Wave's current Extensions Gallery. You can still manually install non-featured extensions to add quick access to your favorite gadgets; it just takes a little more know-how.

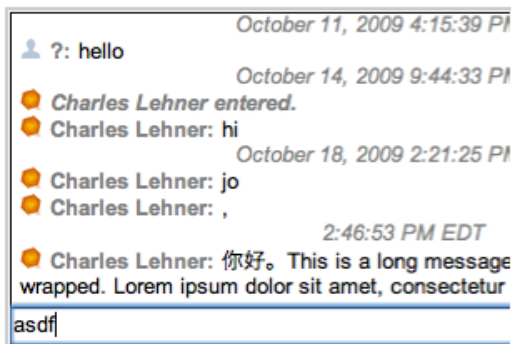
First, you need to install an extension called Extension Installer, which you can find at the bottom of the Extensions Gallery in a section labeled “For Developers Only.” While most extensions add a new button to the Wave client’s edit toolbar, the Extension Installer adds a drop-down menu next to the New Wave button on the Search panel.

Next, find an extension you want to install. Right now the best place to browse for gadgets is at the Google Wave Samples Gallery.^[5] If you find a gadget that looks interesting, click through to its page for details, then look for the Installer XML link on that page, as shown in Figure 7-2. Right-click the link and copy the URL (this link should point to a `manifest.xml` file that tells the Wave client a little about what the extension does and how to install it). Then head back into Wave.

Retro Chat

[« Back to gallery](#)

By: Charles Lehner - Oct 20, 2009



Chat room gadget, for old-fashioned IMing.

Stores messages in the state using timestamps as keys.

[Live Demo*](#) | [Source Code](#) | [Installer XML](#)

[Gadget XML](#)

Figure 7-2. You can manually install extensions and gadgets if you have their Installer XML or Gadget XML links.

When you are back in Wave, manually installing your extension is easy:

1. Click the drop-down menu next to the New Wave button on the Search panel and select New Extension Installer.
2. Paste the URL of the Installer XML you copied into the Insert Extension Installer pop-up and click Insert.
3. A new wave containing the same puzzle-piece layout you’re familiar with from the Extensions Gallery appears, only this one contains information regarding the extension you’re installing. Click the Install button, confirm the installation, and you have successfully performed your first manual extension installation.

NOTE: Installing extensions using the manual method allows you to add extensions to Wave that haven't necessarily been vetted by the Google Wave team, so proceed at your own risk. In theory, this method is used to allow developers to test their extension installers, but until the Wave client features a more streamlined method of installing non-featured extensions, this one works like a charm.

Uninstall an Extension

As convoluted as the different current extension installation processes may seem, *uninstalling* extensions is actually very easy. If you decide you no longer want an extension cluttering up your edit toolbar, click the Settings link in the Navigation panel. (This performs a search for `with:settie`.) A wave called Extension Settings appears; open it and every extension you've installed is displayed, as shown in Figure 7-3. Now you can uninstall any extension with a click of the Uninstall button.

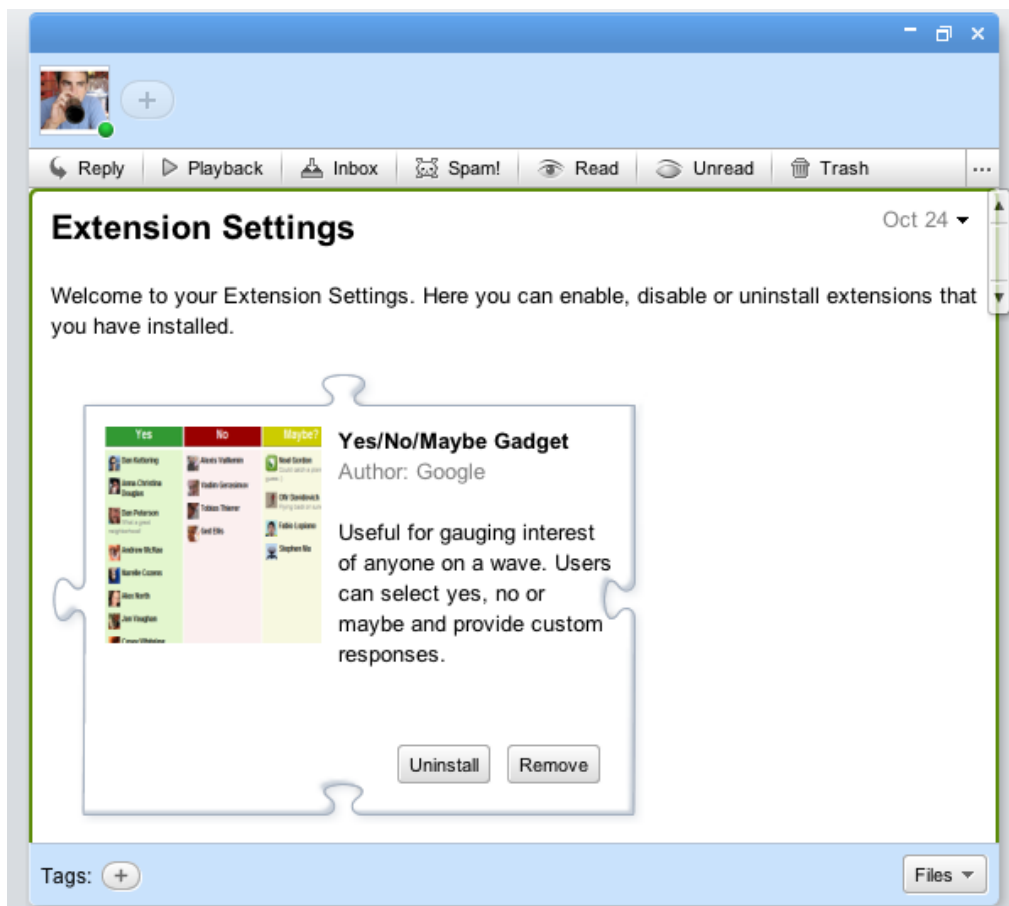


Figure 7-3. You can uninstall, remove, or reinstall extensions from the Extension Settings wave.

Once you've installed an extension, it's always accessible in the Extension Settings wave, where you can reinstall or uninstall it as you like. If you're sure you'll never want to install a particular extension again, click the Remove button to entirely remove the extension puzzle piece from your Extension Settings.

Insert Gadgets by URL

Not all gadgets are available to install as extensions through the Extensions Gallery or manually. On top of that, you won't always want to install a full-on extension just so you can use a gadget one time. Wave's Add Gadget by URL feature inserts new gadgets into a wave on a case-by-case basis.

All you need to insert a gadget by URL is, obvious as it may seem, a link to the gadget. Once again, the Google Wave Samples Gallery is the best place to browse for single-use gadgets. In fact, while not all gadgets in the gallery have an Installer XML, almost all of them do have a Gadget XML link—the URL you need to copy to add a single gadget. Right-click the Gadget XML link, copy the URL, and then open the Wave client.

REMEMBER: Gadgets you insert using the Add Gadgets by URL button won't add a button to Wave's edit toolbar, so save the URL for that gadget somewhere handy. May we suggest starting a new wave where you paste the URLs to your favorite gadgets?

To insert the gadget in a blip, open a wave, start editing a blip, and then click the Add Gadget by URL button on the toolbar (it's the one that looks like a jigsaw puzzle piece). Paste the gadget URL you copied into the pop-up, and then click the Add button, as shown in Figure 7-4. Wave inserts the gadget into the current blip.

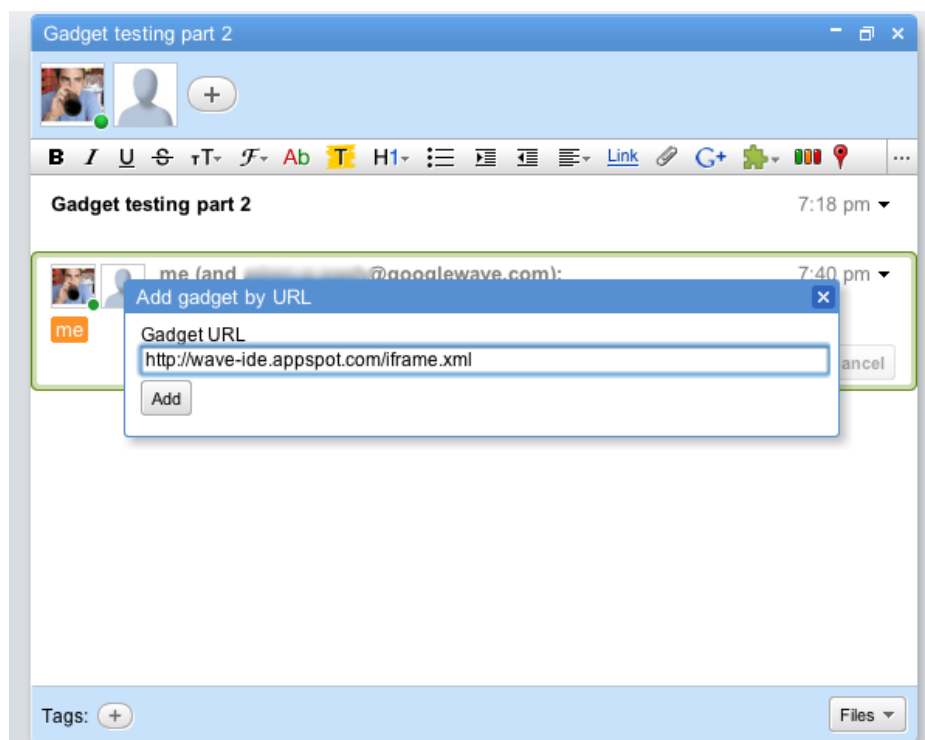


Figure 7-4. Manually insert gadgets into a wave by clicking the Add Gadget by URL button.

A Few Great Gadgets

New Wave gadgets find their way into Wave every week, and as you saw in the previous section, finding them can be difficult. This section highlights some of our favorites and describes what they do.

You've already seen the Yes/No/Maybe and Maps gadgets, so we won't cover those again. Most of the gadgets listed here are available through the Extensions Gallery we covered previously, so they are easy to install. (It's no coincidence that the extensions Google features in the gallery are also the most stable.) For those gadgets that aren't available by default or inside the Extensions Gallery, we've including both the Installer XML and Gadget XML links so you can either install the gadget as an extension (using the New Extension Installer) or insert it in a wave (using the Add Gadget by URL button).

Ribbit Conference Call

Have you gotten to a point in your wave where a quick conference call would be more productive than continuing your back and forth in Wave? Pop the Ribbit's Conference Call gadget into a blip and instantly fire up a conference call with whichever participants you want, as shown in Figure 7-5.

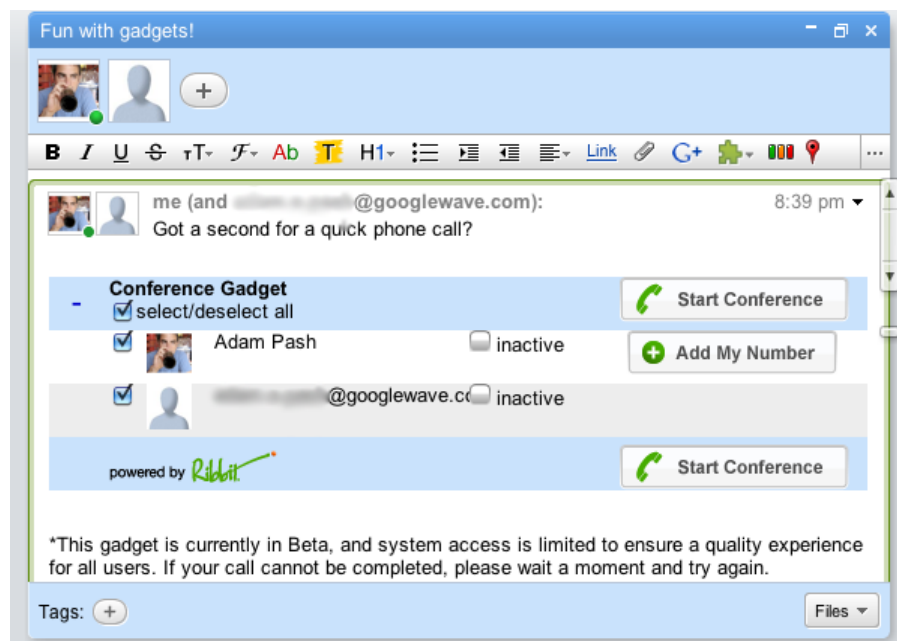


Figure 7-5. Start a call with anyone (and potentially everyone) participating in your wave using the Ribbit Conference Call gadget.

This gadget is currently available in the Extensions Gallery.

Video Chat Experience

Sometimes a phone call just isn't enough. The Video Chat Experience gadget—as its name suggests—allows you to start a video chat with another participant in a wave, as shown in Figure 7-6.

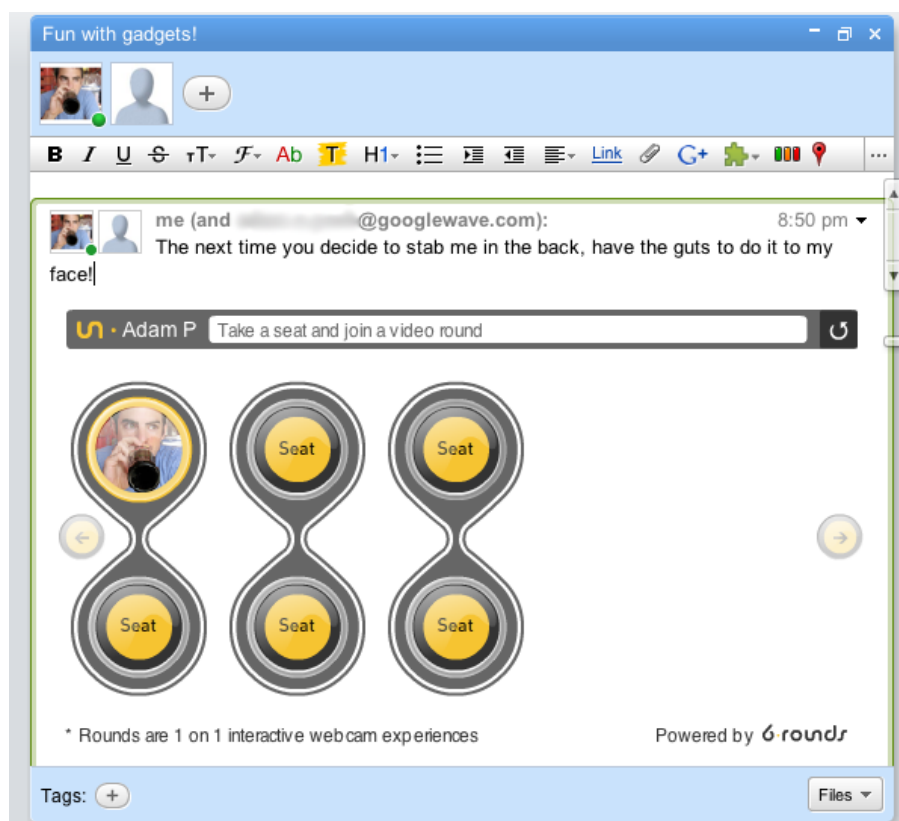


Figure 7-6. Need a little face time? Insert the Video Chat Experience gadget and start a one-on-one video chat.

This gadget is currently available in the Extensions Gallery.

iFrame

The iFrame gadget embeds an iFrame in your blip that can display any web page you choose, as shown in Figure 7-7. Just click the Edit link, type the URL of the web site you'd like to embed, and then click the View link. You can also adjust the height of the gadget in your wave when you're editing the URL.

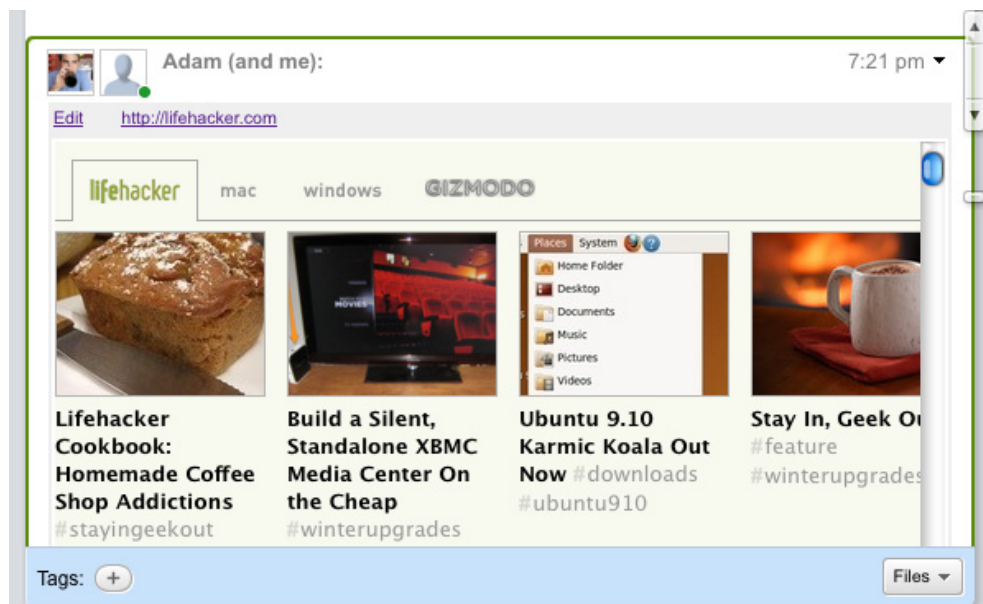


Figure 7-7. The iFrame gadget embeds any web page inside a blip.

Gadget XML: <http://wave-ide.appspot.com/iframe.xml>

Installer XML: <http://wave-ide.appspot.com/iframe-ext.xml>

AccuWeather.com

The AccuWeather.com gadget provides you with a weather forecast based on any date and location you choose, as shown in Figure 7-8. Sure it's information you can find by searching elsewhere, but if you're planning a getaway with other participants, just insert this gadget and your friends won't have to duplicate your efforts.

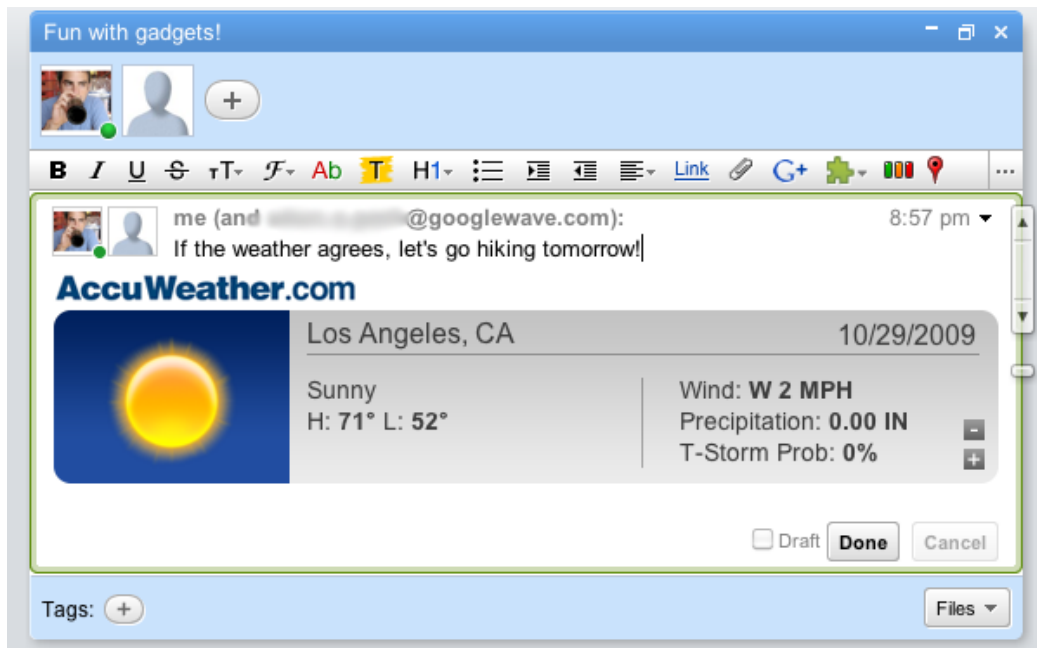


Figure 7-8. Insert the AccuWeather.com gadget, give it your zip code and a date, and it gives you a quick weather outlook.

This gadget is currently available in the Extensions Gallery.

Retro Chat

Feel like taking your conversation into an old-school instant messaging conversation? The Retro Chat gadget inserts an IM window into any blip that all participants in a wave can use, as shown in Figure 7-9.

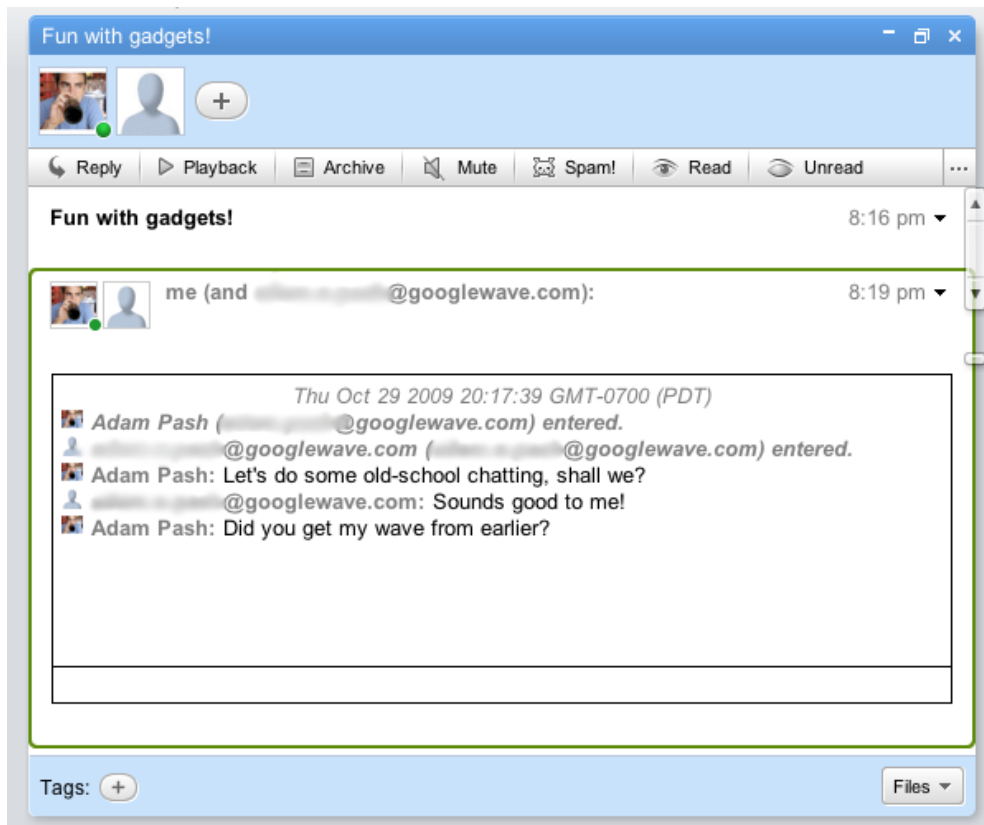


Figure 7-9. The Retro Chat gadget inserts an instant messaging conversation into any blip.

Gadget XML: <http://wave-retro-chat.googlecode.com/svn/trunk/chat.xml>

Installer XML: <http://wave-retro-chat.googlecode.com/svn/trunk/manifest.xml>

Brainstorming

Insert the Brainstorming gadget to collaboratively mindmap ideas with other participants in a wave. Figure 7-10 shows one example; you can see more at the Google Wave Sample Details page for brainstorming:

http://wave-samples-gallery.appspot.com/about_app?app_id=34038

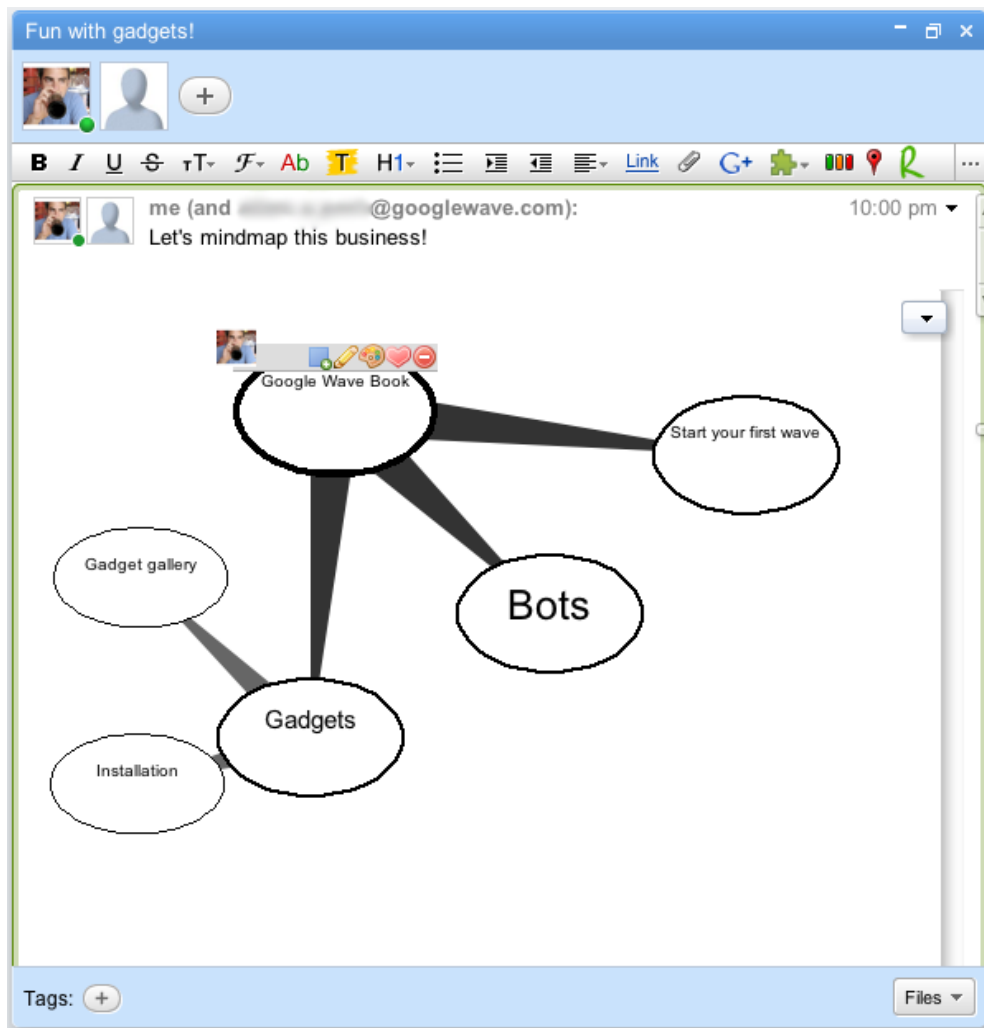


Figure 7-10. Do some collaborative mindmapping with the Brainstorming gadget.

Gadget XML: <http://www.madin.jp/gadget/index.xml>

Napkin

The Napkin gadget lets you and other participants in your wave do some “back of the napkin” brainstorming, as shown in Figure 7-11. Draw your ideas when words can’t express what you’re trying to get across.

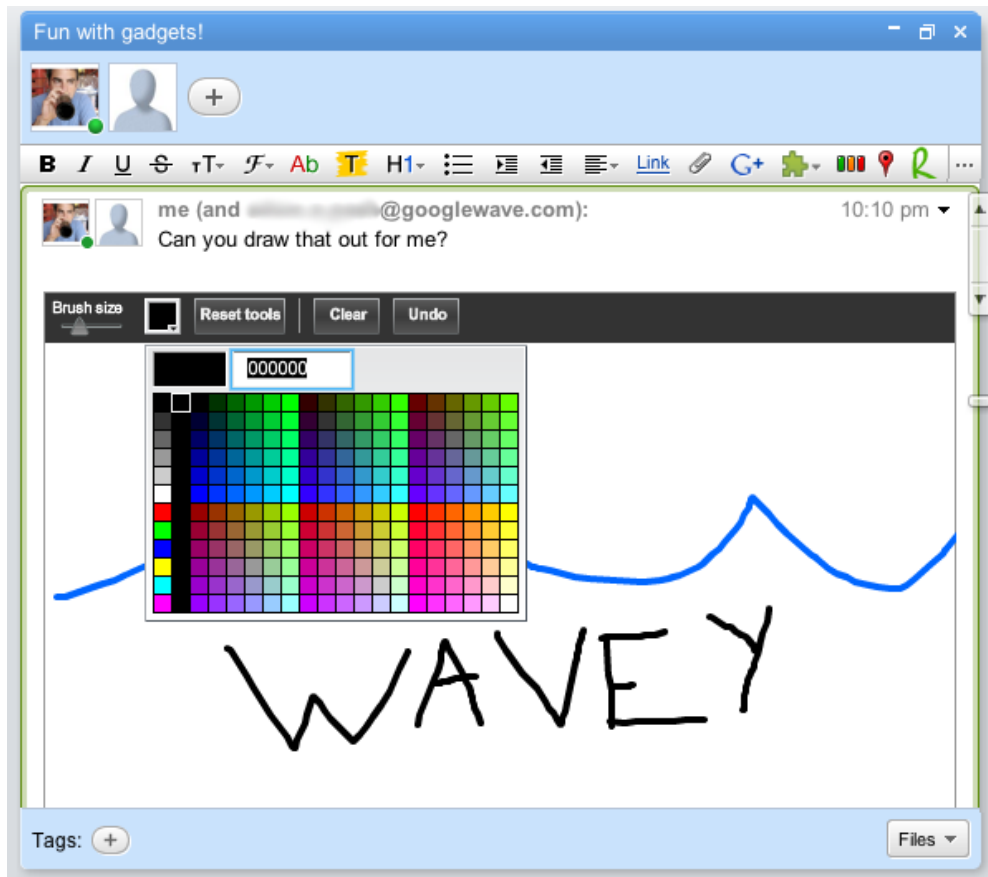


Figure 7-11. Use the Napkin gadget to draw your ideas with other participants when words won't do.

Gadget XML: <http://my-wave-gadgets.appspot.com/wave/NapkinGadget.xml>

HTML

HTML is the markup language that gives structure to the internet, and you can copy HTML code from sites all over the web (including the embed code available for most internet videos, for example). By default you can't simply copy and paste HTML into a blip and expect it to work, however. What you can do is install the HTML gadget, click its Edit link, insert your HTML text, and then click the View link. In response, the HTML gadget renders your HTML code as it was meant to be displayed. See Figure 7-12 for an example.

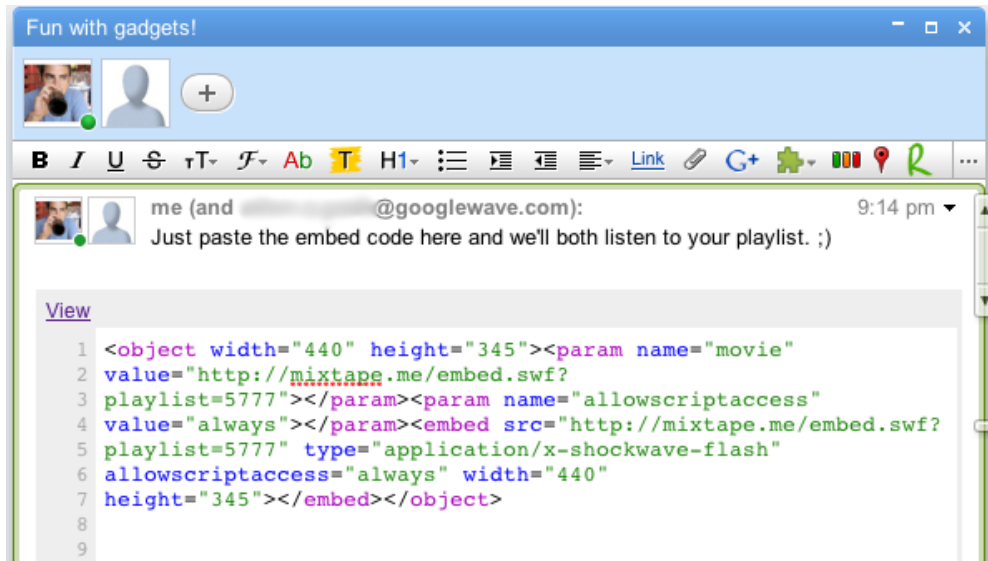


Figure 7-12. Type or paste any HTML code into the HTML gadget and it renders the HTML in a blip.

Gadget XML: <http://wave-ide.appspot.com/html.xml>

Wave Sudoku

Now that you're a Wave expert, you may find that just waving is no longer enough to keep your mind nimble. Take a break from work and give your brain a little workout with the Sudoku gadget. You can either tackle a puzzle by yourself or compete against the participants in a wave, as they are doing in Figure 7-13.

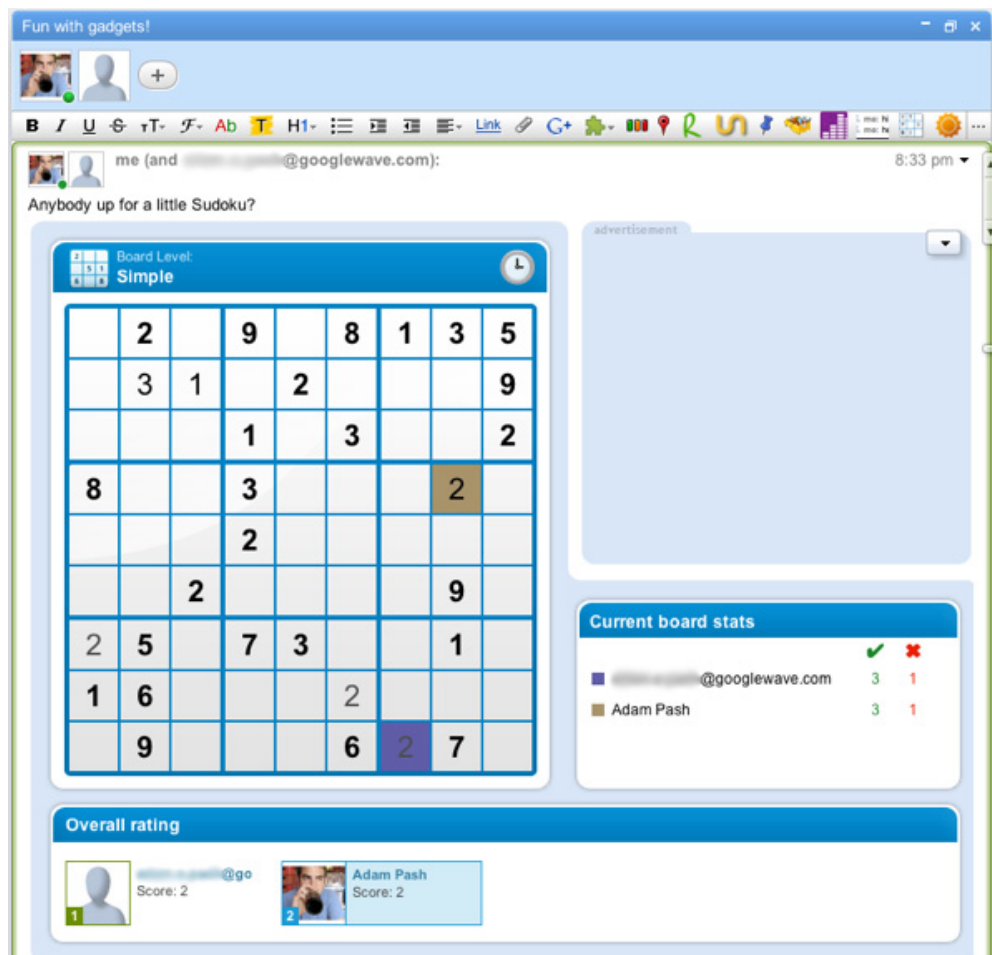


Figure 7-13. Play some competitive Sudoku with wave participants using the Sudoku gadget.

This gadget is currently available in the Extensions Gallery.

This is just a taste of the available Wave gadgets. In the next chapter, we'll introduce you to the other type of extension: Wave bots.

References

1. [Google Wave Help: What are extensions?](#), Google.com
2. [Gmail Help: About Labs](#), Google.com
3. [Google Wave API: Google Wave Extension Installers](#), Google.com
4. [Google Wave: Extensions Gallery](#)
5. [Google Code: Google Wave Samples Gallery](#), Appspot.com

Wave Bots

Robots, or bots for short, are Wave extensions that look like wave participants and automatically update waves in useful ways.

The previous chapter covered how to add special chunks of interactive content to your waves in the form of Wave Gadgets. This chapter covers the other flavor of Google Wave extensions: bots. Bots look like Wave users, but they're programmed to edit and update the contents of waves. Wave bots are like instant messenger bots—but with more possibilities, given Wave's collaboration capabilities.

What's a Bot?

A bot looks like any other Wave participant or contact. It has a Wave ID in the form of `bot@example.com`, and you can add it to your Contacts list just as you would any Wave user. The only difference between a bot and a human Wave user is that the bot is programmed to automatically perform some function within a wave. A bot is an automated wave participant that examines the contents of waves to which it is added, and updates or adds to them based on what it's programmed to do.

For example, there are bots programmed to automatically delete empty blips in a wave, or link all words that start with an @ sign (i.e., `@twitter_username`) to Twitter. Get those and the Wave IDs of more bots in the section titled "A Few Great Bots".

Add or Remove a Bot

To use a bot, add its Wave ID to your Contacts list as you would any other contact. (See Chapter 3, *Manage Your Wave Contacts*, for details.) Create a new wave, then add the bot to try it out.

As of this writing, Wave bots are the only participants you can remove from a Wave. (If you click a participant's icon at the top of a wave, the Remove button on the pop-up that appears is enabled for bots only, not for human users.)

A Few Great Bots

Every day, more bots become available for use in Wave. This section highlights a few of our favorites, their purpose, and because it's so early in Wave's life cycle and some things don't always work the way you'd expect, how well they're working.

To try out any of these bots, add its Wave ID (listed in parentheses after its name) to your Contacts list, and then add it to a new wave.

Wikify (wikifier@appspot.com)

The Wikify bot adds links to and definitions from Wikipedia to your waves for a given topic. When you add Wikify to a wave, it provides instructions on how to add a link to Wikipedia for a topic, or a definition of that topic. Figure 8-1 shows how Wikify works.

Bot status: While Wikify's functionality is limited, it is stable and works as advertised.



Figure 8-1. If you type `<wikify topic>` or `<wikidef topic>` into a wave that the Wikify bot participates in—where *topic* is a word of interest—Wikify automatically pulls a link or definition from Wikipedia and replaces those commands with the results in-wave.

CleanTXT (cleantxt@appspot.com)

The CleanTXT bot is an automated janitor for a wave, especially helpful on active waves with lots of participants, like public waves. When CleanTXT is participating in a Wave, it automatically deletes empty blips, reduces repetitive blank lines in a blip, automatically corrects common typos (such as a mistyped “teh” for “the”), and inserts missing spaces after commas and semi-colons.

The CleanTXT bot also offers a hook into the Approver gadget, a thumbs-up/thumbs-down control that lets participants rate blips in a wave. With CleanTXT participating in your wave, type `!approver` to add the Approver gadget to that blip. Type `!approver++` to have CleanTXT add the Approver gadget to every new blip submitted to the wave going forward.

CleanTXT is especially useful on public waves, which can get cluttered with accidental empty blips and typos quickly. See full instructions on how to use the bot and what it does at its homepage, <http://cleantxt.appspot.com>.

Bot status: Stable and working.

Polly the Pollster (polly-wave@appspot.com)

One of the most promising Wave bots available in the preview, Polly the Pollster lets you create multiple choice polls with custom questions and answers, and distribute them among any number of Wave contacts. As your contacts respond by selecting a radio button and clicking the Submit button, you can watch Polly’s poll results, in the form of a pretty graph, update in real-time. See a Polly-generated poll and results graph in Figure 8-2.

Bot status: Polly *mostly* works, but it can be unstable and unreliable at times, especially in waves with lots of participants.

Usage note: Use Polly first thing on a new wave; the bot won’t work if you add it to a wave already in progress.

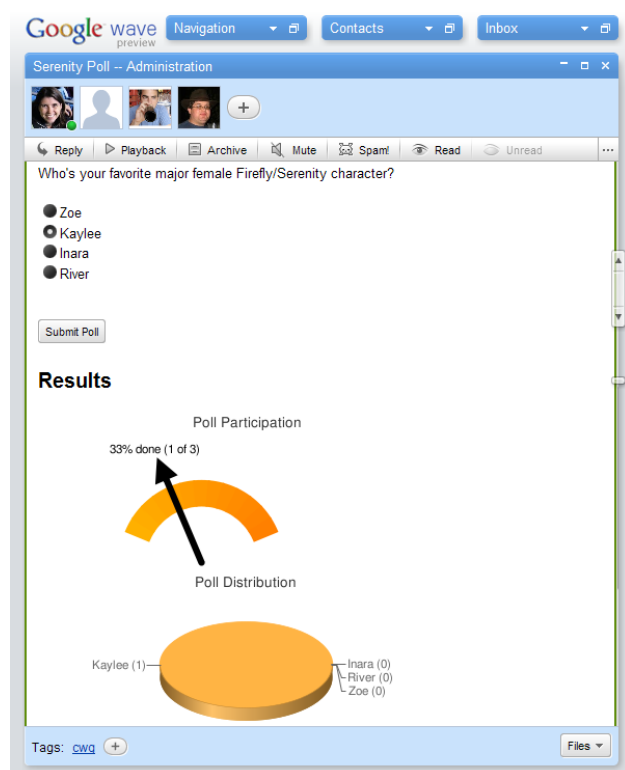


Figure 8-2. Polly the Pollster is a Wave bot that helps you create and distribute multiple-choice questions, and tabulates the recipients’ responses.

Yelpful (yelpful@appspot.com)

The Yelpful bot offers an interactive, in-wave search interface to the business listings web site, Yelp.com. When you add Yelpful to a wave, it greets you and describes its usage with this message in a new blip:

```
Hello there! Usage: /yelp [location] [keyword] Example: /yelp sunnyvale
ca mexican
```

Type a query, such as `/yelp Brooklyn NY Sushi`, and Yelpful responds with search results in a new blip.

Bot status: While Yelpful consistently responds to blips, its search results show up in HTML markup, which is not as readable as it could be.

TwitUsernames (twitusernames@appspot.com)

The TwitUsernames bot inspects the contents of any wave it's participating in, and converts the words that start with the @ sign to Twitter user links. For example, if you add TwitUsernames to a wave and then type `@malcolmreynolds`, that word turns into a clickable link to `http://twitter.com/malcomreynolds`. Several of these are shown in Figure 8-3.

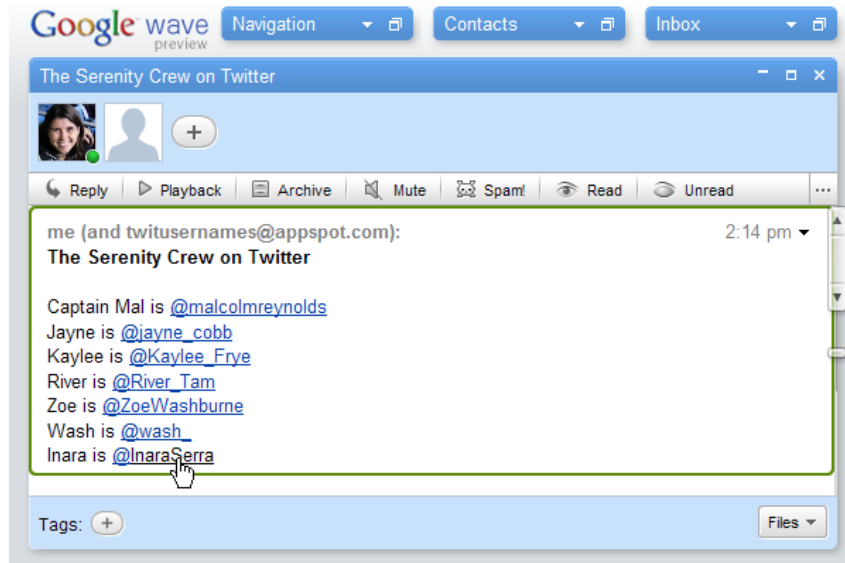


Figure 8-3. The TwitUsernames bot converts `@twitter_usernames` into Twitter user links.

Bot status: Stable and working consistently.

Usage note: When you add TwitUsernames to a wave, only future `@twitter_usernames` are converted into Twitter user links. `@twitter_usernames` that already exist in the wave's blips are not converted, unless you edit the blips and click the Done button (or press Shift+Enter).

XMPP Lite (wave-xmpp@appspot.com)

The XMPP Lite bot sends you notifications of a wave's changes via XMPP (an instant messenger protocol). This means that if you have Google Talk running, and someone changes a wave you've subscribed to via the XMPP Lite bot, you get those change notifications via chat.

To use the XMPP Lite bot, first add it as a participant to the wave you want to get notifications about. The bot adds a new blip with Subscribe and Unsubscribe buttons, as shown in Figure 8-4.

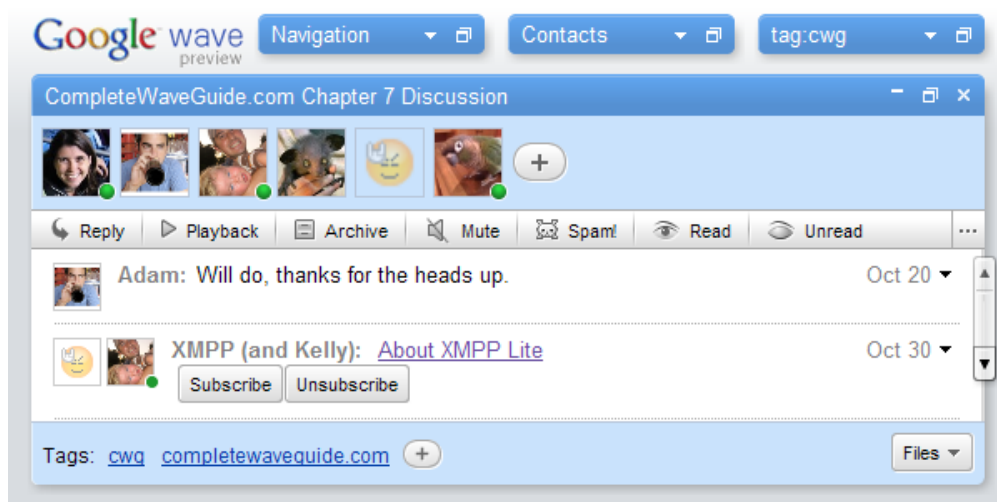


Figure 8-4. The XMPP Lite bot adds Subscribe and Unsubscribe buttons to a new blip for wave participants to subscribe to instant messenger notifications of that wave's changes.

Next, add wave-xmpp@appspot.com to your Google Talk, Jabber, or AIM instant messenger client. Make sure you can receive messages from it (that is, that the bot is not blocked). Then, back in Wave, click the Subscribe button in the blip the bot added to the wave.

To unsubscribe from a wave, click the Unsubscribe button. See more about the XMPP Lite bot's usage at <http://wave-xmpp.appspot.com/public/xmpplite.htm>.

Bot status: Stable and working, but very verbose. You receive a notification about every single change to the waves, so subscribe judiciously.

Madoqua Wave Bot (blog-bot@appspot.com)

Bloggers and other web publishers who want to try publishing the contents of their waves should try the Madoqua Wave Bot. When added to a wave, this bot provides customizable JavaScript code you can copy and paste into any web page to embed a wave, as shown in Figure 8-5.

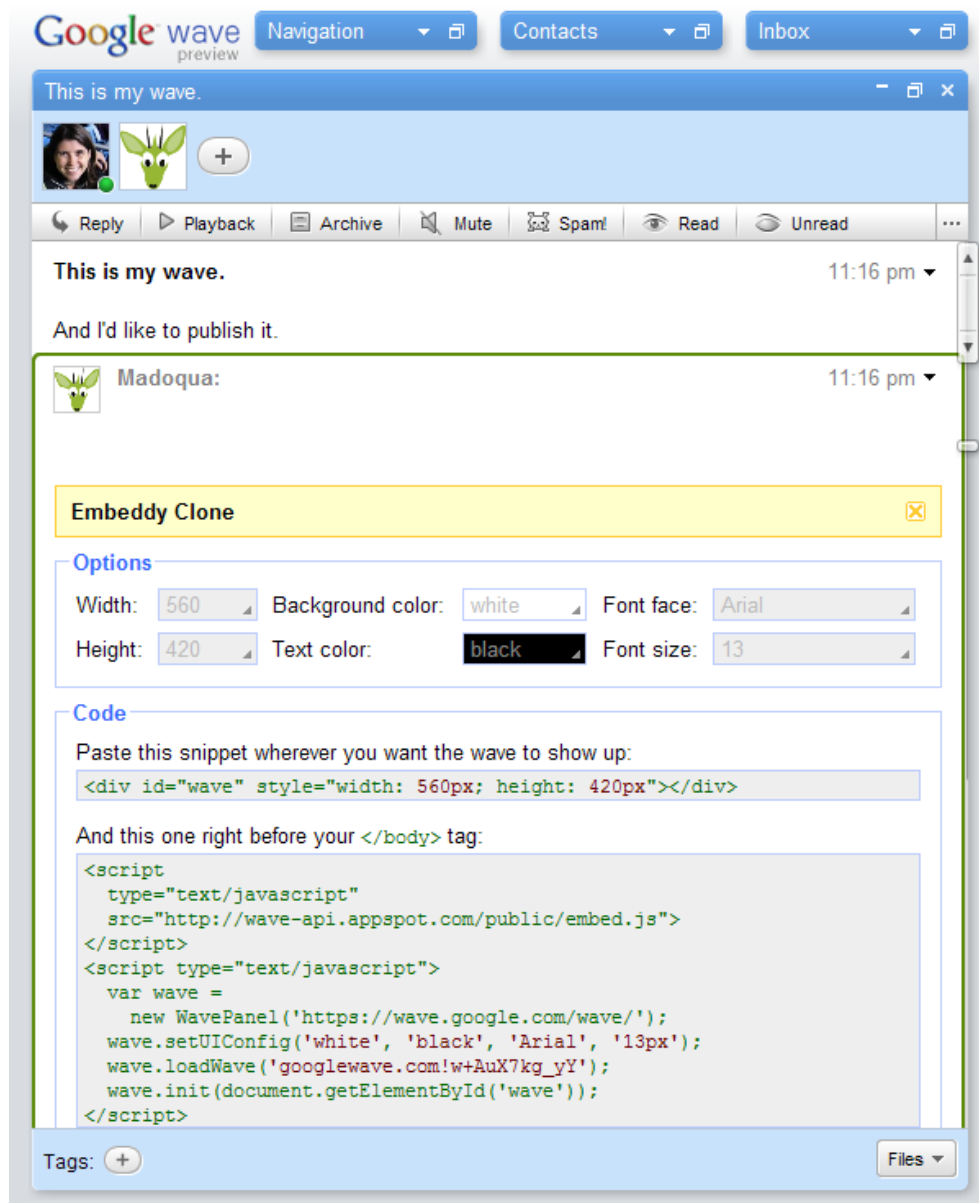


Figure 8-5. The Madoqua Wave Bot generates the HTML you need to embed a wave into any web page.

Bot status: Stable and working. The Madoqua Wave Bot is a clone of the Embeddy bot.

Usage note: You need to be comfortable with copying and pasting HTML and JavaScript widgets into your web page to use this bot successfully. Keep in mind that if you embed a wave that only certain people can see in a web page, everyone else sees either a Wave login page, or a message that they don't have access to the wave. Even if you make the wave itself public and put it on a web page, it is still inaccessible to people who do not have a Wave ID—that is, people who didn't get into the Wave preview.

Emoticony (emoticonbot@appspot.com)

The Emoticony bot converts textual smiley faces into smiley face images. Add Emoticony to your wave, and in any blip (except the first one), Emoticony automatically converts emoticons to images, as shown in Figure 8-6.

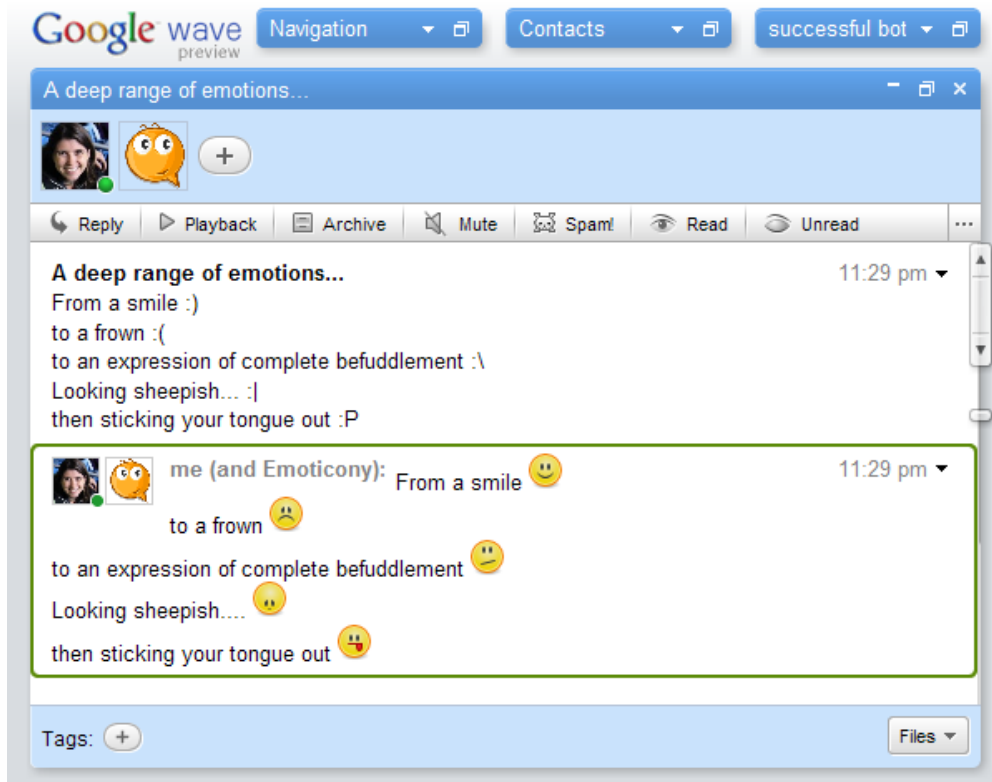


Figure 8-6. The Emoticony bot turns textual emoticons, such as :) , into images.

Bot status: Stable and working consistently.

Usage note: When you add Emoticony to a wave, only future textual emoticons are converted to images. Textual emoticons that already exist in the wave's blips are not converted, unless you edit the blips and click the Done button (or press Shift+Enter).

Inbeddable (inbeddable@appspot.com)

You already know you can drag and drop images into Wave, but to include images that are already online, you must first save and re-upload them. The Inbeddable bot saves you that trouble. To embed an image that's already online, add the Inbeddable bot to your wave, and then type the URL of the image. When you click Done (or press Shift+Enter), Inbeddable converts the image link into the image itself, as shown in Figure 8-7.

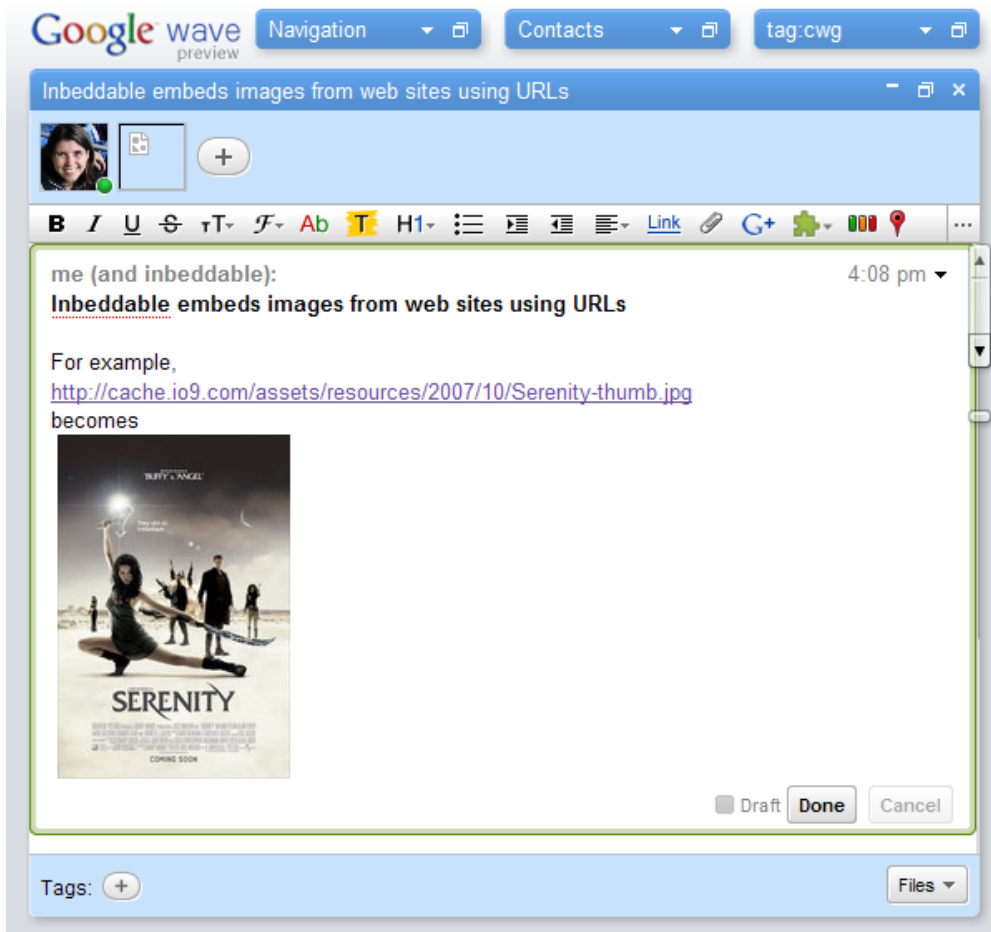


Figure 8-7. The Inbeddable bot takes an image link and embeds the image itself into the wave.

Bot status: Stable and working consistently.

Usage note: When you add Inbeddable to a wave, only future image links are converted to embedded images. Image links that already exist in the wave's blips are not converted, unless you edit the blips and click the Done button (or press Shift+Enter).

Easy Public (easypublic@appspot.com)

In Chapter 5 you learned how to make a wave public using the `public@a.gwave.com` contact—but you also learned that it doesn’t stick around in your Wave Contacts list from session to session. The Easy Public bot makes waves public without `public@a.gwave.com`’s disappearing act. Add it to any wave to give everyone on the Wave server access to your wave. What Easy Public does is add the `public@a.gwave.com` contact to your wave for you.

Bot status: Stable and working.

Usage note: Keep in mind that because Easy Public is a bot, you can remove it from a wave, but that does not make your wave un-public again. Removing the Easy Public bot from a wave does not remove the `public@a.gwave.com` participant that the bot added. There is no undo for making a wave public.

More (Fun) Bots

Several Wave bots show off what bots can do, but in more fun than useful ways. Eliza the Robot Shrink (elizarobot@appspot.com) is a programmed therapist who chats with you in Wave. The Swedish Chef bot (borkforceone@appspot.com) inserts “Bork bork bork!” into your waves. Flippy (flippy-wave@appspot.com) flips the text of your waves upside down—great for some April Fool’s Day fun.

This chapter features only a small handful of available bots. See the (unaffiliated) Google Wave Bots wiki^[1] for a more comprehensive list.

References

1. [Google Wave Bots](#), GoogleWaveBots.info

Afterword

Thanks for supporting the authors, editors, and contributors to *The Complete Guide to Google Wave*.

This book is an experiment in iterative and collaborative technology writing. All of this book's contents are available on the web at <http://completewaveguide.com>. With the help of a community of volunteer contributors, the authors update its contents in concert with Wave as it grows and changes.

We need your help to refine, rewrite, and expand this guide. Please visit the book's web site at <http://completewaveguide.com> to get the most up-to-date information about Wave, and to find out how you can contribute your expertise to benefit current and future Wavers.

Thanks for reading.

About the Authors

[Gina Trapani](#) fell in love with Google Wave the moment she logged into the developer sandbox in June of 2009. A co-host of the popular [This Week in Google](#) podcast and the founding editor of [Lifehacker](#), Gina has done extensive coverage of Google Wave at Lifehacker, appeared on FOXNews.com to discuss Wave, and will do a keynote presentation on Wave at the Web 2.0 Expo in New York City on November 16, 2009. She's authored another book based on the Lifehacker web site, which is in its second edition: [Upgrade Your Life: The Lifehacker Guide to Working Smarter, Faster, and Better](#). Wave her at ginatrapani@googlewave.com.

[Adam Pash](#) is the editor of [Lifehacker](#). A technology enthusiast, Adam was eager to dive into Wave after the first demo. Since its preview release, he's worked to introduce new users to Wave, toyed with bots, and tinkered with gadgets for hours on end. Adam co-authored a book on the iPhone called [How to Do Everything with Your iPhone](#). Wave him at adam.pash@googlewave.com.

Credits

In late October 2009, this project came together in a matter of weeks, thanks to a tight team of capable and forward-thinking technology lovers in sunny Southern California:

- Conception, Project Lead, and Web Site Administrator: [Gina Trapani](#)
- Product Development Lead: **Kelly Abbott** at [3ones](#)
- Book Design: **Patricia Forest** at [3ones](#)
- Web Site Design/MediaWiki Skin Development: [Adam Pash](#)
- Technical Copy Editing: **Marian Gallagher** at [3ones](#)
- E-commerce Development Lead: **Jon Gallagher** at [3ones](#)

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Finally, thanks to you for taking the time to read this book. Please do let us know what you think.