

Chapter 8

End-User Access to Cloud Computing

8.1 Chapter Overview

Rishi Chandra, a product manager for Google Enterprise, outlined in an interview¹ what he believes are key trends that will drive movement toward cloud-based enterprise applications. Chandra cited consumer-driven innovation, the rise of power collaborators (those who embrace and take collaboration to very high levels), changing economics, and a lowering of barriers to entry as the chief reasons why the cloud model is being so widely adopted. Innovation behind the success of cloud services ultimately depends on the acceptance of the offering by the user community. Acceptance of an offering by users changes the economics considerably. As more users embrace such innovation, economies of scale for a product allow implementers to lower the costs, removing a barrier to entry and enabling even more widespread adoption of the innovation.

In this chapter, we will present some of the applications that are proving beneficial to end users, enabling them to be “power collaborators.” We will take a look at some of the most popular Software-as-a-Service (SaaS) offerings for consumers and provide an overview of their benefits and why, in our opinion, they are helping to evolve our common understanding of what collaboration and mobility will ultimately mean in our daily lives. We will be examining four particularly successful SaaS offerings, looking at them from both the user perspective and the developer/implementer perspective. Looking at both sides of these applications will give you a much better understanding of how they are truly transforming our concept of computing and making much of the traditional desktop-type software available to end users at little to no cost from within the cloud.

1. Paul McDougall, “The Four Trends Driving Enterprise Cloud Computing,” http://www.informationweek.com/cloud-computing/blog/archives/2008/06/the_four_trends.html, 10 June 2008, retrieved 26 Feb 2009.

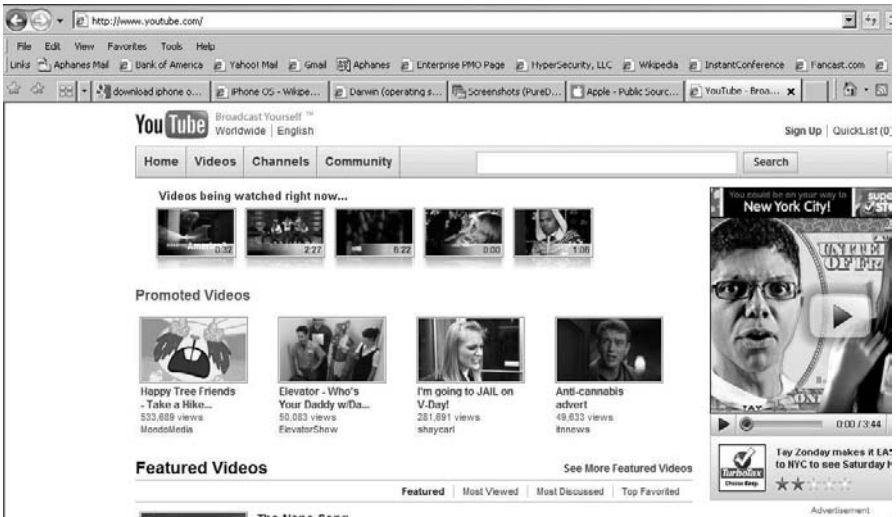


Figure 8.1 YouTube's home page. (Source: <http://www.youtube.com>.)

In the following sections, we will look at YouTube, Zimbra, Facebook, Zoho, and DimDim.

8.2 YouTube

YouTube is the leader in online video, and a premier destination to watch and share original videos worldwide across the Internet through web sites, mobile devices, blogs, and email. YouTube allows people to easily upload and share video clips on the YouTube web site.² Figure 8.1 shows YouTube's home page.

On YouTube, people can view first-hand accounts of current events, find videos about their hobbies and interests, and discover the quirky and unusual—all from videos shared by other subscribers. Founded in February 2005, YouTube received funding from Sequoia Capital and was officially launched in December 2005. Chad Hurley and Steve Chen were the first members of the YouTube management team and currently serve as chief executive officer and chief technology officer, respectively. Within a year of its launch, in November 2006, YouTube was purchased by Google in one of the most talked-about acquisitions to date. Since then, YouTube has struck partnership deals with content providers such as CBS, the BBC, Universal

2. <http://www.youtube.com>.

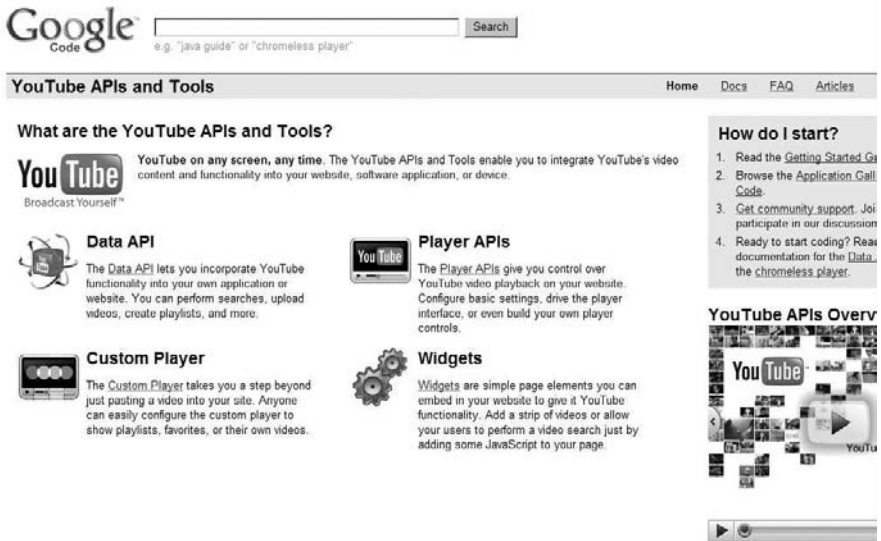


Figure 8.2 The starting point for YouTube APIs. (Source: <http://code.google.com/apis/youtube/overview.html>.)

Music Group, Sony Music Group, Warner Music Group, the NBA, and many more.

YouTube has become so popular that it now provides a set of development application programming interfaces (APIs) to enable developers to integrate YouTube functionality into their web sites. The YouTube APIs and tools allow programmers to bring the YouTube experience to their web pages, applications, and devices. This open-minded approach has paid huge dividends and helped to further propagate the enormous popularity of the site. In the next section, we will provide a short overview of the APIs. Figure 8.2 shows the starting point for using YouTube APIs.

8.3 YouTube API Overview

The YouTube APIs and tools enable site developers to integrate YouTube's video content and functionality into their web site, software applications, or devices.³ First, developers need to decide which APIs and tools best meet their needs. For those familiar with HTML but not so familiar with JavaScript, consider looking at the Widgets and custom player. If the development team is comfortable with JavaScript and/or FlashPlayer, they should

3. <http://code.google.com/apis/youtube/overview.html>.

examine the Player APIs. For those who are programming a device or developing server-side logic for a web site, look at the Data API.

8.3.1 Widgets

Widgets are simple page elements that developers can embed in a web site to give it YouTube functionality. Simply adding a strip of videos or allowing users to perform a video search on your web site can greatly enhance usability and acceptance from those users. All of this can be done just by adding a few lines of JavaScript to a web page. Widgets are JavaScript components that developers can place in a web page to enhance it with YouTube-based content. However, unlike the custom player, which does not require programming skills to use, these widgets are for people who are familiar with development using HTML and JavaScript but who may not be familiar with server-side programming. Two widgets are currently available, the Video Bar and Video Search Control.

The Video Bar

The Video Bar is a simple way to integrate a strip of video thumbnails into your site. Just clicking on a thumbnail opens a floating player for playing video locally. For integration teams, YouTube provides a simple wizard to help jumpstart the process. A Programming Guide⁴ is also available to help developers get the most out of the functionality provided and leverage even more from the Video Bar.

The Video Bar is implemented using the Google AJAX Search API. It is designed to let you easily add a strip of playable videos to web pages and blogs. Control is highly customizable, allowing developers to specify the orientation of the video bar, the number of videos displayed, the size of the thumbnails, the location and size of the video player, the list of search expressions that drive the video bar, etc. The locally developed web page controls the selection of videos displayed in the Video Bar. It is very easy to add the Video Bar to a web page. Start with the Video Bar Wizard, which steps through a few simple customization steps and automatically generates all of the code to imbed in your web page.

Video Search Control

The Video Search Control also uses the Google AJAX Search API. It provides the ability to search through massive amounts of YouTube content.

4. <http://www.google.com/uds/solutions/videobar/reference.html>.

Each Video Search Control search box is preconfigured with a set of HTML tags that define and display thumbnails for the video results obtained from the search. Clicking on a thumbnail of video search results will play it without leaving the page. Like the Video Bar, you can use a wizard to get started; read the Programming Guide⁵ for how to customize the player or search automatically based on site links. The Video Search Control is highly customizable, allowing you to configure the initial set of video search terms, the size and location of the player, the number of results, color schemes, etc. Your web page can manipulate the control through the supplied search form or through preselected search terms. You can also save user searches for future use.

8.3.2 YouTube Player APIs

The Player APIs let you control the YouTube player using JavaScript or ActionScript.⁶ There is a basic embedded player (which is most often used), and there is also a “chromeless”⁷ player that lets you create your own player controls. The Player APIs allow you to establish how users can control YouTube video playback on your web site. By simply configuring some basic settings for the player interface, you can build a highly customized player control. The player APIs provide mechanisms that enable you to control how YouTube videos will look on your site.

It is important to distinguish between the two types of players, the normal “embedded” player you most likely have already seen on the Internet, and a second, chromeless player, which is just a video box without controls. The chromeless player is intended to be implemented by experienced web programmers who want to design a customized video player for their users. Both players have the same API, which is exposed via JavaScript and/or ActionScript. The following sections discuss each option in further detail.

Embedded Player

The embedded player is the simplest way to place YouTube videos on a web page. To customize the behavior and color of the player, developers can use well-documented embedded player parameters. The code needed to display

5. <http://www.google.com/uds/solutions/videosearch/reference.html>.

6. ActionScript is a scripting language based on ECMAScript. It is used primarily for development of web sites and software using Adobe Flash Player (in the form of embedded SWF [Shockwave Flash] files).

7. Chromeless is a term used by developers to refer to a basic player without buttons, gadgets, or menu controls—essentially, the stuff usually found in the silver (or chrome) part of a dialog or window. When those are not present, the control is said to be chromeless.

the embedded player and preconfigured parameters can be quickly generated using a wizard. This makes it possible to find a video by leveraging the Data API and subsequently displaying it using the embedded player. Once the embedded player has been added to a web page, it can be controlled using JavaScript. If you are embedding the player in an Adobe FlashPlayer application, you would use ActionScript instead of Javascript. Using either scripting language, you can create actions similar to what a user could do by clicking on the familiar control buttons—pause the video, seek forward or backward, mute sound, etc. You can use either scripting platform to poll the status of the player and to check for the occurrence of specific events.

Chromeless Player

Interface elements and controls (such as toolbars and buttons) placed around content are sometimes referred to as “chrome,” so a chromeless player is, by definition, a YouTube video player without such controls. This makes it easy to customize a player used within a Flash or HTML environment. The chromeless player exposes the same JavaScript and ActionScript APIs as the embedded player.

8.3.3 The YouTube Custom Player

The custom player goes even further than just using scripted API calls to paste videos into your site. Developers can easily configure the custom player to show playlists, favorites, or custom, locally available videos. Sometimes it's nice to have control over your web site without having to edit it. Many web sites benefit from having video content, but updating this content can be difficult. The YouTube custom player allows you to customize a YouTube player and populate it with videos you specify. Once the custom player is on your site, you can easily update the appearance or content by logging into your YouTube account and clicking on Custom Video Players. In creating a custom player, you can choose from a number of themes for the player. The videos that a custom player displays can be all of the videos on your YouTube channel, all of your favorite videos, or any custom playlist you have created. By creating playlists and hooking them up to a custom player, you can easily control what is displayed on your web site without ever leaving YouTube!

8.3.4 YouTube Data API

The YouTube Data API lets you incorporate YouTube functionality into your own application or web site. You can perform searches, upload videos,

create playlists, and more. It is possible to search for videos, retrieve standard feeds, and see related content. A program can also authenticate as a user to upload videos, modify user playlists, and more. The Data API is primarily for developers who are used to programming in server-side languages. It is useful for sites or applications that want deeper integration with YouTube. This integration might be a web application to allow users to upload video to YouTube, or a device or desktop application that brings the YouTube experience to a new platform. The Data API gives you programmatic access to the video and user information stored on YouTube. With this, you can personalize your site or application with users' existing information as well as perform actions on their behalf (such as commenting on and rating videos.) If you are curious about how the Data API works at the basic level using XML and HTTP, you can read the Protocol Guide.⁸ This guide details the requests and responses that the YouTube API servers expect and return. To learn more about the structure of these requests and responses, read the Reference Guide. This guide defines the API's feed types, HTTP request parameters, HTTP response codes, and XML elements. You may also want to read about the Google Data Protocol⁹ and the Atom Publishing Protocol,¹⁰ which are the standards on which the Data API is built. To make working with the API easier, there are a number of client libraries that abstract the API into a language-specific object model. These client libraries are open source and can be used and modified under Apache License 2.0. There are Developer's Guides for Java, .NET, PHP, and Python as well as sample code.

8.4 Zimbra

On September 17, 2007, Yahoo! announced that it had entered into an agreement to acquire Zimbra, Inc., a company specializing in web-based email and collaboration software, for approximately \$350 million. The Zimbra email and calendar server is available for Linux, Mac OS X, and virtualization platforms. Zimbra can synchronize with smartphones (such as iPhone and BlackBerry) and desktop clients (such as Outlook and Thunderbird).

Yahoo! Zimbra Desktop¹¹ is a free, open source email and calendar client which runs on any Windows, Apple, or Linux desktop computer. It

8. <http://code.google.com/apis/youtube/2.0/reference.html>.

9. <http://code.google.com/apis/gdata>.

10. <http://googledataapis.blogspot.com/2008/07/intro-to-atom-publishing-protocol.html>.

11. <http://www.zimbra.com>.

works online and offline, and it works with any POP or IMAP email account, such as Yahoo! Mail, Zimbra Mail, Hotmail, Gmail, AOL, Microsoft Outlook, or any other work or personal email account that uses POP or IMAP. Zimbra provides software for email and collaboration, including email, group calendar, contacts, instant messaging, file storage, and web document management.

Zimbra can be deployed on-premises or as a hosted email solution and imposes no limit on the size of email storage. Advanced web technology adds Conversation Views and Message Tags to automatically highlight important emails in all your email accounts. The visual Search Builder makes it easy to quickly find important pictures, documents, or messages from people you care about. Yahoo! Zimbra Desktop also manages your Contacts and has a Calendar, Document editor, Task list, and Briefcase for storing all your attachments. Zimbra Desktop uses Web 2.0 AJAX technology and is designed to handle several email accounts with multigigabyte storage (there are no 2-GB mailbox limits!). Zimbra also features archiving and discovery for meeting regulatory compliance guidelines. The Yahoo! Zimbra desktop is shown in Figure 8.3.

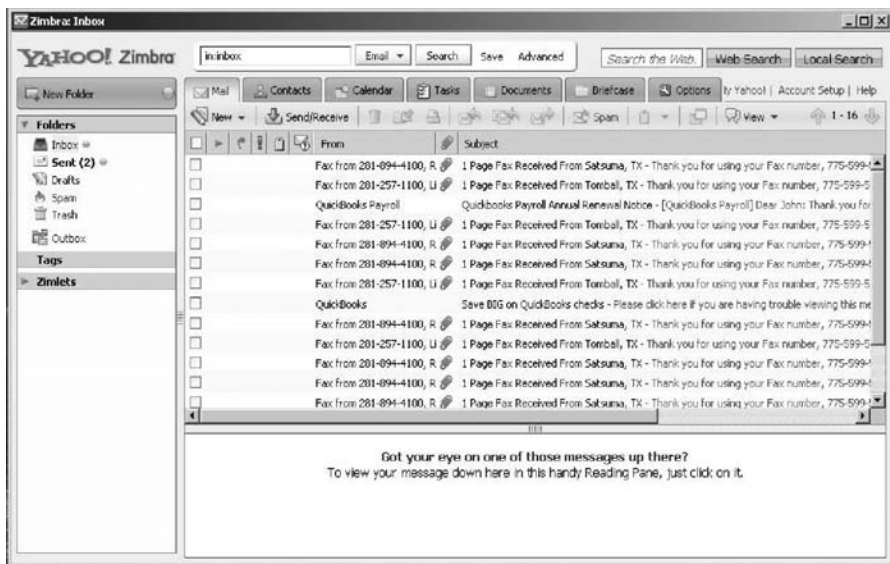


Figure 8.3 The Yahoo! Zimbra desktop.

8.4.1 Zimbra Collaboration Suite (ZCS)

ZCS version 5.0 is a modern, innovative messaging and collaboration application. Ajax-based web collaboration is core to ZCS 5.0. The web client integrates email, contacts, shared calendar, VoIP, and online document authoring into a browser-based interface. Open source Zimlet technology makes it easy to include custom mash-ups in the ZCS web client.

ZCS 5.0 includes an Ajax-based administration interface and scripting tools to use with the ZCS server. Full support is provided for standards-based APIs (IMAP/POP/iCal/CalDAV) as well as MAPI and iSync. This approach enables compatibility with third-party clients such as Microsoft Outlook, Apple desktop suite, and Mozilla Thunderbird. Zimbra also offers Zimbra Mobile, which provides over-the-air push synchronization to smartphones and supports BlackBerry Enterprise Server via a Connector. The Zimbra solution also has a set of security features including antispam and antivirus scanning. Zimbra also features archiving and discovery services as an optional component to save and search email for various compliance issues.

8.5 Facebook

Facebook, Inc., is a leading engineering company located in the heart of Silicon Valley. Facebook was formerly called Thefacebook and is a free-access social networking web site that is operated and privately owned by Facebook, Inc. While he was a student at Harvard University, Mark Zuckerberg founded Facebook with his roommates, Dustin Moskovitz and Chris Hughes, fellow computer science majors at Harvard. Initially, site membership was limited to Harvard students. Later, membership access was expanded to other colleges in the greater Boston area, the Ivy League, and Stanford University. It later expanded to include any university student, then to any high school student, and, finally, to anyone 13 years old and over. Getting onto Facebook is easy. First you create a sign-on identity and provide your email address, as shown in Figure 8.4. A simple three-step process is all it takes to establish an account.

Once you have completed the account creation process, you are taken to your home page, where you can customize it to suit your interests. Figure 8.5 shows a home page as it looks before customizing.

Find Friends Already on Facebook

Step 1 of 3

Welcome John Rittinghouse! Your account has been created.

Facebook helps you connect with friends, family, and coworkers. Follow the steps below to find people you already know on Facebook.

Find friends using your email account

Searching your email account is the fastest and most effective way to find your friends on Facebook.

Your Email:

Valid webmail address

Password:

Find Friends

We won't store your password or contact anyone without your permission.

Find people you Instant Message

Skip this step

Figure 8.4 Finding friends on Facebook.

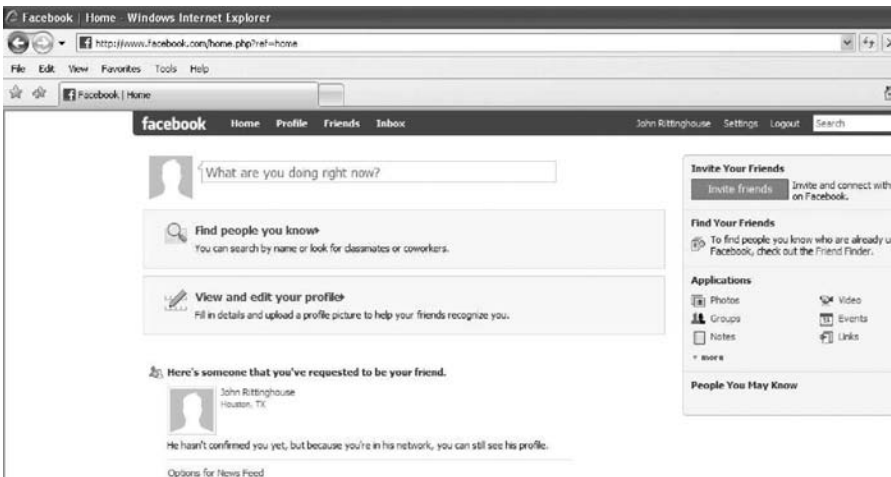


Figure 8.5 The Facebook default home page.

The Facebook web site currently has more than 175 million active users worldwide. Users can join networks organized by city, workplace, school, and region to connect and interact with other people. People can also add friends and send them messages, and update their personal profiles to notify friends about themselves. The web site's name refers to the paper facebooks depicting members of a campus community that some U.S. colleges and preparatory schools give to incoming students, faculty, and staff as a way to get to know other people on campus.

Facebook serves up over 50 billion page views a month while employing fewer than 200 engineers. It is the second most-trafficked PHP hyper-text preprocessor site in the world (Yahoo is number 1), and it is one of the world's largest MySQL installations, running thousands of databases. In terms of total photo page views, Facebook exceeds all of the next-largest photo sites combined. It is the largest photo-sharing site in the United States, with over a billion photos. Facebook is the fourth most-trafficked web site in the United States, and Facebook users upload more than 14 million new photos every day. It is also the largest user in the world of **memcached**, an open source caching system originally developed by LiveJournal. It is obvious from these statistics that the engineering team at Facebook is pushing the limits of IT engineering. They have created a custom-built search engine capable of processing millions of queries a day, completely distributed and entirely in-memory with real-time updates.

8.5.1 Facebook Development

Facebook provides anyone the ability to create Facebook applications. A user can get a basic application up and running in minutes. To create a Facebook application, you should be well versed in PHP or some other coding language such as Ruby on Rails, JavaScript, or Python. It is preferable to know one that already has a client library for the Facebook API. You will need to have a basic understanding of the Internet, SSH, MySQL, and Unix.

8.6 Zoho

Zoho is an office productivity suite from AdventNet, Inc., which was founded in 1996. The Zoho product is supported by over 120 developers. To date, Zoho has launched 15 different applications, and more are in the works. When you first go to the Zoho web site, you see the page shown in Figure 8.6.

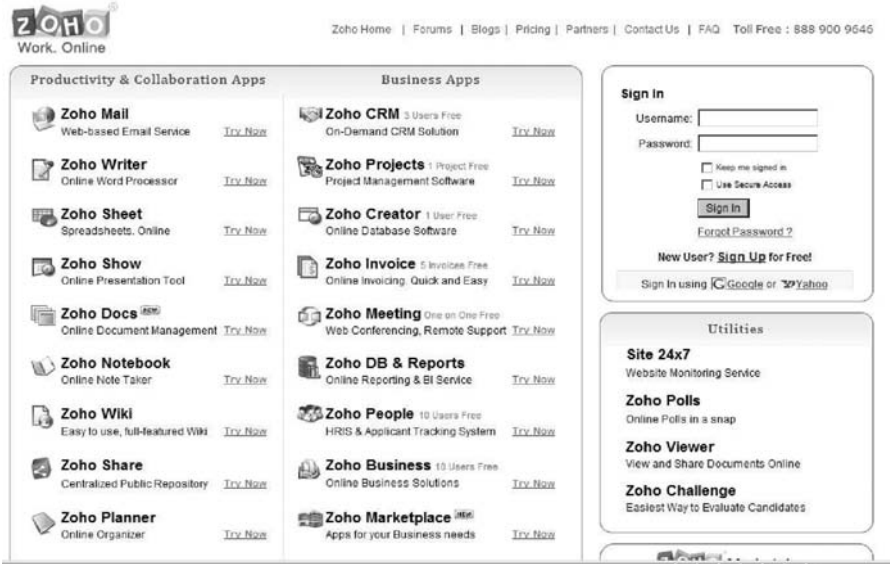


Figure 8.6 The Zoho home page. (Source: www.zoho.com.)

From the home page you can create an account or sign in. After signing into Zoho, quite a few options are available to you. For example, signing into Zoho Mail, as shown in Figure 8.7, provides you with a rich set of features.



Figure 8.7 Zoho Mail home page.

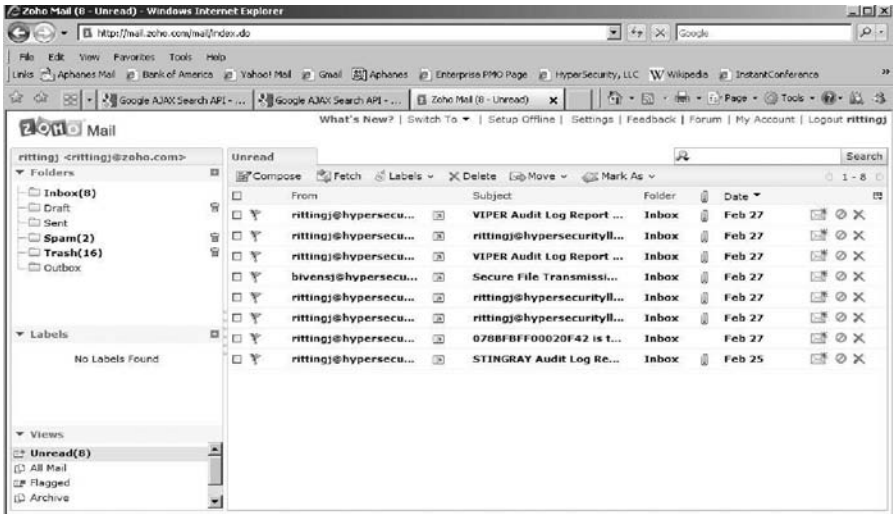


Figure 8.8 The inbox for Zoho mail.

Zoho Mail provides ample storage space. You can store and search through every email you have ever sent or received, and it offers offline support so you can take your mail with you. You can read and compose emails without an active Internet connection and send them out once you are connected. Zoho Mail supports both traditional folders as well as labels. A label is a type of folder that you can customize by both name and color.

Zoho Mail offers advanced, self-learning algorithms that keep unwanted spam out of your inbox and deliver only legitimate emails. Using Zoho, you can have a personalized email address or create one using the zoho.com domain. Also, there is support for mobile users. Zoho Mail can be read from an iPhone, and support for other mobile phones is expected this year. Integrated instant messaging (IM) is available, so you can send instant messages from within Zoho Mail and, best of all, you don't need to download a separate client.

8.6.1 Zoho CloudSQL

CloudSQL is a technology that allows developers to interact with business data stored across Zoho Services using the familiar SQL language. Unlike other methods for accessing data in the cloud, CloudSQL encourages developers to leverage the years of experience they have with the SQL language. CloudSQL allows businesses to connect and integrate the data and applications they have in Zoho with the data and applications they have in-house,

or even with other SaaS services. This leads to faster deployments and easier integration projects. CloudSQL is offered as an extension to the existing Zoho web API. It is meant to be used by developers, not end users. CloudSQL supports multiple database dialects (e.g., ANSI, Oracle, Microsoft SQL Server, IBM DB2, MySQL, PostgreSQL, and Informix). The main purpose of the SQL Interpreter component is to translate SQL statements that are executed by a third-party application into a neutral dialect that can be understood by any of the individual Zoho services. The federation layer understands and handles service-specific query delegation and result aggregation. The federation layer enables a query to span across multiple Zoho services to fetch data in an aggregated manner, thus virtualizing different Zoho services so they appear as a single service.

Each of the specific Zoho services (i.e., Zoho CRM, Zoho Creator, Zoho Reports) comprises the last layer of the CloudSQL architecture. They collect, store, and mine business data consumed by Zoho users and developers. The services execute the query against their data store and pass the results back to the CloudSQL middleware. The services take care of authorizing each query to verify whether the user who is executing the query has permission to access or manipulate the data on which the query is executed.

8.7 DimDim Collaboration

Dimdim¹² invested more than 15 person-years of engineering development into making a product to support complex web meetings. This free service lets anyone communicate using rich media in real time. Unlike competing web conference products, Dimdim does not require users to install software on their computers in order to attend a web meeting. Users can start or join meetings using only a few mouse clicks.

Dimdim is available as open source software, and it already integrates with CRM and LMS software so it can be extended easily. It is extremely flexible, available in hosted and on-site configurations, and easily customizable. Dimdim Open Source Community Edition v4.5, code named “Liberty,” is meant for developers and highly technical enthusiasts, and for use in noncritical environments. It has nearly all of the features touted by the commercial version of Dimdim (Enterprise) and is based on open source streaming and media components. Dimdim Enterprise is based on commercial streaming and media components (Adobe Flash Server) and runs on top

12. <http://www.dimdim.com>.

Sign in and start your meeting...simple!
If you need an account, create one here.

Sign in to your account

Dimdim ID :

Password :

☒ Remember me on this computer

[Sign In](#) [Forgot your password?](#)

Create a new account

Dimdim is a browser-based web 2.0 service that allows anybody to :

- Share their desktop
- Show slides
- Talk, Listen, Chat and Broadcast via Webcam
- Much more !

Dimdim's hosted service is available for free and can be easily used for small gatherings, to seminars with hundreds of attendees.

Learn the benefits of getting Dimdim Pro

[Create Account](#)

Figure 8.9 The Dimdim sign-in page. (Source: <http://www.dimdim.com>.)

of their SynchroLive Communication Platform. The open source community supports the Open Source Community Edition.

Dimdim has a simple user interface that is easy for presenters and attendees to learn. Meeting hosts and attendees do not have to install anything to broadcast audio or video, because all that is needed is a very tiny plug-in (which is required only if you want to share your desktop.) The free version is not a limited-feature trial product. Dimdim Free boasts a powerful feature set that allows anyone to host meetings with up to 20 people simultaneously using diversified platforms such as Mac, Windows, and Linux. Signing up to use Dimdim is easy, as shown in Figure 8.9: Simply go to the web site and fill in the requested information.

If you already have an account, you can just use your existing information. Otherwise, you can create one in a few clicks and sign in. Once you sign into Dimdim, you will see the home screen, which will look like Figure 8.10.

To start a meeting with Dimdim, simply click the Host Meeting button, as shown in Figure 8.11. Provide a name for the meeting and an agenda and then enter the email addresses of the attendees. Next, choose a key to

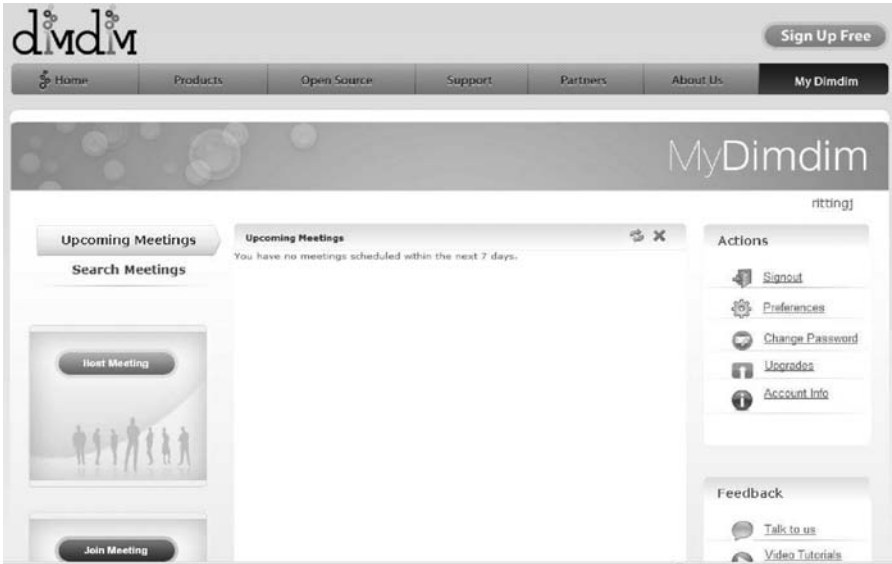


Figure 8.10 The Dimdim home screen. (Source: <http://www.dimdim.com>.)

use as Host and one for the attendees to gain access to the meeting and click the Start button.

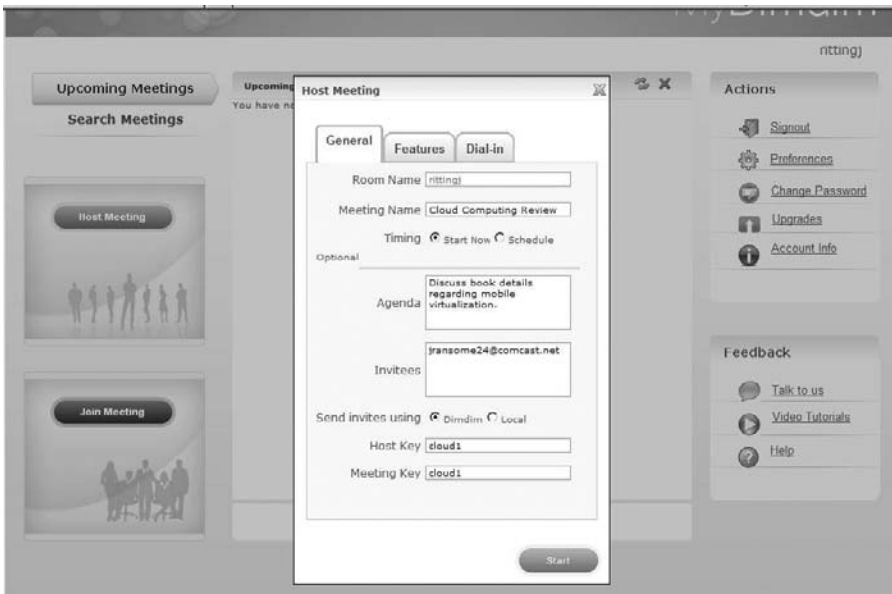


Figure 8.11 Dimdim Host Meeting screen. (Source: <http://www.dimdim.com>.)

Schedule Meeting

General

Features

Dial-in

Room Name

rittingj

Meeting Name

Cloud Computing Review

Timing

☐ Start Now

☒ Schedule

Optional

Agenda

Discuss book details regarding mobile virtualization.

Invitees

jransome24@comcast.net

Send invites using

☒ Dimdim

☐ Local

Host Key

cloud1

Meeting Key

cloud1

Room URL

http://webmeeting.dimdim.com:80/portal/JoinForm.action?confKey=rittingj

Click on the URL to copy it to Clipboard.

Repeat Option

Once Only

Start Date

March 02, 2009

End Date

March 02, 2009

Start Time

3

00

PM

Timezone

GMT-05:00 Eastern Time

Schedule

Figure 8.12 Dimdim Schedule Meeting screen. (Source: <http://www.dimdim.com>.)

In the example shown in Figure 8.11, the meeting will begin immediately. If you want to schedule a meeting for a future time, click **Schedule** on the **Timing** option. This brings up the screen shown in Figure 8.12.

In the **Schedule Meeting** screen, enter the start and end dates and the start time. The time zone you select should represent the time zone where the meeting will be hosted. Click the **Schedule** button to bring up the dialog box shown in Figure 8.13.

Meeting Scheduled

A meeting Cloud Computing Review is scheduled. All the participants have been notified via email. Would you like to schedule another meeting?

Yes

No

Figure 8.13 Meeting Scheduled dialog box. (Source: <http://www.dimdim.com>.)



Dear rittingj,

Congratulations! You have successfully scheduled a Dimdim Web Meeting for **March 02, 2009 04:30:PM CST**. To start the web meeting simply click here*

We've already sent email invitations to your invitees. Once you start your meeting, they can join by clicking on the link in their email or they can enter your meeting ID **rittingj** at Dimdim.com.

Details about the meeting:

Meeting Name: Cloud Computing Review	Meeting Room ID: rittingj
Meeting Agenda: Discuss book details regarding mobile virtualization.	Your Role: Presenter
Recurrence: This meeting happens only once	Schedule Ends At: Not Applicable
International Dial In: Not Applicable	
Moderator Pass Code: Not Applicable	Attendee Pass Code: Not Applicable
Host Key: cloud1	

Click here to add this event to your Outlook calendar.

Hint: You can click on the MyDimdim tab to start, add, edit or search your meetings at Dimdim.com.

Sincerely,

Your Dimdim Team

*If the link above is broken (as can happen with some email systems) simply copy and paste the following URL into your browser address bar: <http://webmeeting.dimdim.com:80/portal/GetStartConferenceForm.action?>

Figure 8.14 An email confirming the meeting invitation extended via DimDim.

You and your attendees will all receive an email similar to the one shown in Figure 8.14.

A single click starts your meetings, as shown in Figure 8.15.

A single click shares PPTs, PDFs, whiteboards, even your entire desktop. A click is all it takes to pass control of the meeting to any attendee. Pass the mic or webcam around with a single click. The attendees at a meeting can see the presenter's live video and desktop while hearing multiple voices-over-IP (VoIP). For larger meetings, you can use the free teleconference service. All attendees can simultaneously annotate a presentation, mark up a whiteboard, send instant messages, and broadcast their audio and video if permitted by the host. In Figure 8.16, the Whiteboard is being used.



Figure 8.15 Dimdim Web Meeting opening screen. (Source: <http://www.dimdim.com>.)



Figure 8.16 Using the Whiteboard in a Dimdim meeting. (Source: <http://www.dimdim.com>.)

Dimdim has a fully integrated web browser, which allows you to take your audience to various web sites and show them specific features live on the Internet. Figure 8.17 is an example of showing your audience the web site.



Figure 8.17 Showing your audience a web site. (Source: <http://www.dimdim.com>.)

Dimdim is a powerful tool for collaboration in the cloud. Connectors for open source software such as SugarCRM,¹³ coupled with Dimdim's web conferencing software, means that users, developers, and partners have cloud-based access to advanced browser-based collaboration features that allow them to easily interact with groups large or small across multiple geographies, while simultaneously recording the activity in their SugarCRM application.

Online support¹⁴ for Dimdim includes a complete collection of tools designed specifically to improve the Dimdim experience. First, you can use Forums, where you can join the discussion group relevant to your topic and learn from others in the Dimdim community. Dimdim employees also use the forums to gain better understanding of customer issues. There is an online knowledgebase that is connected to the support database. It is constantly updated and is a great place to get self-help. Dimdim uses an issue tracker and keeps it updated so you can check the status of an issue or view issues for all users. Tools are available to help you check your system, bandwidth, and even test your webcam before you conduct meetings. You can also download any plug-ins if necessary. Other support resources such as

13. <http://www.sugarcrm.com/crm/download/sugar-suite.html>.

14. http://www.dimdim.com/support/dimdim_help.html.

product and API documentation, videos, Dimdim support policies, supported platforms, and open source support links can also be found on the support site.

8.8 Chapter Summary

This chapter provided an overview of end-user access to cloud computing. We first talked about key trends we believe will drive collaboration further into the cloud environment. We chose five significant entities to present you with an overview of the types and levels of capability available in the cloud today—things you can use now. YouTube, an online video repository, has an amazing hold on the global audience. Collaboration suites such as Zimbra both enhance mobility and allow you to maintain a virtual office in the cloud. Social networking with Facebook has become very popular, especially in academic settings. Zoho is a SaaS vendor to watch. Backed by Google, Zoho offers something for everyone. Finally, for presentations and online sharing, Dimdim is a good choice. With the vast amount of free, open source software available from the cloud, is it any wonder technology is outpacing our ability to keep up? In the next chapter, we will discuss how the new mobile virtualization technologies are improving our ability to interact at all levels.

