Google™ 10 IO

Integrating your app with the Google Apps Marketplace

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Steve Bazyl @stevenbazyl

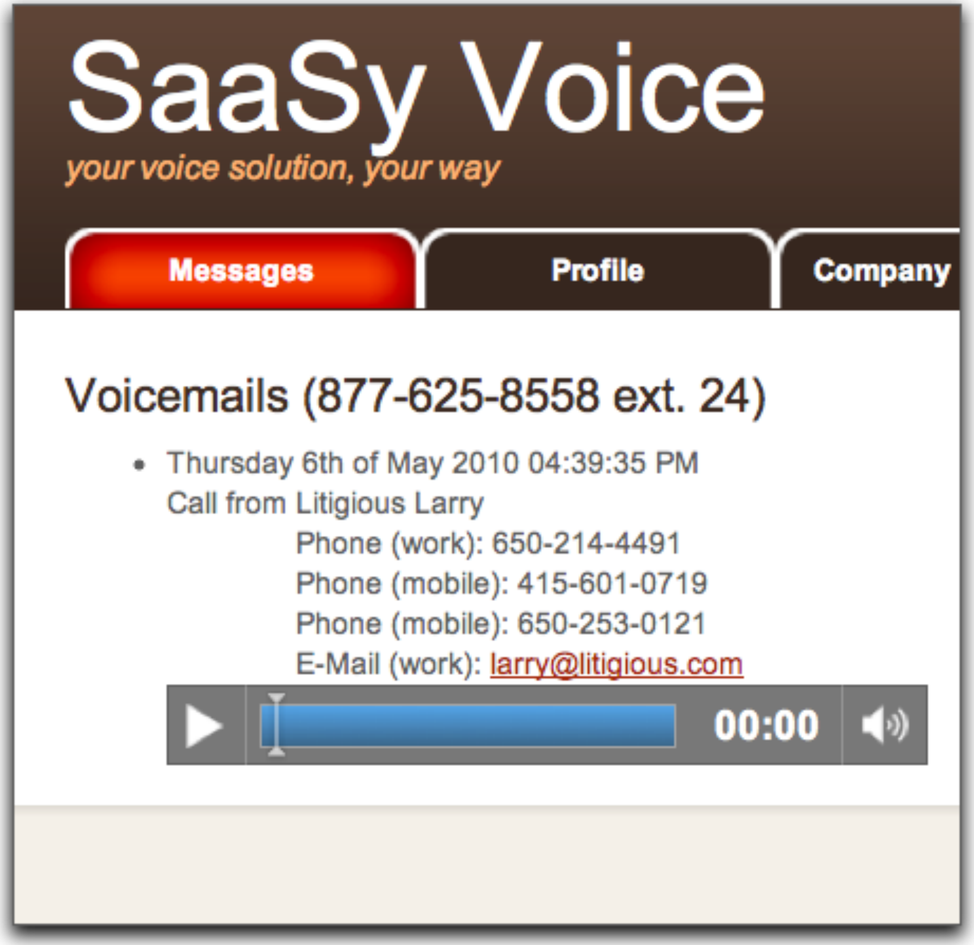
May 19th, 2010

View live notes and questions about this session on Google Wave:

http://bit.ly/appswave

Smart Lawfirm

SaaSy Voice



Voicemails (877-625-8558 ext. 24)

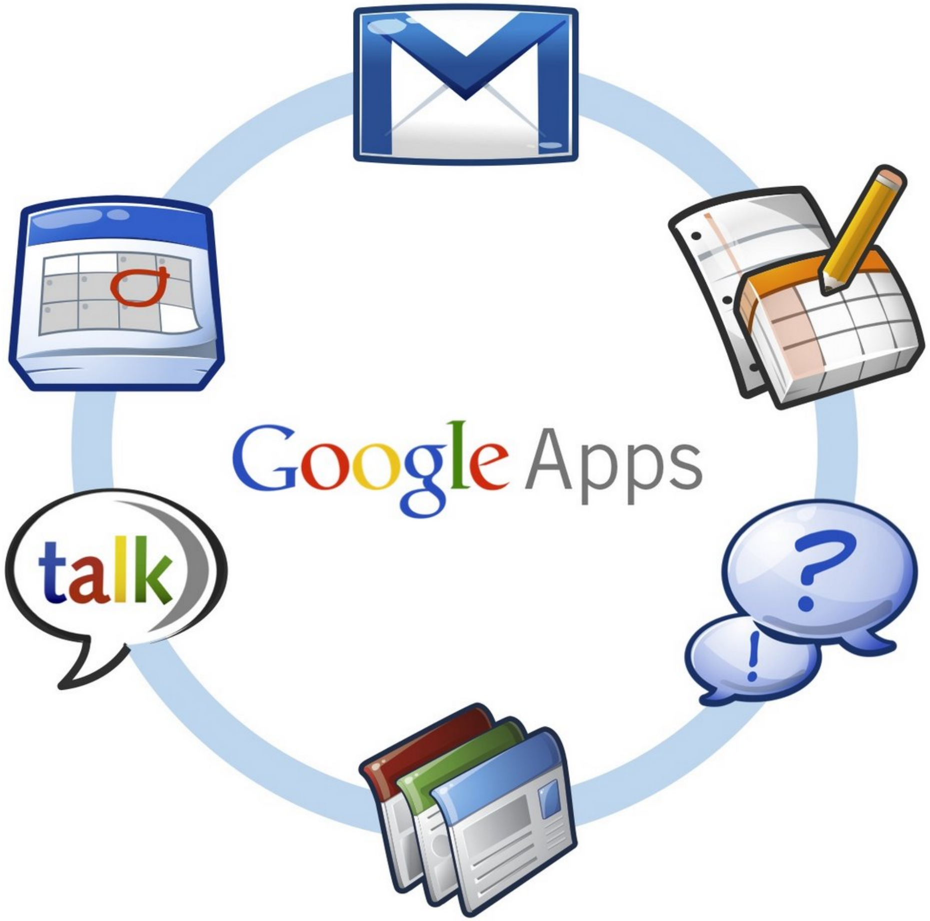
- Thursday 6th of May 2010 04:39:35 PM
  Call from Litigious Larry
  Phone (work): 650-214-4491
  Phone (mobile): 415-601-0719
  Phone (mobile): 650-253-0121
  E-Mail (work): larry@litigious.com

Agenda

- **Google Apps Marketplace Overview**
- **Launching SaaSy Voice on the Marketplace**
  - Build
  - Integrate
  - Test
  - Sell
- **Roadmap**
- **Q&A**

Marketplace Overview

Google Apps is Focused on Messaging & Collaboration



Gives *every* employee powerful messaging and collaboration tools without the usual IT hassle and cost

These customers want more great cloud apps...

- ✓ Messaging
- ✓ Collaboration
- □ Accounting & Finance
- □ Admin Tools
- □ Calendaring / Meetings
- □ Customer Management
- □ Document Management
- □ Productivity
- □ Project Management
- □ Sales & Marketing
- □ Security & Compliance
- □ Workflow

Google Apps Marketplace

Steps to sell your app to Google Apps customers

1. Build your app:

- with any tools and hosting provider you want

2. Integrate your app:

- add Single Sign On using OpenID (required)
- access over a dozen integration points from Calendar, Contacts, Docs, etc. using OAuth (optional)

3. Sell your app:

- to 2M+ businesses & 25M+ users
- through Google Apps resellers
- to wherever Google Apps goes
- **One-time fee of $100, 20% rev share starting 2H'10**

Everything in the Cloud

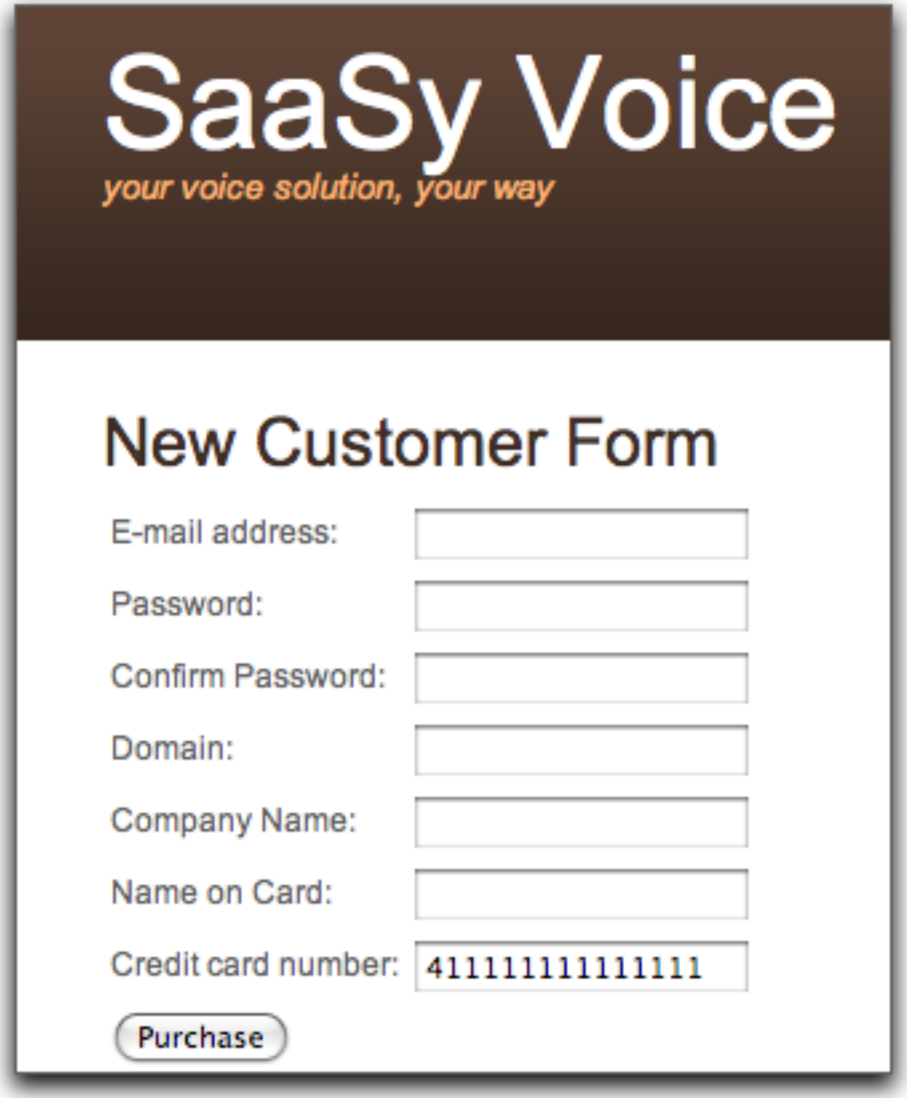
Document Management
Workflow
Collaboration
Calendaring / Meetings
Productivity
Messaging
Security & Compliance
Admin Tools
Sales & Marketing
Project Management
Accounting & Finance
Customer Management

Building SaaSy Voice

Demo of SaaSy Voice Features

- Create new account
- Provision a new phone number
- Create employees and assign extensions
- Show voicemails

Demo of SaaSy Voice Features



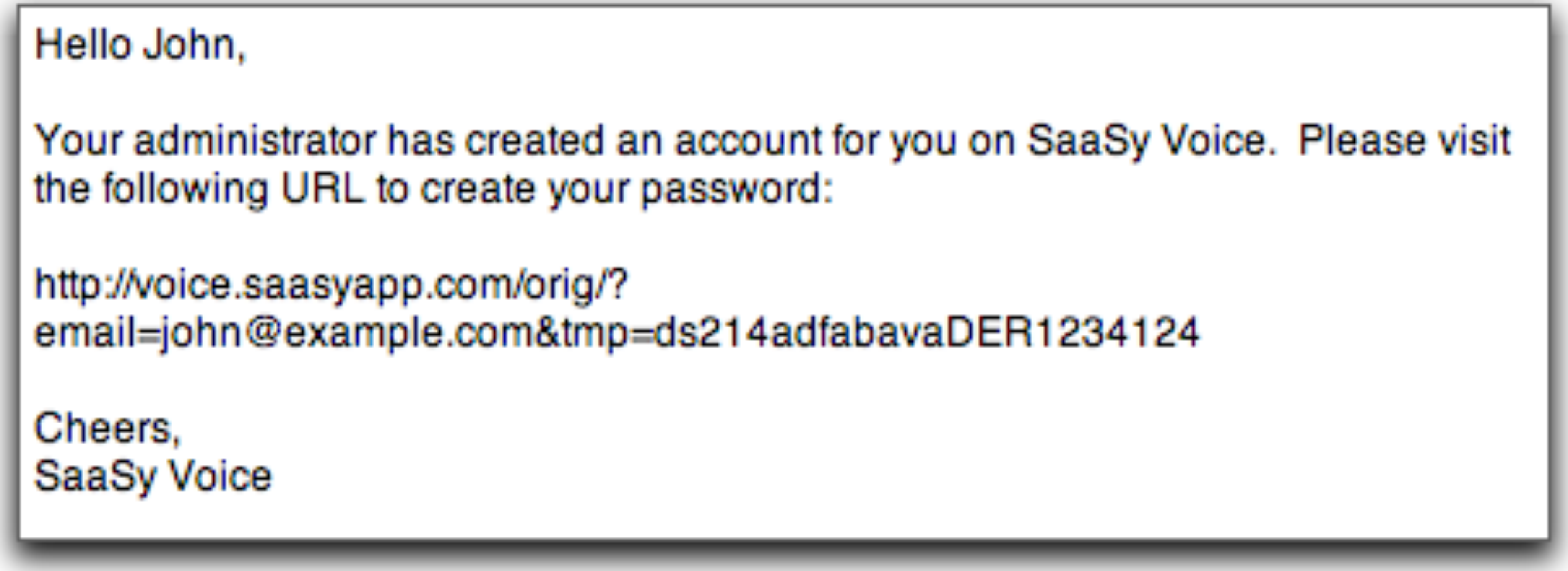
SaaSy Voice

your voice solution, your way

New Customer Form

E-mail address:	
Password:	
Confirm Password:	
Domain:	
Company Name:	
Name on Card:	
Credit card number:	4111111111111111

Demo of SaaSy Voice Features



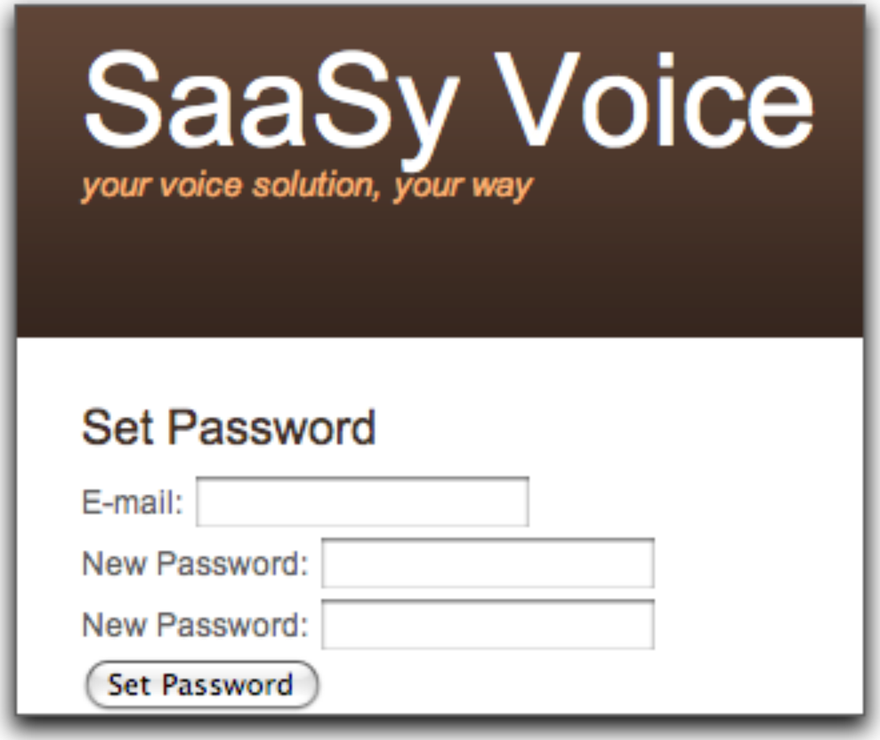
Hello John,

Your administrator has created an account for you on SaaSy Voice. Please visit the following URL to create your password:

http://voice.saasyapp.com/orig/?
email=john@example.com&tmp=ds214adfabavaDER1234124

Cheers,
SaaSy Voice

Demo of SaaSy Voice Features



SaaSy Voice

your voice solution, your way

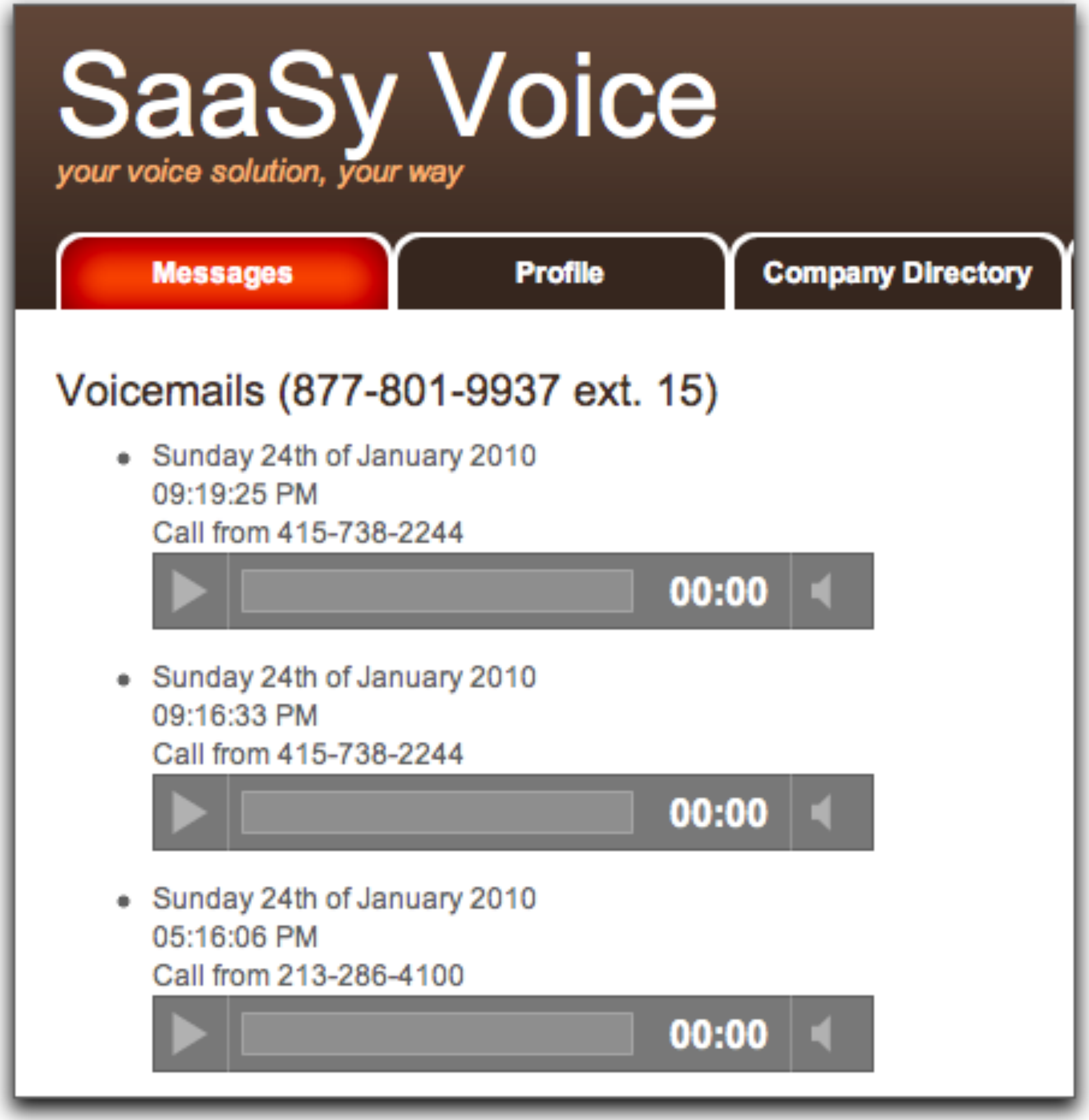
Set Password

E-mail:

New Password:

New Password:

Demo of SaaSy Voice Features

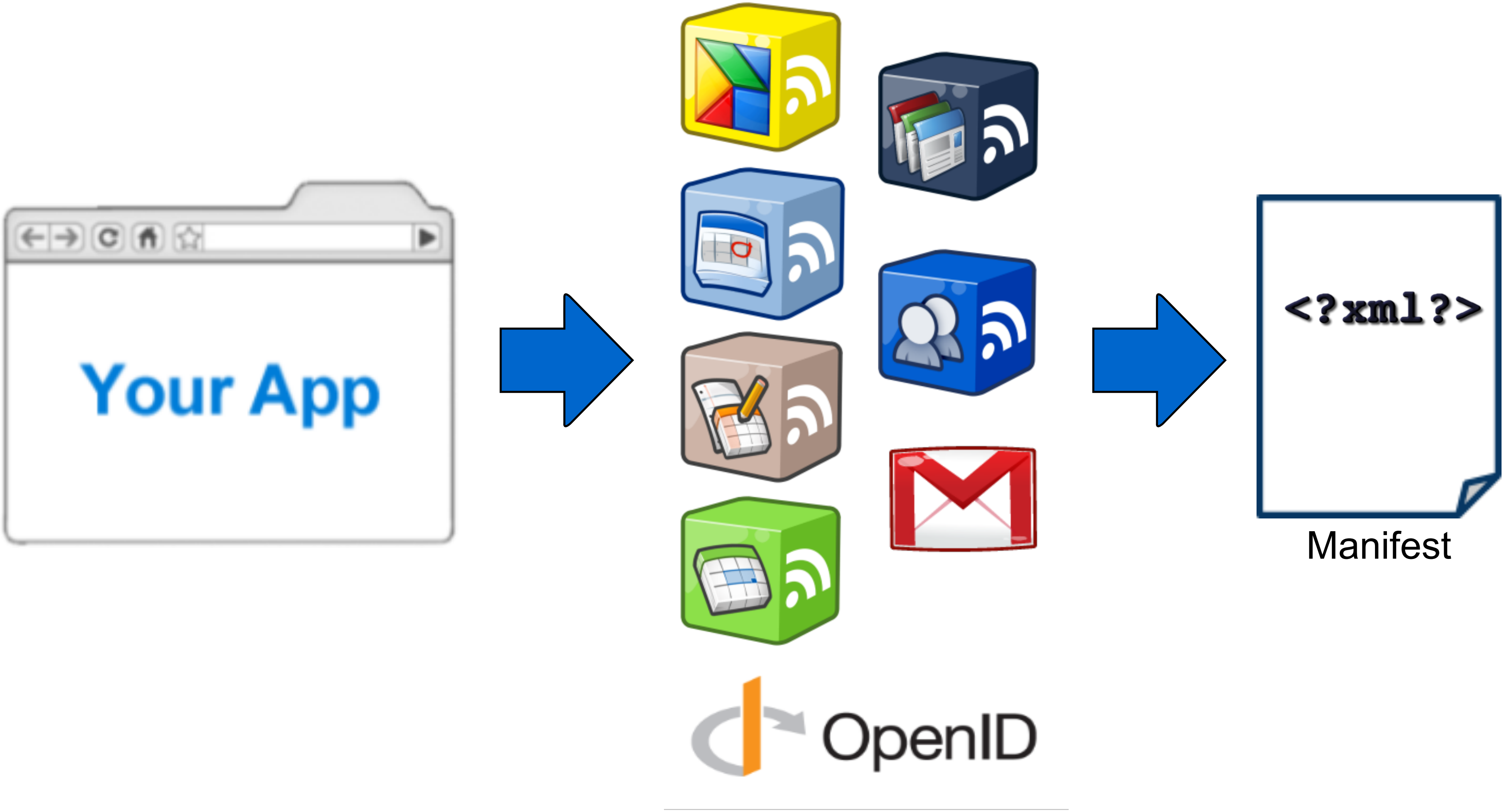


Voicemails (877-801-9937 ext. 15)

- Sunday 24th of January 2010
  09:19:25 PM
  Call from 415-738-2244
- Sunday 24th of January 2010
  09:16:33 PM
  Call from 415-738-2244
- Sunday 24th of January 2010
  05:16:06 PM
  Call from 213-286-4100

Integrating SaaSy Voice with Google Apps

Integrating with Google Apps & the Marketplace



Your App

OpenID

<?xml?>

Manifest

Demo Part 1

How it's done - Single Sign On

Single Sign On

OpenID with Google Apps

Magic OpenID Pixie Dust!

Google Apps

Email: bob@foo.com

Password: ***********

Magic OpenID Pixie Dust!

Welcome Bob!

Your App

Attribute Exchange?

Provider?

Claimed ID?

Relying Party?

PAPE?

Realm?

Crypto?

Nonce?

Discovery?

Association?

Sounds complicated, but not hard in practice!

Single Sign On

OpenID Libraries

Language	Libraries
Java	OpenID4Java, Step2
.NET	DotNetOpenAuth
PHP	php-openid, php-openid-apps-discovery
Ruby	ruby-openid, ruby-openid-apps-discovery
Any	RPX, Ping Identity

Single Sign On - Code

Step 1 of 3 - Initialize library

```
function getOpenIDConsumer() {
  // Initialize client, storing associations
  // in memcache
  $store = new Auth_OpenID_MemcachedStore($MEMCACHE);
  $consumer = new Auth_OpenID_Consumer($store);

  // Enable Google Apps support
  GApps_OpenID_EnableDiscovery($consumer);
  return $consumer;
}
```

Single Sign On - Code

Step 2 of 3 - Make the request

```php
// Create an auth request to the user's domain
$auth_request = getOpenIDConsumer()->begin($domain);

// Request email address & name during login
$ax = new Auth_OpenID_AX_FetchRequest;
$attr = Auth_OpenID_AX_AttrInfo::make(
    $AX_SCHEMA_EMAIL, 1, 1, 'email');
$attr = Auth_OpenID_AX_AttrInfo::make(
    $AX_SCHEMA_FIRSTNAME, 1, 1, 'first');
$attr = Auth_OpenID_AX_AttrInfo::make(
    $AX_SCHEMA_LASTNAME, 1, 1, 'last');
$auth_request->addExtension($ax);

// Render Javascript/form to post request
$form_html = $auth_request->htmlMarkup($REALM,
    $RETURN_TO, false,
    array('id' => 'openid_message'));
print $form_html;
```

Single Sign On - Code

Step 3 of 3 - Handle response

```
// Parse the response from identity provider
$response = getOpenIDConsumer()->complete($RETURN_TO);
if ($response->status == Auth_OpenID_SUCCESS) {
  // Extract data from response
  $openid = $response->getDisplayIdentifier();
  $ax = new Auth_OpenID_AX_FetchResponse();
  $ax_resp = $ax->fromSuccessResponse($response);
  $email = $ax_resp->data[$AX_SCHEMA_EMAIL][0];
  $firstName = $ax_resp->data[$AX_SCHEMA_FIRSTNAME][0];
  $lastName = $ax_resp->data[$AX_SCHEMA_LASTTNAME][0];
  // Map to user in DB
  $user = fetch_user($openid, $email, $firstName,
      $lastName);
}
```

Single Sign On - Code

Manifest

<?xml?>

```
<ApplicationManifest>
  <Name>Sassy Voice</Name>
  <Description>Voice Mail &amp; Messaging</Description>
  <Admin>
    <Link rel="setup">
http://voice.saasyapp.com/setup.php?domain=${DOMAIN_NAME}
    </Link>
  </Admin>
  <Extension id="navlink" type="link">
    <Name>SaasyVoice</Name>
    <Url>
http://voice.saasyapp.com/login.php?domain=${DOMAIN_NAME}
    </Url>
  </Extension>
  <Extension id="realm" type="openIdRealm">
    <Url>http://voice.saasyapp.com/</Url>
  </Extension>
</ApplicationManifest>
```

Single Sign On

What we learned about users

Claimed ID: http://example.com/openid?id=12345

Email: bob@example.com*
First Name: Bob
Last Name: Dobbs

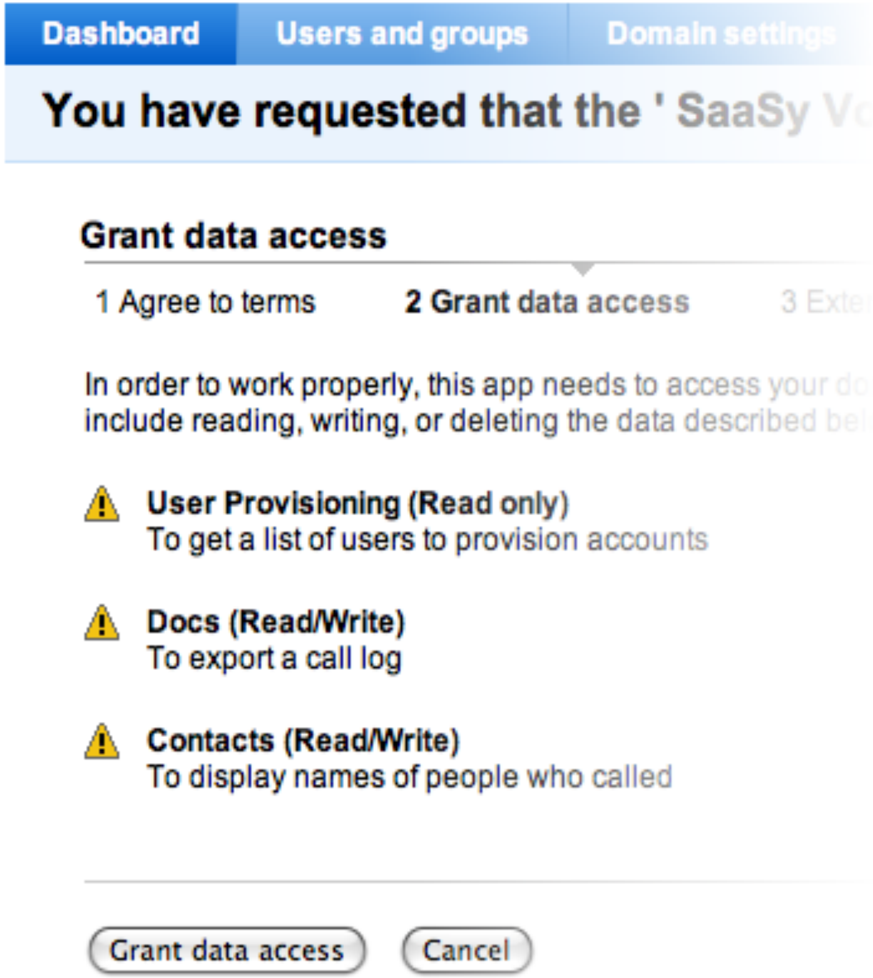
* Be sure to confirm or white-list trusted providers

How it's done - Data Access

2-Legged OAuth

Delegating data access

```
<ApplicationManifest>
  ...
  <Scope id="userFeed">
    <Url>https://apps-apis.google...
    <Reason>To get a list of user...
  </Scope>
  <Scope id="contactsFeed">
    <Url>https://www.google.com...
    <Reason>To display names of...
  </Scope>
  <Scope id="docsFeed">
    <Url>https://docs.google.com...
    <Reason>To export a call log...
  </Scope>
</ApplicationManifest>
```



You have requested that the ' SaaSy Vo

Grant data access

1 Agree to terms **2 Grant data access** 3 Exte

In order to work properly, this app needs to access your do include reading, writing, or deleting the data described bel

⚠ **User Provisioning (Read only)**
To get a list of users to provision accounts

⚠ **Docs (Read/Write)**
To export a call log

⚠ **Contacts (Read/Write)**
To display names of people who called

Data Access - Code

Step 1 of 2 - Initialize the client

```
function getOauthClient() {
  $options = array(
    'consumerKey' => $CONSUMER_KEY,
    'consumerSecret' => $CONSUMER_SECRET,
    'signatureMethod' => 'HMAC-SHA1',
    'requestScheme' =>Zend_Oauth::REQUEST_SCHEME_HEADER,
    'version' => '1.0');
  $consumer = new Zend_Oauth_Consumer($options);
  $token = new Zend_Oauth_Token_Access();
  $httpClient = $token->getHttpClient($options);
  return $httpClient;
}
```

Data Access - Code

Step 2 of 2 - Fetching Users with Provisioning API

```php
// Initialize client
$userClient = new Zend_Gdata_Gapps(getOauthClient());

// Query feed for current user's domain
$userQuery = new Zend_Gdata_Gapps_UserQuery(
  getCurrentUserDomain());
$usersFeed = $userClient->getUserFeed($userQuery);

// Extract data from user feed
$users = array();
foreach ($usersFeed as $userEntry) {
  $login = $userEntry->getLogin();
  $name = $userEntry->getName();
  $users[] = array(
   'username' => $login->getUsername(),
   'firstName' => $name->getGivenName(),
   'lastName' => $name->getFamilyName(),
   'admin' => $login->getAdmin());
}
```

Demo Part 2

Data Access - Code

Fetching Contacts

```
// Initialize client
$contactsClient = new Zend_Gdata(getOauthClient());

// Request data for current user
$contactsQuery = new Zend_Gdata_Query($CONTACTS_URL);
$contactsQuery->setParam('xoauth_requestor_id',
  getCurrentUserEmail());
$url = $contactsQuery->getQueryUrl();
$contactsFeed = $contactsClient->getFeed($url);

// Extract data from contacts feed
foreach ($contactsFeed as $entry) {
  $contacts[] = parseContact($entry);
}
```

Data Access - Code

Uploading CSV

```
// Write call log to temporary CSV file
$callLog = writeCallLog();

$docsClient = new Zend_Gdata_Docs(getOauthClient());
$url = 'https://docs.google.com'.
       '/feeds/documents/private/full/'.
       '?xoauth_requestor_id='.urlencode(getEmail());
$docName = 'Saasy Voice Call Log - '.date('Y-m-d');
$entry = $docsClient->uploadFile($callLog, $docName,
       'text/csv', $url);
// Get the URL of the docs editor so we can redirect
$editUrl = null;
foreach ($entry->link as $link) {
  if ($link->getRel() === 'alternate') {
    $editUrl = $link->getHref();
    break;
  }
}
```

Integration Recap

With not a lot of code we added:

- **Single Sign On** with OpenID
- **Quicker setup** with Attribute Exchange, Provisioning API
- **Integrated user data** with Contacts API
- **Uploading spreadsheets** with Docs API

Gadgets - your real estate in Google Apps

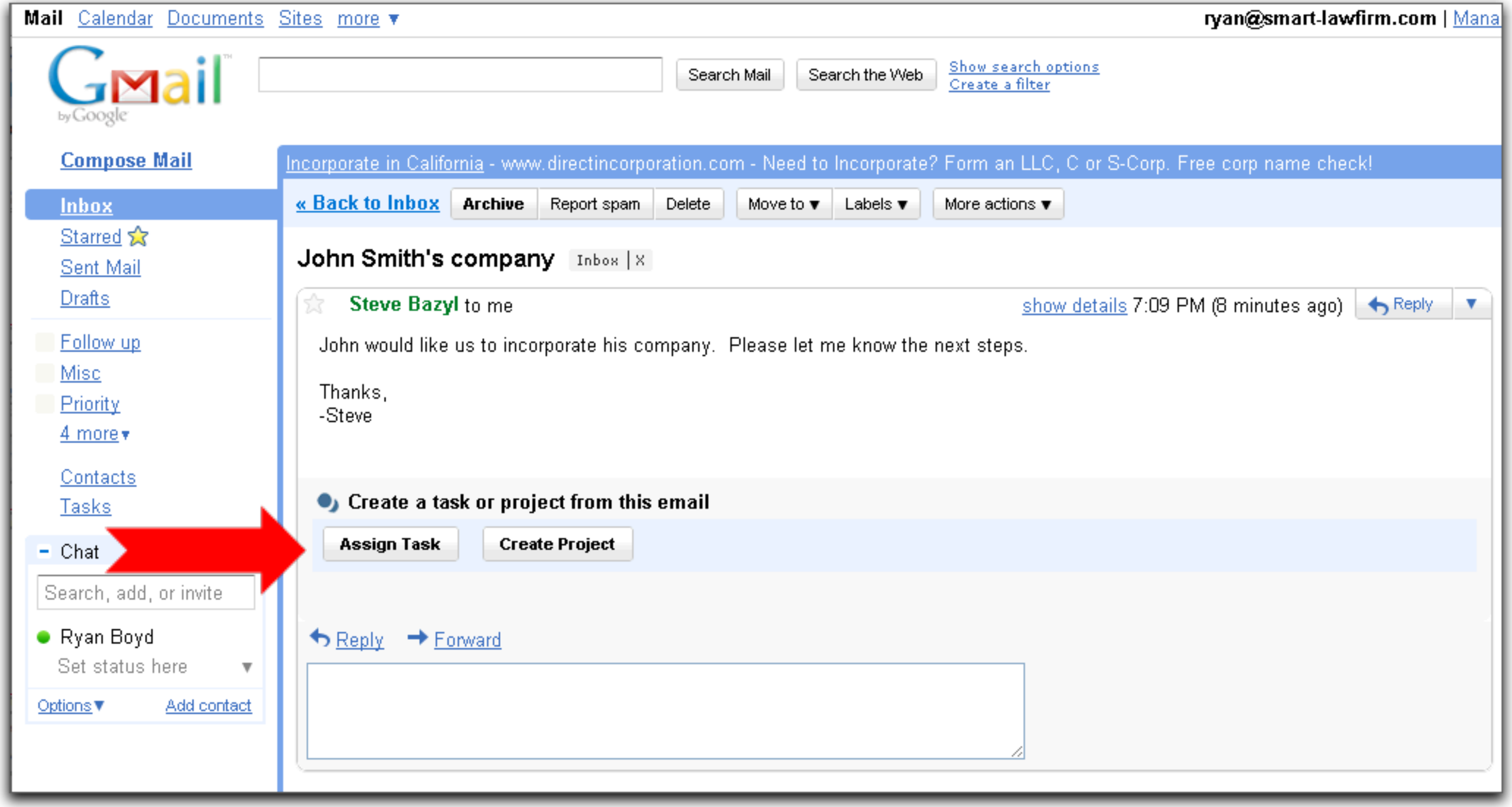
Gadgets

- Many types of gadgets
  - Gmail sidebar
  - Calendar sidebar
  - Sites
  - Spreadsheets
- Two new types of gadgets available this week!
  - Gmail contextual!
  - Wave!
- All use the OpenSocial gadgets specification

Gmail contextual gadgets

- Detect e-mail content via regular expressions
- Display and collect actionable business information directly in Gmail, below each message

Gmail contextual gadgets



Incorporate in California - www.directincorporation.com - Need to Incorporate? Form an LLC, C or S-Corp. Free corp name check!

John Smith's company Inbox | X

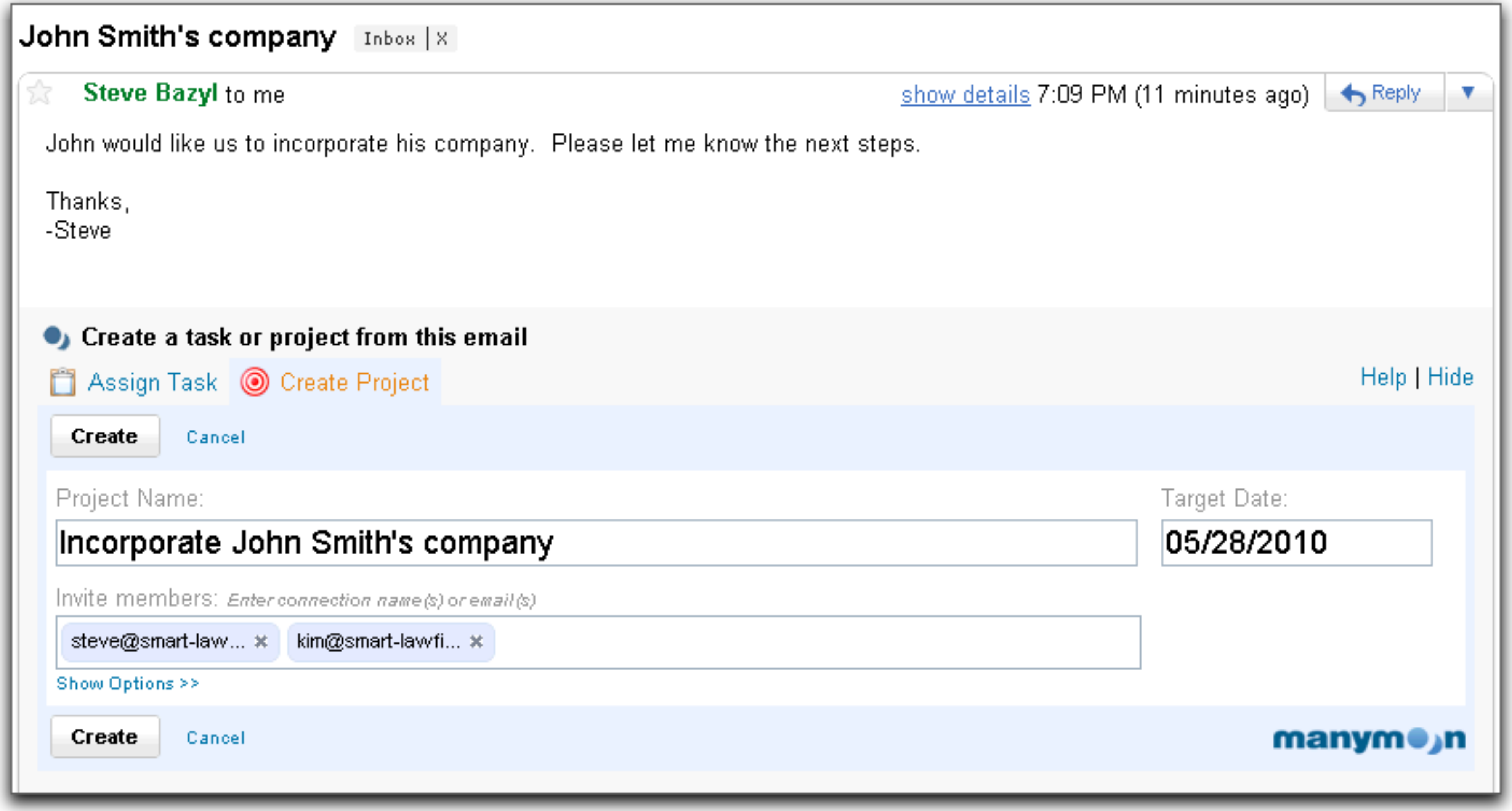
Steve Bazyl to me show details 7:09 PM (8 minutes ago) Reply ▾

John would like us to incorporate his company. Please let me know the next steps.

Thanks,
-Steve

Create a task or project from this email

Gmail contextual gadgets



John Smith's company

Steve Bazyl to me — 7:09 PM (11 minutes ago)

John would like us to incorporate his company. Please let me know the next steps.

Thanks,
-Steve

Create a task or project from this email

Project Name: Incorporate John Smith's company

Target Date: 05/28/2010

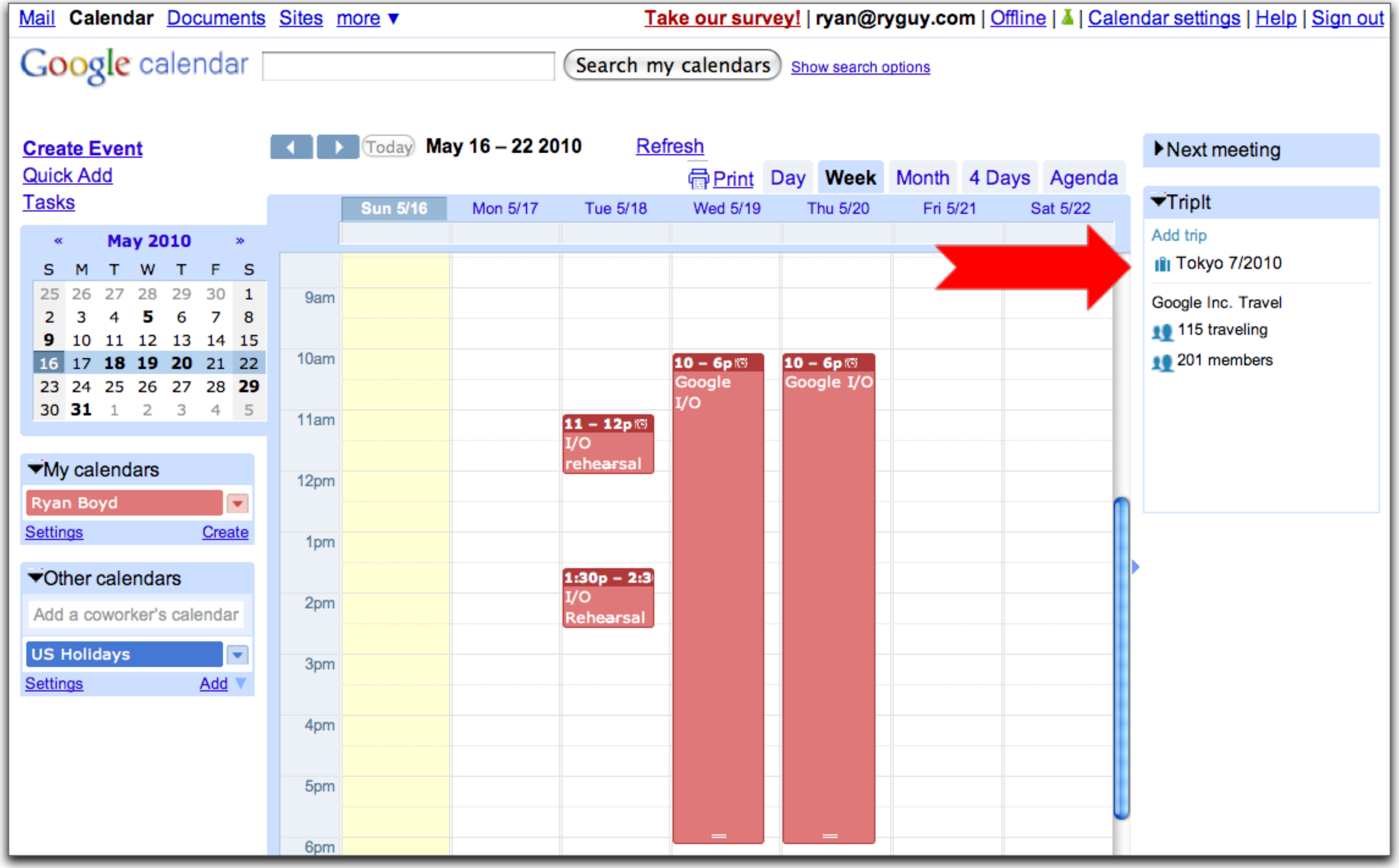
Invite members: *Enter connection name(s) or email(s)*

steve@smart-law... ✖ kim@smart-lawfi... ✖

Calendar sidebar gadgets

- Can detect:
    - currently-displayed date range
    - currently-selected event
        - title
        - attendees
        - date/time

Calendar sidebar gadgets



Mail Calendar Documents Sites more ▼ Take our survey! | ryan@ryguy.com | Offline | | Calendar settings | Help | Sign out

Google calendar [Search my calendars] Show search options

Create Event
Quick Add
Tasks

« May 2010 »

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

▼My calendars
Ryan Boyd
Settings Create

▼Other calendars
Add a coworker's calendar
US Holidays
Settings Add

Today May 16 – 22 2010 Refresh

Print Day Week Month 4 Days Agenda

Sun 5/16 Mon 5/17 Tue 5/18 Wed 5/19 Thu 5/20 Fri 5/21 Sat 5/22

9am 10am 11am 12pm 1pm 2pm 3pm 4pm 5pm 6pm

Tue 5/18: 11 – 12p I/O rehearsal; 1:30p – 2:3 I/O Rehearsal

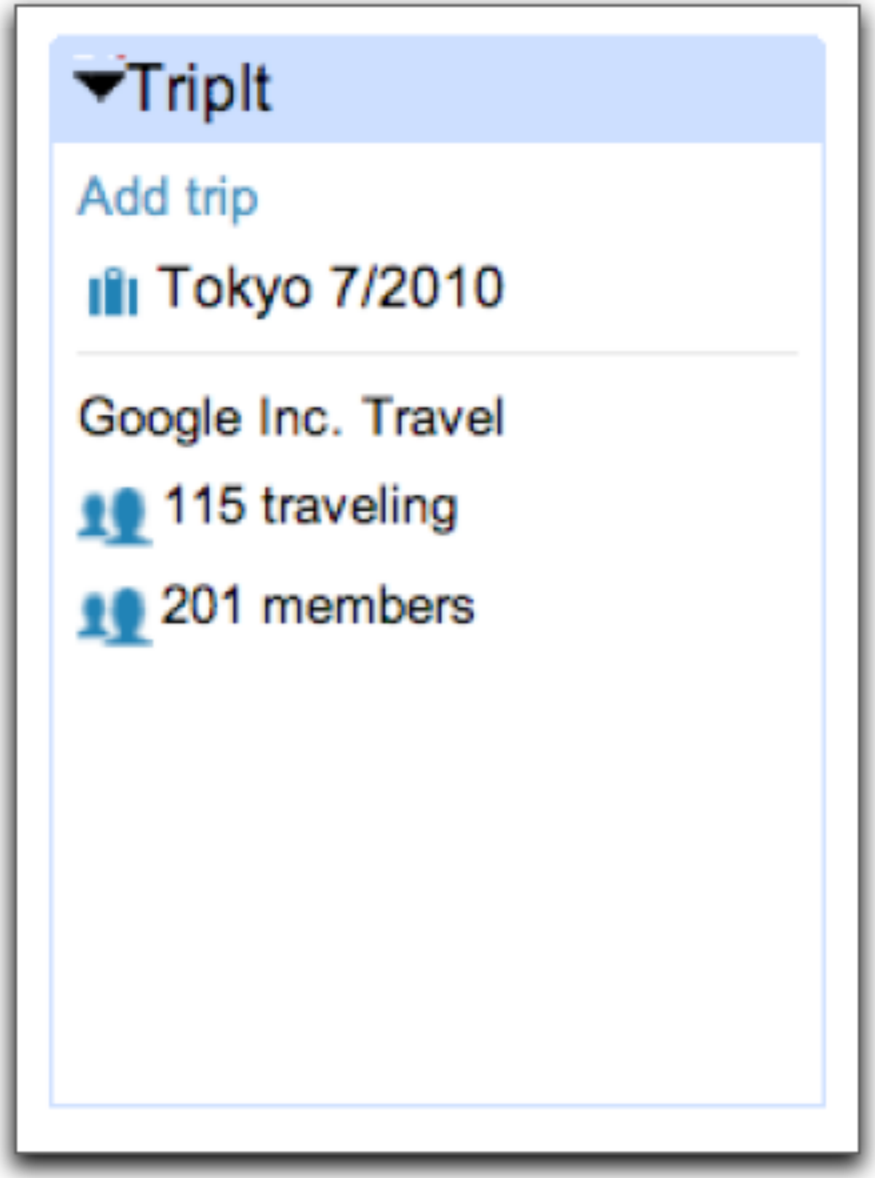
Wed 5/19: 10 – 6p Google I/O

Thu 5/20: 10 – 6p Google I/O

▶Next meeting

▼TripIt
Add trip
Tokyo 7/2010
Google Inc. Travel
115 traveling
201 members

Calendar sidebar gadgets



TripIt

Add trip

Tokyo 7/2010

Google Inc. Travel

115 traveling

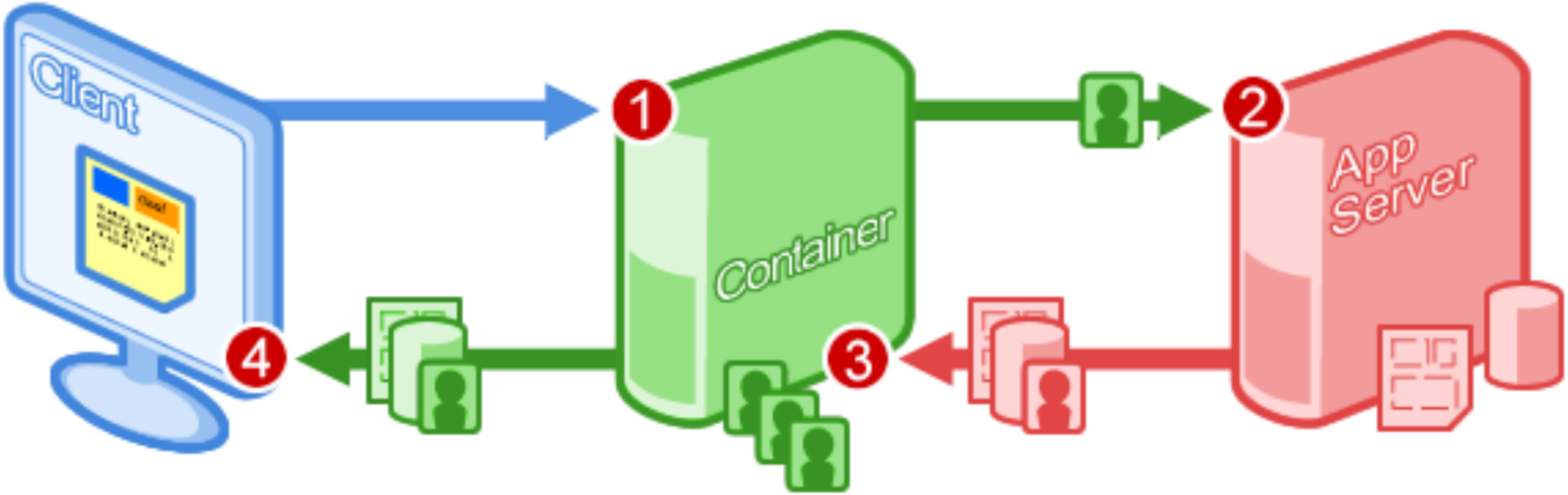
201 members

Demo - Gmail Sidebar Gadget

Gadget Distribution

- A couple different distribution mechanisms
  - **Admin-installed**
    - Gmail contextual gadgets
  - **User-installed**
    - Others

Gadget Communication



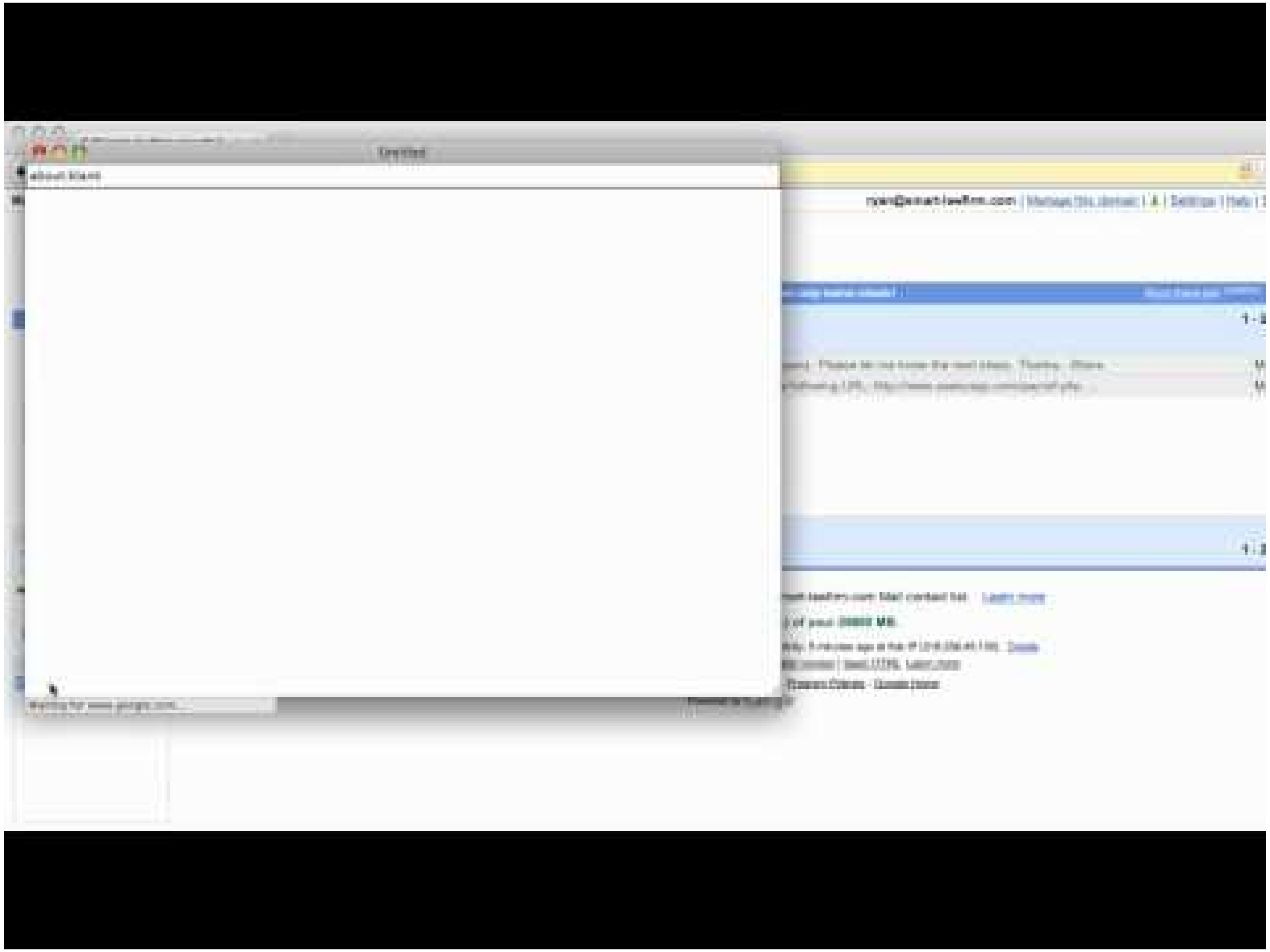
1. Gadget uses JavaScript to request data from SaaSy Voice, proxied through Gmail due to cross-domain issues. Gmail adds information on the user to the request & signs it.
2. SaaSy Voice verifies the signature and determines the user is OpenSocial user #34124561.
3. SaaSy app returns the voicemail, proxied through Gmail.
4. The gadget is rendered in JavaScript

Gadget Authentication - Challenge

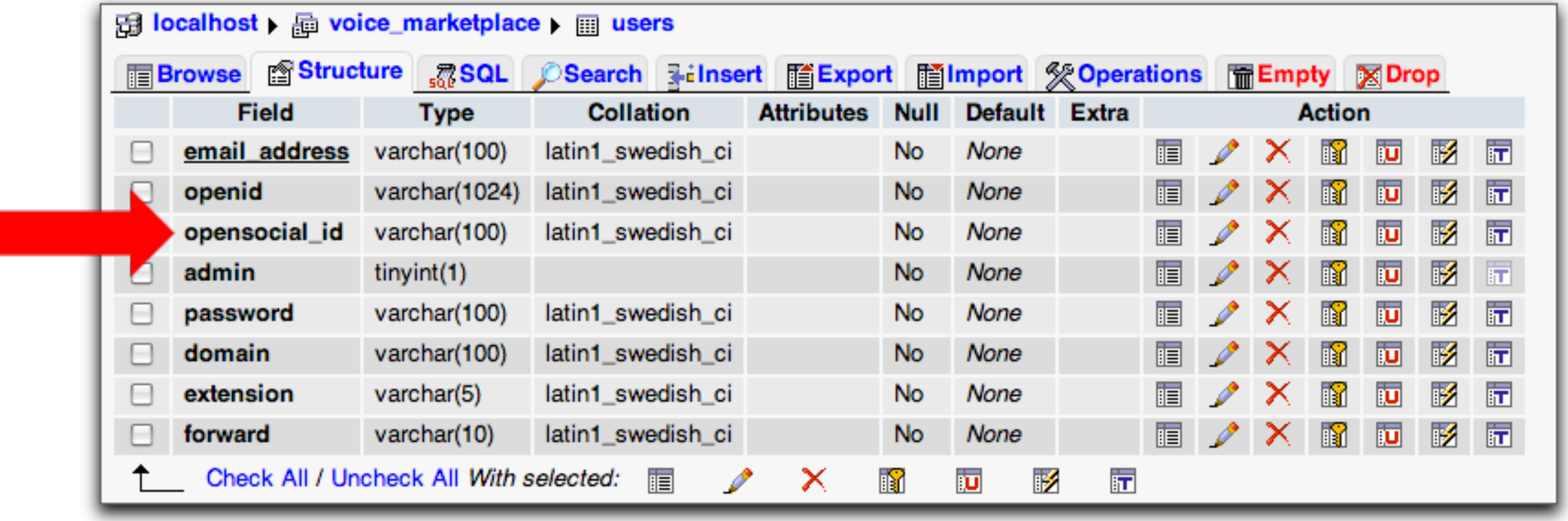
Who is "34124561" ?

Gadget Authentication - Solution

- Use OpenID in the gadget to correlate the user's OpenSocial ID with the user's OpenID


Untitled
about:blank
ryan@smart-lawfirm.com | Manage this domain | Settings | Help
Waiting for www.google.com...

Gadget Authentication - Solution

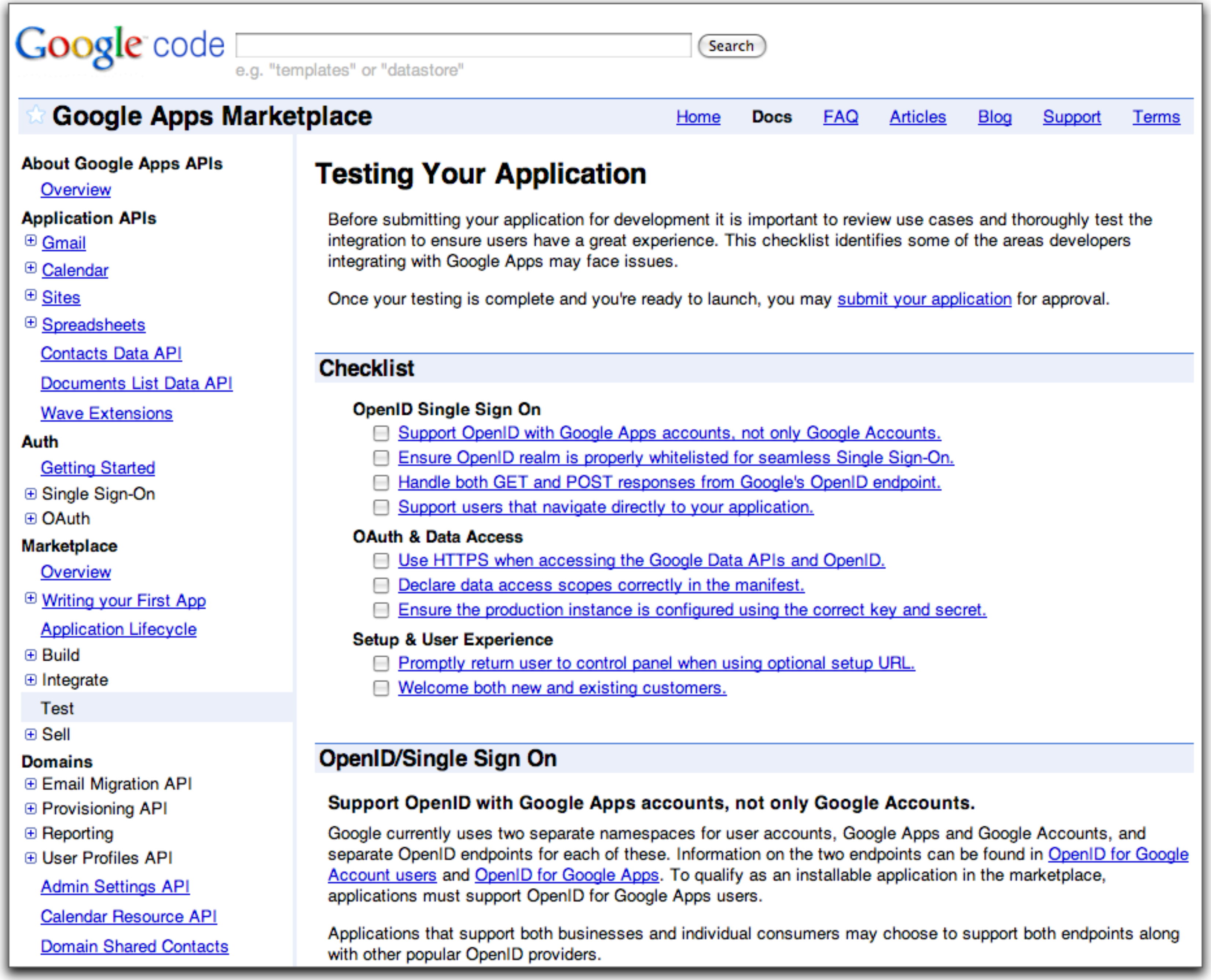


	Field	Type	Collation	Attributes	Null	Default	Extra	Action
□	email_address	varchar(100)	latin1_swedish_ci		No	*None*		
□	openid	varchar(1024)	latin1_swedish_ci		No	*None*		
□	opensocial_id	varchar(100)	latin1_swedish_ci		No	*None*		
□	admin	tinyint(1)			No	*None*		
□	password	varchar(100)	latin1_swedish_ci		No	*None*		
□	domain	varchar(100)	latin1_swedish_ci		No	*None*		
□	extension	varchar(5)	latin1_swedish_ci		No	*None*		
□	forward	varchar(10)	latin1_swedish_ci		No	*None*		

Check All / Uncheck All *With selected:*

Testing your App

Testing Checklist



Google Apps Marketplace

Home | Docs | FAQ | Articles | Blog | Support | Terms

About Google Apps APIs
- Overview

Application APIs
- ⊞ Gmail
- ⊞ Calendar
- ⊞ Sites
- ⊞ Spreadsheets
- Contacts Data API
- Documents List Data API
- Wave Extensions

Auth
- Getting Started
- ⊞ Single Sign-On
- ⊞ OAuth

Marketplace
- Overview
- ⊞ Writing your First App
- Application Lifecycle
- ⊞ Build
- ⊞ Integrate
- Test
- ⊞ Sell

Domains
- ⊞ Email Migration API
- ⊞ Provisioning API
- ⊞ Reporting
- ⊞ User Profiles API
- Admin Settings API
- Calendar Resource API
- Domain Shared Contacts

Testing Your Application

Before submitting your application for development it is important to review use cases and thoroughly test the integration to ensure users have a great experience. This checklist identifies some of the areas developers integrating with Google Apps may face issues.

Once your testing is complete and you're ready to launch, you may submit your application for approval.

Checklist

OpenID Single Sign On

□ Support OpenID with Google Apps accounts, not only Google Accounts.
□ Ensure OpenID realm is properly whitelisted for seamless Single Sign-On.
□ Handle both GET and POST responses from Google's OpenID endpoint.
□ Support users that navigate directly to your application.

OAuth & Data Access

□ Use HTTPS when accessing the Google Data APIs and OpenID.
□ Declare data access scopes correctly in the manifest.
□ Ensure the production instance is configured using the correct key and secret.

Setup & User Experience

□ Promptly return user to control panel when using optional setup URL.
□ Welcome both new and existing customers.

OpenID/Single Sign On

Support OpenID with Google Apps accounts, not only Google Accounts.

Google currently uses two separate namespaces for user accounts, Google Apps and Google Accounts, and separate OpenID endpoints for each of these. Information on the two endpoints can be found in OpenID for Google Account users and OpenID for Google Apps. To qualify as an installable application in the marketplace, applications must support OpenID for Google Apps users.

Applications that support both businesses and individual consumers may choose to support both endpoints along with other popular OpenID providers.

Testing Checklist

- Realm mismatch
- OpenID for Google Apps
- Support existing users

Sell

Complete Manifest

```
<ApplicationManifest xmlns="http://schemas.google.com/ApplicationManifest/2009">
<Name>SaaSy Voice</Name>
  <Description>SaaSy Voice</Description>
  <Support>
    <Link rel="setup" href="https://.../setup.php?domain=${DOMAIN_NAME}"/>
    <Link rel="manage" href="https://.../config.php?domain=${DOMAIN_NAME}"/>
    <Link rel="deletion-policy" href="http://.../deletion-policy.php"/>
    <Link rel="support" href="http://.../support.php"/>
  </Support>
```

Complete Manifest

(continued)

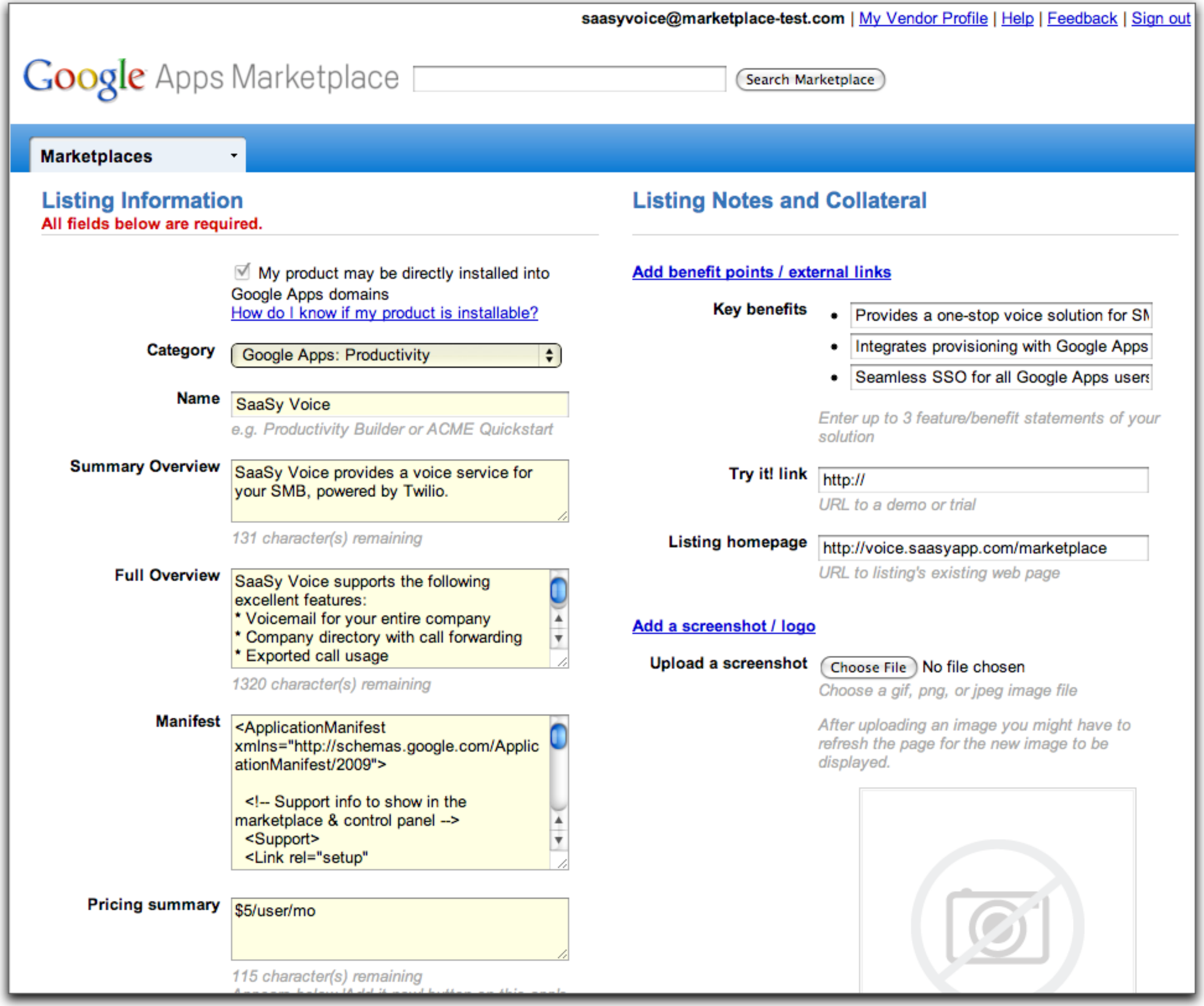
```
<!-- Link in universal navigation -->
<Extension id="oneBarLink" type="link">
  <Name>SaaSy Voice</Name>
  <Url>http://.../index.php?domain=${DOMAIN_NAME}</Url>
  <Scope ref="provisioningFeed"/>
  <Scope ref="contactsFeed"/>
  <Scope ref="docsFeed"/>
</Extension>
<!-- Declare our openid.realm -->
<Extension id="realm" type="openIdRealm">
  <Url>http://voice.saasyapp.com/marketplace/</Url>
</Extension>
```

Complete Manifest

(continued)

```
  <Scope id="provisioningFeed">
    <Url>https://apps-apis.google.com/a/feeds/user/#readonly</Url>
    <Reason>To get a list of users to provision accounts</Reason>
  </Scope>
  <Scope id="contactsFeed">
    <Url>https://www.google.com/m8/feeds/</Url>
    <Reason>To display names of people who called</Reason>
  </Scope>
  <Scope id="docsFeed">
    <Url>https://docs.google.com/feeds/</Url>
    <Reason>To export a call log</Reason>
  </Scope>
</ApplicationManifest>
```

Listing in the Google Apps Marketplace



saasyvoice@marketplace-test.com | My Vendor Profile | Help | Feedback | Sign out

Google Apps Marketplace [ ] Search Marketplace

Marketplaces

Listing Information

All fields below are required.

☑ My product may be directly installed into Google Apps domains

How do I know if my product is installable?

Category	Google Apps: Productivity
Name	SaaSy Voice *e.g. Productivity Builder or ACME Quickstart*
Summary Overview	SaaSy Voice provides a voice service for your SMB, powered by Twilio. *131 character(s) remaining*
Full Overview	SaaSy Voice supports the following excellent features: * Voicemail for your entire company * Company directory with call forwarding * Exported call usage *1320 character(s) remaining*
Pricing summary	$5/user/mo *115 character(s) remaining*

Manifest

```
<ApplicationManifest
xmlns="http://schemas.google.com/Applic
ationManifest/2009">

  <!-- Support info to show in the
marketplace & control panel -->
  <Support>
  <Link rel="setup"
```

Listing Notes and Collateral

Add benefit points / external links

Key benefits

- Provides a one-stop voice solution for SM
- Integrates provisioning with Google Apps
- Seamless SSO for all Google Apps users

Enter up to 3 feature/benefit statements of your solution

Try it! link	http:// *URL to a demo or trial*
Listing homepage	http://voice.saasyapp.com/marketplace *URL to listing's existing web page*

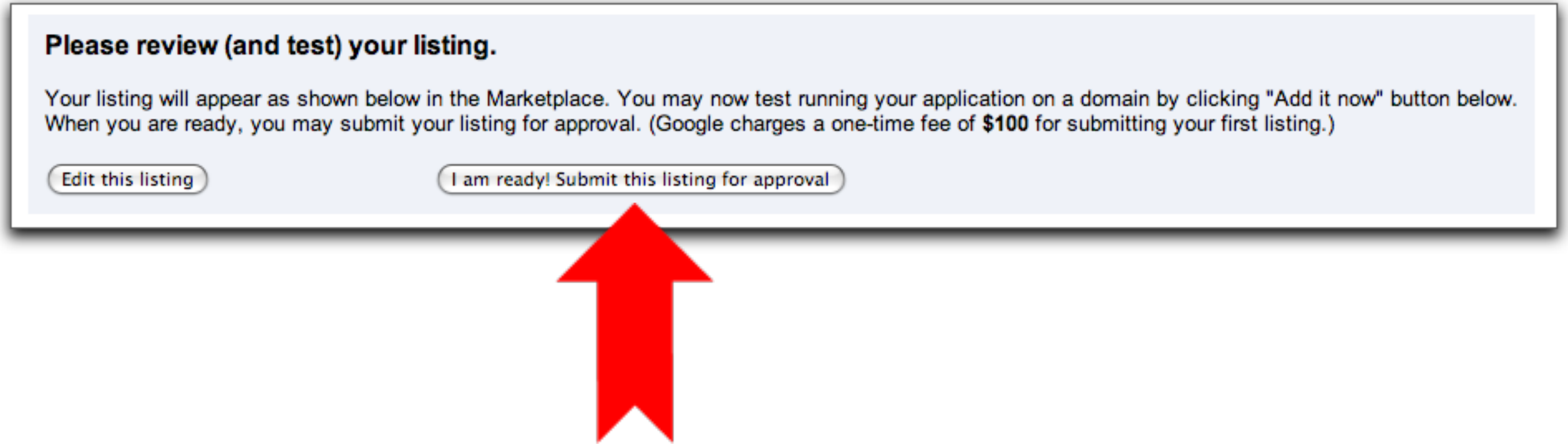
Add a screenshot / logo

Upload a screenshot: Choose File No file chosen

Choose a gif, png, or jpeg image file

After uploading an image you might have to refresh the page for the new image to be displayed.

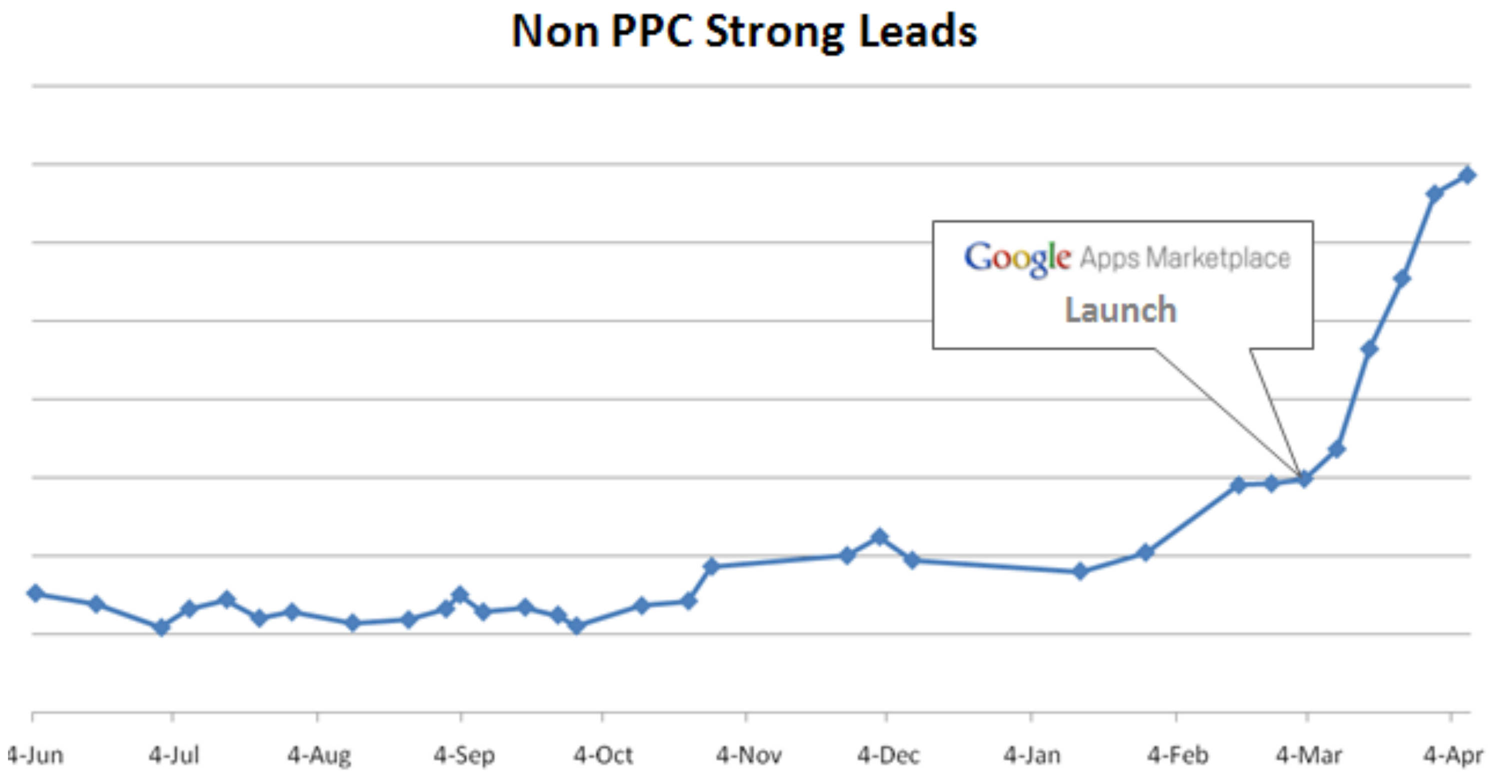
Listing in the Google Apps Marketplace



Please review (and test) your listing.

Your listing will appear as shown below in the Marketplace. You may now test running your application on a domain by clicking "Add it now" button below. When you are ready, you may submit your listing for approval. (Google charges a one-time fee of **$100** for submitting your first listing.)

Reach 25 million Google Apps Users



"We've seen a very meaningful increase in high quality, non-paid lead flow directly attributable to Google Apps customers...Our customers cite Smartsheet's tight integration with Google's Data APIs as a key factor in their decision to purchase."

Brent Frei, Smartsheet

Roadmap

Roadmap - General

- **Recent Launches**
  - Gmail contextual gadgets
  - OAuth support for Gmail's IMAP and SMTP

Roadmap - Billing

- **Goals**
  - ○ Simplified invoicing & payments for customers
  - ○ Consistent experience across apps
- **Planned 2nd-half of 2010**
  - ○ Required for installable apps after transition period
  - ○ Revenue sharing starts once APIs adopted

- **Features**
  - ○ Unified billing for apps purchased in marketplace
  - ○ Support for a variety of pricing & licensing models
  - ○ APIs for customization and up-selling

Learn More

Upcoming Marketplace Google I/O Sessions

- **OpenID and OAuth for Google Apps**
  - Tomorrow @ 10:15am
- **Gadgets for Google Apps**
  - Tomorrow @ 2:15pm
- **Gmail contextual gadgets**
  - Tomorrow @ 4:45pm

Resources

- **Business and Marketing**
  - http://developer.googleapps.com/marketplace
- **Technical and Code**
  - http://code.google.com/googleapps/marketplace
- **Shopping!**
  - http://www.google.com/appsmarketplace
- **Don't have Google Apps?**
  - http://www.google.com/a

Q & A

Ask your questions on Google Wave:

http://bit.ly/appswave

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