We choose App Engine as a development environment because we can use Google’s infrastructure for hosting.

Google makes the rules - and we learn them.
<table>
<thead>
<tr>
<th>Resource</th>
<th>Free Default Quota</th>
<th>Billing Enabled Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily Limit</td>
<td>Maximum Rate</td>
</tr>
<tr>
<td>Requests</td>
<td>1,300,000 requests</td>
<td>7,400 requests/minute</td>
</tr>
<tr>
<td>Outgoing Bandwidth (billable, includes HTTPS)</td>
<td>1 gigabyte</td>
<td>56 megabytes/minute</td>
</tr>
<tr>
<td>Incoming Bandwidth (billable, includes HTTPS)</td>
<td>1 gigabyte</td>
<td>56 megabytes/minute</td>
</tr>
<tr>
<td>CPU Time (billable)</td>
<td>6.5 CPU-hours</td>
<td>15 CPU-minutes/minute</td>
</tr>
</tbody>
</table>

Outgrowing the maximums? [Request an increase.](http://code.google.com/appengine/docs/quotas.html)
## Quotas for App Engine

<table>
<thead>
<tr>
<th>Resource</th>
<th>Free Default Quota</th>
<th>Billing Enabled Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily Limit</td>
<td>Maximum Rate</td>
</tr>
<tr>
<td>Mail API Calls</td>
<td>7,000 calls</td>
<td>32 calls/minute</td>
</tr>
<tr>
<td>Recipients Emailed (billable)</td>
<td>2,000 recipients</td>
<td>8 recipients/minute</td>
</tr>
<tr>
<td>Admins Emailed</td>
<td>5,000 mails</td>
<td>24 mails/minute</td>
</tr>
<tr>
<td>Message Body Data Sent</td>
<td>60 megabytes</td>
<td>340 kilobytes/minute</td>
</tr>
<tr>
<td>Attachments Sent</td>
<td>2,000 attachments</td>
<td>8 attachments/minute</td>
</tr>
<tr>
<td>Attachment Data Sent</td>
<td>100 megabytes</td>
<td>560 kilobytes/minute</td>
</tr>
</tbody>
</table>

Outgrowing the maximums? [Request an increase.](http://code.google.com/appengine/docs/quotas.html)
When you run out...

http://code.google.com/appengine/docs/billing.html
Activating Your App Engine

- You must have a Google account (i.e. GMail)
- Add App Engine to the account
  - http://appengine.google.com
- Will require a SMS-Capable phone and number
Welcome to Google App Engine

Before getting started, you want to learn more about developing and deploying applications. Learn more about Google App Engine by reading the Getting Started Guide, the FAQ, or the Developer's Guide.

Create an Application

Verify Your Account by SMS

To create applications with Google App Engine, you need a verification code. Select the country and carrier for your mobile phone and enter your mobile phone number. The verification code will be sent to it via SMS. Note you will only need to verify your account once.

Country and Carrier:
United States  (US) AT&T

If your country and carrier are not on the list, select Other (Not Listed). What carriers are supported?

Mobile Number:

Include your country code and full phone number. eg: +1 650 555 1212

Send
Making a New Application
## My Applications

<table>
<thead>
<tr>
<th>Application</th>
<th>Title</th>
<th>Current Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>ae-12-ejax</td>
<td>AppEngineLearn Ajax Chat</td>
<td>1</td>
</tr>
<tr>
<td>ae-12-chat</td>
<td>AE Learn Chat</td>
<td>None Deployed</td>
</tr>
<tr>
<td>nb-codereview</td>
<td>Personal Code Review</td>
<td>1</td>
</tr>
</tbody>
</table>

Create an Application

You have 8 applications remaining.

## Create an Application

**Application Identifier:**

```text
ee-12-ejax .appspot.com
```

You can map this application to your own domain later. [Learn more](#)

**Application Title:**

AELearn Chat

Displayed when users access your application.

**Authentication Options (Advanced):**

[Learn more](#)

Google App Engine provides an API for authenticating your users. If you choose not to use this, anyone in the world will be able to access your application. However, if you choose to use this, you’ll need to specify now who can sign in to your application:

**Open to all Google Accounts users (default)**

If your application uses authentication, anyone with a valid Google Account may sign in. (This includes all Gmail Accounts, but does not include accounts on any Google Apps domains.)

[Edit](#)
application: ae-12-ajax
version: 1
runtime: python
api_version: 1

handlers:
- url: /static
  static_dir: static

- url: /_ah/admin.*
  script: $PYTHON_LIB/google/appengine/ext/admin
  login: admin

- url: /.*
  script: index.py
Yes - it is actually very easy to use. (noah) Thu 01 Jan 2009

Very cool - have you tested the new version feature yet? (csev) Thu 01 Jan 2009

We are up and running on.appspot! (noah) Thu 01 Jan 2009
Development Console

Note - You must enter the Entity Kind (there is no drop-down)
Development Console

```
from google.appengine.ext import db

# A Model for a User
class User(db.Model):
    account = db.StringProperty()
    password = db.StringProperty()
    name = db.StringProperty()

newuser = User(name="Chuck", account="csev",
                password="secret");
newuser.put();
```
Admin Console
Collaborators

<table>
<thead>
<tr>
<th>Google Account</th>
<th>Status</th>
<th>Remove Access</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:csev@umich.edu">csev@umich.edu</a></td>
<td>Active</td>
<td>Remove</td>
</tr>
<tr>
<td><a href="mailto:noahbotimer@gmail.com">noahbotimer@gmail.com</a></td>
<td>Active</td>
<td>Remove</td>
</tr>
</tbody>
</table>

Invite a Developer to Collaborate on this Application:

Enter a complete email address

Invite
New Version...

- Make changes locally - re-upload to replace your code on the server
- You can have multiple versions going at one time and control which is active by changing the version number in the `app.yaml`
application: ae-12-ajax
version: 1
runtime: python
api_version: 1

handlers:
- url: /static
  static_dir: static
- url: /admin/.*
  script: $PYTHON_LIB/google/appengine/ext/admin
  login: admin
- url: /.*
  script: index.py

Normally when you upload, it replaces the copy you have - unless you change the version - changing the version is rare.
Google Analytics
Google Analytics

• Free Google service to track usage of your site

• Steps:
  • Setup Analytics
  • Add Javascript to your site
Improve your site and increase marketing ROI.

Google wants you to attract more of the traffic you are looking for, and help you turn more visitors into customers.

Use Google Analytics to learn which online marketing initiatives are cost effective and see how visitors actually interact with your site. Make informed site design improvements, drive targeted traffic, and increase your conversions and profits.

Sign up now. It’s easy - and free!

>> Learn more.
<div id="bodycontent">
{% block bodycontent %}
  Replace this
{% endblock %}
</div>

<script type="text/javascript">
document.write(unescape("\<script src='" + gaJsHost + "google-analytics.com/ga.js' type='text/javascript'\>\</script\>"));
</script>

<script type="text/javascript">
try {
  var pageTracker = _gat._getTracker("UA-423997-9");
  pageTracker._trackPageview();
} catch(err) {}</script>
</html>
These are supporting materials for the O'Reilly book titled Using Google App Engine. This book is aimed at people who want to gain skill in web programming in general and the Google App Engine. The book has been used to support many beginning courses ranging from High School to College. As such there are chapters on Python, HTML, CSS, and HTTP. More advanced programmers will likely want to skip over the first few chapters.

I see Google App Engine as a way for virtually everyone to have their own interactive software-based web site regardless of their level of programming skills. Increasingly, web programming will simply need to be a competency like mathematics and this book is dedicated to teaching everyone about Google App Engine.

- You can download the Sample Applications from the book.
- **Installing Python and Your Programmer Text Editor**
  - Macintosh: [Handout, Screencast, YouTube]
  - Windows Vista: [Handout, High Quality Screencast, YouTube]
  - Windows XP: [Handout, Screencast, and YouTube]
- Installing the App Engine and writing your first Application.
- You may want to also download the App Engine Helper Scripts. This is a script (one for Mac and one for Windows) that you put in your apps folder to launch the App Engine. These scripts simplify setting the paths, etc. There is a README.txt file in the ZIP describing how to use the utilities.
- The Request Dumper Program - dumps out the HTTP Request Data ([Handout, Screencast, YouTube]).
- A Basic Web Application for for Google App Engine ([Handout, Screencast, YouTube]).
- Simple Session Implementation ([Utility Code and Documentation]).
Sign Up for AdSense

- Add to your Google Account
- Will need identity - will call you on the phone
- Once you make revenue, they will want tax information

http://www.google.com/adsense/
Google AdSense

AdSense for Content

Choose Ad Type > Choose Ad Format and Colors

Wizard | Single page

You can customize your ads to fit in with your pages. Use the options below to specify ad size, style, and more.

Format
Ad units come in a variety of sizes - view all the options on our Ad Formats page.

Colors
Choose from one of our pre-designed color palettes, or create your own palette. Tip

* Some options apply to text ads only.

Sample
Ad Title
Ad text
www.ad-url.com

Ads by Google
AdSense unit: 300x250, test 12/14/09

Your AdSense unit has been saved. Changes may not appear for up to 10 minutes.

You may paste this code into any web page or website that complies with our program policies. For more help with implementing the AdSense code, please see our Code Implementation Guide.

Tip: Did you know that you can make changes to your ads without replacing the ad code on your site? Try Manage Ads.

Your AdSense unit code:

```html
<script type="text/javascript">
  //--
  google_ad_client = "pub-0127400494105307";
  // 300x250, test 12/14/09
  google_ad_width = 300;
  google_ad_height = 250;
  //-->
</script>
<script type="text/javascript" src="http://pagead2.g.doubleclick.net/pagead/show_ads.js"></script>
```

Preview this AdSense unit  |  Edit this AdSense unit  |  Create a new AdSense unit
These are supporting materials for the O'Reilly book titled ...
Summary

- Reasonable hosting is free for up to 10 applications per Gmail account (and cell phone number)
- You can add free tracking to your site using Google Analytics
- You can make money with Google Ads - probably not a good idea for a portfolio site :)