

GNU MediaGoblin @ ChiPy

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Outline

- 1 About me!
- 2 Let's see some screenshots
- 3 The technology stack
- 4 State of the project / etc
- 5 How do I get involved

Hello Chipy! / About Me

- Hi, I'm Christopher Allan Webber!
- I used to give talks here a lot
- Then I moved to Deklabbs (DeKalb, IL)
- By dayjob, a programmer for Creative Commons
- By night, programmer on various FOSS things, maker of weird drawings
- <http://dustycloud.org/>
- But I'm not here to talk about me...

So, about GNU MediaGoblin!

Pull up <http://mediagoblin.org/>

Better summary on page but in short we're building:

- Media publishing system
- Initially images only
- But designing for multiple media types (video, documents, etc)
- Federated (more on this later!)
- Think: FOSS, federated Flickr/DeviantArt (eventually YouTube/Blip/Vimeo)

The problem of intarwebs homogenization

Teh intarwebs!

- Initially this great, decentralized, fault-tolerant system
- More and more homogenization means:
 - more centralization
 - more rigidity
 - more fragility
 - sad intarwebs

Enter federation and free software

- Decentralization w/ intercommunication
- We already know what this looks like outside the web:
 - email
 - xmpp/jabber
- Federated web services: bringing intercommunication to the web
- We already have a pretty good meta-standard: OStatus

```
| GNU MediaGoblin          | login | register |
|-----|
|
|-----|
| GNU MediaGoblin is a great way to start
| sharing blah blah blah
|
|                               [ Sign me up! ]
|                               [ More about GMG ]
|-----|
|
|-----|
| _Featured_works_
|-----|
|   -----   |   -----   |   -----   |
| | ,-\|      | | ,( )      | | ,,      |
| | /o o_,,|  | | (_o_)     | | e~_~     |
| | / __vvvv | | | /      | | \ /      |
| | / \      | | |,,,,,|  | | / \      |
| |'-----'| | |'-----'| | |'-----'|
| | Dragons of | | Clover in | | Joe is so
| | Flame by   | | the grass  | | Hip
| | schendje   | | by cloddud | | by joe
| |-----|
|-----|
```


Piece of media

```
| GNU MediaGoblin          | login | register |
|-----|
| The Terror of Tinman Tim |
| Posted by cwebber on May 8, 2011 |
|-----|
|                               |
|      _ _ _ _ _              |
| (O) == |      | |= (O)      |
|      | | O  o |          DESTROY ALL HUMANS |
|      | _ | [w] |          |
|      |   | _ | _         |
|      | (((((( _ | (( _    |
|      |   |   |         |
|      | _ _ _ | _ _ _     |
|      | _ | \ \ \ _       |
|      | _ / _ \ \ / / /   |
|      | _ _ | | \ / /     |
|                               |
|-----|
| Just another piece on a robot who wants |
| to do what any robot would want to do. |
|-----|
| Comments: |
|-----|
| Wow I love your robot!!!!!! |
|                               |
|                               |
|                               |
|                               |
| sue @ May 8 2011 11:45PM |
|-----|
```

User profile

```
-----
|_()_|  USER NAME
|_|
|_/\_|

Recent artwork:

|-----|
|  ___  ___  ___  |
| |pic| |pic| |pic| |
| |___| |___| |___| |
|-----|
|  ___  ___  ___  |
| |pic| |pic| |pic| |
| |___| |___| |___| |
|-----|

|_About_User_Name_-----|
|
| Some sort of self-
| description probably goes
| here
|
|-----|

Recent favorites:

|-----|
|  ___  ___  ___  |
| |pic| |pic| |pic| |
| |___| |___| |___| |
|-----|
|  ___  ___  ___  |
| |pic| |pic| |pic| |
| |___| |___| |___| |
|-----|

|_Recent_activity_-----|
| New picture: DragonFace
|                   4/2/2010
|-----|
| Sup yall this is some kind
| of mini blogpost. Maybe
| the interface will allow
| for this?
|
|-----|

|_External_comments_here_-----|
| Dang! This stuff rocks
|                   - Joe 4/2/2010
|-----|
| Nice job on the dragon
|                   - Morgan 4/2/2010
|-----|
```


OH WAIT

Oh wait sorry

so sorry

Real screenshots:

<http://mediagoblin.org/2011/06/version-002—we-can-haz-pages/>

But this is a ChiPy presentation!

What is GNU MediaGoblin from like, a technical standpoint

"Framework"

- WSGI minimalist application
- “no framework” / unframework
- “Django minus Django”
- highly recommend reading “Another Do-It-Yourself Framework” in webob docs

<http://pythonpaste.org/webob/do-it-yourself.html>

Django minus Django (part 1)

- Django minus Django, why not Django?
- I must be an idiot, I don't know how great Django is
- I've done a **ton** of Django development, yes I know how awesome it is
- Actually I replaced the world's first major Python Paste deployment with Django at Imaginary Landscape
- McAvoy: "Do your fingers burn as you type"
- I think this was the right choice for Imaginary Landscape!
- Also have worked on <http://miroguide.com/> and <http://mirocommunity.org> and Django was **great** for these
- Django is great for many, maybe most webdev, and is the absolute best option for new python web programmers

Django minus Django (part 2)

- Replace the templates with Jinja2, replace the database with MongoDB / MongoKit, etc, how much Django do you have left?
- Most of Django's ideas implemented as good or better in independent libraries now
- Gluing together those libraries yourself
 - not hard at all
 - “framework” module `mediagoblin/app.py` only 160 lines and pretty custom
- In the end our stack still owes a lot of thanks to Django though.
- (Other frameworks are also nice, hi Massimo!)

What the app looks like:

```
- . mediagoblin/  
  |-> app.py  
  |-> routing.py  
  |-> util.py  
  |  
  |-. db/  
  |  |-> models.py  
  |  '-> migrations.py  
  |  
  |-. auth/  
  |  |-> routing.py  
  |  |-> views.py  
  |  '-> lib.py  
  |  
  |-. submit/  
  |  |-> routing.py  
  |  |-> views.py  
  |  '-> lib.py  
  |  
  |-. templates/
```

... etc. Look familiar enough?

The technology stack page!

Python language

Nose tests

zc.buildout for the environment, you can use virtualenv tho

MongoDB for the database

MongoKit ORM for the database

Paste Deploy For launching the application / application configuration

WebOb Request / Response objects (very Django-like)

Jinja2 Templating system

WTForms Form stuff

Celery For farming out tasks/media processing (image resizing, video transcoding, etc)

A few other things Whatever, read our setup.py

mediagoblin/auth/routing.py

```
from routes.route import Route

auth_routes = [
    Route('mediagoblin.auth.register',
          '/register/',
          controller='mediagoblin.auth.views:register'),
    Route('mediagoblin.auth.register_success',
          '/register/success/',
          template='mediagoblin/auth/register_success.html',
          controller='mediagoblin.views:simple_template_render'),
    Route('mediagoblin.auth.login',
          '/login/',
          controller='mediagoblin.auth.views:login'),
    Route('mediagoblin.auth.logout',
          '/logout/',
          controller='mediagoblin.auth.views:logout'),
```

mediagoblin/db/models.py

```
class User(Document):
    __collection__ = 'users'

    structure = {
        'username': unicode,
        'email': unicode,
        'created': datetime.datetime,
        'plugin_data': dict, # plugins can dump stuff here.
        'pw_hash': unicode,
        'email_verified': bool,
        'status': unicode,
        'verification_key': unicode,
        'is_admin': bool,
    }

    required_fields = ['username', 'created', 'pw_hash', 'email']

    default_values = {
        'created': datetime.datetime.utcnow
```

```
mediagoblin/user_pages/views.py
```

```
@uses_pagination
```

```
def user_home(request, page):  
    """'Homepage' of a User()"""  
    user = request.db.User.find_one({  
        'username': request.matchdict['user'],  
        'status': 'active'})  
    if not user:  
        return exc.HTTPNotFound()  
  
    cursor = request.db.MediaEntry.find(  
        {'uploader': user['_id'],  
        'state': 'processed'}).sort('created', DESCENDING)  
    # [...]   
    return render_to_response(  
        request,  
        'mediagoblin/user_pages/user.html',  
        {'user': user,  
        'media_entries': media_entries,  
        'pagination': pagination})
```

```
class RegistrationForm(wtforms.Form):
    username = wtforms.TextField(
        'Username',
        [wtforms.validators.Required(),
         wtforms.validators.Length(min=3, max=30),
         wtforms.validators.Regexp(r'^\w+$')])
    password = wtforms.PasswordField(
        'Password',
        [wtforms.validators.Required(),
         wtforms.validators.Length(min=6, max=30),
         wtforms.validators.EqualTo(
             'confirm_password',
             'Passwords must match.')])
    confirm_password = wtforms.PasswordField(
        'Confirm password',
        [wtforms.validators.Required()])
    email = wtforms.TextField(
        'Email address',
        [wtforms.validators.Required(),
         wtforms.validators.Email()])
```

```
{% block mediagoblin_content %}
  <form action="{ request.urlgen('mediagoblin.auth.login') }}"
        method="POST" enctype="multipart/form-data">
    <div class="login_box form_box">
      <h1>Log in</h1>
      {% if login_failed %}
        <div class="form_field_error">Login failed!</div>
      {% endif %}
      {{ wtforms_util.render_divs(login_form) }}
      <div class="form_submit_buttons">
        <input type="submit" value="submit" class="button"/>
      </div>
      {% if next %}
        <input type="hidden" name="next" value="{ next }"
              class="button" style="display: none;"/>
      {% endif %}
      <p>
        Don't have an account yet?
        <a href="{ request.urlgen('mediagoblin.auth.register') }" >
          Create one here!</a></p>
    </div>
  </form>
{% endblock %}
```

Why MongoDB?

- Actually little to do with scalability
- Kind of the opposite (worried about scaling down)
- More flexibility:

Example (Example)

```
{"title": "Me talking until you are bored",  
  "description": "blah blah blah",  
  "media_type": "audio",  
  "media_data": {  
    "length": "2:30",  
    "codec": "OGG Vorbis"},  
  "plugin_data": {  
    "licensing": {  
      "license": "http://creativecommons.org/[...]/"}}
```


Thoughts on MongoKit

- Pretty great
- Good way to ensure structure while retaining flexibility
- Not too fond of the indexing and migration stuff, we'll probably do it ourselves
- Development slightly stagnant, but not completely
- Doesn't bloat your documents at all
- Hope it keeps going!

Thoughts on Jinja2

- Like Django templating but extremely better:
- Able to pass in arguments to function
- Don't have to waste your time on superfluous tags
- `{% elif %}`

OStatus!

<http://ostatus.org>

- How we're going to do federation
- Kind of a meta-standard
 - PubSubHubbub
 - Salmon
 - etc. . .
- Already in use!
 - StatusNet / <http://identi.ca>
 - Google Buzz (largely)
- Can go through this at end if have time :)

A bit on it being a GNU project

- Wasn't originally a GNU project, was asked if I want to make it GNU
- But I'm very proud the software is "GNU MediaGoblin"
- web-wise, FOSS is winning in libraries and failing in applications
- Vision of GNU 25 years ago, and mostly come true
- Many of us rely on this dream come true for our dayjobs even
- Do the ideas of GNU apply in the modern day?
- A very interesting copyright assignment strategy

Actual state of the project

- 1 month private development
- 1.5 months public dev
- For that timeline, made some good progress:
 - a lot of good infrastructure
 - you can submit and view media
 - authentication system
 - start of a good theme
- A lot of the best features still “in the future”:
 - federation
 - multiple media types
- Moving fast!

Okay, I want to get involved!

We're off to a really great start but **we could use your help!**
Getting started easier than you might think!
See the “hacking howto” section of our docs especially.

Join us! Contact us!

Website <http://mediagoblin.org>

Join us <http://mediagoblin.org/join/> <- !

Docs <http://docs.mediagoblin.org>

IRC [#mediagoblin](irc://irc.freenode.net/#mediagoblin) on [irc.freenode.net](irc://irc.freenode.net)

Contact me <http://dustycloud.org/contact/>