

About Me

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From the Washington DC Area.

I'm a Technical Architect for **General Dynamics Advanced Information Systems**, where I work on information and social media projects for **CENSORED**..

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- Why work with Facebook?
- The Facebook Development Landscape
- How to Get Started
- General Application Types
- Some tips and best practices

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- How to Get Started
 - Learning to embrace the chaos
- General Application Types
 - Plus a few examples
- Some tips and best practices
 - Your Facebook development survival guide





Which of These Two Leaders Has the Greatest Influence In Iran?

Vote Now!

Current Results

Create A Poll

Be a student. Be a musidan. Explore a new culture. Learn English.



Use your phone to start your X-Life today.

Welcome to Iran Voices! Voice your Opinion and Invite your friends to do the same. You can create your own Polls too!

Related Polls

Which Candidate Did You Vote For In The June 12th Presidential Election? poll never expires

Which of These Two Leaders Has the Greatest Influence In Iran? poll never expires

Related Tweets



AMSR12 Sind eure Landesgesetze und allgemein gültige demokratische Werte bei Massenmörder aufgehoben USA, EU? #iran

4 months ago

0 credits - Get Info



Twitter



More



Build a Massive Fanbase



Add a Promotions tab to your fan page. Go live with a viral Sweepstakes, Contest, or Coupon in Minutes with Wildfire!

Want A Killer Good Time?



Play Mafia Wars today and find out just how much fun you can have robbing, stealing and putting out contracts on your friends!

Jim Coudriet, Thoraya Zedan, and John Gianopoulos played this.

Free Flip Camcorder ×

1 Chat (2)



Home

Q

Polls

Invite

My Polls

Welcome to PollCast! Create a cool Poll with your own photos and invite your friends to vote. You might be suprised what your friends really think!



Кой е вашият любим отбор във F1?







Stanislav Dimitrov wants to know

NFL Football: Who Will Win the NFC East?







Johnny Nguyen wants to know 52 votes 8 comments

What is your favorite holiday?

Vote Now Wiew Results





Kayley Suk wants to know 28 votes 3 comments

Coke or Pepsi?













More

Create an Ad

Build a Massive Fanbase



Add a Promotions tab to your fan page. Go live with a viral Sweepstakes, Contest, or Coupon in Minutes with Wildfire!

Fun Rottweiler Tshirts



Get 15% off your order of \$56 or more with code FB15 today only at Cafepress.com.au

Like

Free Flip Camcorder x



1 Chat (3)

Sign In













Click icon to sign in

















View All

Random Videos

Random

Recently Added

Top Rated

More...







5 views 2.70



2.60



2.75

More Entries





Recent Activity







Garage Band - Electric Funeral Johnny Nguyen shared this.

Why Facebook?

More than

500 million

active users

of active users log on to Facebook in any given day

More than

35 million

users update their status each day

More than

60 million

status updates posted each day

More than

3 billion

photos uploaded to the site each month

More than

5 billion

pieces of content (web links, news stones, blog posts, notes, photo albums, etc.) shared each week Average user has

130 friends

on the site

Average user sends

8 friend requests

per month

Average user spends more than

55 minutes

per day on Facebook

Average user clicks the Like button on

9 pieces of content

each month

Average user writes

25 comments

on Facebook content each month

Average user is a member of

13 groups

Every month

70% of all users

use Facebook apps

More than

1 million

developers from 180 countries

More than

500,000 active Facebook apps

More than

250 apps

have 1 million+ users

More than

80,000 sites

now use Facebook Connect

More than

60 million

use sites via Facebook Connect

A

E

B

0

K

Website Monitoring

Beyond the Stats....

Facebook provides...

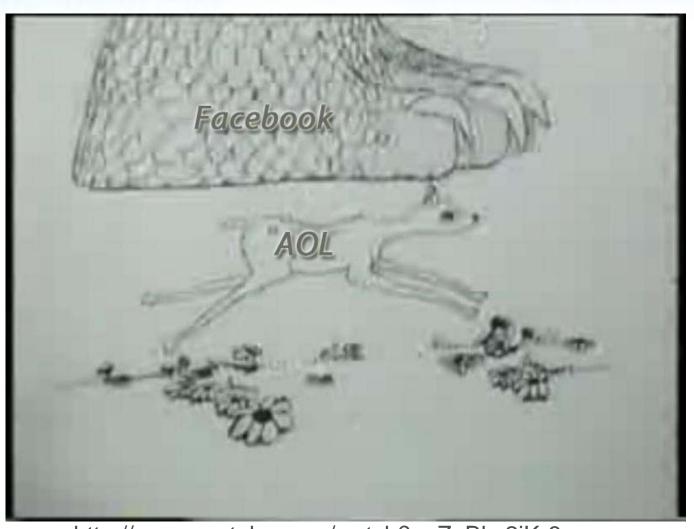
- A large and <u>active</u> audience
- Global reach (70% non-US)
- Methods for apps to interact with that audience
- Well-defined ways for audience members to tell their friends what they like
- Successful apps can make real money

Bambi Meets Godzilla

Facebook: 600 million

AOL: 35 million

(Also a 1969 animated short from Marv Newland)



http://www.youtube.com/watch?v=ZpBkc2jK-6w

Pop Quiz

1. In 2001, did you think the Internet Boom would last forever?

O Yes
O No

2. In 2006, did you think the Real Estate Boom would last forever?

O Yes O No

3. Do you seriously think that Facebook can add 100 million new users every single year?

O Yes O No

The Development Landscape





From a PHP Mindset...

- Facebook was designed with PHP in mind
- Integration features were clunky at best
- ...including an API (sort of)

But they bought FriendFeed in Aug 2009

- Key tech people were ex-Google
- Knew API's and scalability issues

...to a Modern API

- Uses OAuth 2.0 for authentication
- OpenGraph API central to Facebook's plans
- Relaxation of draconian data storage policies
- Privacy Permissions on all Data
- New easy-to-integrate widgets
- Deprecation of all the old technologies



http://www.zazzle.com/paradigm_shift_shirt-235689301340536532

It's Been a Rocky Road...

- Facebook still outgrowing the PHP mindset
- No "dev" version of Facebook to test apps against upcoming platform changes
- Their REST interfaces may not do REST in the way you expect:
 - https://graph.facebook.com/me/friends
 - https://graph.facebook.com/me/home (News Feed)

Just accept it and move on...

Gone, Deprecated, etc.

1. Old REST Web Services

2. FBML and FBJS

- HTML with extensions
- JavaScript w/ extensions

3. Facebook Connect

- Single sign-on for external sites
- Rebranded as part of OpenGraph API

Facebook Platform

OpenGraph API

- Consistent view of the social graph
- Represents objects & actions

Social Plugins

 The "gateway drug" of the Facebook Platform

Authentication

- Uses Oauth 2.0
- Formerly Facebook Connect

OpenGraph Protocol

- Allows external web pages to be integrated into the social graph
- Simple meta tags

It's Still a Moving Target



- Facebook changes often, and with little warning
- 3rd party libs always lag behind platform changes...

Getting Ready to Develop

- Create a Facebook account
 - You can't play if you don't join
- (1) "Install" the Facebook Developer app
 - http://www.facebook.com/developers
- ① Create a Facebook application
 - Register your app with Facebook
- ① Record key data elements for later use
 - Application ID (Your OAuth client_id)
 - Application Secret (Your OAuth client_secret)

Some App Variations

- External, Single Sign-On Only
 - Just leverages Facebook's audience
- External, Shallow Integration (Social Plugins)
 - Quick, easy, limited; no control of branding. Needs JavaScript lib.
- External, Medium Integration (JavaScript)
 - Requires actual programming with the JavaScript lib
- External, Deep Integration (OpenGraph)
 - A deeper user experience, more work
- Facebook Canvas Application
 - Functions within the Facebook context
 - Can integrate with Facebook Business Pages

Example 1: Single Sign-On

(JavaScript)

Single Sign-On, JavaScript (1)

Must include the following code:

```
<div id="fb-root"></div>
<script src="http://connect.facebook.net/en_US/all.js"></script>
<script>
 FB.init({appld: '123456789012345', status: true, cookie: true, xfbml: true});
 FB.Event.subscribe('auth.sessionChange', function(response) {
 if (response.session) {
   // A user has logged in, and a new cookie has been saved }
 else {
   // The user has logged out, and the cookie has been cleared
</script>
```

Single Sign-On, JavaScript (2)

<fb:login-button></fb:login-button>

f Login with Facebook

- Or you can have your own button and call FB.login via JavaScript for a login popup...

```
FB.login(function(response) {
   if (response.session) {
      if (response.perms) {
        // user is logged in and granted some permissions. }
      else {
        // user is logged in, but did not get any permissions }
   } else {
      // user is not logged in
   }
}, {perms:'read_stream,publish_stream,offline_access'});
```

Facebook Cookie

- Successful logins result in the creation of a Facebook cookie
- The cookie is called: fbs_APP_ID
- That cookie can be interrogated by code on the server
 - access_token, facebook_id (UID)
- Generally, you create local accounts for Facebook users (and record things like their name, UID, etc.) after they've logged in for the 1st time

Example 2: Profile Pics

(HTML)

Facebook Profile Pics

Who's Been Here?



View All

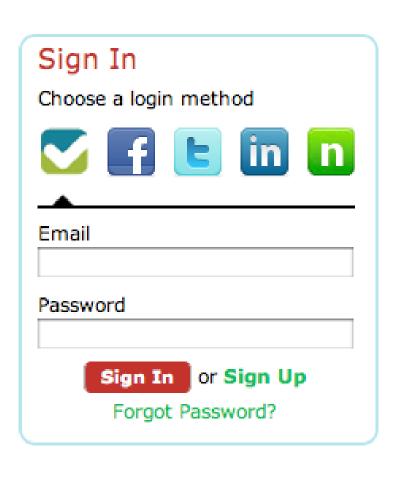
If you know any user's
 Facebook UID, then you can show their profile pic...

https://graph.facebook.com/UID/picture?type=small

Example 3: Single Sign-On

(Ruby and OAuth2)

Single Sign-On, Ruby



- We'll use the OAuth2 gem for Facebook authentication
- Same technique also works with Twitter and LinkedIn

Facebook Login Badge

```
<% if @auth_method.nil? || @auth_method == :any %>
<%= I18n.t('text.login.choose') %>
<%= link_to "<span class=\"alt\">" +
    I18n.t('label.connect_3rd_party',
    :network=>"Facebook") + "</span>",
    facebook_login_url(:contest_id => contest_id, :back =>
    request.env['REQUEST_URI']), :title =>
    I18n.t('label.connect_3rd_party', :network=>"Facebook")
  %>
```

Facebook Routes

- We support multiple auth schemes
- Each one has its own controller (facebook_controller.rb)
- Here are the relevant routes:

Rails 2.3.x

```
map.facebook_login "facebook/", :controller => 'facebook', :action => 'new'
map.facebook_oauth_callback "facebook_oauth_callback/",
    :controller => 'facebook', :action => "oauth_callback"
```

Rails 3

```
resources :facebook, :only => [:new] do
    collection do
        get :oauth_callback
    end
end
```

New Login Action

```
class FacebookController < StoreBaseController
 before_filter :authorize, :except=>[:new, :oauth_callback]
 def new
  session[:return_to] = params[:back] if params[:back]
  redirect_to client.web_server.authorize_url(:redirect_uri =>
    facebook_oauth_callback_url)
 end
 def oauth_callback end # Provided on next slide
protected
  def client
   @config ||= YAML.load(File.open(RAILS_ROOT +
      "/config/facebook_auth.yml").read)[RAILS_ENV]
   OAuth2::Client.new(@config['client_id'],
      @config['client_secret'], :site => @config['base_url'])
  end
end
```

Oauth_Callback Action

```
def oauth_callback
  unless params[:code]
   authentication_failed('Authentication info does not match session info.') and return
  end
  access_token = client.web_server.get_access_token(params[:code],
    :redirect_uri => facebook_oauth_callback_url)
  user = FacebookUser.identify_or_create_from_access_token(access_token)
  session[:user_id] = user.id
  session[:user_type] = user.user_type
  user.increment!(:login_count)
rescue Net::HTTPServerException => e
   case e.message
     when '401 "Unauthorized"'
        authentication_failed('This auth request is no longer valid') and return
      else
        authentication_failed('There was a problem trying to auth you.') and return
  end
end
```

Parsing the JSON

```
def self.identify_or_create_from_access_token(token)
  raise ArgumentError, 'Must authenticate with an OAuth2::AccessToken.' unless
     (token) || token.is_a?(OAuth2::AccessToken)
  user_ison = token.get('/me')
  user_info = JSON.parse(user_json).symbolize_keys
  unless user = self.find_by_external_id(user_info[:id])
   user = self.new( :external_id => user_info[:id])
  end
  FACEBOOK_ATTRIBUTES.each do |att|
    user.send("#{att}=", user_info[att]) if user.respond_to?("#{att}=")
  end
  user.external_id = user_info[:id]
  user.access_token = token.token
  user.profile_pic = "https://graph.facebook.com/#{user_info[:id]}/picture?type=small"}
  user.save
  user
end
```

Tips and Best Practices

Practical Tips

- Look carefully at performance
 - Control the number of Facebook calls on a page
 - Consider FQL to get data more efficiently
 - FQL has been updated to use OpenGraph
 - Cache data where possible
- If you use the canvas, use the iframe sub-type
 - Better control of the output
 - No need for HTML to be scrubbed (or mangled) by Facebook
- Do periodic regression tests on <u>production</u> code

For Canvas Apps

- "Hybrid Apps" is the way to go
- Limited functionality works within the Facebook "canvas"
- For advanced features, users taken to a separate site
- Example: PollCast Users can take polls within Facebook, but they create them by going to a separate site

Resources

- Facebook Developer Resources
 - http://www.facebook.com/developers
 - http://developer.facebook.com
- AllFacebook.com
 - http://www.allfacebook.com
- "Developing Facebook Platform Applications with Rails" by Michael J. Mangino, Pragmatic Programmers, 2008
 - Seriously outdated, but interesting

Questions

- **Blog:** http://www.keenertech.com
- Facebook: http://www.facebook.com/keenertech
- Twitter: dkeener2010
- Email: dkeener@keenertech.com

dkeener@metrostarsystems.com

Appendix A: App Creation

As a prerequisite for developing applications for Facebook, you must first register your app...

This appendix shows the various Facebook pages involved in the process

NOTE: These 3 screenshots are out-of-date now, but the basic tasks are still the same.

Documentation | Forum | Policy

Create new applications



Developer

Displaying 1 of 312 stories

News List of your apps I

See All | Subscribe



Connecting with f8

Yesterday at 5:00pm Published by Julia Lam 276

Whether you're joining us in person at f8, or will be following the event from afar, we're looking forward to celebrating the developer community with everyone on April 21.

Preparing for f8, Taking a Look Back

As we get closer to the next f8, we'll begin sharing videos from past conferences on the f8 Page for a look at some of the conversations that took place when Facebook Platform launched, and a year later when the focus was Facebook Connect.

Bringing f8 to You

With such a large and diverse ecosystem of developers and entrepreneurs around the world, we want to give everyone the opportunity to participate in f8. We'll continue to post the latest content to the f8 Page, including a live stream, updates, and photos on the 21st, so that you can see what's going on at the event, ask questions, and interact with other developers and Facebook employees on the ground.

In addition to the f8 Page and live stream, you can also connect to the event on Twitter at @fbplatform (hashtag: #f8).

For those who missed out on purchasing a ticket on time, the staff at TechCrunch has free tickets they're awarding to five people with the best comments on this article (as judged by TechCrunch). Just let them know why you should attend f8 this year for a chance to win.

The Countdown Begins!

We're anticipating another great crowd this year. Go to the f8 Page and share what you're most looking forward to discussing and learning at the event.

See you there (or you'll see us) on April 21!

Julia is moving fast with the rest of the f8 team, getting ready for the big day.

My Applications

See My Applications

dkfbone	more *	
Monthly Active Users		
Application Fans	0	
	0	

+ Set Up New Application

J	JobCast	more *
	Monthly Active Users	
	Application Fans	0

metrostarconnection	more	*
Monthly Active Users		
Application Fans		0
		0

			v
0	PollCast	more	*
	And the second second		

Monthly Active Users
Application Fans 51
28

Status

Subscribe | See All

IFrame app issues

Apr 7, 2010-12:50pm

Hello, we are aware of issues currently affecting some iFrame apps, and we're working on a solution. You can see updates and... Read more...

Multi-friend selector issues resolved

Apr 6, 2010 11:04pm

Create an Ad

U2 360° - Rose Bowl

Account *



U2 360" At The Rose Bowl features live footage from their historic concert & more. Available June 3rd. Pre-order it here!

Like

Recommended Download



Boost PC speed, Microsoft certified, Free download.

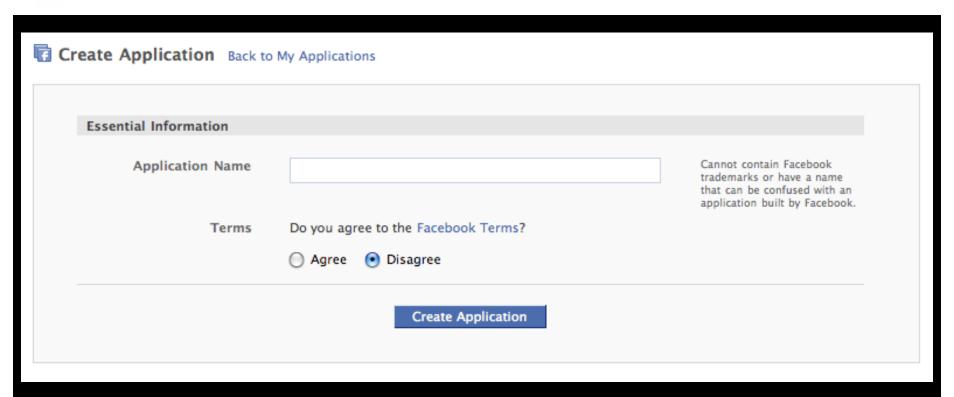
Like

Want A Killer Good × Time?



Play Mafia Wars today and

Initial App Creation

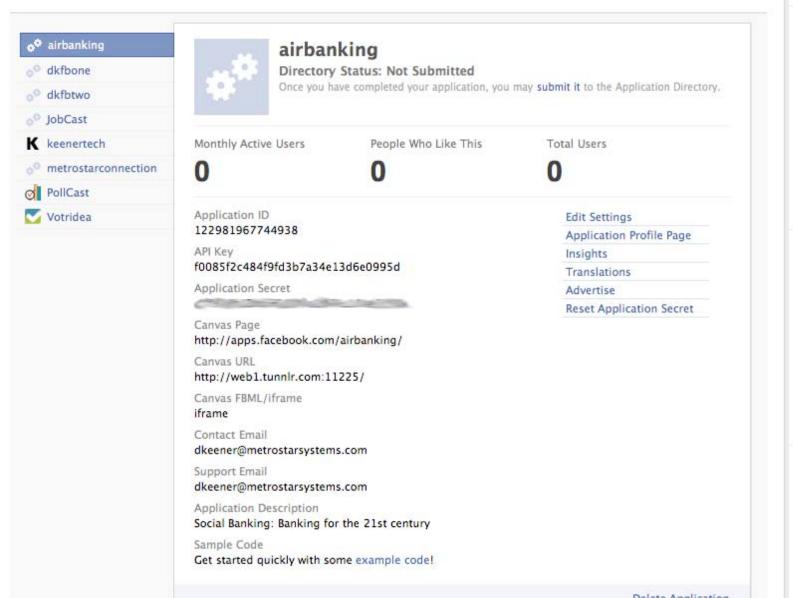


- http://www.facebook.com/developers/createapp.php
- Must fill out a CAPTCHA upon submission

Back to Developer Home



+ Set Up New Application



Create an Ad

Google & Clickbank x



Make Min \$ 3,500 a Month with Google & Clickbank Using a Simple System Which I Will Setup For You on a \$4.95 Special Trial

Like

Comic Book Club



If you like reading comic books and / or collecting comic books this is the place for you. Stop by, say Hello.

Like

Need Website Traffic?



If you own a website, you

Appendix B: SSH Tunneling

SSH tunneling is only needed if:

- You are building an app that will run within Facebook's canvas
- You want Facebook to pull the app from your dev environment, e.g. – your laptop

http://127.0.0.1:3000

...is not acceptable...

Facebook can't find your laptop...

One Simple Access Method

- Set up ssh access to a host on the Net
- On host, sshd_config file needs:
 GatewayPorts = clientspecified
- Run the following command on a UNIX flavor dev machine (like your laptop):
 - \$ ssh keenertech.com -R :3001:127.0.0.1:3000 sleep 99999

Forwards host's port 3001 to 3000 on laptop

Appendix C: Other Examples

Some more code examples:

- Example 4: Social Plugins ("Like" Button)
- Example 5: Metadata
- Example 6: Canvas App

Example 4: Social Plugins

Social Plugins

- Leverages Facebook's JavaScript SDK
- Can easily add social plugins to web sites
- Enables rapid "shallow integration"
- Eight type of social plugins available
- Each widget supports customization options
- Customization is still limited, though

Available Social Plugins



Like Button

The Like button lets users share pages from your site back to their Facebook profile with one click.



Activity Feed

The Activity Feed plugin shows users what their friends are doing on your site through likes and comments.



Recommendations

The Recommendations plugin gives users personalized suggestions for pages on your site they might like.



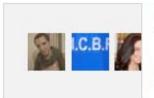
Like Box

The Like Box enables users to like your Facebook Page and view its stream directly from your website.



Login Button

The Login Button shows profile pictures of the user's friends who have already signed up for your site in addition to a login button.



Facepile

The Facepile plugin shows the Facebook profile pictures of the user's friends who have already signed up for your site.



Comments

The Comments plugin lets users comment on any piece of content on your site.



Live Stream

The Live Stream plugin lets your users share activity and comments in real-time as they interact during a live event.

Adding a Like Button

- "Like" will cause the web page to be promoted on the user's News Feed...and will also appear for their friends
- The number of people who "Like" an item impacts how often the item will be shown on Facebook news feeds
- Facebook will retrieve info about the page

Blog Entry, With "Like" Button

KEERERTECH

INTERNET TECHNOLOGIES MADE SIMPLE

Our First RubyNation Video is Live



dkeener on May 21, 2010



About

Portfolio

Presentations

Gallery

1 Tools

□ Contact



Our first RubyNation video is now live. It features Jim Wierich and his well received "SOLID Ruby" talk. It's been a lot of work getting the RubyNation video production effort off the ground, so it's nice to finally see our first polished video (only 28 more conference sessions to go).











Categories

Career Advice (7)

Database (4)

Humor (11)

Java (12)

Open Source (4)

Opinion (27)

Rails (33)

Ruby (13)

RubyNation (18)

Site News (2)

Social Media (8)

Tools (13)

Traffic Building (7)

Video (15)

Web Design (18)

3D virtual meetings

In your browser In under a minute





Like 3 people like this. Be the first of your friends.

Social Plugin Requirements

Need to have the following code...

```
<div id="fb-root"></div>
<script>
 window.fbAsyncInit = function() {
  FB.init({appld: '106529556064124', status: true, cookie: true,
        xfbml: true});
 (function() {
  var e = document.createElement('script'); e.async = true;
  e.src = document.location.protocol +
    '//connect.facebook.net/en_US/all.js';
  document.getElementById('fb-root').appendChild(e);
 }());
</script>
```

Using a Partial...

- This is <u>part</u> of "show.html.erb" for content pages on the KeenerTech blog
- Partials help keep social plugin code modular

Like Button – Embed Code

```
<iframe
    src="http://www.facebook.com/plugins/like.php?href=
        <%= CGI::escape(href%>
        &amp;layout=standard&amp;show_faces=false&amp;width=450
        &amp;action=like&amp;colorscheme=light&amp;height=35"
        scrolling="no" frameborder="0"
        style="border:none; overflow:hidden; width:450px; height:35px;"
        allowTransparency="true">
        </iframe>
```

/shared/_facebook_like_button.html.erb

Example 5: Metadata

Metadata for Facebook (1)

```
<a href="http://opengraphprotocol.org/schema/" xmlns:fb="http://www.facebook.com/2008/fbml"> <a href="http://www.facebook.com/2008/fbml"> <a href="http://ww
```

- <meta property="og:description" content="Description"/>
 - See http://developers.facebook.com/docs/opengraph#types
- <meta property="og:image" content="/images/ctnt/123/rn.jpg"/>
 - Images should be square and at least 50x50 pixels

Metadata for Facebook (2)

```
<meta property="og:url" content="http://.../your_page/"/>
```

- Permalink for the article; used by Facebook
- <meta property="og:site_name" content="KeenerTech"/>
 - Official name of your website
- <meta property="fb:app_id" content=" 106529556064124"/>
 - The app ID (or use fb:admins with comma-delimited list of Facebook ID's for the admins)

. . .

Example 6: Canvas App

Prerequisite - Appendix B: SSH Tunneling

Facebook Application

- Entire app functions within the "canvas,"
 i.e.- within the Facebook context
- Two sub-types:
 - Canvas: Deprecated.
 - Iframe: External app functions within an iframe
- Many games use iframes with an embedded Flash app
- Mostly the same as external apps...now

What Is the Canvas?

The canvas is the area within the Facebook web site that your application can control.

- As a "Canvas" app, or...
- An external app running in an iframe

It looks like this...

DKFBONE Home

This is a test.

This is the Canvas



How Facebook Canvas Apps Work

