

MOBILIZING & SHARING

HOW THE ZEND FRAMEWORK BUILDS
COMMUNITY FOR NOKIA MOSH

by Ben Ramsey & Brian DeShong



ZEND/PHP CONFERENCE & EXPO 8-11 OCTOBER 2007

Who we are...

- Ben Ramsey
 - Software Architect, Schematic
 - God o' PHP
- Brian DeShong
 - Senior Software Architect, Schematic
 - Rookie on conference circuit

Who is Schematic?

THE CHALLENGE



Nokia

- Leading manufacturer of mobile devices with over 36% of market share
- Sell over 1 million phones every day
- Forum Nokia developer community is largest in the world
- These developers have no channel to market their content
- Nokia wants to provide that channel to capture the innovation of their community and enhance their sales

Challenges: Audience

- Global
- Consumers from varying backgrounds
- Interested in application/content creation or sharing on their mobile devices
- Mobile phones from various providers
- Tech savvy with online community experience
- Nokia wants to be *the* place for mobile content sharing

Challenges: Technical

- Web and mobile experiences
 - Bringing parity to the experiences on both platforms
- Must sustain increased traffic over time
- Global nature requires i18n and l10n
- Low time-to-market
- Needed a reliable, flexible, community-supported framework or library
- Content moderation

mobilize and share

mosh

NOKIA

WHAT IS MOSH?



What is MOSH?

- MOSH == MObilize and SHare
- User-generated content sites
 - Web
 - Mobile
 - Other (APIs, device clients, etc.)
- Images, audio, video, apps, games, and documents

Features of MOSH

- Uploading content from Web and mobile devices
- Community aspects
 - Sharing content
 - Friends
 - Collecting content
 - User rankings/statistics
 - Tagging
- Device compatibility



Get MOSH on your mobile device

Registered Users

00034162

Invite a Friend

Sign In | Register

CONTENT Refresh

Audio Images Applications
Games Videos Documents

COLLECTIONS Refresh

- Div. readers by Tea
- sawantabhi's Collection by sawantabhi
- niklas's Collection by niklas

PEOPLE Refresh

TAGS

Welcome To MOSH

Your Stuff. Any Phone. Everywhere.

Upload

Upload your games, applications, photos, video and more.

Collect

Organize your favorites into collections

Share

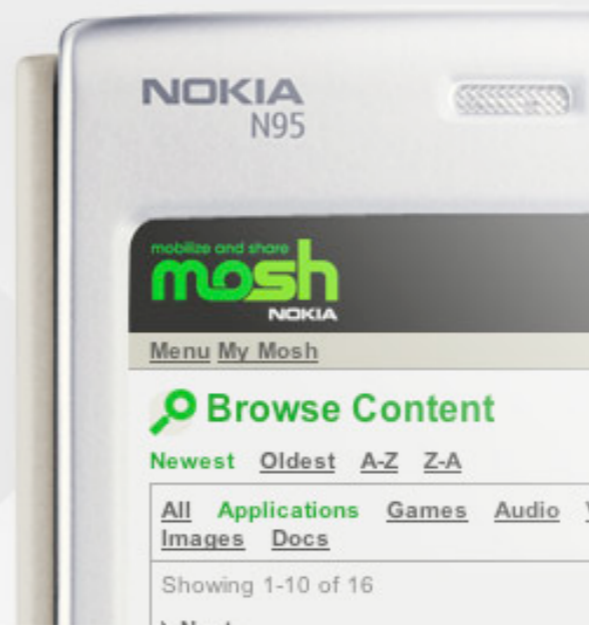
Pass it on to your friends and other MOSH members around the globe

Mobilize

Leave the laptop at home — upload, share, browse all your favorite stuff right on your mobile phone

Register now to upload. It's free!

TOUR THE SITE



SIGN IN

Username
Password

SIGN IN Remember Me

Forgot **username** or **password**?
Register (It's free!)

Popular Content



Volvo World Race

by Pablo

Viewed: 638

Collected: 18

Love: 21

More

Visit

on the mobile

mosh.nokia.mobi



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ramsey Sign Out | Account

CONTENT Refresh

Audio Images Applications
Games Videos Documents

COLLECTIONS Refresh

Hot Video by y4h0ooo0
Farryanto's Collection by Farryanto
Stan's Collection by Stan

PEOPLE Refresh

TAGS

Welcome, ramsey!



- Edit your public profile
- Select your device
- Change your contact info

BROWSE CONTENT MY SUBSCRIPTIONS UPLOAD

Popular Content



Steve Jobs Speech at Stanford
by vvsnaresh
Viewed: 2,709
Collected: 99
Love: 68
More

Visit
mosh
on the mobile
mosh.nokia.mobi

Memo From russell



2 days ago
I want to update you on the search for the real Russell. As previously

MY MOSH MOBILE ?

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SEND ME A LINK!

MY DASHBOARD ?

Stats:

Creator Collector Sharer

My rank: 287 (top 1%)

Comments Left: 15
Love It: 64
Collected: 89

MY UPLOADS ?

Tomiku
Downloads: 77
Comments: 0
Love It: 4
UPLOAD NOW

MY COLLECTIONS ?

MY SUBSCRIPTIONS ?

Collections

Vending machines



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CONTENT Refresh

Audio Images Applications
Games Videos Documents

COLLECTIONS Refresh

- Div. readers by Tea
- games by chklat22
- Mosh_test2's Collection by Mosh_test2

PEOPLE Refresh

TAGS

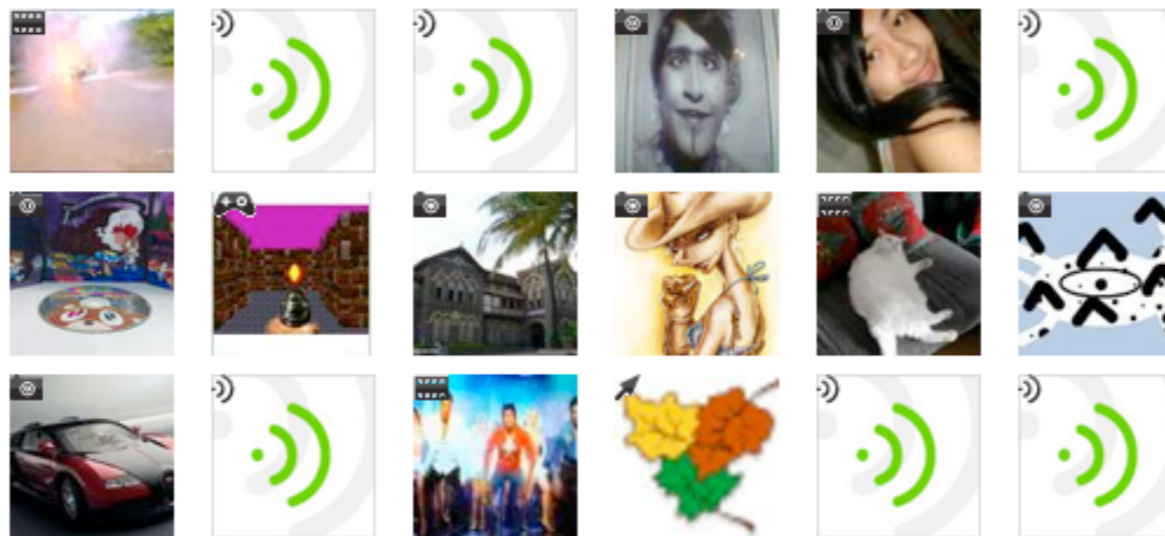
Browse

Browse All Content

APPLICATIONS GAMES AUDIO VIDEOS IMAGES DOCUMENTS

CONTENT SAMPLER

Refresh



Most Recent



Mustard Thunder II
by doggie
14 minutes ago

Most Loved



Nokia is going flat
by tote
Jun 24, 2007

Most Collected



Frozen Bubble (S60, 3rd edition)
by bdeshong
Aug 7, 2007

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MY COLLECTIONS

MY SUBSCRIPTIONS

Collections

Vending machines
by bdeshong

Done





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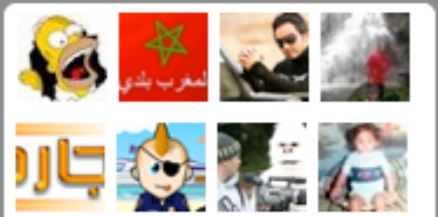
CONTENT Refresh

Audio Images Applications
Games Videos Documents

COLLECTIONS Refresh

- amania's Collection by amaniya
- chklat22's Collection by chklat22
- Mosh_test2's Collection by Mosh_test2

PEOPLE Refresh



TAGS

E65 Stuff
by bdeshong Added Aug 4, 2007

ITEMS IN THIS COLLECTION

1 of 12 3 of 12

iPhone theme by HarishRajamani

Prev Next

LOVE IT LEAVE IT

Stuff for my brand new, shiny E65!

- Subscribe
- Share
- Report Abuse

Stats

Raved: 0
Linked To: 0
Shared: 3
Commented: 1
Subscriptions: 25

In This Collection

- Indiana Jones the by bdeshong
- Jeopardy Ringtor by Nealw98
- Putty S60v3 R296 by mika
- Screenshot S60v: by mika
- Frozen Bubble (S by bdeshong
- "Quote of the day by Itomuta
- Nice Alarm by Leonard
- Knight Rider by windsorr
- Theme - Dots Blu by fawzi
- A-Team by bambataa123

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UPLOAD NOW

MY COLLECTIONS

MY SUBSCRIPTIONS

- Collections
- Vending machines by bdeshong





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SEARCH

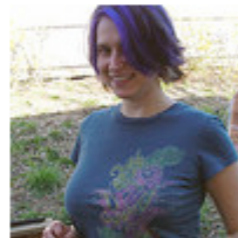
ramsey Sign Out | Account

CONTENT Refresh

Audio Images Applications
Games Videos Documents

maggie

Space monkey robot ninjas!
Rank: 71 (top 1%)

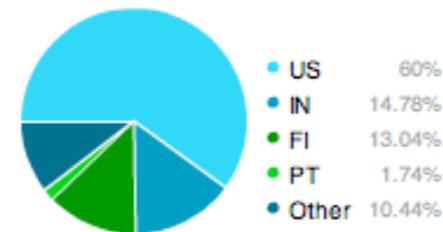


I'm a software developer in NYC. I like PHP, but above all, I like a well-normalized database. Oracle PL/SQL is beautiful. Tom Kyte (asktom.oracle.com) is my hero.

I also like horrible puns.

Q: How is Nicole Kidman like the damage done by a morningstar?
A: She's two die four.

Who's Collecting maggie's Content:



REMOVE FROM MY PEOPLE

COLLECTIONS Refresh

- eVILrAcEr's Collection by eVILrAcEr
- Games by anujg
- Farryanto's Collection by Farryanto

Stats

Has 23 Uploads [View](#)
Has 10 Collections [View](#)
Has left 206 Comments
Has added 517 Tags

Device

Apple iPhone



PEOPLE Refresh

TAGS

Showcase Item:

Playa pano (not player piano)

Panorama of the playa at

What maggie Uploads

Games 0%

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MY COLLECTIONS

MY SUBSCRIPTIONS

Vending machines

Done



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 SEARCH

ramsey Sign Out | Account

Upload

Ready to add your content to MOSH? Follow the few simple steps below.

1 Choose File

Uploading...

2 Categorize

Help us categorize your upload.
Looks like you're uploading a: **Video**

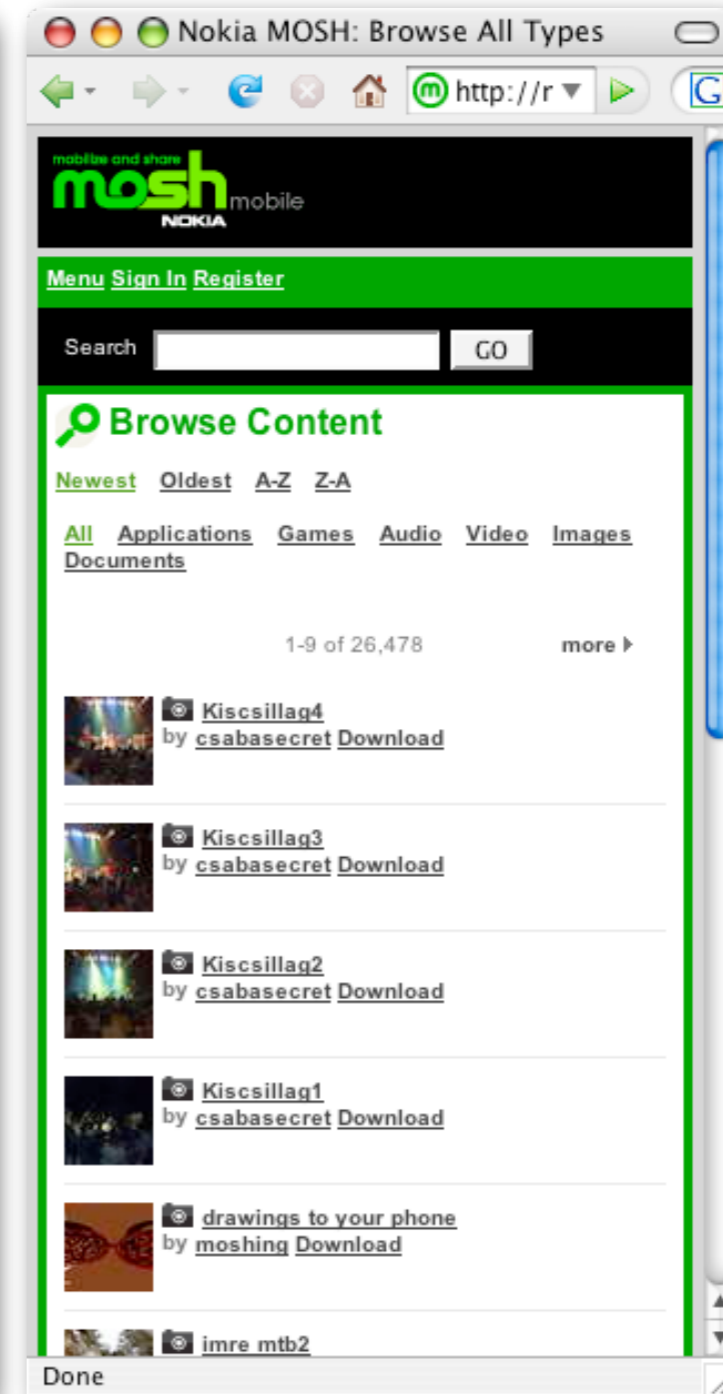
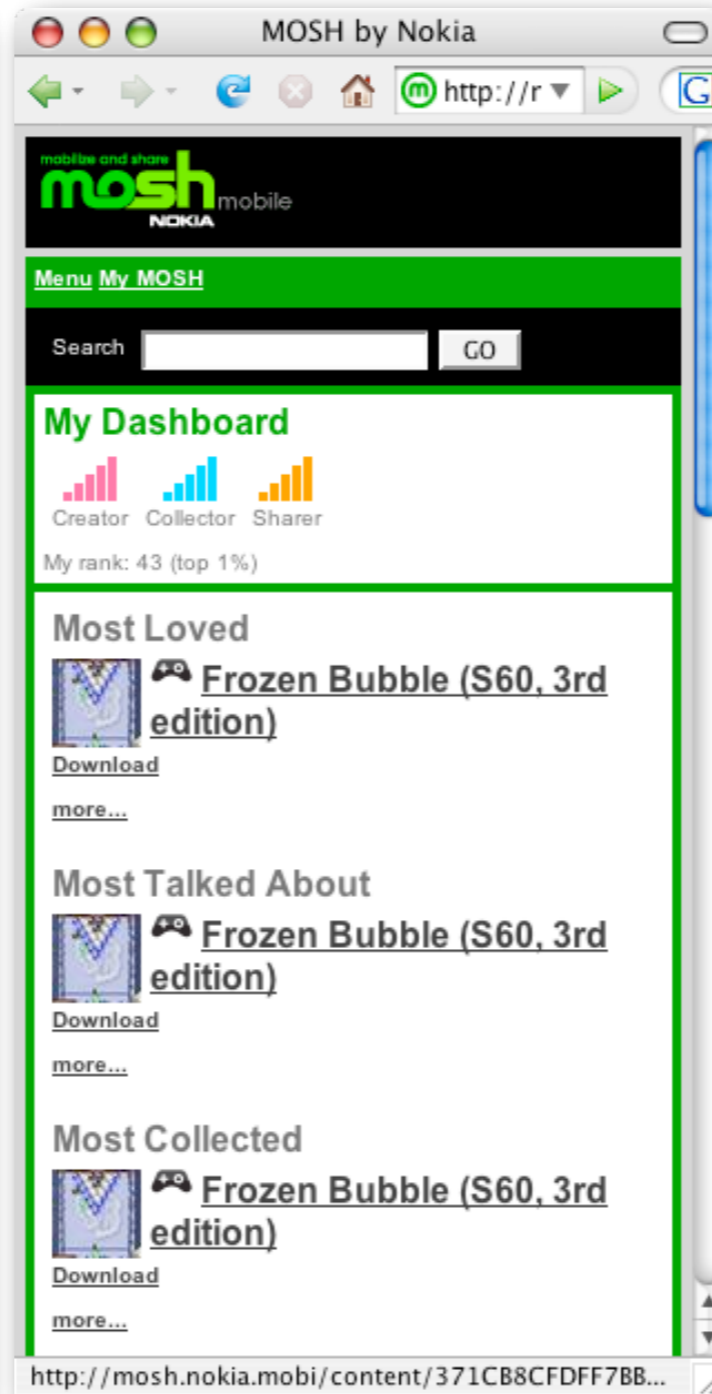
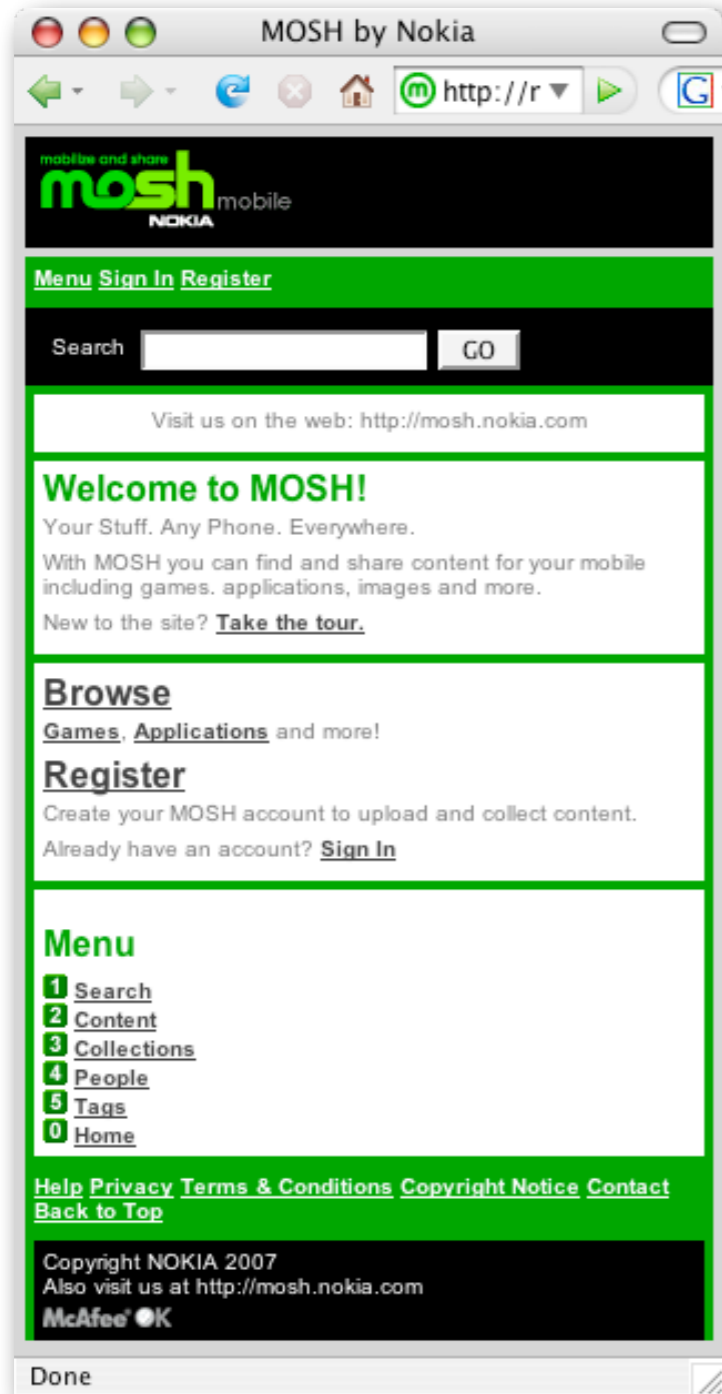


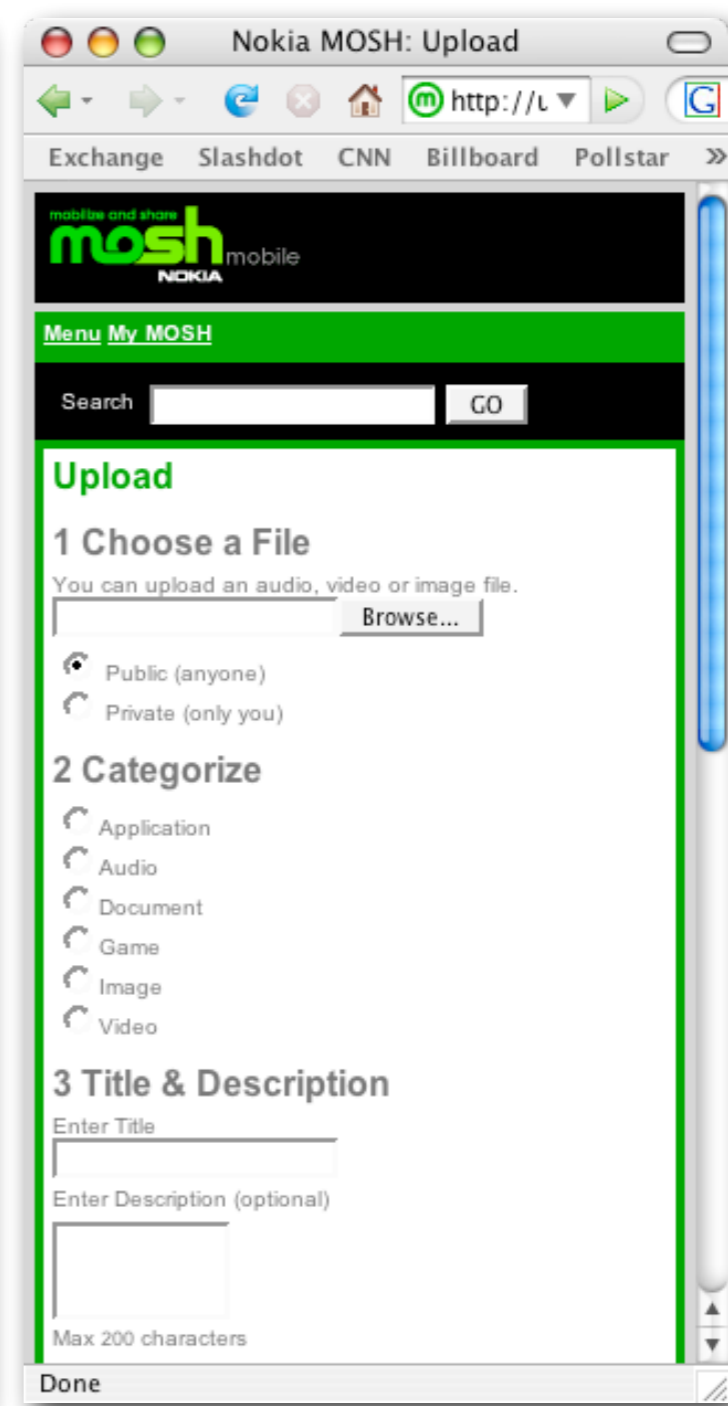
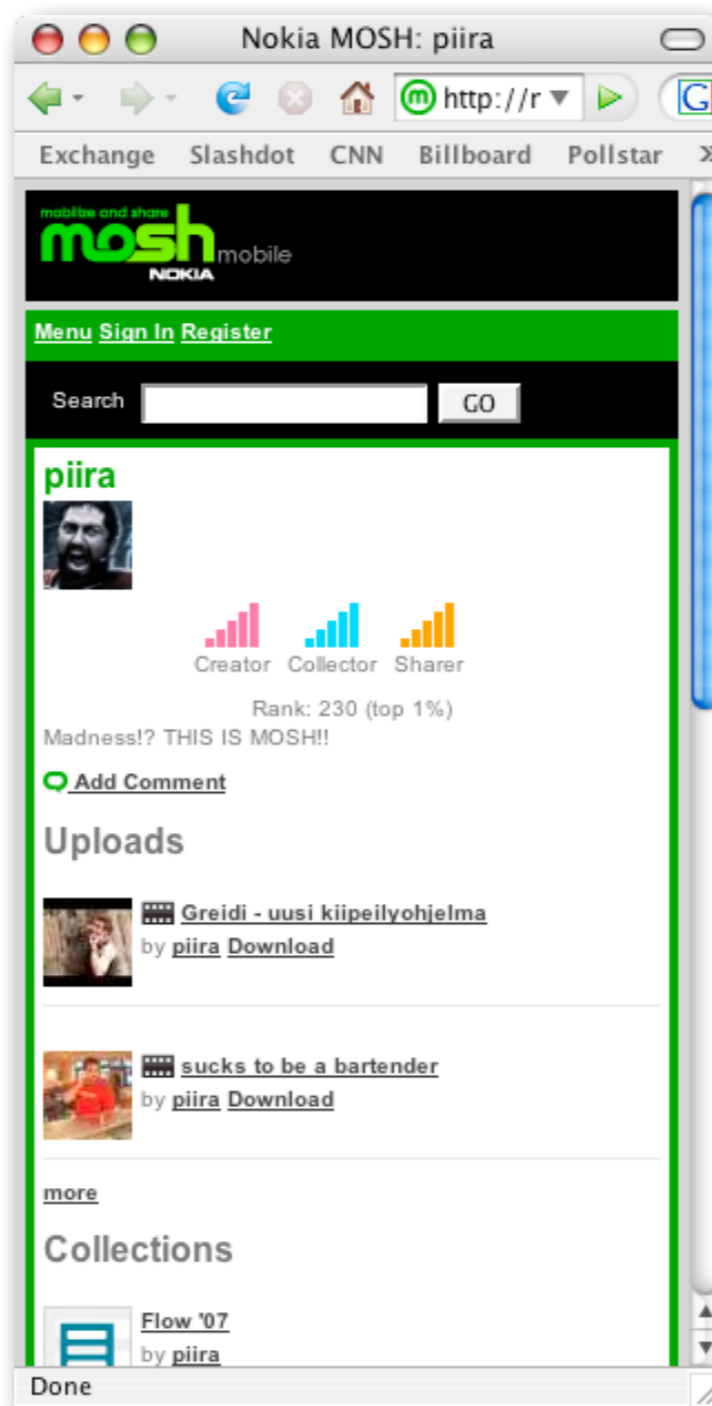
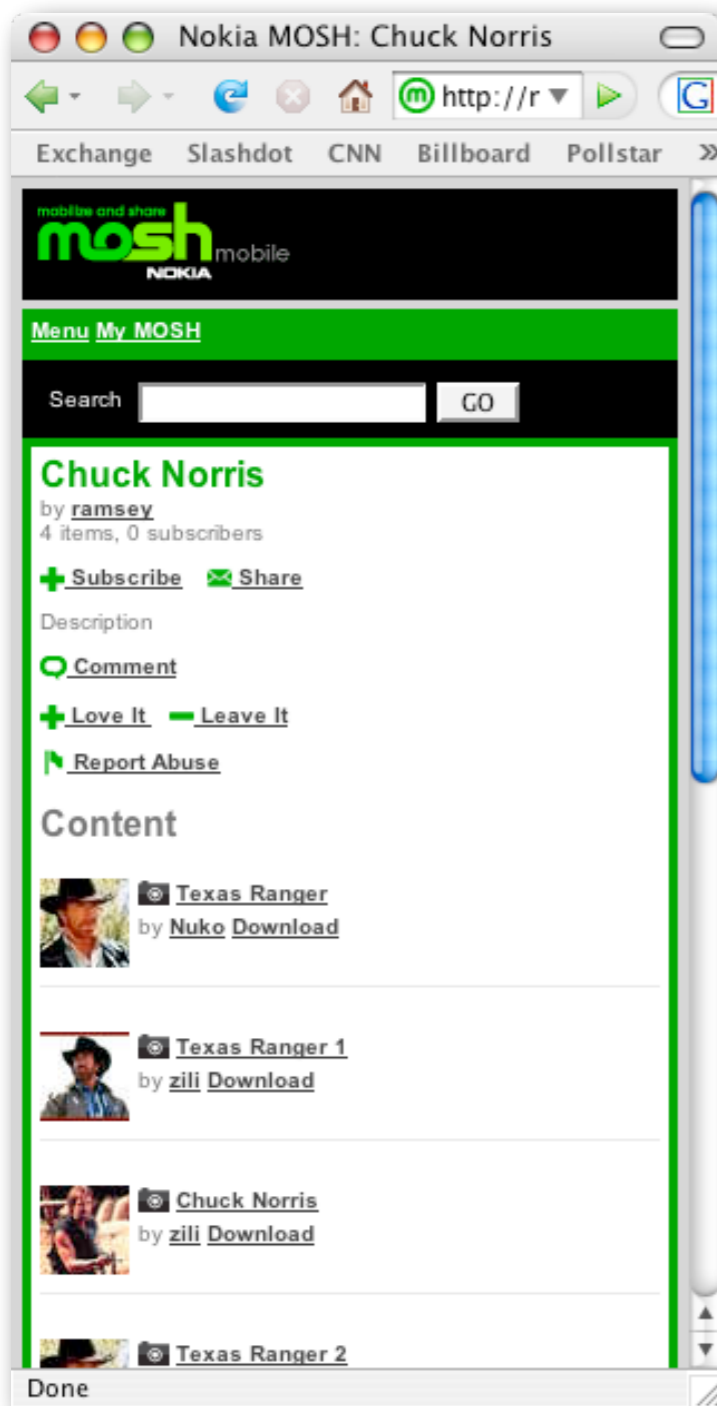
YES, I AM NO, I'M NOT

3 Describe

Having trouble with your upload? Try the

Classic Uploader





THE SOLUTION



PHP 5

- Resources available in Schematic
- Experience building large and scalable PHP applications
- Free as in “freedom”
 - No extra costs incurred in the way of server and software licenses
- Rapid time-to-market
- Scalable and proven technology
- Full UTF-8 support in PHP 5 with mbstring functions
- Extensions

PHP Extensions

- PDO / PDO_OCI
- Memcache
- APC
- Fileinfo
- uploadprogress
- mbstring
- imagick (2.0 series)
- GD

Zend Framework

- Adheres to our existing in-house standards and best practices
- A “use-at-will” approach means we have a flexible framework that doesn’t burden us with components we don’t need
- Easy to add our own classes/components to extend and enrich the feature set
- Contained many components we needed to construct a scalable social networking website
- BSD license and CLA are advantages
- Strong community support and corporate backing

Oracle

- Client preferred Oracle
- Extensive experience on our team using Oracle on high-trafficked sites
- Good community support from Oracle; direct access to Oracle extension maintainers
- Stable and mature stored procedures, transactions, and views
- Unicode support
- Data partitioning

Miscellaneous

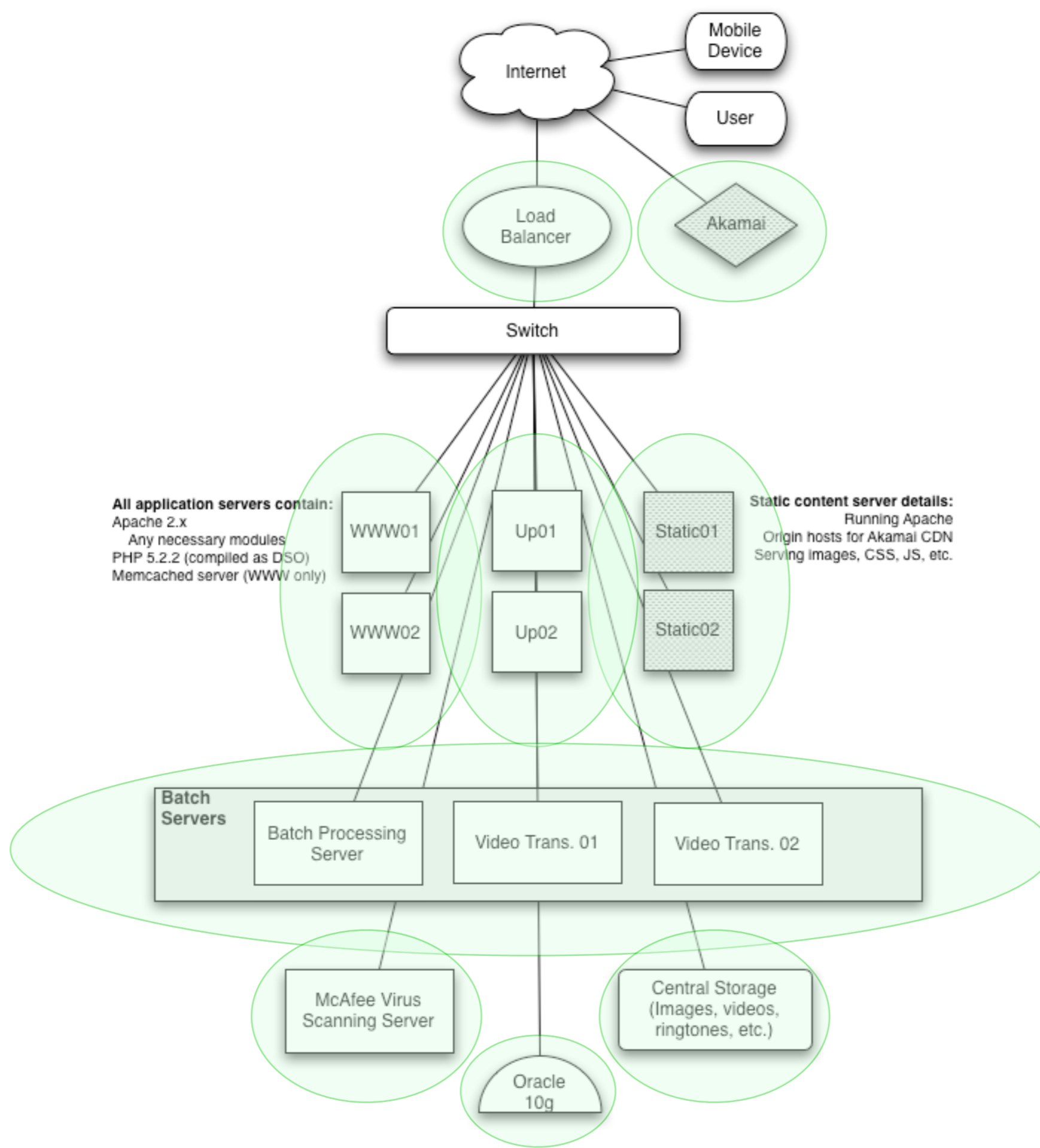
- Akamai (CDN)
- Linux
- Apache
- Video transcoding tools
- Audio transcoding tools
- Copyright scanning
- Virus-detection with McAfee
- Messaging via e-mail and SMS

ARCHITECTURE



Basics

- OPAL - Oracle, PHP, Apache and Linux
- Three clusters:
 - WWW
 - Upload
 - Static
- Dedicated batch processing machines
- One Memcached pool
- Central storage device
- All machines contain code base on local disk



SCALING MOSH



General techniques

- Load balancing; clusters of machines
- Memcache session handler (PECL extension)
- User data stored in session at login
- Liberal use of caching
 - Database query result sets
 - Non-user-specific data
- Batch processing on the back end

Processing uploads

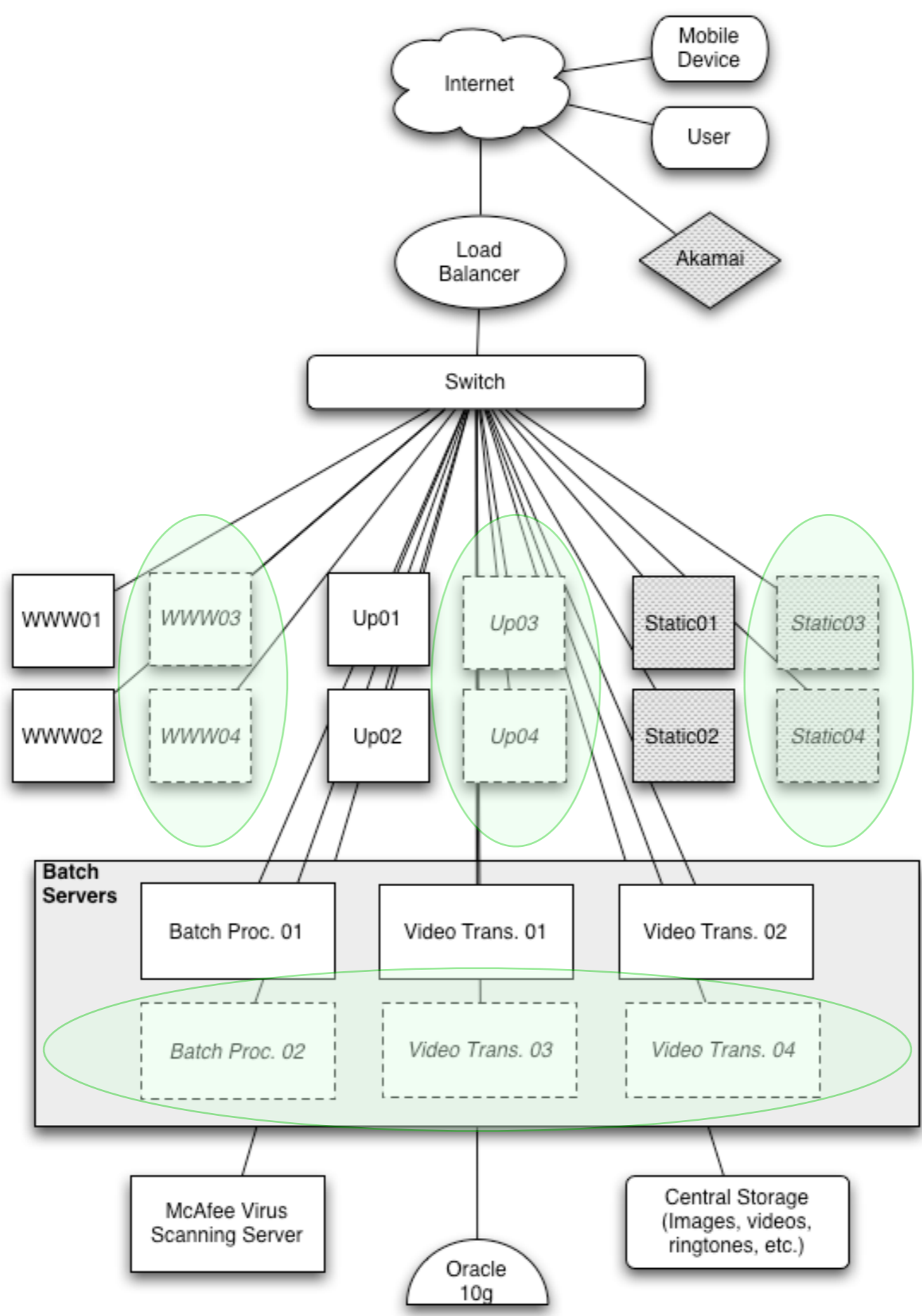
- All uploads are virus scanned
- Images
 - Generate thumbnails
- Videos
 - Transcode into Flash Video and 3GP
 - Copyright detection
 - Generate thumbnails
- Audio files
 - Copyright detection
 - Transcoding into AAC (coming soon)

Batch processing

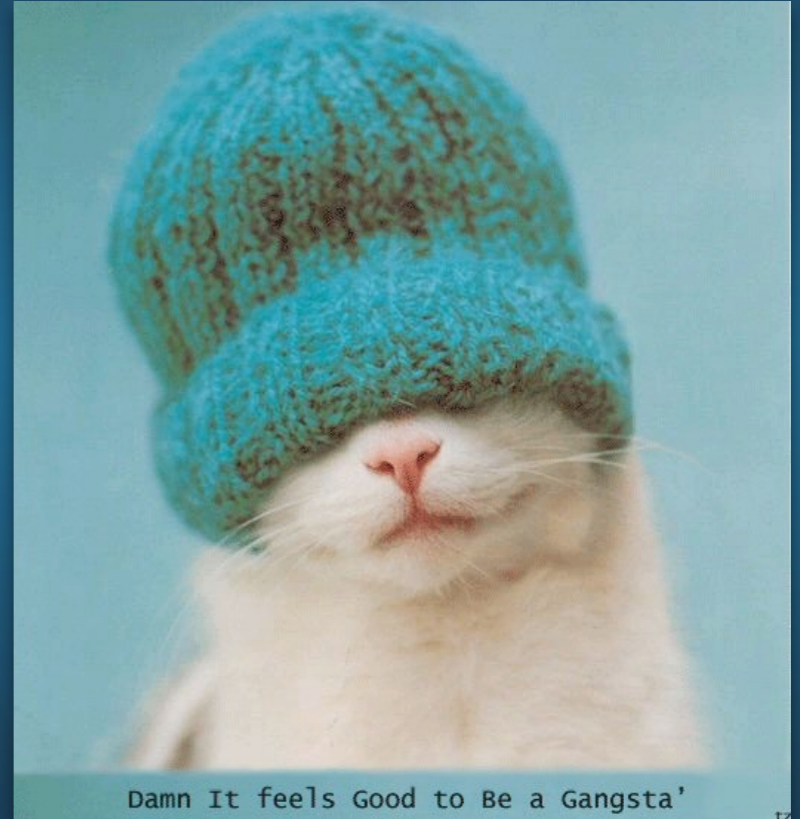
- Upload processing is performed in batch
 - New uploads go into a “Pending” state
- All vendor communication is performed by batch processes
- If one server isn't enough
 - We add more!
 - Processes built to run on multiple machines

As MOSH grows...

- Add more webservers
- Add more batch processing servers
 - Data model for queues built to support multiple batch machines
- We can expand Memcached pool or add more



ZEND FRAMEWORK



Zend_Controller

- Basic foundation of the site
- Controls all actions and determines URI structure
- Fast and easy to set-up
- Using advanced features like routes gives us lots of power in designing URIs
- Extensible and flexible

Zend_View

- No special templating engine adding extra layers of complexity
- Views are HTML mixed with PHP: plenty of resources skilled with these technologies
- Uses the default rendering functionality (i.e. ZF is smart enough to know where the view of a particular action lives)
- Customized view helpers have provided reusable building blocks, saving us lots of time

Controller / View Example

- Given the following URL:
 - `www.example.org/browse/videos`

```
<?php

class BrowseController extends Zend_Controller_Action
{
    public function videosAction()
    {
        // Do processing of browse videos data;
        // View script is automatically rendered at end of method
    }
}

?>
```

- Automatically grabs view from `appdir/views/scripts/browse/videos.phtml`

Zend_Session

- Session namespaces provide separation of session data
 - Authentication
 - Access and permissions
 - Throttling
- Access session data as properties on an object

Zend_Cache

- Using memcached implementation
- Wrote an adapter to wrap the functionality of Zend_Cache according to our interface preferences
- Used heavily to store database query resultsets

Zend_Config

- Chose to use an INI file for configuration
- Ability to access that configuration as an object
- Configuration lives in global scope; always at hand for information
- Extensible configuration sections allows for multiple development environments without duplicating config values

Zend_Auth / Zend_Acl

- Using Zend_Auth out of the box
- Authentication performed against database
- Roles and permissions set up in the database
- Zend_Acl allows easy representation and access of these roles and permissions

Zend_Translate

- Use the gettext adapter
- xgettext “sucks” out the strings into .po files that we send to the translation team
- Created a view helper that “wraps” Zend_Translate
- Modified slightly to provide an sprintf() approach:
 - `$this->translate('Hi, %s! Welcome to MOSH', array($user));`
- Easy to drop in new translation files at any time

Zend_Locale / Zend_Date

- Use Zend_Locale to get browser language info
- Language info is used with Zend_Translate to translate the website
- Locale information used to properly translate countries and month names
- Date information used for rendering date format according to the locale

Zend_Filter / Zend_Validate

- Combined with custom input processing class
- Used ZF Filter and Validate interfaces to construct other custom filters/validators
- Provides a comprehensive input validation solution for MOSH

Zend_Mail

- Used in the batch processing cluster
- Simple interface; easy to use
- Supports multipart messages
- Sends messages in UTF-8 encoding

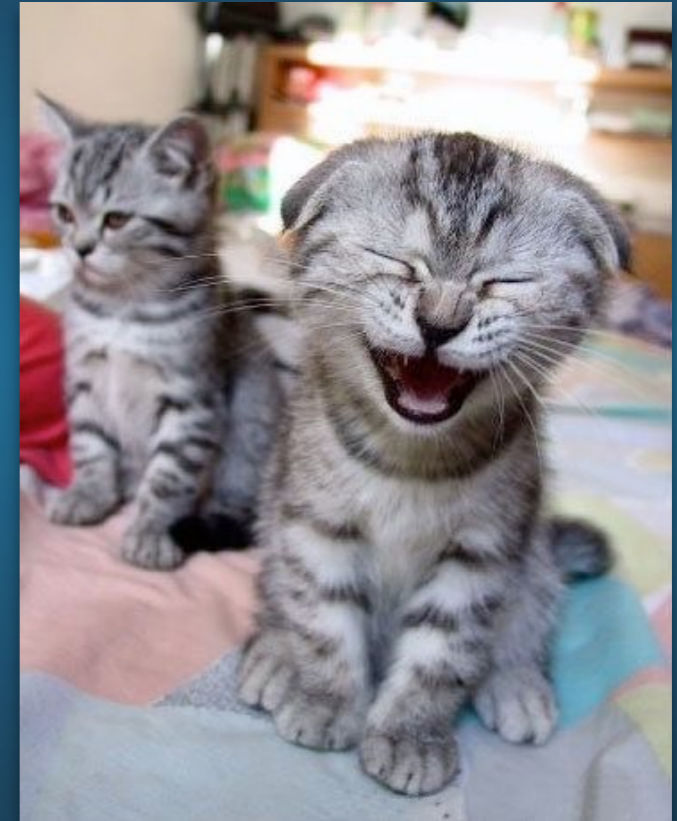
Zend_Feed

- Really Simple Syndication (RSS) format used for feeds throughout the site
- Generates proper headers for application/rss+xml
- Decided Atom support too weak for our purposes; wrote our own Atom syndication format and publishing protocol classes

In closing...

- Challenge
 - Nokia wanted to build a global, community website for users to share mobile content
- Solution
 - PHP 5 and the Zend Framework met that challenge as part of a comprehensive and scalable solution

QUESTIONS?



Links of interest...

- Schematic: <http://www.schematic.com/>
- Nokia MOSH
 - Web: <http://mosh.nokia.com/>
 - Mobile: <http://mosh.nokia.mobi/>
- Zend Framework: <http://framework.zend.com/>
- Our blogs...
 - Ben Ramsey: <http://benramsey.com/>
 - Brian DeShong: <http://www.deshong.net/>