(Don't Fear) the Features

Now with more cowbell.

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Me

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- 1996 – Enterprise Web Tech & CMS
- 2006 – PMP, Stanford Advanced PM
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Hook 42

Who are we?

A boutique software development firm.

Cater to both luxury clients and humanitarian efforts.

Specialize in complex projects.

Contribute to the community.

Focus areas: site rescue, migration / upgrades, multilingual, SEO, responsive design, digital strategy, business process improvements

Drupal has a nice feature,

you can create a feature using Features.

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Are you scared yet?

Drupal has a nice [development and deployment] feature -

you can create a feature [on your website] [using the] Features [module].

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Getting there.

1. What is a Feature?

2. Why use Features?

3. What is this Features jargon?

4. How do I do Features "right"?

5. Why is it important to be organized?

6. When should I fear the Features?

What is the Features module?

It exports Drupal configurations in the database to code in the structure of a module.

Intended Usage

Bundle a reusable website feature for reuse on other sites.

Site1.com/blog
Site2.com/blog
Site3.com/blog

For example, a custom blog feature =
content type + views + block + permissions

Feature: h42_awesome_blog

Adapted Usage

Bundle database configurations to code for deployment in a *multi-stage* publication process for a single web site.

example.com

Dev → Test → Prod

Other Usage

Features can be installed in a distribution with special considerations.

Apps are Features with EVEN MORE COWBELL. They have an extended interface for non-technical user installation.

See Panopoly, OpenPublish/Public/Enterprise/ Academy for great examples.

From LevelTen:
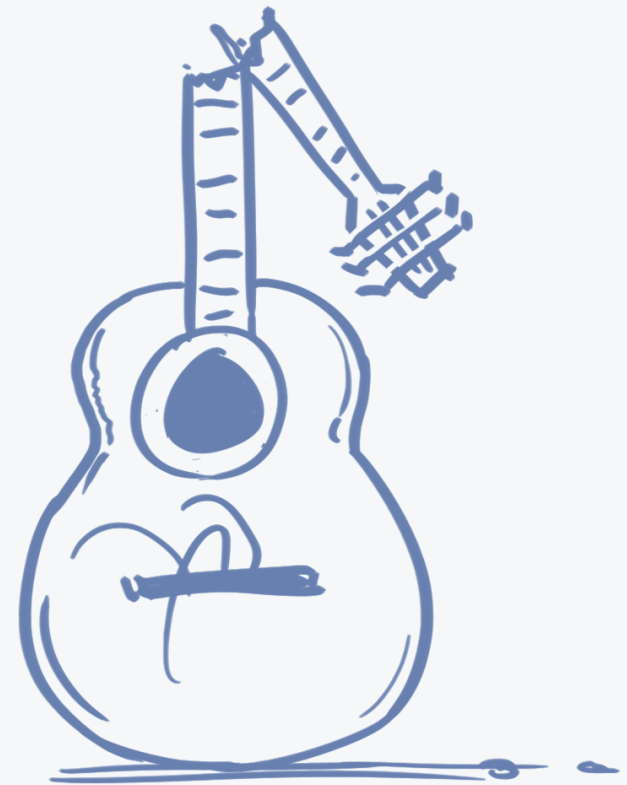http://www.youtube.com/watch?v=SF7bZw9wCwg

Features has a bad reputation

- Too much work
- Hard to use
- Messy
- Painful
- Evil
- Ugh

Poorly made Features hurts everyone

- Missing variables
- Circular & Multiple Dependencies
- Missing settings
- Non-exportable?!
- Un-tested?!?

Goal: Love Features

Through understanding. And more cowbell.

Features is a Band Member

Features Band Members

Dependencies:

- Ctools: https://drupal.org/project/ctools

Extra cowbell add-ons:

- Diff: https://drupal.org/project/diff

Extending features Features:

- Features Extra: https://drupal.org/project/features_extra
- FTools: https://drupal.org/project/ftools (local)
- Strongarm: https://drupal.org/project/strongarm
- Features Override: https://drupal.org/project/features_override

Features Band Members

Content Export Support:

- UUID Features Integration (+UUID) https://drupal.org/project/uuid_features

- Nice comparison of Node Export vs. UUID Features: https://drupal.org/node/1311428

- If content needs to be bundled, consider Deploy: https://drupal.org/project/deploy/

Behind the music.

- `featurename.info`
- `featurename.features.inc`
  - includes calls to other modules that are extending
  - (ds / strong-arm)
- `featurename.module`
  - exists blank by default, but you can put hook_XXX_alters and any other module extensions
- `featurename.features.[exportable-type].inc`
  - Created by specific module exportables
  - (user_permissions, workbench_moderation)
- `featurename.[exportable-type].inc`
  - Created by specific module exportables
  - (strongarm, ds,)

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```
aimees-mbp-2:all aimee$ pwd
/Users/aimee/Code/pantheon-hook42/sites/all
aimees-mbp-2:all aimee$ cd modules
aimees-mbp-2:modules aimee$ ls
README.txt          contrib             features
aimees-mbp-2:modules aimee$ cd features
aimees-mbp-2:features aimee$ ls
h42_base                h42_external_blogs      h42_seo
h42_block               h42_frontend            h42_service
h42_blog                h42_home                h42_team_members
h42_contact             h42_page
aimees-mbp-2:features aimee$ cd h42_seo
aimees-mbp-2:h42_seo aimee$ cat h42_seo.info
name = H42 SEO
core = 7.x
package = Hook 42
version = 7.x-1.0
project = h42_seo
dependencies[] = globalredirect
dependencies[] = metatag
features[features_api][] = api:2
aimees-mbp-2:h42_seo aimee$ cat h42_seo.module
<?php
/**
 * @file
 * Drupal needs this blank file.
 */
aimees-mbp-2:h42_seo aimee$
```

```
./h42_base:
h42_base.features.field_base.inc
h42_base.features.taxonomy.inc
h42_base.info
h42_base.module

./h42_block:
h42_block.features.fe_block_boxes.inc
h42_block.features.fe_block_settings.inc
h42_block.info
h42_block.module

./h42_blog:
h42_blog.features.fe_block_settings.inc
h42_blog.features.field_instance.inc
h42_blog.features.inc
h42_blog.info
h42_blog.module
h42_blog.strongarm.inc
h42_blog.views_default.inc

./h42_contact:
h42_contact.features.conditional_fields.inc
h42_contact.features.field_instance.inc
h42_contact.features.inc
h42_contact.field_group.inc
h42_contact.info
h42_contact.module
h42_contact.strongarm.inc

./h42_external_blogs:
h42_external_blogs.features.fe_block_settings.inc
h42_external_blogs.features.field_instance.inc
h42_external_blogs.features.inc
h42_external_blogs.feeds_importer_default.inc
h42_external_blogs.info
h42_external_blogs.module
h42_external_blogs.strongarm.inc
h42_external_blogs.views_default.inc
```

Prevent conflicts. Reduce dependencies.

ARCHITECTING FEATURES

FOCUS:
ORGANIZE FOR PARALLEL DEVELOPMENT
FIELD REUSE
INDEPENDENT SITE FEATURES

Isolate & identify the Feature(s) that gets turned on first and turned off last.

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Two Leading Approaches

All Views
All Panels
All Content Types

Field Bases
View Modes
Image Styles

Blog
Product
PPC Landing Page

Use Cases:
Small dev team
Large w/ type per dev
Code deployment
Single use

By Type / Purpose

Base / Shared / Global Settings

By Site Functionality

Use Cases:
Large dev team
Distributions
Code deployment
Reusable Features

Benefits:
Know where things go
Manages dependencies
Reduce Merge Conflicts*

Which one to choose?
Depends on your organization
and project needs

Benefits:
Isolate site features*
Parallel development
Reduce Merge Conflicts

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What is your name, Feature?

Like any module, a Feature is unique.
Avoid naming collisions.

Best practices:

- Create a Feature tag to group features
- Prefix the name with a code h42_blog
- Add a clear descriptor of contents*

Where do you live, precious Feature?

Features are essentially modules.

They are custom to your install.

- In [droot]/sites/all/modules/custom
- Or [droot]/sites/all/modules/features
- Or in your architect's convention.

Results of the Naming Convention

Features Structure

Feature Name	Feature Contents	Requirements
base_site	Views, ctools, jquery updates, global perms	Enables all shared modules May leverage an install profile for this it
base_field	Stores all field bases and field collections base for reuse	Most other Features require this Feature
base_frontend	All shared / global theme and theme support settings: Base view modes, image styles, breakpoints, picture	Most other Features require this Feature
base_dev	All modules that are used to support development: Views UI, Fields UI, Devel, Devel Themer	Can safely turn off in any environment without impacting site functionality
base_content_tools	Link checkers, wysiwyg	All tools for the content editors
base_seo	Metatag, xmlsitemap, pathauto, global redirect	Isolate SEO based settings
h42_blog	Content type, any blog views, permissions for blog, blog view modes settings, pathauto, custom metatag, xmlsitemap	Isolate all settings for a single part of a site's functionality

What are you saying?

FEATURES TERMINOLOGY

FOCUS:
KNOW WHAT THE BUTTON LABELS MEAN

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Know your lingo (all)

- **Dependencies:** like a module, a feature can have dependencies on modules or other features

- **Disabled:** a feature that is not used

- **Overridden:** the code on disk is different that the database structure

- **Needs Review:** things have really changed, you need to consider reverting your feature w/o a look

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Know your lingo (UI)

- **Recreate:** make changes to an existing feature

- **Generate:** pressing "the button" to export the code disk

- **Review Overrides:** with the diff module installed you can see an overview of changes

Dashboard   Content   Structure   Appearance   People   Modules   Configuration   Reports   Advanced help   Help   Hello **Aimee Degnan**   Log out

Search   0 / 1

H42 Block ⊕

VIEW   **REVIEW OVERRIDES**   RECREATE

❌ There are security updates available for one or more of your modules or themes. To ensure the security of your server, you should update immediately! See the available updates page for more information and to install your missing updates.

DEFAULT	OVERRIDES
FE_BLOCK_SETTINGS	

Line 4	**Line 4**
`'machine_name' => 'contact_address_block',`	`'machine_name' => 'contact_address_block',`
`'module' => 'block',`	`'module' => 'block',`
− `'pages' => 'contact',`	+ `'pages' => '<front>',`
`'themes' => array(`	`'themes' => array(`
`'bartik' => array(`	`'bartik' => array(`
Line 13	**Line 13**
`'status' => 1,`	`'status' => 1,`
`'theme' => 'hook42',`	`'theme' => 'hook42',`
	+ `'weight' => -16,`
`),`	`),`
`'seven' => array(`	`'seven' => array(`
Line 21	**Line 22**
`),`	`),`
`),`	`),`
− `'visibility' => 1,`	
`),`	`),`
`'block-contact_selection_block' => array(`	`'block-contact_selection_block' => array(`
Line 36	**Line 36**

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GENERAL INFORMATION

Name

H42 Blog

Example: Image gallery (Do not begin name with numbers.)

Machine-readable name *

h42_blog

Example: image_gallery
May only contain lowercase letters, numbers and underscores. **Try to avoid conflicts with the names of existing Drupal projects.**

Description

Contains article content type and supporting blog features.

Provide a short description of what users should expect when they enable your feature.

Package

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Organize your features in groups.

Version

7.x-1.2

Examples: 7.x-1.0, 7.x-1.0-beta1

· **ADVANCED OPTIONS**

Download feature

COMPONENTS

Expand each component section and select which items should be included in this feature export.

Search [   ] Clear ☐ Select all

· **BLOCK CONTENTS (BOXES)** (fe_block_boxes)

· **BLOCK SETTINGS** (fe_block_settings)
☑ [views-1f78a359869152e78ca50486abc900db] View: Blog Articles: Recent Articles Block
☑ [views-blog_articles-block_1] View: Blog Articles
☑ [views-d1f607e7d0399bc7a2d6efc2feb446f1] View: Blog Articles: Full Article Listing Block

· **CONDITIONAL FIELDS** (conditional_fields)

· **CONTENT TYPES** (node)
☑ Article

· **DEPENDENCIES** (dependencies)
☑ Content Theme ☑ Chaos tools ☑ Date ☑ Display Suite ☑ Entity Reference ☑ FE Block
☑ Features ☑ File ☑ H42 Base ☑ Image ☑ List ☑ Media ☑ Metatag ☑ Multiselect
☑ Options ☑ Strongarm ☑ Taxonomy ☑ Views

· **DISPLAY SUITE FIELD SETTINGS** (ds_field_settings)
☑ comment|comment_node_article|default

· **DISPLAY SUITE LAYOUT SETTINGS** (ds_layout_settings)
☑ comment|comment_node_article|default

· **FIELD BASES** (field_base)
☑ field_type

· **FIELD INSTANCES** (field_instance)
☑ node-article-body ☑ node-article-field_attachments ☑ node-article-field_display_author
☑ node-article-field_display_date ☑ node-article-field_image ☑ node-article-field_service_tr
☑ node-article-field_tags ☑ node-article-field_topics_tr ☑ node-article-field_type

· **FIELDGROUP** (field_group)

· **FILE ENTITY** (file_display)

· **MENU LINKS** (menu_links)

· **MENUS** (menu_custom)

· **METATAG** (metatag)

· **PERMISSIONS** (user_permission)

· **ROLES** (user_role)

· **STRONGARM** (variable)
☑ additional_settings__active_tab_article ☑ comment_anonymous_article ☑ comment_article
☑ comment_default_mode_article ☑ comment_default_per_page_article
☑ comment_form_location_article ☑ comment_preview_article
☑ comment_subject_field_article ☑ diff_enable_revisions_page_node_article
☑ diff_show_preview_changes_node_article ☑ diff_view_mode_preview_node_article
☑ field_bundle_settings_node__article ☑ menu_options_article ☑ menu_parent_article
☑ node_options_article ☑ node_preview_article ☑ node_submitted_article
☑ pathauto_blog_pattern ☑ pathauto_node_article_pattern

· **TEXT FORMATS** (filter)

· **VIEWS** (views_view)
☑ Blog Articles (blog_articles)
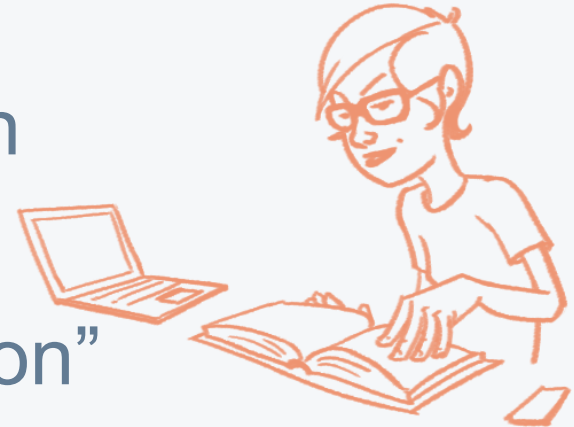
· **WYSIWYG PROFILES** (wysiwyg)

LEGEND

Normal **Changed** *Auto detected* Conflict

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Know your lingo (drush)

- **Revert:** apply all settings in exported code to DB
- **Update:** pressing "the button" to export the code disk
- **Diff:** with the diff module installed you can see an overview of changes

Most used Drush Commands
https://drupal.org/node/960926

- See the difference of code and DB:
  - drush features-diff (fdiff) NAME_OF_FEATURE

- Apply code in a Feature to DB:
  - drush features-revert (fr) NAME_OF_FEATURE
  - drush features-revert-all (fr-all, fr)

- Add new configs from DB to a Feature:
  - drush features-update (fu) NAME_OF_FEATURE
  - drush features-update-all (fu-all)

Watch out for…

The gotchas.

State based Variables in Strongarm

Circular & Multiple Dependencies

Field Cleanup

Timing Dependency deployments

Module dependencies & patching

Force, cc all, force, cc all

Files don't get deleted

Module export formats

Incorrect module exports

Things that have an ID (role, terms, content)

Takeaways.

1. A Feature is an bundled export of custom configurations and custom code.

2. A Feature is great for backups, code deployment, and sharing.

3. Features, you will not override my sanity.

4. I'm going to try a Feature's architecture on my site.

5. I'm going to use a clear naming convention to quickly identify my Features.

6. I love you, Features. Sort of. ;)

Goal: Love Features

Through understanding. And more cowbell.