



CONFIGURATION AS DEPENDENCY

*Managing Drupal 8 Configuration
with Git and Composer*



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- Working with Drupal since 2004
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- Github: <https://github.com/ebeyrent>

Moshe Weitzman

Moshe has been a consistent contributor to Drupal core and Contrib since November 2001. As such, he has pretty much touched the whole core code. He maintains the user.module, the bootstrap code, and the groups.drupal.org web site.



Justin Ludwig

Justin works for BioRAFT as a Development Engineer and am responsible for anything that gets thrown my way. He thrives in areas related to user management including SSO & permissions templates as well as adding some whizz-bang to sites with jQuery. Drupal has been his tool of choice since 2007.



AGENDA

- Overview of Drupal 8 configuration management

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- Managing your Git repository

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- Using Composer and Drupal Console

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- Overview of Drupal 8 configuration management
- Managing your Git repository
- Using Composer and Drupal Console
- Multisite considerations



</configurations>

BICORRAFT

BACKGROUND

- Pre-Drupal 8 Challenges
 - Configuration cannot easily be represented in code
 - Configuration changes performed by clients and/or client services cannot be represented in code without going through patch/release with developers

BACKGROUND

- Drupal 8 Goals
 - Allow non-developers to change configuration safely
 - Clients can safely change configurations to the extent that they are allowed
 - Provide an audit trail of all configuration changes made
 - Easily and automatically create new instances of sites with default configurations



Two Types of Configuration in Drupal 8

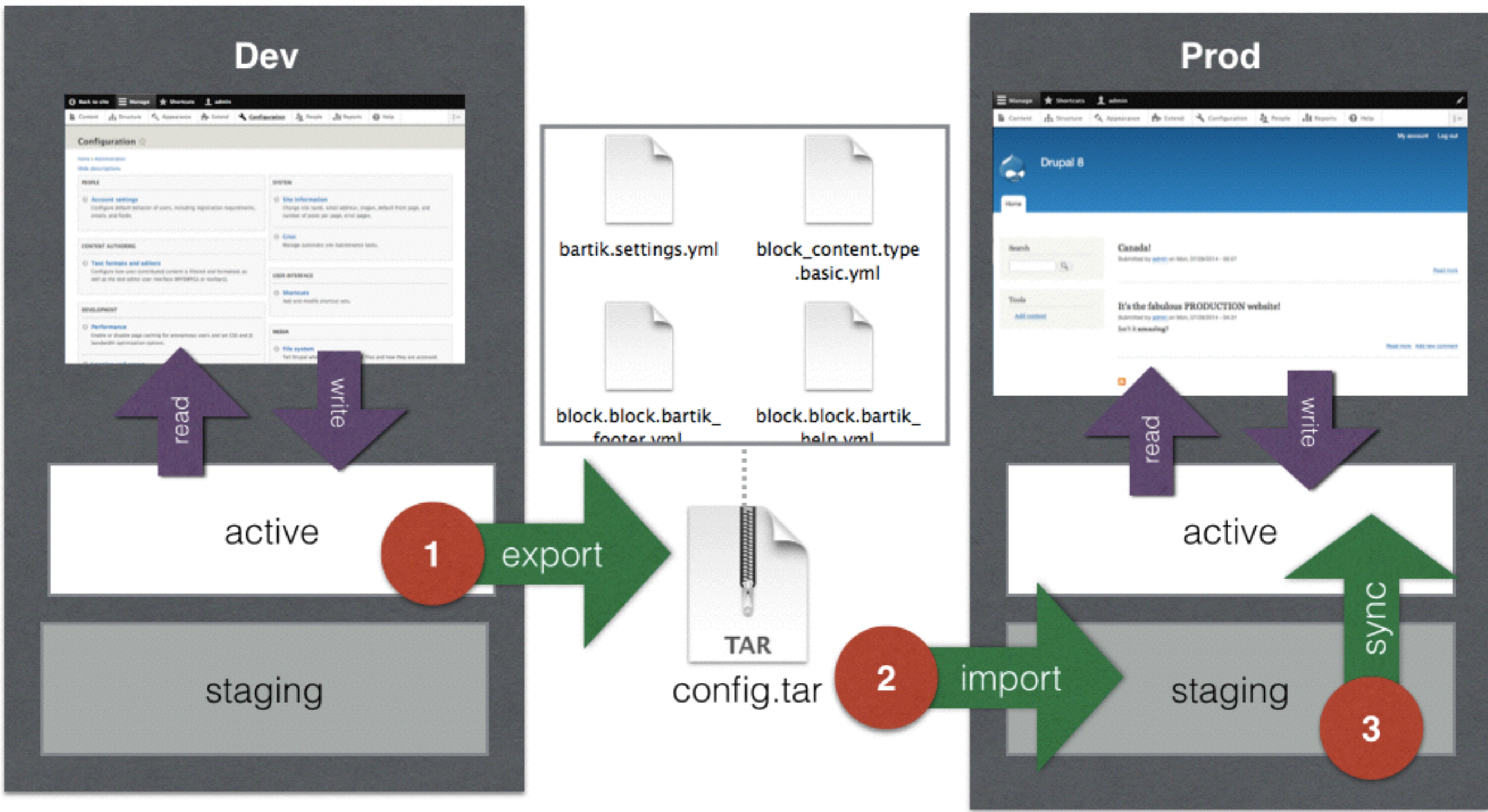
DRUPAL 8 CONFIGURATION SYSTEM

- Standardizes configuration export into YAML files
- Used for both simple config and config entities (fields, views, workflows, roles, etc)

“

Sites own their configuration, not modules.

- *Alex Pott*



DRUPAL 8 CONFIGURATION SYSTEM

- Contrib/custom modules have the same tools for enabling default configurations
- Default YAML files are stored with the module
- Once a module is installed, the site now owns the config and those YAML files are copied to the site-wide config directory

DRUPAL 8 CONFIGURATION SYSTEM

- Robust system for managing hard and soft/optional dependencies
- Nested module dependencies are automatically added to the configuration (when exported)

USEFUL CONFIGURATION MODULES

- Configuration Update

https://www.drupal.org/project/config_update

- Configuration Tools

https://www.drupal.org/project/config_tools

- Configuration Synchronizer

https://www.drupal.org/project/config_sync

- Configuration Development

https://www.drupal.org/project/config_devel

- Configuration Log

https://www.drupal.org/project/config_log

WANT MORE INFORMATION?

Watch Moshe Weitzman's DrupalNights presentation about Drupal 8's configuration management system!

<http://drupalnights.org/events/2015/moshe-weitzman-d8-configuration-management>



“

There is no “recommended”
workflow.

-Matthew Tift

<https://www.lullabot.com/articles/configuration-management-in-drupal-8-the-key-concepts>

Clone Trooper



Clone Trooper



Storm Trooper



Storm Trooper



Scout Trooper



Snow Trooper



AT-AT Pilot



AT-DP Pilot



Clone Commando



EVO Trooper



Navi Commando Trooper



Aqua Trooper



Riot Trooper



ARF Trooper



Scuba Trooper



Jump Trooper



VIA 9GAG.COM

TMTOWTDI

BRO



DO YOU EVEN GIT?

GIT REPO STRATEGY

- Create two repositories:

Code

Configuration



MY GOD

THERE'S TWO OF THEM

memegenerator.net

YES, THERE'S TWO OF THEM

- Use git to manage individual site differences and conflict resolution
- Default configurations for all sites can be managed on the master branch of the configuration repository
- Each client site has its own branch of the Config Repo
- Code repository contains only custom modules/themes/libraries, “sites” directory and build scripts

GIT REPO STRATEGY: CODE REPO

- All dependencies are managed by Composer
- Package and version added to composer.json and it is built with all dependency dependencies resolved automatically



“

Configuration is just another
dependency.

-Erich Beyrent

CONFIGURATION AS DEPENDENCY

- Manage configuration as a dependency in composer.json
- Use tags to identify configuration versions

```
"repositories": [  
  {  
    "type": "composer",  
    "url": "https://packagist.drupal-composer.org"  
  },  
  {  
    "type": "vcs",  
    "url": "https://github.com/weitzman/multiplesite-config.git"  
  }  
],
```



```
"require": {  
  "composer/installers": "^1.0.20",  
  "drupal-composer/drupal-scaffold": "^2.0.1",  
  "cweagans/composer-patches": "~1.0",  
  "drupal/core": "~8.0",  
  "drush/drush": "8.x-dev",  
  "drupal/console": "~1.0",  
  "multiplesite-config/alpha": "dev-alpha",  
  "multiplesite-config/bravo": "dev-bravo"  
},
```

```
"config": {  
  "preferred-install": {  
    "multiplesite-config/*": "source"  
  }  
}
```

```
erichs-MacBook-Pro: multiplesite erich$ ls -ltr
```

```
total 464
```

```
wxr-xr-x  17 erich  staff    578 Sep 14 19:46 web
wxr-xr-x   3 erich  staff    102 Sep 14 19:46 scripts
w-r--r--   1 erich  staff    481 Sep 14 19:46 phpunit.xml.dist
wxr-xr-x   5 erich  staff    170 Sep 14 19:46 drush
wxr-xr-x   3 erich  staff    102 Sep 14 19:46 config
w-r--r--   1 erich  staff 199403 Sep 14 19:46 composer.lock
w-r--r--   1 erich  staff   2518 Sep 14 19:46 composer.json
w-r--r--   1 erich  staff   5924 Sep 14 19:46 README.md
w-r--r--   1 erich  staff  18046 Sep 14 19:46 LICENSE
```

```
erichs-MacBook-Pro: multiplesite erich$
```



```
erichs-MacBook-Pro:multisite erich$ composer install
DrupalProject\composer\ScriptHandler::checkComposerVersion
Adding composer repositories with package information
Updating dependencies (including require-dev)
- Installing composer/installers (v1.2.0)
  Downloading: 100%

- Installing drupal-composer/drupal-scaffold (2.1.0)
  Downloading: 100%

- Installing cweagans/composer-patches (1.5.0)
  Loading from cache

- Installing symfony/event-dispatcher (v2.8.11)
  Loading from cache

- Installing symfony/polyfill-mbstring (v1.2.0)
  Loading from cache

- Installing symfony/console (v2.8.11)
  Downloading: 100%

- Installing psr/log (1.0.0)
  Loading from cache

- Installing symfony/debug (v2.8.11)
  Downloading: 100%

- Installing consolidation/output-formatters (1.0.0)
  Downloading: 100%

- Installing symfony/finder (v2.8.11)
  Downloading: 100%

- Installing webmozart/assert (1.1.0)
  Downloading: 100%
```

```
erichs-MacBook-Pro: multiplesite erich$ ls -ltr
```

```
total 440
```

```
drwxr-xr-x  3 erich  staff   102 Sep 14 19:46 scripts
-rw-r--r--  1 erich  staff   481 Sep 14 19:46 phpunit.xml.dist
drwxr-xr-x  5 erich  staff   170 Sep 14 19:46 drush
-rw-r--r--  1 erich  staff  5924 Sep 14 19:46 README.md
-rw-r--r--  1 erich  staff 18046 Sep 14 19:46 LICENSE
-rw-r--r--  1 erich  staff  2484 Sep 14 19:48 composer.json
drwxr-xr-x  5 erich  staff   170 Sep 14 19:53 config
-rw-r--r--  1 erich  staff 185419 Sep 14 19:54 composer.lock
drwxr-xr-x 18 erich  staff   612 Sep 14 19:54 web
drwxr-xr-x 36 erich  staff  1224 Sep 14 19:54 vendor
```

```
erichs-MacBook-Pro: multiplesite erich$ cd web
```

```
erichs-MacBook-Pro:web erich$ ls -ltr
```

```
total 48
```

```
drwxr-xr-x  3 erich  staff   102 Sep 14 19:46 themes
drwxr-xr-x 11 erich  staff   374 Sep 14 19:46 sites
drwxr-xr-x  3 erich  staff   102 Sep 14 19:46 profiles
drwxr-xr-x  4 erich  staff   136 Sep 14 19:46 modules
drwxr-xr-x 32 erich  staff  1088 Sep 14 19:54 core
-rw-r--r--  1 erich  staff   549 Sep 14 19:54 index.php
-rw-r--r--  1 erich  staff  1596 Sep 14 19:54 robots.txt
-rw-r--r--  1 erich  staff   554 Sep 14 19:54 update.php
-rw-r--r--  1 erich  staff  4254 Sep 14 19:54 web.config
-rw-rw-rw-  1 erich  staff   382 Sep 14 19:54 autoload.php
```

```
erichs-MacBook-Pro:web erich$ █
```

```
"extra": {  
  "installer-paths": {  
    "config/{$name}": ["type:bonefish-package"],  
    "web/core": ["type:drupal-core"],  
    "web/modules/contrib/{$name}": ["type:drupal-module"],  
    "web/profiles/contrib/{$name}": ["type:drupal-profile"],  
    "web/themes/contrib/{$name}": ["type:drupal-theme"],  
    "drush/contrib/{$name}": ["type:drupal-drush"]  
  }  
},
```



```
"scripts": {  
  "drupal-scaffold": "DrupalComposer\\DrupalScaffold\\Plugin::scaffold",  
  "pre-install-cmd": [  
    "DrupalProject\\composer\\ScriptHandler::checkComposerVersion"  
  ],  
  "pre-update-cmd": [  
    "DrupalProject\\composer\\ScriptHandler::checkComposerVersion"  
  ],  
  "post-install-cmd": [  
    "DrupalProject\\composer\\ScriptHandler::createRequiredFiles"  
  ],  
  "post-update-cmd": [  
    "DrupalProject\\composer\\ScriptHandler::createRequiredFiles"  
  ]  
},
```

GIT REPO STRATEGY: CONFIG REPO

- Master branch contains the default configurations for any/all modules
- Each client site gets its own branch in the config repository
- For a site to work, we need both repos
- Master branch containing site defaults is mirrored from the Config Repo into the Drupal Repo (read-only) using git subtree split

DEVELOPER WORKFLOW

- Create a branch of Code Repo for a new ticket/card/bug/feature and do some work
- The Config Repo will be available to edit configs for sites where module is already enabled
- The same YAML will also have to be added to the module for sites where it was never enabled

CONFIG REPO BENEFITS

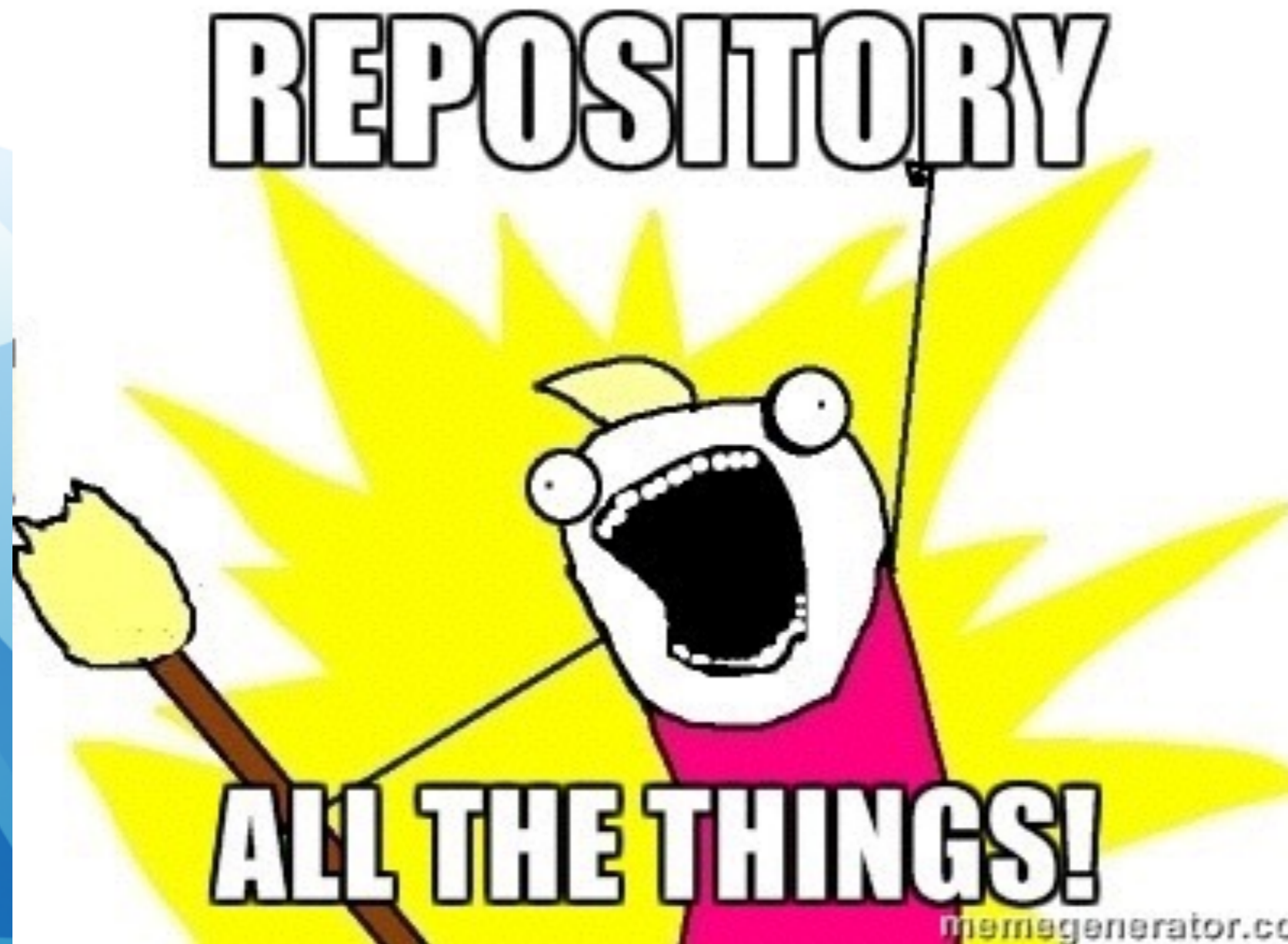
- While a feature is being worked on, a specific version of config can be used that won't conflict with other features being developed
- If a problem arises with configuration, it can easily be “rolled back” by specifying the working version
- Exact replica of an entire site's configuration can be built from scratch during development or debugging without any client data being used

MORE CONFIG REPO BENEFITS

- Helps determine if a bug involving config is actually solved rather than just solved for a particular piece of data
- Helps with testing unique configuration considerations
- Potential to assist with new site rollouts

WHAT ELSE?

- Theme repositories?



MULTISITE CONFIGURATION REQUIREMENTS

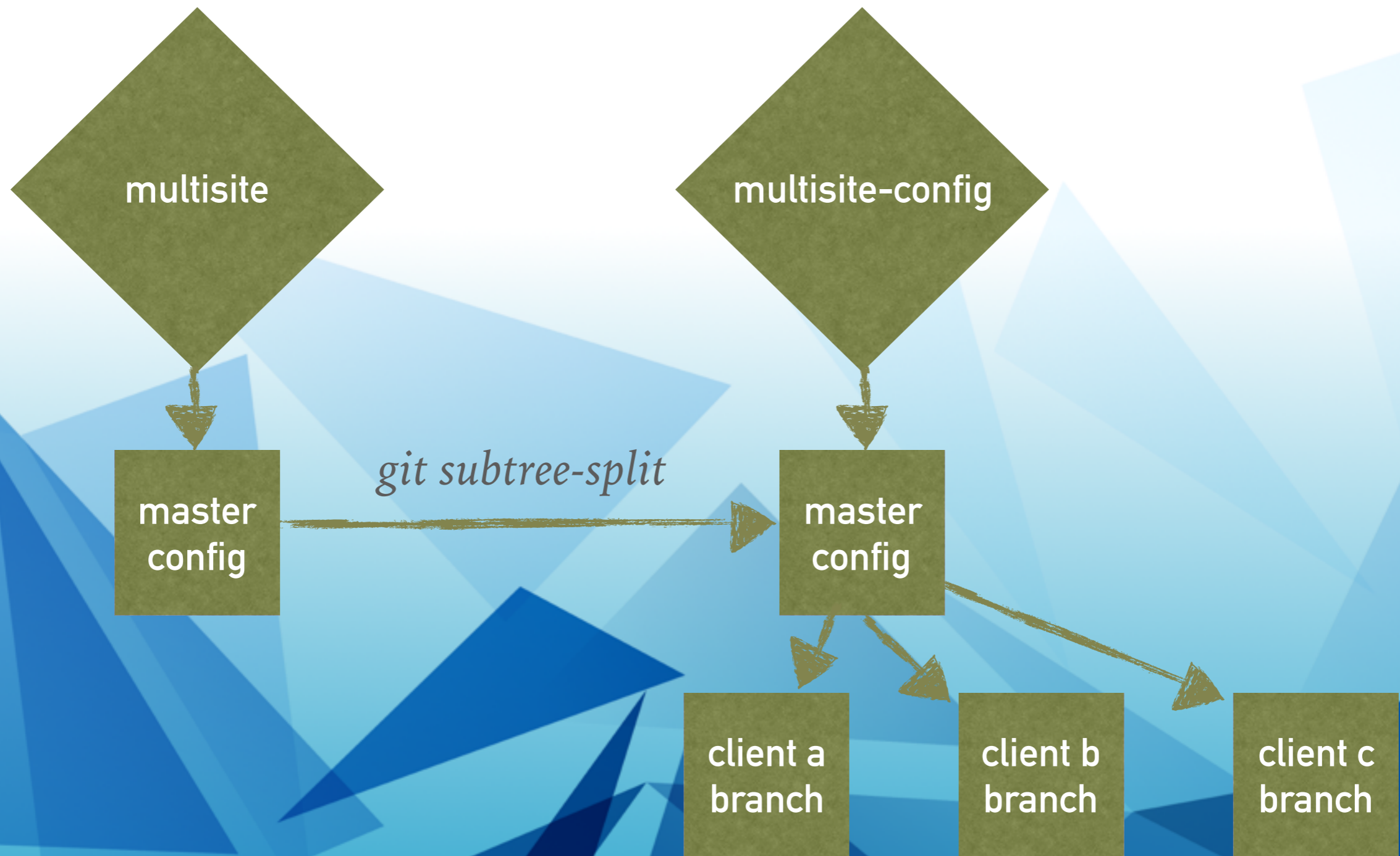
- `<?php return count($sites) >= 2; ?>`
- Configuration defaults exist and may need to be updated
- Each site is configured uniquely and may override defaults as required
- Both simple config (e.g. site name) and complex config (“config entities”) may need to be overridden
- A config may need to be changed for a single site or a group of sites
- Conflict management varies from case to case

THE EXPERIMENT

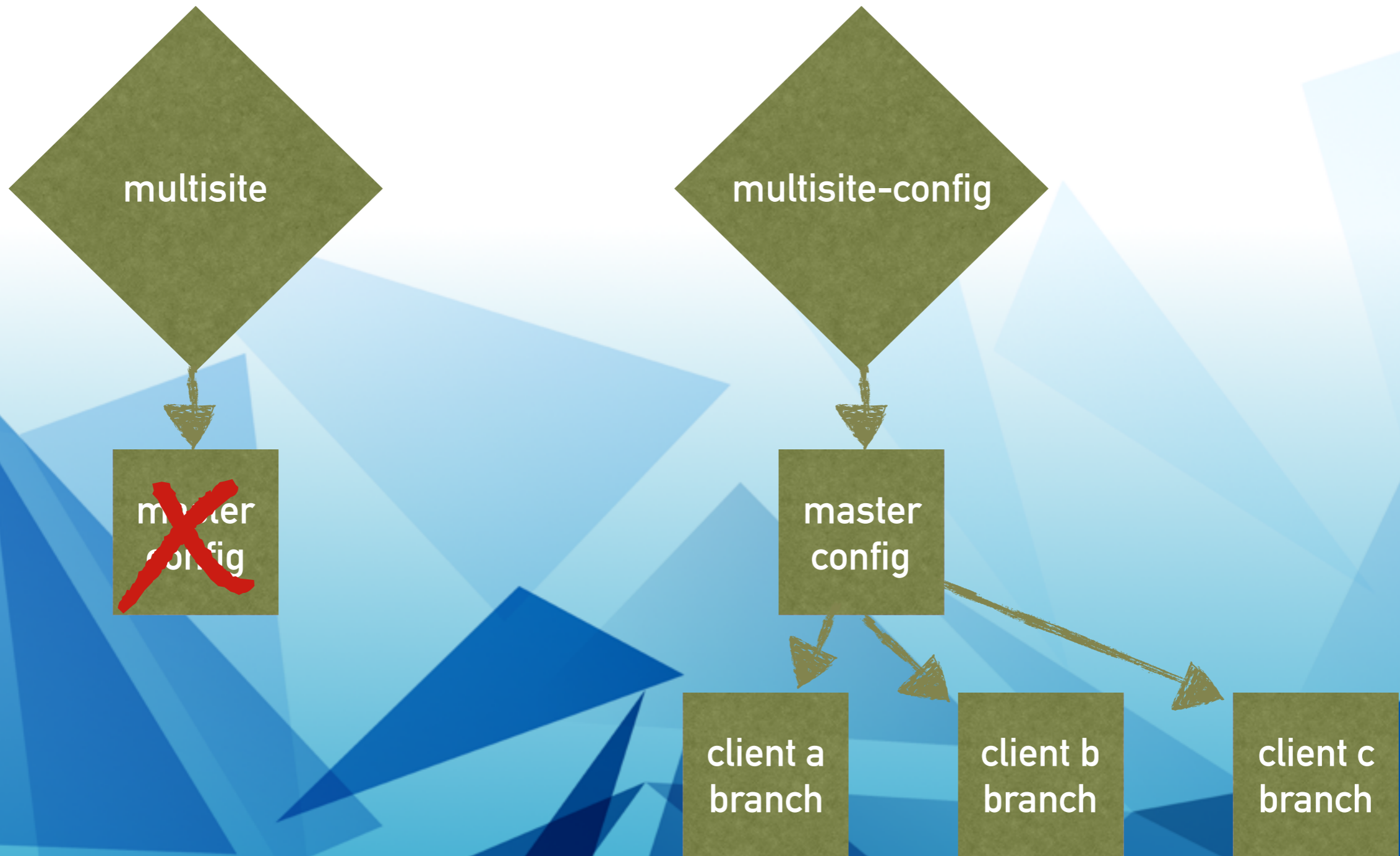
- <https://github.com/weitzman/multiplesite>

An experiment in how to handle the "multisite" pattern in Drupal 8. This is when you run dozens or hundreds of very similar sites. You want these sites to vary configuration in slight ways, but still easily push out config changes to all. Examples include one site for each member of Congress, or one site for each musician in our portfolio.

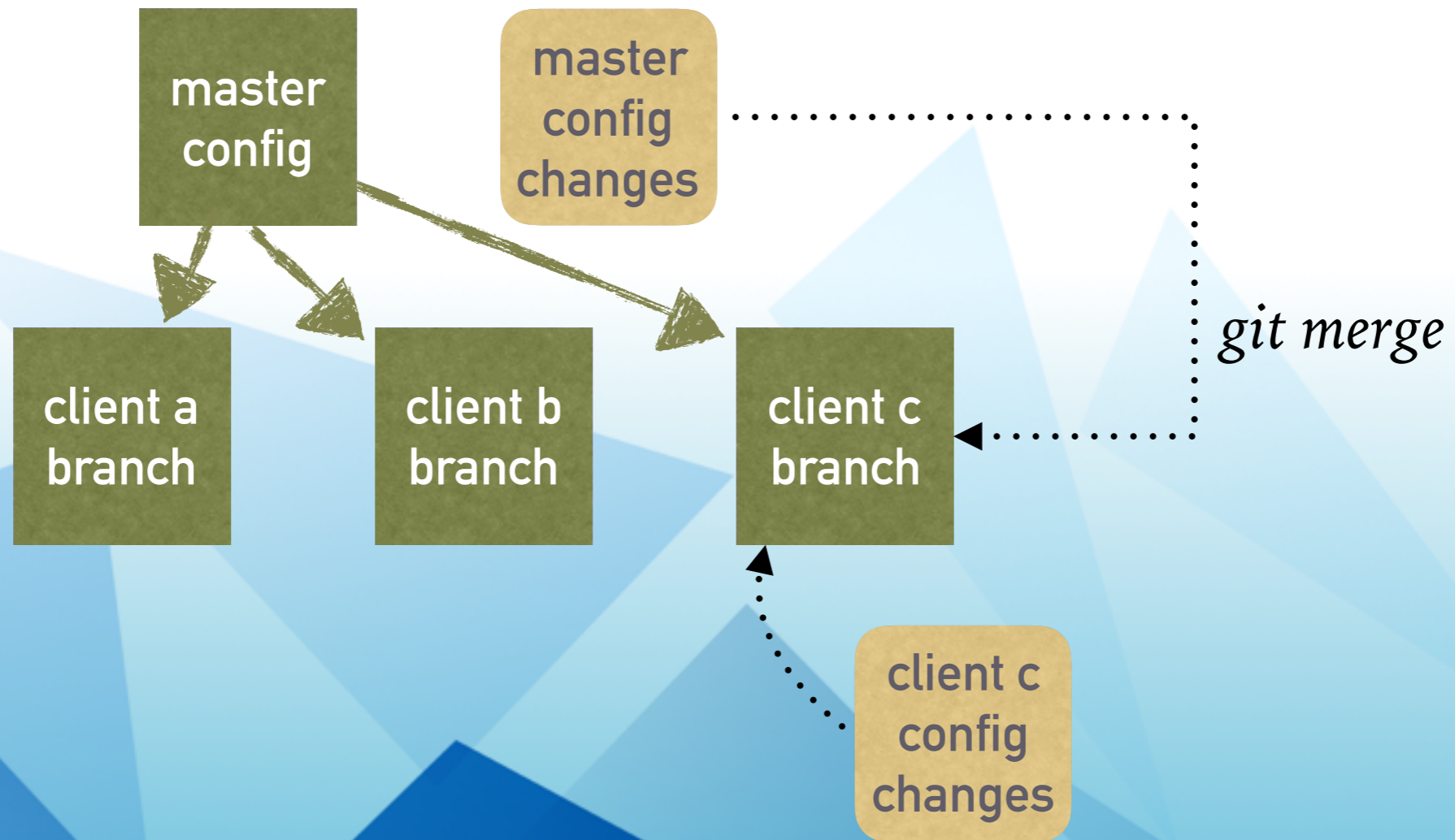
IMPLEMENTATION



IMPLEMENTATION ALTERNATIVE



IMPLEMENTATION

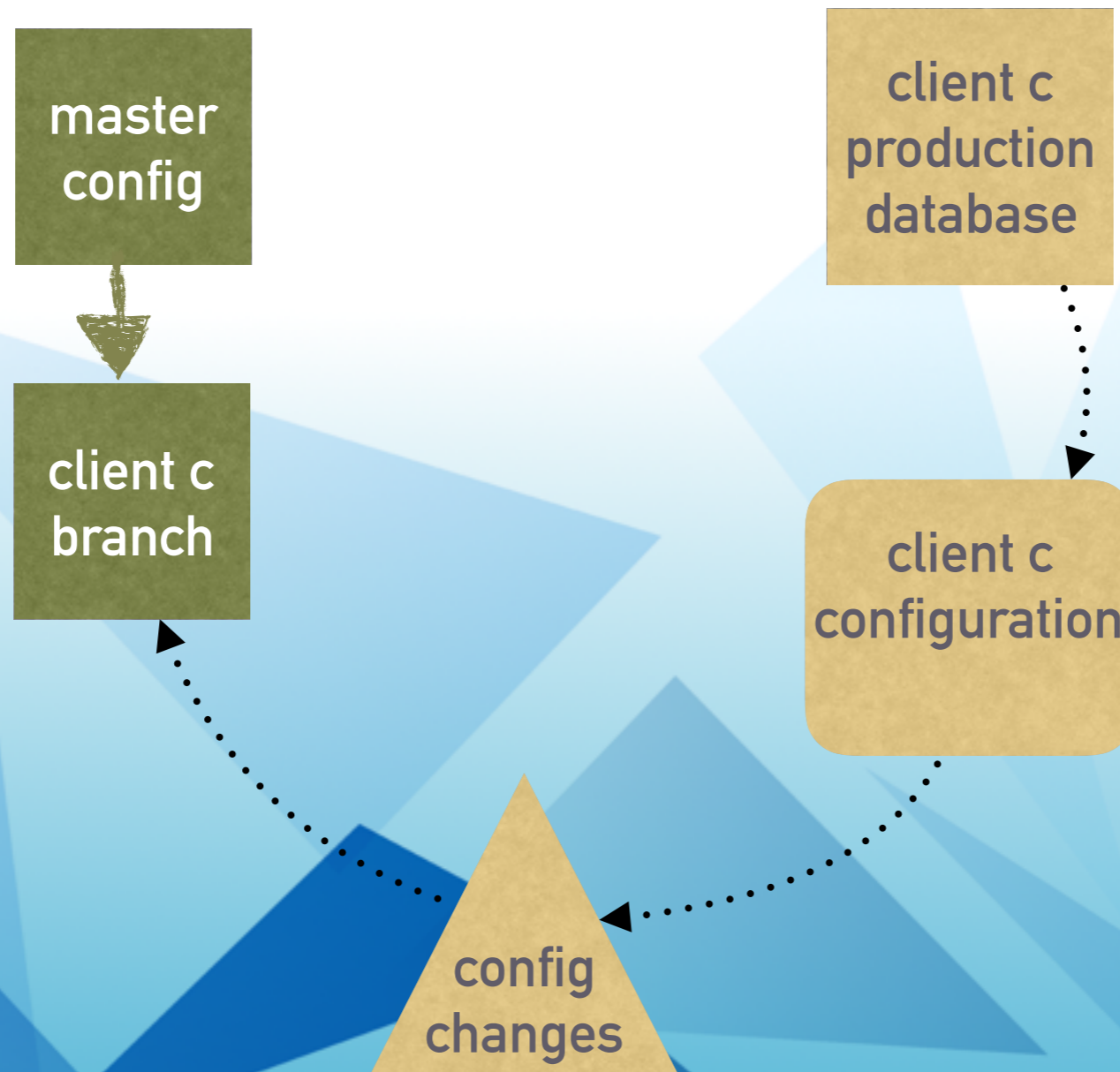


PUSHING COMMITS

- When fixing bugs while using a client site, a developer can choose to push commits to master config or to client config as needed. Pushing to client config happens automatically since that's "origin". If dev wants to integrate changes into multiplesite, add a remote pointing to multiplesite and then push commits there.

```
git remote add multiplesite https://github.com/weitzman/multiplesite.git
git checkout -b multiplesite-master multiplesite/master
git cherry-pick <COMMIT>
git push
```


IMPLEMENTATION

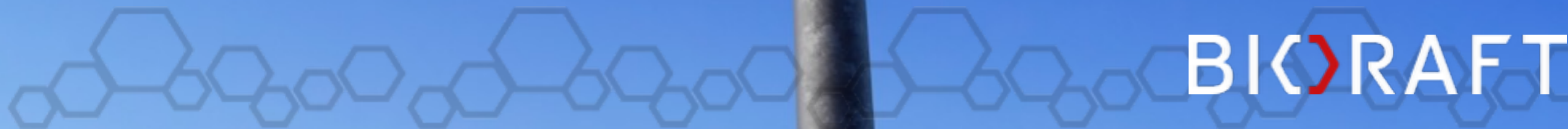


SUMMARY

- Multisite projects have unique config requirements
- The proposed workflow should be able to handle all of those requirements elegantly
- The process can be automated enough to reduce cognitive strain and allow everyone to focus their energy on what matters: the product!

RESOURCES

- <https://www.drupal.org/developing/api/8/configuration>
- <https://dev.acquia.com/blog/ultimate-guide-drupal-8-episode-6-new-back-end-features-drupal-8>
- <https://github.com/weitzman/multiplesite>
- <https://www.lullabot.com/articles/configuration-management-in-drupal-8-the-key-concepts>
- <http://drupalnights.org/events/2015/moshe-weitzman-d8-configuration-management>



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