

# Devops @ Princeton

How we track, maintain, and deploy  
hundreds of sites

Web  
Development  
Services

# Our Website Services

Department,  
Program,  
Center

Faculty,  
Researcher, and  
Lab

Student Group,  
Event, Topical

# Our Website Services

Department,  
Program,  
Center

Drupal Template

Drupal Custom

Roxen

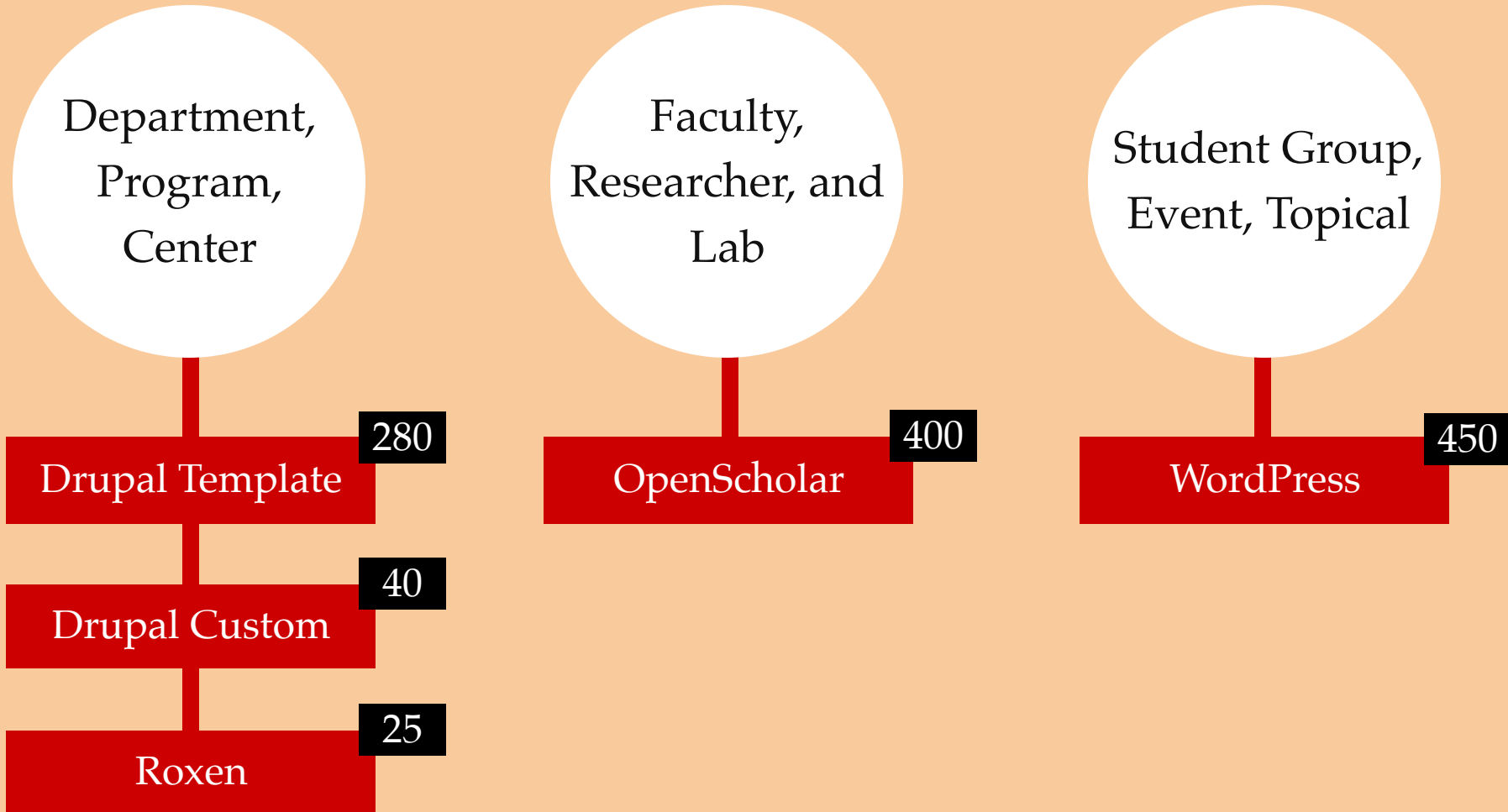
Faculty,  
Researcher, and  
Lab

OpenScholar

Student Group,  
Event, Topical

WordPress

# Our Website Services



# Sites Database

# Sites

Add New Site ▾

## Search

🔍 [Advanced Search - Drupal 7 Template](#)

🔍 [Advanced Search - Drupal 7 Custom](#)

Title

Department(s)

Platform(s)

Drupal 7 Template ×

WordPress ×









Status

Active ×

Domain / URL

Show 50 ▾ 1-50 of 733

First < 1 2 3 4 5 > Last

Name ▲ and Department	Requested	Live	Platform	Status	
 <a href="#">1080princeton</a> Dean of Undergraduate Students	2016-01-25	2016-02-01	WordPress	active	<a href="#">Edit</a>
 <a href="#">19th Princeton Japanese Pedagogy Forum</a> East Asian Studies	2017-02-14	2017-03-20	Drupal 7 Template	active	<a href="#">Edit</a>
 <a href="#">2012 Greece Global Seminar Blog</a> Prnctn Inst Intl & Regnl Studs	2012-05-17	2012-05-17	WordPress	active	<a href="#">Edit</a>
 <a href="#">2016 International Conference on Structures in Fire</a> Civil and Environmental Eng	2015-01-05	2015-01-07	WordPress	active	<a href="#">Edit</a>
 <a href="#">2019 ISA RC28 Summer Meeting</a> Unknown	2018-10-31		Drupal 7 Template	active	<a href="#">Edit</a>
 <a href="#">701 Carnegie Center</a> Unknown	2018-05-03		Drupal 7 Template	active	<a href="#">Edit</a>
 <a href="#">A Blog on Modern Optimization</a> Oper Res and Financial Eng	2014-09-22	2014-09-26	WordPress	active	<a href="#">Edit</a>
 <a href="#">AAMG Input Website</a> Provost	2016-02-16		Drupal 7 Template	active	<a href="#">Edit</a>

# Accessibility

Details

Edit

Backups

Stats

Action Logs

Jobs

Operations ▾

## Basic Details

**Platform** Drupal 7 Template

**Name** Accessibility

**Machine Name** accessibility

**URL**  <http://accessibility.princeton.edu>

**Department** Software and Application Services

**Department Details** User Experience Office

**Status** Active

**Request Date** 2016-12-16

**Live Date**




## Admin Contacts

Name	netID	Email
Damian A. Sian	dsian	<a href="mailto:dsian@princeton.edu">dsian@princeton.edu</a>

## Tech Contacts

Name	netID	Email
Damian A. Sian	dsian	<a href="mailto:dsian@princeton.edu">dsian@princeton.edu</a>

## Domains

Hostname	Environment
 <a href="http://accessibility.princeton.edu">accessibility.princeton.edu</a>	prod
 <a href="http://accessibility.wdtemplate-qa.princeton.edu">accessibility.wdtemplate-qa.princeton.edu</a>	test
 <a href="http://accessibility.wdtemplate-dev.princeton.edu">accessibility.wdtemplate-dev.princeton.edu</a>	dev



# Accessibility - Stats

[Details](#)[Edit](#)[Backups](#)[Stats](#)[Action Logs](#)[Jobs](#)

## Basic Stats

Theme	hepcat
Maintenance Mode	no
Last Login (non-admin)	2019-01-15
Users (non-admin)	61
Active Users (non-admin)	35
Total Nodes	159
Total Taxonomy Terms	37

## Content Types

basic_page	64
blog	7
events	42
news	5
people	34
resource link	5

## Enabled Modules

Module	Version
Acquia Purge acquia_purge	1.3
Actions permissions (VBO) actions_permissions	3.5
Administration views admin_views	1.6
API Tokens api_tokens	1.7
API Tokens PWDS Entities api_tokens_pwds_entity	Unknown
Apps apps	1.1
Automatic Entity Labels auto_entitylabel	1.4
Backports backports	1.0-alpha1
Better Formats	Unknown

# Advanced Search: Drupal 7 Template

## Filters

Maintenance Mode ×

Disabled ▼

Node Count ×

people ▼

Greater than/equal ▼

10

Theme ×

is ▼

tiger ▼

Search

## Sites

Showing 39 results

Name <span>▲</span>	Maintenance Mode	Theme	Users	Active Users	Terms	Nodes	Last Login				
<b>Brynildsen Research Group</b> Drupal 7 Template	no	tiger	12	8	10	65	2019-01-14	Visit	Login	Stats	Edit
<b>Campus Life</b> Drupal 7 Template	no	tiger	23	8	1	55	2019-01-07	Visit	Login	Stats	Edit
<b>Center for Health and Wellbeing</b> Drupal 7 Template	no	tiger	70	31	40	630	2019-01-16	Visit	Login	Stats	Edit

# Job "sitesdb:provision\_template\_site" (ID: 4)

Command	<code>sitesdb:provision_template_site '--site-id=1402'</code>
Site	2019 ISA RC28 Summer Meeting
State	<span>Finished</span> (refresh page for updated status)
Created	2018-10-31 3:46:46 PM
Runtime	12s
Closed	2018-10-31 3:46:58 PM

## Output

```
Began provisioning attempt.
Creating Acquia Cloud domain "rc28.princeton.edu" in the "prod" environment (for site "2019 ISA RC28 Summer Meeting").
Creating Acquia Cloud database "rc28" (for site "2019 ISA RC28 Summer Meeting").
Verifying local copy of Acquia Cloud repo is configured properly.
Resetting Acquia Cloud repo, cleaning, checking out master, and pulling upstream changes.
Creating the site folder and settings.php file.
Re-creating the sites.php file to include mappings of domains to multisite folders.
Checking git status to see if there are any changes to commit.
Changes detected, committing.
Commit hash: e7aabddb061e195bc5f90743543362aa5bbcdeb
Pushing commit to master branch of Acquia remote origin.
Rebasing commit to stage branch and force pushing to Acquia remote origin.
Rebasing commit to develop branch and force pushing to Acquia remote origin.
Switching back to master branch.
-----
Provisioning completed.
```



## Sync Site Environment



This will sync the production database and files to the selected target environment.

### Target env \*

- Dev
- Test/QA

### Type \*

- Database
- Files (images, pdfs, CSS injector, etc)

Submit

# Accessibility - Backups

[Details](#)[Edit](#)[Backups](#)[Stats](#)[Action Logs](#)[Jobs](#)

## Files

Filename	Date	Size
<a href="#">accessibility-2019-02.tar.gz</a>	2019/02/01	61 MB
<a href="#">accessibility-2019-02-01.tar.gz</a>	2019/02/01	61 MB
<a href="#">accessibility-2019-01-31.tar.gz</a>	2019/01/31	61 MB
<a href="#">accessibility-2019-01-30.tar.gz</a>	2019/01/30	61 MB
<a href="#">accessibility-2019-01-29.tar.gz</a>	2019/01/29	61 MB
<a href="#">accessibility-2019-wk-05.tar.gz</a>	2019/01/28	61 MB
<a href="#">accessibility-2019-01-28.tar.gz</a>	2019/01/28	61 MB
<a href="#">accessibility-2019-01-27.tar.gz</a>	2019/01/27	61 MB
<a href="#">accessibility-2019-01-26.tar.gz</a>	2019/01/26	61 MB
<a href="#">accessibility-2019-wk-04.tar.gz</a>	2019/01/21	61 MB
<a href="#">accessibility-2019-wk-03.tar.gz</a>	2019/01/14	61 MB
<a href="#">accessibility-2019-wk-02.tar.gz</a>	2019/01/07	61 MB

## Databases

Filename	Date	Size
<a href="#">accessibility-2019-01-31.sql.gz</a>	2019/01/30	1 MB
<a href="#">accessibility-2019-01-30.sql.gz</a>	2019/01/29	1 MB
<a href="#">accessibility-2019-wk-05.sql.gz</a>	2019/01/29	1 MB
<a href="#">accessibility-2019-01-29.sql.gz</a>	2019/01/28	1 MB
<a href="#">accessibility-2019-01-28.sql.gz</a>	2019/01/27	1 MB
<a href="#">accessibility-2019-01-27.sql.gz</a>	2019/01/26	1 MB
<a href="#">accessibility-2019-01-26.sql.gz</a>	2019/01/25	1 MB
<a href="#">accessibility-2019-01-25.sql.gz</a>	2019/01/24	1 MB
<a href="#">accessibility-2019-wk-04.sql.gz</a>	2019/01/22	1 MB
<a href="#">accessibility-2019-wk-03.sql.gz</a>	2019/01/15	1 MB
<a href="#">accessibility-2019-wk-02.sql.gz</a>	2019/01/08	1 MB
<a href="#">accessibility-2019.sql.gz</a>	2019/01/02	1 MB

# Technology

- Built with Symfony 3.4
- Acquia Cloud API
- "Deployer" for deploying updates
- Hosted on Princeton VM
- Background job runner



# Future

- Provisioning / De-provisioning of WP sites
- Track individual OpenScholar sites
- Automated & improved handling of contact info
- Ability to duplicate sites

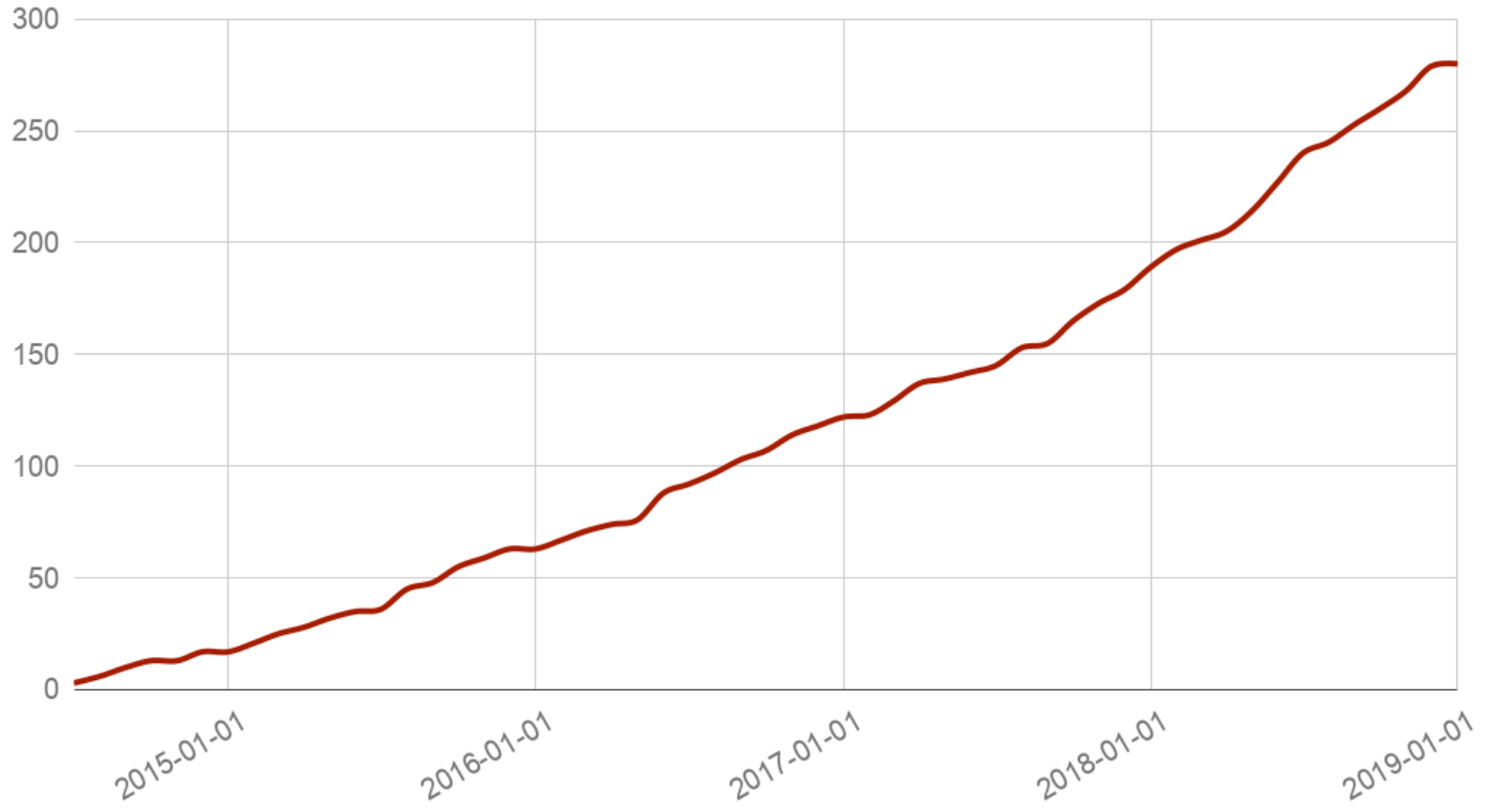
# Drupal 7 Template Platform



# Platform Overview

- Drupal 7 multisite
- Acquia hosted
- "Locked down"
- ~280 sites
- Monthly release cycle

Drupal 7 Template Sites Over Time



# Release Planning & Development



Plan

Develop

Test

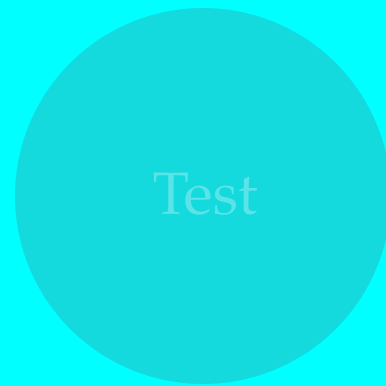
Release



Plan



Develop



Test



Release

## Project Mgmt

- Bitbucket issue tracker
- Standard issue template
  - Problem/Motivation
  - Related issue(s)
  - Requester(s)
  - Proposed resolution
  - Acceptance criteria
  - Documentation
  - Data model changes

## Scheduling

- Monthly releases
- Issues discussed in length
- Priority given to migration blockers & major ally issues
- 3 weeks dev time per release



Plan

Develop

Test

Release

# Local Dev Environment

- Acquia Dev Desktop - Fast
- Drush make file
- Grunt + Drupal Tasks plugin
- Everyone using a Mac



Plan

Develop

Test

Release

## Code workflow

- New branch for each feature/bug
- Branched off "develop"
- Force specific commit message
- Pull requests for code review & Probo environment



Plan

Develop

Test

Release

# Testing Features & Fixes

1. Pull request created
2. Reviewers test in Probo
3. Pull request merged to "develop"
4. Occasionally deploy "develop" to Acquia "Dev" environment

princeton from bitbucket is using 4.21 GB out of 15 GB. [Upgrade now!](#)

[princeton from bitbucket](#) > [princeton/pwds\\_cms](#) > Build Details

# Build Steps

## Issue #1227: Drupal security update

[View Site](#)

[Commit 5a0385](#) | [View pull request](#) | [View branch](#) | [View build permalink](#) | [Rebuild](#) | [Pin](#) | [Delete](#)

[Advanced Functions](#) ▾

DISK SPACE: 716.5 MB · BUILT: January 16, 2019 2:16 PM

BitbucketDownloader task	▾
DURATION: 3 seconds 422 milliseconds	
Output software versions	▾
DURATION: 373 milliseconds	
Install bundler	▾
DURATION: 907 milliseconds	
Run grunt to create build artifact	▾
DURATION: 2 minutes 37 seconds 496 milliseconds	
Install drupal	▾
DURATION: 3 minutes 2 seconds 945 milliseconds	



Plan

Develop

Test

Release

# Step 1: Deploy to Dev

Bitbucket pipeline manually triggered

1. Checkout "develop" branch
2. Run grunt to create build artifact
3. Clone Acquia repo and checkout "develop" branch
4. Sync build artifact to Acquia repo, commit and push



## Dev ›

princetonoitdev.prod.acquia-sites.com  
develop

Code



Databases



Files

## Stage ›

princetonoitstg.prod.acquia-sites.com  
stage

Code



Databases



Files

## Prod ›

www.futureofchildren.org  
master

Code



Databases



Files

#20

Rerun

33dac8a Merged in  
feature/1223\_make\_blog\_panels\_sitewide\_categories\_c

develop

3 min 26 sec 19 days ago

Pipeline



Deploy to Dev/Test 2m 50s

Deploy to Stage/QA 35s

Deploy to Prod Deploy

Build +



Build setup 30s >

git fetch && git checkout develop && git reset --hard origin/develop <1s >

printf "\nHost \*\n StrictHostKeyChecking no" >> ~/.ssh/config <1s >

git config --global core.autocrlf input <1s >

git config --global user.name "Bitbucket Pipelines" <1s >

git config --global user.email "webservices@princeton.edu" <1s >

gem install --conservative bundler -v 1.12.3 --no-ri --no-rdoc <1s >

npm install 22s >

node\_modules/.bin/grunt --no-validate 1m 15s v

```
+ node_modules/.bin/grunt --no-validate
Running "notify_hooks" task
```

```
Running "shell:bundle-install" (shell) task
Don't run Bundler as root. Bundler can ask for sudo if it is needed, and
installing your bundle as root will break this application for all non-root
users on this machine.
```

```
Fetching gem metadata from https://rubygems.org/
Fetching version metadata from https://rubygems.org/
Fetching dependency metadata from https://rubygems.org/
Installing chunky_png 1.3.1
Installing fssm 0.2.10
```



Plan

Develop

Test

Release

# Step 2: Deploy to Test

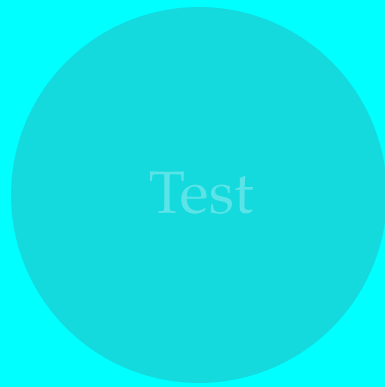
1. Another Bitbucket pipeline
  1. Clone Acquia repo
  2. Merge "develop" branch into "stage" branch
  3. Push to Acquia
2. Acquia cloud hook runs
3. Create release notes
4. Notify customers
5. Visual regression test (sometimes)
6. Fix any found issues



Plan



Develop



Test



Release

BackstopJS



Plan

Develop

Test

Release

# Step 3: Deploy to Prod

1. Another Bitbucket pipeline
  1. Clone Acquia repo
  2. Merge "stage" branch into "master" branch
  3. Push to Acquia
2. Acquia cloud hook runs
3. Notify customers
4. Website Wednesday

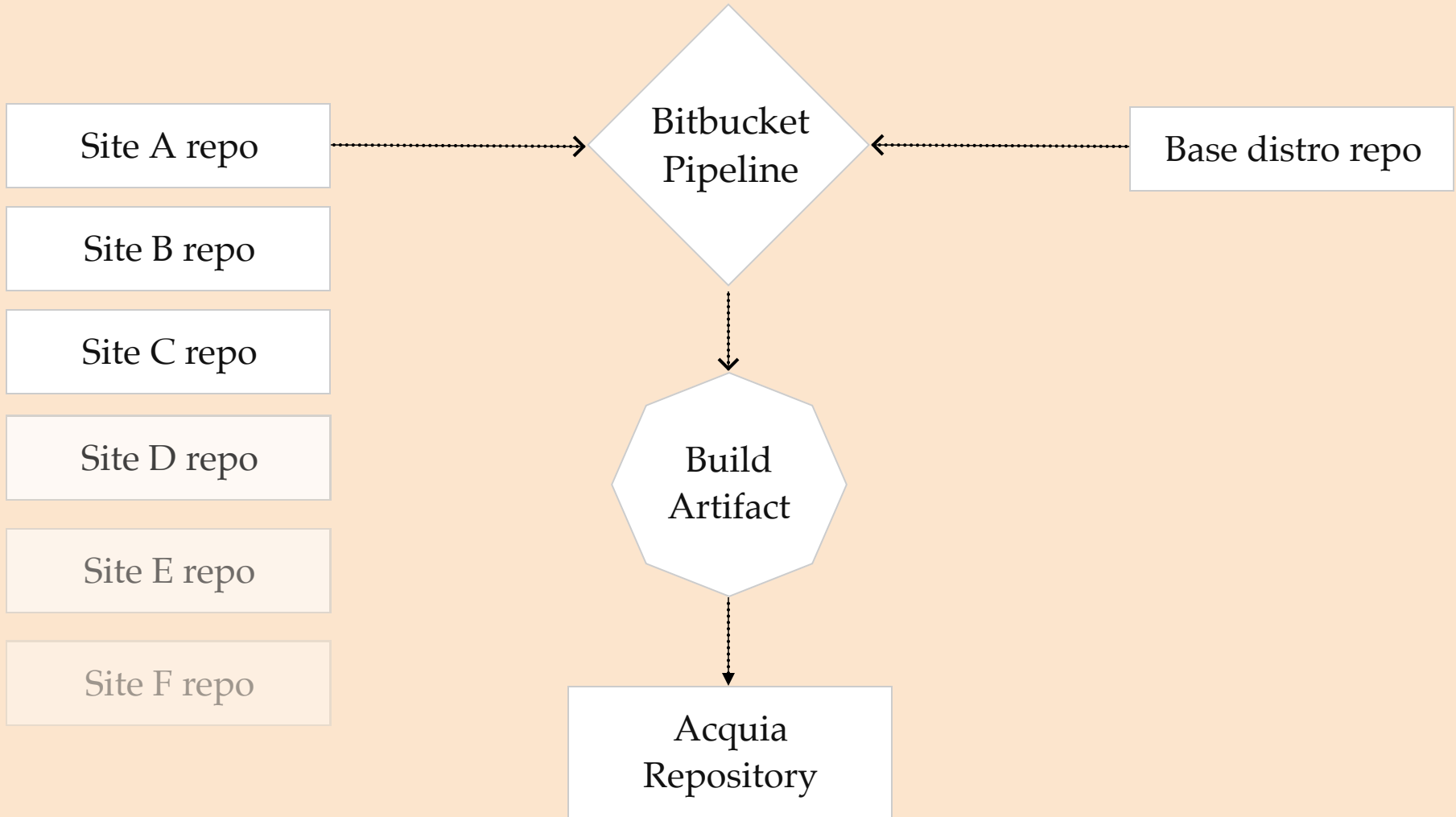
# Drupal 7 Custom Platform

# Platform Overview

- Drupal 7 multisite
- Acquia hosted
- Sites can be completely distinct from others
- Complicated deployment
- ~40 sites
- Can be difficult to maintain



# Deployment



# Drupal 8



# Platform Goals

- Apply lessons learned
- Provide more flexibility for content modeling
- More optional modules
- Reduce number of completely custom sites
- Improve editorial UX
- Automated test suite
- Accessible from the start
- Clean, documented code (reduce tech debt)

# Local Development

- Docker-based
- Not using a docker wrapper (dosksal, lando)
- NFS for faster file performance
- Common env for everyone
- Still not ideal





# Automated Testing

- Pros:
  - Big wins for catching regressions
  - Peace of mind
- Cons
  - Slows development
  - Refactoring tests required
  - Slow to run



Scenario: Admins can define and use CKEditor styles

Given I am logged in as an "admin"

And I am on "/admin/config/content/ckeditor-standalone-styles"

And I fill in "Styles" with "This is bad"

And I press "Save configuration"

Then I should see the error message "The provided list of styles is syntactically

When I fill in "Styles" with:

```
"""
```

```
h2.heading-test-class-a.heading-test-class-b|Heading Test Style
```

```
p.first-paragraph-test|First Paragraph Test Style
```

```
p.second-paragraph-test|Second Paragraph Test Style
```

```
"""
```

And I press "Save configuration"

Then I should see the success message "The configuration options have been saved."

# Now to go a page and verify the styles dropdown is there and can be used.

When I am on "/node/add/ps\_basic\_page"

Then CKEditor "edit-field-ps-body-0-value" exists

And CKEditor "edit-field-ps-body-0-value" should contain styles:

element	name	classes
h2	Heading Test Style	heading-test-class-a heading-test-clas
p	First Paragraph Test Style	first-paragraph-test
p	Second Paragraph Test Style	second-paragraph-test

# Now manually insert some HTML that uses those styles and confirm Drupal doesn't

# strip them out. I found no easy way to actually interact with the buttons in

# the editor, so we just fill in manually.

And I fill in "Title" with "Sample Page"

And I put '<h2 class="heading-test-class-a heading-test-class-b">Test heading</h2>

And I press "Save"

Then I should see the success message "Page Sample Page has been created"

And the response should contain "<h2 class=\"heading-test-class-a heading-test-cla

And the response should contain "<p class=\"first-paragraph-test\">First test para

And the response should contain "<p class=\"second-paragraph-test\">Second test pa

And the response should contain "<p>Invalid paragraph</p>"

# Dev & Deploy Workflow

- Jira - more robust project planning
- Still refining release cycle
- Bitbucket Pipelines
  - Automated tests
  - Release to Dev / Stage / Prod
  - Sub-tree split install profile
- Acquia BLT
  - Creating build artifacts
  - Rebuilding local env
  - Syncing remote data to local

 #1093

Rerun

🔗 2922176 Add CKEditor Stylsheet to Registrar theme.





🔗 develop

🕒 2 min 39 sec 📅 4 hours ago



### Pipeline



-  Subtree split install profile 44s
-  Deploy to Dev/Test 1m 54s
-  Deploy to Stage/QA Deploy
-  Deploy to Prod Deploy

### Build +

Build setup

```
printf "\nHost *\n Strictl
```

```
composer install
```

```
vendor/bin/blt artifact:de
```

```
+ vendor/bin/blt artifact:de  
Commit message is set to Bit  
Branch is set to develop.  
Preparing artifact directory  
Global .gitignore file is be  
Fetching from git remote pri  
Merging upstream changes int  
Generating build artifact..  
For more detailed output, us  
> source:build:frontend  
> source:build:frontend-reqs  
> source:build:frontend-asse  
> drupal:hash-salt:init  
Hash salt already exists.  
> drupal:deployment-identifi  
Generating deployment identi
```





## Deployment preview



 #1093

















Staging

 #1069 5 days ago 

### Deployment changes

Commits (7) Issues (7) Diff

-  **PS-312** External link module should treat sites with a different subdomain as external DONE 
-  **PS-300** Allow content-type specific list blocks to be placed on taxonomy term detail pages TO DO 
-  **PS-296** Configure cache settings for pages and files DONE 
-  **PS-294** WYSIWYG styles dropdown DONE 
-  **PS-288** Instead of enabling select2 on all select elements, enable it only on specific ones DONE 
-  **PS-143** Figure out what to do about view modes & taxonomy term detail pages TO DO 
-  **PS-6** Add ability to create custom taxonomy vocabularies and associate them with content types DONE 

Deploy

Cancel

Questions?