

APRIL SIDES + LULLABOT

Custom Drupal Data Migration: A Georgia GovHUB Story

April Sides

SR. DEVELOPER + LULLABOT



weekbeforenext



weekbeforenext

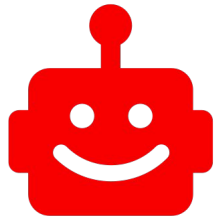


aprilsides





July 10-12, 2020
Asheville, NC
www.drupalasheville.com



Lullabot[®]



Lullabot Migration Team





Digital Services Georgia

What we will cover

- * Discovery and Planning
- * Strategies and Workflow
- * Magical Nerdery



Discovery and Planning

Photo by [Elodie Oudot](#) on [Unsplash](#)



Source

- * Drupal 7 Multisite
(85+ sites)
- * Hosted on Acquia
- * 27 Content Types
(15 migrated)
- * 14 Taxonomy Vocabularies
(9 migrated)
- * Paragraphs, Field Collections
and Entity Embeds



Destination

- * Drupal 8 Multisite
(~6 at a time)
- * Hosted on Acquia
- * 20 Content Types
(14 populated)
- * 17 Taxonomy Vocabularies
(10 populated)
- * "Micro-content" Types
and Entity Embeds

	A	B	C	D
1	entity_type	bundle	field_name	type
77	field_collection_item	field_group_hours	field_days_of_week	list_text
78	field_collection_item	field_group_hours	field_close_hours	text
79	field_collection_item	field_group_hours	field_lunch_hours	text
80	field_collection_item	field_group_hours	field_open_hours	text
81	field_collection_item	field_phone_numbers	field_number_type	text
82	field_collection_item	field_phone_numbers	field_phone_number	text
83	field_collection_item	field_related_links	field_title_and_link	link_field
84	field_collection_item	field_related_links	field_related_content	node_reference
85	field_collection_item	field_related_links	field_index_list_description	text_long
86	file	image	field_file_image_alt_text	text
87	file	image	field_file_image_title_text	text
88	node	agency	field_address_field	addressfield
89	node	agency	field_collection_assoc_documents	field_collection
90	node	agency	field_collection_assoc_services	field_collection
91	node	agency	field_faq	field_collection
92	node	agency	field_location_position	geofield
93	node	agency	field_agency_social_media	link_field
94	node	agency	field_website	link_field
95	node	agency	field_master_terms	taxonomy_term_reference
96	node	agency	field_alias	text
97	node	agency	field_display_name	text
98	node	agency	field_email	text
99	node	agency	field_fax_number	text

	A	B	C	D	E
1	FAQ List Entity				
2	Property	Machine Name	Data Type	Rules	Notes
3	Title		Text		
4	Short Title	field_short_title	Text	40 characters or less	If present, use it to generate menu titles and pathauto strings
5	Overview	field_overview	Rich Text		
6	Questions	field_faq	Complex		Question + Rich Text answer
7					
8					
9	<u>Division/Section</u>	field_division	Entity Reference	single value taxonomy reference to term in division/section vocabulary	
10	<u>Program or Service</u>	field_services	Entity Reference	Only "Services"	
11	<u>Categories</u>	field_categories	Controlled Vocabulary		
12	<u>Search Terms</u>	field_search_terms	Text	Multi-value	Used for search weighting, replaces "Synonyms"
13	Exclude from Search	field_exclude_from_search	Boolean		
14	Meta Tags	field_metatags	Meta tags		
15					
16	<i>Migration Legacy Body</i>	<i>field_migration_legacy_body</i>	<i>Rich text</i>		
17	<i>Migration Legacy Content Type</i>	<i>field_migration_legacy_type</i>	<i>Text (plain)</i>		
18	<i>Migration Legacy Link</i>	<i>field_migration_legacy_link</i>	<i>Link</i>		
19					
20					
21					
22					
23					
24					
--					

	A	B	C	D	E	F	G	H
1	Content type	D8 content type	Fields Migrated	File/Image Fields	Rich Fields	Paragraphs/Field Collection Fields	WYSIWYG cleanup	Fields Not Migrated
19	Photo Gallery		title > title, body > body, field_master_terms > field_categories, field_alias > field_search_terms	field_thum bnail_imag e		field_collection_gallery		
20	Popular Topic				field_link	field_faq, field_collection_assoc_agencies, field_collection_assoc_services, field_collection_assoc_documents		title, field_alias, field_master_terms, field_agency_specific, field_overview, body, field_legal_disclaimer
21	Press Release	press release	title > title, body + field_pr_contact_information > body, field_author > field_author, field_release_date > field_release_date, field_master_terms > field_search_terms, field_alias > field_search_terms, field_file_attachments > field_attached_files, field_content_header > field_header					field_news_release_type
22	Profile	bio, contact, location	body > field_biography, field_profile_job_title > field_job_title, field_first_name > field_full_name/given, field_last_name > field_full_name/family, field_organization > field_organization, field_profile_department > field_organization, field_staff_directory > field_bio_type, field_address_field > Location field_physical_address, field_location_position > Location field_geolocation, field_email > field_emails, field_phone_number > field_phones, field_profile_social_media > field_social_media_links, field_main_image > field_portrait					field_profile_leadership, field_profile_staff

	A	B	C	D	E	F	G	H	I	J
1	API Bundle	D8 Entity Type	D8 Bundle	Source	Migration ID	API Field ID	D8 Field ID	Complexity	Status	Notes
2	story	node	news			id	N/A			
3	story	node	news			link	N/A			
4	story	node	news	Existing (JSON)	gpb_npr_api_node_story		uid	basic	Done	setting default value of 1
5	story	node	news	Existing (JSON)	gpb_npr_api_node_story		status	basic	Done	setting default value of 1
6	story	node	news	Existing (JSON)	gpb_npr_api_node_story		moderation_state	basic	Done	setting default value of 1
7	story	node	news	Existing (JSON)	gpb_npr_api_node_story	title	title	basic	Done	
8	story	node	news			subtitle	N/A			
9	story	node	news	Existing (JSON)	gpb_npr_api_node_story	shortTitle	field_short_title	basic	Done	haven't seen data
10	story	node	news	Existing (JSON)	gpb_npr_api_node_story	teaser	field_summary	basic	Done	
11	story	node	news			miniTeaser	N/A			
12	story	node	news			contributorText				Use when creating author
13	story	node	news			slug	N/A			
14	story	node	news	Existing (JSON)	gpb_npr_api_node_story	storyDate	created	processing (date)	Done	need to format the dates
15	story	node	news	Existing (JSON)	gpb_npr_api_node_story	pubDate	field_release_date	processing (date)	Done	need to format the dates
16	story	node	news	Existing (JSON)	gpb_npr_api_node_story	lastModifiedDate	changed	processing (date)	Done	need to format the dates
17	story	node	news			audioRunByDate				Use when creating audio
18	story	node	news			keywords	N/A			
19	story	node	news			priorityKeywords	N/A			
20	story	node	news			organization	N/A			
21	story	node	news	Existing (JSON)	gpb_npr_api_node_story	parent	field_categories	entity lookup (categories)	Done	migrate separate as taxon
22	story	node	news	Existing (JSON)	gpb_npr_api_node_story	audio	(NEW)	migration lookup		need a new content type
23	story	node	news	Existing (JSON)	gpb_npr_api_node_story	byline	field_author	entity lookup (bio)	Done	migrate separate as bio n
24	story	node	news	Existing (JSON)	gpb_npr_api_node_story	image	body, field_teaser_image	migration lookup (gpb_npr_api_media_image)	WIP	map to field_teaser_image top of body.
25	story	node	news			text	N/A			
26	story	node	news	Existing (JSON)	gpb_npr_api_node_story					concatenate paragraphs v containers, watch for pull

Plan



Format Data Tools Add-ons Help All changes saved in Drive

Sort sheet by **column D**, A → Z

Sort sheet by **column D**, Z → A

Sort range

Turn off filter

Filter views

Slicer

New

Create new filter view

Save as filter view

Filter view options

blogpost

event

education_resource

education_segment

21	story	node	news	Existing (JSON)	gpb_npr_api_node_story	parent	field_categories	entity lookup (categories)	Done	migrate separate as taxon
22	story	node	news	Existing (JSON)	gpb_npr_api_node_story	audio	(NEW)	migration lookup	Done	need a new content type
23	story	node	news	Existing (JSON)	gpb_npr_api_node_story	byline	field_author	entity lookup (bio)	Done	migrate separate as bio n
24	story	node	news	Existing (JSON)	gpb_npr_api_node_story	image	body, field_teaser_image	migration lookup (gpb_npr_api_media_image)	WIP	map to field_teaser_image top of body.
25	story	node	news	Existing (JSON)	gpb_npr_api_node_story	text	N/A			concatenate paragraphs v containers, watch for pull
26	story	node	news	Existing (JSON)	gpb_npr_api_node_story					



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Add Issues for Migration Planner to dashboard +

Drupal Core

Distributions

Modules

Themes

Migration Planner

View

Edit

Version control

Maintainers

Automated testing

By [weekbeforenext](#) on 10 January 2020, updated 10 January 2020



This project is not covered by Drupal's [security advisory policy](#).

Drush 9 command used to query a Drupal 7 site database and generate an Excel file that can be used to plan migrations.

Supporting organizations:

[Lullabot](#)

Project information



This project is not covered by the [security advisory policy](#).
Use at your own risk! It may have publicly disclosed vulnerabilities.

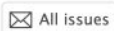
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Maintainers for Migration Planner

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Issues for Migration Planner

To avoid duplicates, please search before submitting a new issue.

Search

[Advanced search](#)

All issues

0 open, 0 total

[Bug report](#)

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



SQueaLer

Photo by [mali maeder](#) from [Pexels](#)

SQueaLer scans

- ★ WYSIWYG string queries:

- ☆ Object tags
- ☆ Image tags
- ☆ Embedded entities
- ☆ Absolute links
- ☆ Span tags
- ☆ iFrames
- ☆ Script tags
- ☆ Tables
- ☆ Custom classes
- ☆ Custom forms
- ☆ Email links
- ☆ Style tags and attributes
- ☆ Social network links
- ☆ Video iFrames
- ☆ Links to PDFs
- ☆ File Lists

SQueaLer reports *(continued)*

- ★ Content by date thresholds
 - ★ Parent Content
 - ★ Unpublished Content
 - ★ Content with documents
 - ★ Paragraphs
 - ★ Field Collections
 - ★ Specific field values
 - ★ Redirects
- ★ Metatag string queries:
 - ☆ Description
 - ☆ Abstract
 - ☆ Token
 - ☆ Creator
 - ☆ Canonical
 - ☆ Title
 - ☆ Image
 - ☆ Keyword
 - ☆ Video
 - ☆ Twitter
 - ☆ Open Graph

SQueaLer command

```
$ drush @[SITENAME].[ENVIRONMENT] squeal
```



```
/sites/[SITENAME].georgia.gov/files/ga_squealer_reports/  
[SITENAME].georgia.gov_YYYY-MM-DD.xlsx
```


	A	B	C	F	G	H	I
1	Node ID	Title	Status	Url Alias	Creation Date	Table Name	Bundle
2	103	Blog Authorship Credits: Yes or No?	Published	https://digitalservices.georgia.gov/blog/2014-03-26	2014-03-26	field_data_body	blog_entry
3	651	Guide to Negativity	Published	https://digitalservices.georgia.gov/blog/2014-08-12	2014-08-12	field_data_body	blog_entry
4	686	No Design for You! Try Some Content Instead.	Published	https://digitalservices.georgia.gov/blog/2014-09-10	2014-09-10	field_data_body	blog_entry
5	1296	Test Book - Page Two	Published	https://digitalservices.georgia.gov/book-page/2015-10-16	2015-10-16	field_data_body	book
6	2156	What Do YOU Want From Your Audience?	Published	https://digitalservices.georgia.gov/book-page/2016-09-27	2016-09-27	field_data_body	book
7	2171	Content Playbook, Fallon Tweet	Published	https://digitalservices.georgia.gov/content-play/2016-09-28	2016-09-28	field_data_body	site_page
8	2241	GOVTalks: Fall 2016 Schedule	Not Published	https://digitalservices.georgia.gov/govtalks-fall-2016-10-20	2016-10-20	field_data_body	site_page
9	2616	Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-03-13	2017-03-13	field_data_body	event
10	2621	Advanced Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-03-13	2017-03-13	field_data_body	event
11	2956	Test Page for Construction Feed	Not Published	https://digitalservices.georgia.gov/test-page-co/2017-08-30	2017-08-30	field_data_body	site_page
12	3146	Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-10-12	2017-10-12	field_data_body	event
13	3151	Advanced Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-10-12	2017-10-12	field_data_body	event
14	3156	Advanced Editor's Training	Not Published	https://digitalservices.georgia.gov/events/2017-10-12	2017-10-12	field_data_body	event
15	3251	Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-12-21	2017-12-21	field_data_body	event
16	3256	Advanced Editor's Training	Published	https://digitalservices.georgia.gov/events/2017-12-21	2017-12-21	field_data_body	event
17	3266	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-01-02	2018-01-02	field_data_body	event
18	3271	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-01-02	2018-01-02	field_data_body	event
19	3281	Digital Center of Excellence: Working Groups to	Published	https://digitalservices.georgia.gov/DCoE/2018-01-09	2018-01-09	field_data_body	site_page
20	3421	Content Specialist Certification	Published	https://digitalservices.georgia.gov/events/2018-02-15	2018-02-15	field_data_body	event
21	3581	Editor's Training - September 2018	Published	https://digitalservices.georgia.gov/events/2018-08-13	2018-08-13	field_data_body	event
22	3586	Advanced Editor's Training - September 2018	Published	https://digitalservices.georgia.gov/events/2018-08-13	2018-08-13	field_data_body	event
23	3591	Advanced Editor's Training - December 2018	Published	https://digitalservices.georgia.gov/events/2018-08-13	2018-08-13	field_data_body	event
24	3596	Editor's Training - December 2018	Published	https://digitalservices.georgia.gov/events/2018-08-13	2018-08-13	field_data_body	event
25	3601	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-08-14	2018-08-14	field_data_body	event
26	3606	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-08-14	2018-08-14	field_data_body	event
27	3611	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-08-14	2018-08-14	field_data_body	event
28	3616	One-on-One Training	Published	https://digitalservices.georgia.gov/events/2018-08-14	2018-08-14	field_data_body	event
29	3641	Editor's Training - March 2019	Published	https://digitalservices.georgia.gov/events/2018-09-24	2018-09-24	field_data_body	event
30	3646	Advanced Editor's Training - March 2019	Published	https://digitalservices.georgia.gov/events/2018-09-24	2018-09-24	field_data_body	event



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Version control

Maintainers

Automated testing

By [weekbeforenext](#) on 8 November 2019, updated 8 November 2019



This project is not covered by Drupal's [security advisory policy](#).

A Drush 9 command that will query a Drupal 7 database migration source for potential migration issues, generating an Excel file tracing issues to a URL.

This module was originally created for the Georgia.gov project and is currently being generalized for use on any site.

Supporting organizations:

[Lullabot](#)

Project information



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Maintainers for SQueaLer

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Issues for SQueaLer

To avoid duplicates, please search before submitting a new issue.

Search

[Advanced search](#)

All issues

0 open, 0 total

Bug report

0 open, 0 total

0 open, 0 total

<https://www.drupal.org/project/squealer>



Strategies and Workflow

Photo by [chuttersnap](#) on [Unsplash](#)



Did not migrate

- * Structural elements:
 - ☆ Content types and field definitions
 - ☆ Vocabularies
 - ☆ Paragraph and field collection bundles
- * Views
- * Webform submissions



Migrated

- * Data elements:
 - ☆ Select nodes and field data
 - ☆ Select taxonomy terms
- * Menus
- * Webforms
- * Files

Migration modules

* Core:

- ☆ **Migrate**
`migrate`
- ☆ **Migrate Drupal**
`migrate_drupal`

* Custom:

- ☆ `ga_migrate`
- ☆ `ga_migrate_site`
- ☆ `ga_migrate_source_ui`

* Contributed:

- ☆ **Migrate Files (extended)**
`migrate_file`
- ☆ **Migrate Plus**
`migrate_plus`
- ☆ **Migrate Source CSV**
`migrate_source_csv`
- ☆ **Migrate Tools**
`migrate_tools`
- ☆ **Drupal Upgrade**
`migrate_upgrade`
- ☆ ***Migrate Source UI***
`migrate_source_ui`

Development tools

- * Local development environment:
 - ☆ Lando
- * QA environment:
 - ☆ Tugboat.qa
- * DevOps magic:
 - ☆ CircleCI
 - ☆ Quay.io



TUGBOAT

<https://tugboat.ga>

Development workflow

- * Focus on field mapping by complexity/content type:
 - ☆ Basic fields
 - ☆ Rich fields
 - ☆ File/image fields
 - ☆ Paragraphs/Field Collections
 - ☆ WYSIWYG cleanup

Migration development strategy

- * Create/edit migration configuration files directly in config sync directory
- * Preserve nids for standalone nodes
- * Migrate unpublished content
- * Prioritize ability to rollback and re-import
- * Use `ga_migrate_site` for site specific overrides
- * Log skips and exceptions using custom logging solution
- * Solution order:
 - ☆ Configuration, core and contrib
 - ☆ Custom source/process plugins and services in `ga_migrate` module
 - ☆ `hook_migrate_MIGRATION_ID_prepare_row()`



Custom Logging

Photo by [Dorelys Smits](#) on [Unsplash](#)

```
ga_migrate_log(  
    $message, // String: detailed message with ids.  
    $migration_id, // String: current migration id.  
    $audience, // String: 'DSGa' or 'dev'.  
    $needs_fix, // Boolean: Does this need to be fixed.  
    $severity, // String: 'warning', 'notice', or 'error'.  
    $category, // String: Short descriptor.  
    $row_id // Integer: The current row id.  
);
```


	A	B	C	D	E	F	G	H	I	J
1	mid	audience	needs_fix	severity	category	message	d7_id	d8_id	migration_id	timestamp
796	795	DSGa	1	warning	WYSIWYG Other	Node /news-and-events-0 (/node/701) body/0/value has a h2 tag which has been removed along with contents.	701	NULL	ga_d7_1_node_i	1557780152
797	796	dev	0	notice	redirects/aliases	Customized alias /regulations-2014-2015 (/node/726) was preserved while migrating node with nid 726.	726	NULL	ga_d7_1_node_i	1557780152
798	797	DSGa	1	warning	WYSIWYG Other	Node /regulations-2014-2015 (/node/726) body/0/value has a h2 tag which has been removed along with contents.	726	NULL	ga_d7_1_node_i	1557780152
799	798	dev	0	notice	WYSIWYG Image	Image media entity with id 75 created.	876	NULL	ga_d7_1_node_i	1557780152
800	799	dev	0	notice	WYSIWYG Image	Node /reach-statewide-signing-day (/node/876) body/0/value has an image which has been replaced with an embedded media entity with id 75.	876	NULL	ga_d7_1_node_i	1557780152
801	800	dev	0	notice	redirects/aliases	Customized alias /regulations-2016-2017 (/node/1156) was preserved while migrating node with nid 1156.	1156	NULL	ga_d7_1_node_i	1557780152
802	801	DSGa	1	notice	link fields	A document was created as part of a migration from an absolute link of 2017-State Programs Definitions.pdf to a file. In order to fill its required 'Type' field and make sure it is properly classified, please go to '/media/76/edit' .	1156	NULL	ga_d7_1_node_i	1557780152
803	802	dev	0	notice	WYSIWYG File	Node /regulations-2016-2017 (/node/1156) body/0/value has a file link Program Definitions (sites/gscf.georgia.gov/files/2017-State%20Programs%20Definitions.pdf) which had its URL updated to Program Definitions.	1156	NULL	ga_d7_1_node_i	1557780152
804	803	DSGa	0	notice	WYSIWYG Style	Node /regulations-2016-2017 (/node/1156) body/0/value has style attribute(s) which have been removed.	1156	NULL	ga_d7_1_node_i	1557780152
805	804	dev	0	notice	Site Page	Site page /contact-us (/node/6) was not migrated as an Link Collection because field_related_links is empty.	6	NULL	ga_d7_site_page	1557780152
806	805	dev	0	notice	Site Page	Site page /events (/node/16) was not migrated as an Link Collection because field_related_links is empty.	16	NULL	ga_d7_site_page	1557780152

Migration Phases

The background is a dark, star-filled space. A diagonal line of seven red, spherical planets or moons extends from the bottom left towards the top right. On the left side, there is a larger, grey, cratered sphere, possibly representing the Moon. The text 'Migration Phases' is centered in the upper half of the image.

Migration phases

- * Add/remove sites from Tugboat
- * Run migrations on Tugboat
- * Client QA's migrations on Tugboat
- * Development team fixes issues
- * Run migration on Production
- * Client prepares sites for launch
- * Sites are launched

Magical Nerdery

A photograph of a LEGO Harry Potter diorama. In the background is a tan-colored castle facade with several arched windows. In the foreground, four minifigures are gathered around two black laptops. From left to right: Hermione Granger with brown hair, Luna Lovegood with long black hair and a wand, Harry Potter with glasses and a Gryffindor scarf, and Sirius Black with a Gryffindor scarf. A brown dog (Scabbers) is on the left, and a white owl (Errol) is on the right.

A gravel path winds through a dense forest of evergreen trees. The path is made of small, light-colored stones and is surrounded by lush green vegetation and tall, thin trees. The lighting is soft, suggesting a slightly overcast day.

Site Specific Overrides

Photo by [James Wheeler](#) from [Pexels](#)



```
/modules/custom/ga_migrate_site
```



```
/sites/[SITENAME].georgia.gov/modules/custom/ga_migrate_site
```

```
...
```

```
ga_migrate: 0
```

```
ga_migrate_site: 0
```

```
...
```

```
core.extension.yml
```



```
interface GaMigrateSiteInterface {  
    // Press_release nodes with release date greater  
    // than threshold are trashed.  
  
    const GA_MIGRATE_SITE_PRESS_RELEASE_THRESHOLD = 3;  
  
    // The date unit that accompanies the threshold value.  
  
    const GA_MIGRATE_SITE_PRESS_RELEASE_THRESHOLD_UNIT = 'y';  
  
    // The site node skip list.  
  
    const GA_MIGRATE_SITE_SKIP_LIST = [];  
  
}
```

/modules/custom/ga_migrate_site/src/Plugin/GaMigrateSiteInterface.php

```
// Implements hook_migrate_prepare_row().
```

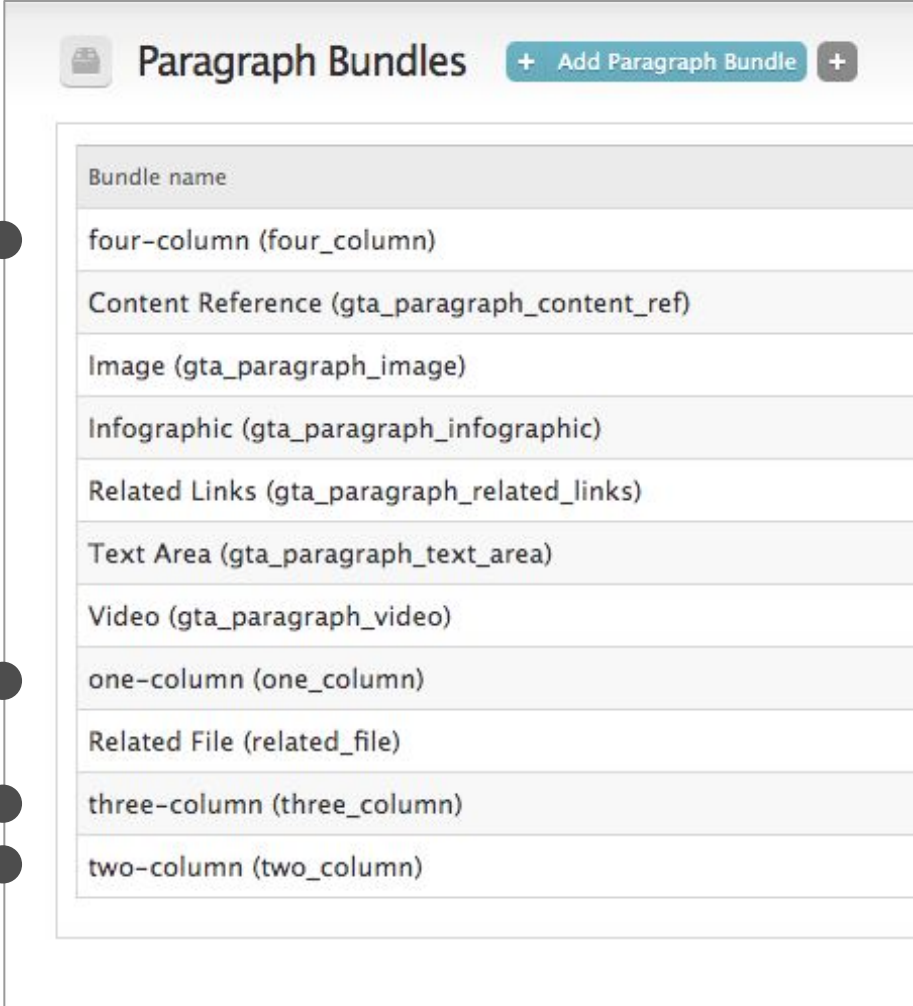
```
// Implements hook_migrate_MIGRATION_ID_prepare_row().
```

```
/sites/[SITENAME].georgia.gov/modules/custom/ga_migrate_site/ga_migrate_site.module
```

Nested Paragraphs



Container Paragraphs

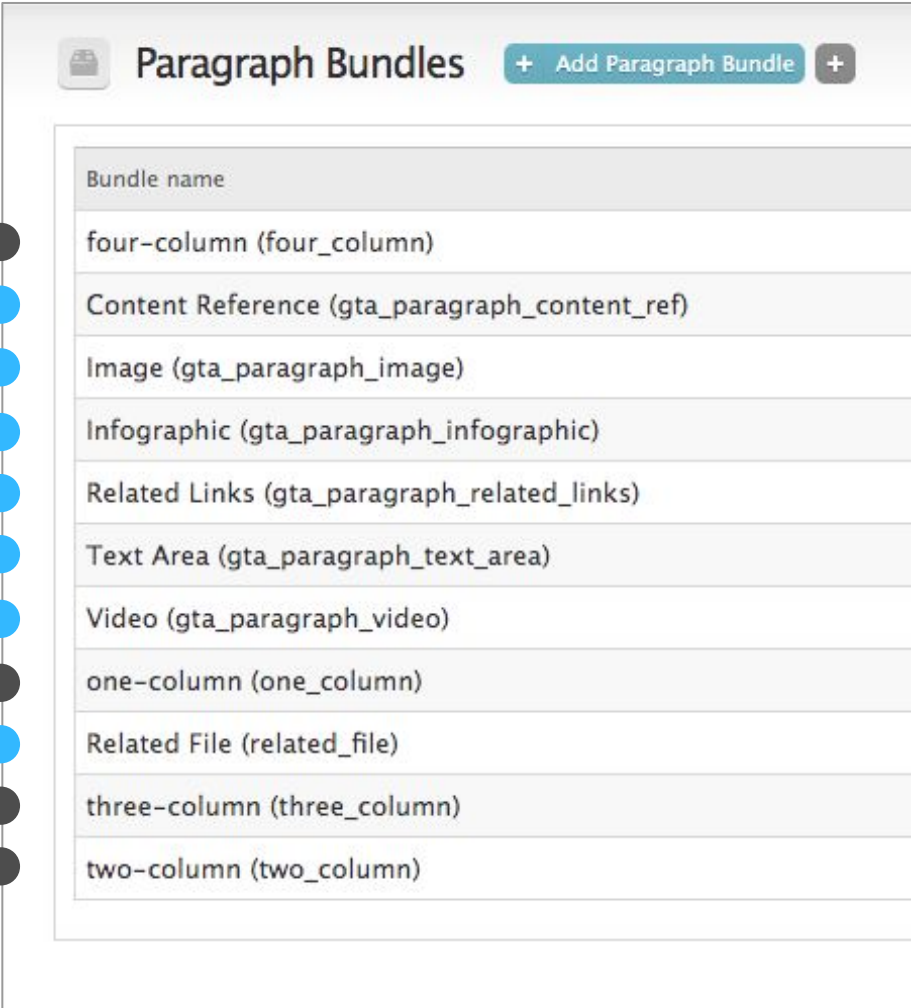


The screenshot displays a user interface for managing paragraph bundles. At the top, there is a header with a folder icon, the title "Paragraph Bundles", and a button labeled "+ Add Paragraph Bundle" with a plus sign icon. Below the header is a list of bundles, each with a "Bundle name" column and a corresponding content reference code. The bundles listed are:

Bundle name	Content Reference
four-column (four_column)	gta_paragraph_content_ref
Image (gta_paragraph_image)	gta_paragraph_image
Infographic (gta_paragraph_infographic)	gta_paragraph_infographic
Related Links (gta_paragraph_related_links)	gta_paragraph_related_links
Text Area (gta_paragraph_text_area)	gta_paragraph_text_area
Video (gta_paragraph_video)	gta_paragraph_video
one-column (one_column)	gta_paragraph_one_column
Related File (related_file)	related_file
three-column (three_column)	gta_paragraph_three_column
two-column (two_column)	gta_paragraph_two_column

Container Paragraphs

Content Paragraphs



The screenshot displays the 'Paragraph Bundles' interface. At the top, there is a title 'Paragraph Bundles' and a button '+ Add Paragraph Bundle'. Below this is a list of bundles, each with a 'Bundle name' header and a corresponding content type. The bundles are: 'four-column (four_column)', 'Content Reference (gta_paragraph_content_ref)', 'Image (gta_paragraph_image)', 'Infographic (gta_paragraph_infographic)', 'Related Links (gta_paragraph_related_links)', 'Text Area (gta_paragraph_text_area)', 'Video (gta_paragraph_video)', 'one-column (one_column)', 'Related File (related_file)', 'three-column (three_column)', and 'two-column (two_column)'. A vertical line of colored circles (black, blue, black) is positioned to the left of the list.

Bundle name
four-column (four_column)
Content Reference (gta_paragraph_content_ref)
Image (gta_paragraph_image)
Infographic (gta_paragraph_infographic)
Related Links (gta_paragraph_related_links)
Text Area (gta_paragraph_text_area)
Video (gta_paragraph_video)
one-column (one_column)
Related File (related_file)
three-column (three_column)
two-column (two_column)

node

field_content

two_column

gta_paragraph_related_links

gta_paragraph_image

one_column

gta_paragraph_text_area

Paragraphs strategy

- * Convert Paragraphs into to Drupal 8 markup
 - ☆ Includes entity embeds
- * Stack new content in Body field

...

prepared_field_content:

plugin: ga_micro_content_to_text

source:

- field_content

micro_content:

field_content: paragraphs_item

...

What do you mean by "render"?

- * What should the Drupal 8 markup be for this paragraph when placed in the WYSIWYG Body field?
 - ☆ Text markup
 - ☆ Entity embed code
 - ☆ File download link
 - ☆ Alignment adjustments

node

field_content 6

two_column 3

gta_paragraph_related_links 1

gta_paragraph_image 2

one_column 5

gta_paragraph_text_area 4

...

body/0/value:

plugin: concat

source:

- '@prepared_field_content'
- **body/0/value**

...

A photograph of a person holding a brown chicken and a basket of eggs. The person's hands are visible, one holding the chicken and the other holding a wire basket filled with straw and several brown eggs. The background is a light-colored fabric.

Circular Dependencies

Photo by [Anita Austvika](#) on [Unsplash](#)

site_page node

field_related_links

Link

Node reference

Node reference

Link

Link



link_collection node

field_rich_links

Link

Node reference

Node reference

Link

Link

ga_d7_site_page_field_related_links



ga_d7_node_site_page

...

prepared_field_related_links:

-

plugin: migration_lookup

migration: ga_d7_site_page_field_related_links

source: nid

no_stub: true

-

plugin: ga_entity_embed_code

entity_type: node

...

ga_d7_node_site_page

```
...
```

```
body/0/value:
```

```
-
```

```
  plugin: concat
```

```
  source:
```

```
    - body/0/value
```

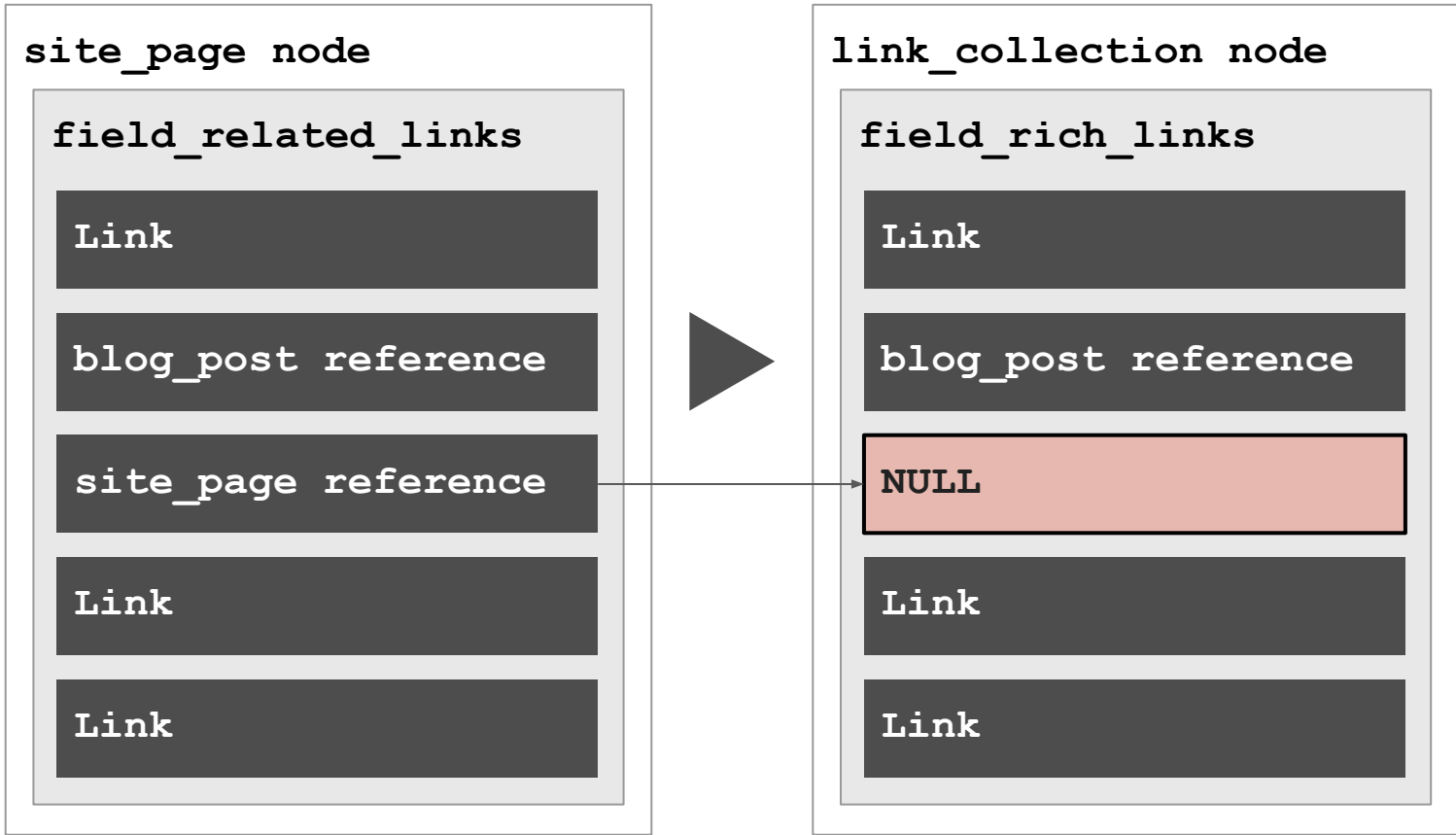
```
    - '@prepared_field_related_links'
```

```
...
```

ga_d7_node_site_page

Dependencies

- * `ga_d7_node_site_page`
 - ☆ `ga_d7_site_page_field_related_links`



ga_d7_site_page_field_related_links

...

site_page_stub_entity_references:

plugin: sub_process

source: field_related_links

process:

entity_references:

...

-

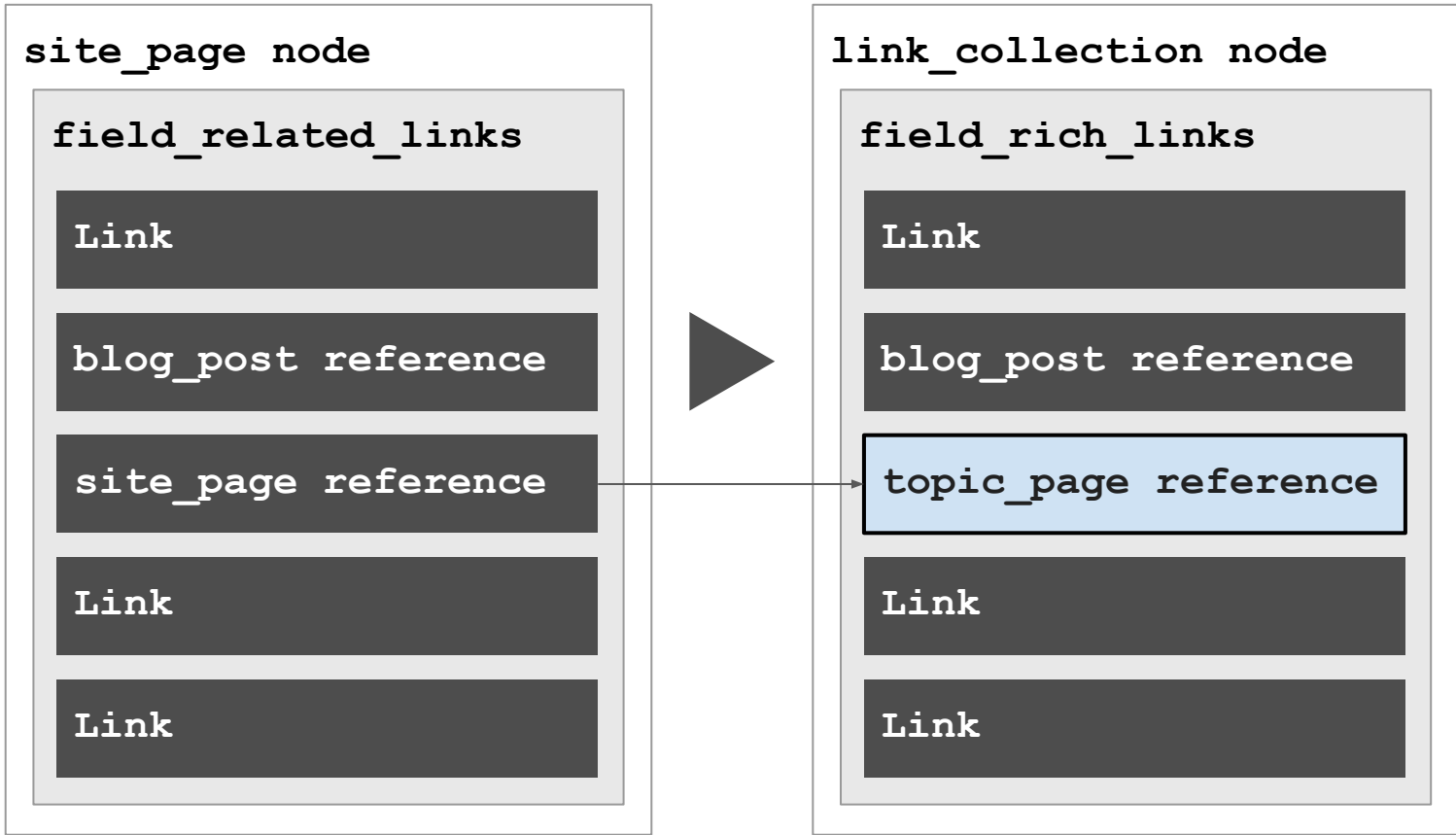
plugin: migration_lookup

migration: ga_d7_node_site_page

source: field_related_content/0/nid

stub_id: ga_d7_node_site_page

...



ga_d7_site_page_field_related_links

...

site_page_stub_entity_references:

plugin: sub_process

source: field_related_links

process:

entity_references:

...

-

plugin: migration_lookup

migration: ga_d7_node_site_page

source: field_related_content/0/nid

stub_id: ga_d7_node_site_page

...

Dependencies

- * `ga_d7_node_site_page`
 - ☆ `ga_d7_site_page_field_related_links`
- * `ga_d7_site_page_field_related_links`
 - ☆ `ga_d7_node_blog_post`
 - ☆ `"ga_d7_node_site_page"`

It works if...

- * The non-specified dependency migration id is alphabetically **before** the current migration:
 - ☆ `ga_d7_node_site_page`
 - ☆ `ga_d7_site_page_field_related_links`

It doesn't work if...

- * The non-specified dependency migration id is alphabetically **after** the current migration:
 - ☆ `ga_d7_index_list_field_related_links`
 - ☆ `ga_d7_node_index_list`
- * The ~~fix~~ hack:
 - ☆ `ga_d7_1_node_index_list`
 - ☆ `ga_d7_index_list_field_related_links`
- * Migration Dependency When Stubbing Content:
<https://www.drupal.org/project/drupal/issues/3024634>

WYSIWYG DOM Processing

...

body/0/value:

...

-

plugin: dom

method: import

-

plugin: ga_wysiwyg_cleanup_dom

text_format: expanded

-

plugin: dom

method: export

...

Xdebug

```
\DOMDocument
```

\DOMDocument processing

- * Get elements from the `\DOMDocument` object.
- * Loop and collect the items to alter, replace, or remove in an array.
- * Loop through collection array and alter, replace or remove each element.

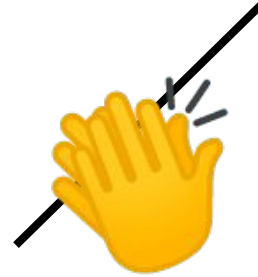

```
// Get elements by tag.
$elements = $dom->getElementsByTagName('*');
$remove_elements = [];
if ($elements->length > 0) {
    foreach ($elements as $element) {
        // Collect elements based on conditions.
        $remove_elements[] = $element;
    }
}

// Remove or replace elements.
foreach ($remove_elements as $element) {
    $this->removeElementAndContent($element);
}
```

WYSIWYG clean up

- * D7 embedded entity → D8 embed syntax
- * D7 tag → D8 embedded media entity
- * D7 link to file → D8 file download link
- * D7 <iframe> tag → D8 embedded Code Block node or media entity
- * General text filtering based on D8 field text format

We made it!



More about the Georgia.gov project

- * [Georgia GovHub: a case study](#) by Darren Peterson at Drupal GovCon 2019
 - ☆ This is also coming to DrupalCon Minneapolis 2020!
- * [A forest of designs without subthemes: Implementing Georgia.gov's front-end in Drupal 8](#) by Marc Drummond at Drupal GovCon 2019

More about migration from Lullabot

- * [Real Life Data Migrations](#) on the Lullabot Podcast
- * [An Overview for Migrating Drupal Sites to 8](#) by Juampy NR
- * [Running and Testing Drupal 8 Migrations in CircleCI](#) by Juampy NR
- * [31 Days of Drupal Migrations with Mauricio Dinarte](#) on the Lullabot Podcast
- * [Managing Authentication During API Migrations](#) by April Sides
- * and more to come!

Thank you.