How to COPE with external entities

Adrian Bateman, Nomensa polynya
Goal

To show how to use External Entities module to share content between Drupal websites
COPE: Create Once Publish Everywhere

- Strategy to create content in one place and publish it in many places

- Simple example: a block that appears on multiple webpages

- Also applies to the same content on multiple websites.

- Drupal solutions such as Migrate, Replication and Feeds all create duplicates of the content

- Single Point Of Truth
External Entities

- “This module allow you to connect to datasets from external databases and use it in your Drupal 8 website.”

- Data is handled by Drupal as content entities with remote storage. External entities can be used in most ways that standard entities can.

- First released in 2015 (jelle_S). Branch 1.x still in Alpha.

- Branch 2.x started August 2018 (rp7). Improvements include separate entity types instead of bundles.
Simple example (today’s session)

Display a teaser for an article on another website
Complex example (for another day)

Shared media library
Display teaser card for a remote article

**Remote website**
- Create a REST service to GET multiple and single articles

**Local website**
- Create an External Entity type
- Create a View with an entity browser display
- Add entity reference field to a content type with an entity browser widget
- Theme the external entity
REST service on remote website

- Keeping it simple with a View with REST export displays
- Alternatives e.g. JsonAPI, GraphQL, core RESTful module
- Authentication and permissions - ignored!
- 2 REST exports for single and multiple results
- Shows 2 options - separate fields and rendered entity
JSON response

- http://remote.test/rest/remote-pages?_format=json
- http://remote.test/rest/remote-pages/19?_format=json
- Response for single item is inside an array - could use custom serializer to remove array
- Response shows 2 options - separate fields or rendered entity. Fields rewritten in Views UI.
- Relative links in the body or the rendered entity have to be changed to external links, e.g. with a custom PathProcessor
External entity type

Create ‘external_card’ external entity type

Module includes storage clients for REST and an example using Wikipedia

Set REST endpoint and JSON format

Read-only as we are only using GET

Pager settings are not needed
External entity type

Storage client part 2

- Patch allows REST client to remove the array that Views wraps around the response for a single item.
- Set parameter to add ‘_format=json’ to the request
External entity type

Field mapping

- Map nid and title in response to entity type properties
- Create Drupal fields and map response fields to them
- Set text formats
- Complex mapping is possible in 2.x e.g. ‘contact_information/email_address’
External entity type

Caching and theme

- Enable theming to render the entities with a Twig template in the active theme
External card fields
External cards

- List is at http://client.test/external-card

- Single item is at http://client.test/external-card/19

- Create Twig template in the theme: external-card.html.twig
Views and Search API

No automatic Views support

- Waiting for core issue to be resolved - “Make Views use SqlEntityStorageInterface” https://www.drupal.org/project/drupal/issues/2079019
- No recent work on EntityFieldQuery Views Backend module

Workaround with Search API

- Create index in Search API with database server
Search API index

- Run the index.
- Entities are indexed in table search_api_db_external_cards
Create a view

- Base table for the view is the Search API index
Configure the view

- Create Entity Browser display

- Add the field “Entity browser bulk select form for Search API views”
Create entity browser

- Create Entity Browser display

- Add the field “Entity browser bulk select form for Search API views”
Create entity browser

- Add View display widget using the External cards view
Entity Cards field

- Create the External Cards field on a node content type
- Choose the Entity browser widget with the External Cards entity browser
Field display

- Choose rendered entity for displaying the External Cards field

![Manage display interface]

- Home » Administration » Structure » Content types » Basic page
- Content items can be displayed using different view modes: Teaser, Full content, Print, RSS, etc. They are used in lists of multiple content items. Full content is typically used when the content is displayed alone.
- Here, you can define which fields are shown and hidden when Basic page content is displayed in each view mode.

<table>
<thead>
<tr>
<th>FIELD</th>
<th>LABEL</th>
<th>FORMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>External cards</td>
<td>- Hidden -</td>
<td>Rendered entity ▼</td>
</tr>
<tr>
<td>Body</td>
<td>- Hidden -</td>
<td>Default ▼</td>
</tr>
<tr>
<td>Links</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Disabled
- No field is hidden.

- Custom display settings
- Save
Edit the page

- Select an external card with the entity browser

- The remote website could be hit with lots of requests if the entities’ caches have expired. Use Varnish!
This page on Local Website is promoting an article on Remote Website!

Lorem ipsum dolor amet bespoke snackwave shoreditch kale chips roof party. Cliche typewriter pork belly wolf yr. Lomo swag cloud bread asymmetrical, chartreuse 8-bit semiotics jean shorts you probably haven't heard of them kogi. Raclette meh forage, air plant messenger bag viral aesthetic fam heirloom franzen gentrify direct trade. Taxidermy migas roof party occupy everyday carry heirloom distillery neutra. Vape copper mug aesthetic vegan.

composer.json

"drupal/core": "^8.6",
"drupal/ctools": "^3.0",
"drupal/devel": "1.x-dev",
"drupal/entity_browser": "^2.0@alpha",
"drupal/external_entities": "2.x-dev",
"drupal/search_api": "1.x-dev",
"drush/drush": "^9.3",
"vlucas/phpdotenv": "^2.4",
"webflo/drupal-core-require-dev": "^8.6@RC",
"webflo/drupal-finder": "^1.0.0",
"webmozart/path-util": "^2.3"
}
"require-dev": {...},
"conflict": {"drupal/drupal": "*"},
"minimum-stability": "dev",
"prefer-stable": true,
"config": {"sort-packages": true...},
"autoload": {...},
"scripts": {...},
"extra": {
   "enable-patching": true,
   "patchLevel": {
      "drupal/core": "-p2"
   },
   "patches": {
     "drupal/external_entities": {
       "Theming support": "https://www.drupal.org/files/issues/2018-09-10/2998552-external_entities_theme_support.patch"
     }
   },
Adrian Bateman
Principal developer
polynya
@we_are_nomensa
Become a Drupal contributor
Friday from 9am

- First timers workshop
- Mentored contribution
- General contribution