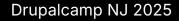
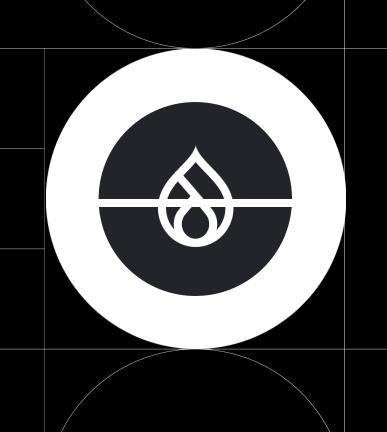


# Decoupled Drupal: Are We There Yet?



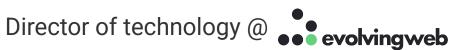






# Bonjour!

# **Simon Morvan**



# https://www.drupal.org/u/garphy

- 15+ years in Drupal
- Backend Architecture, DevOps
- **Decoupled Drupal specialist**
- Speaks Linux & Docker fluently



ABOUT EVOLVING WEB

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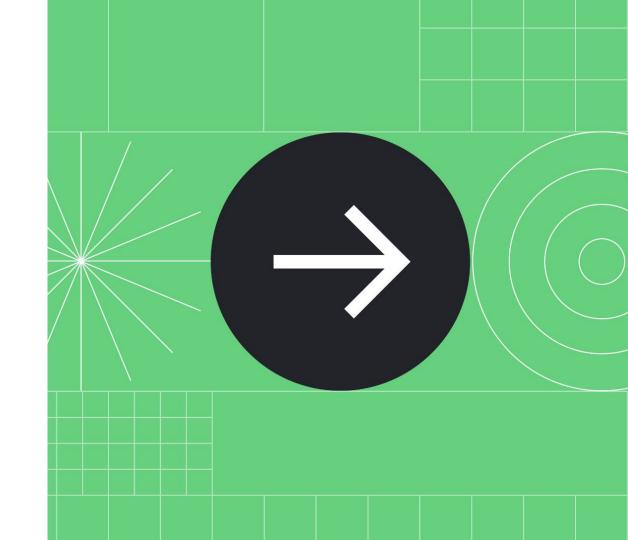
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evolvingweb







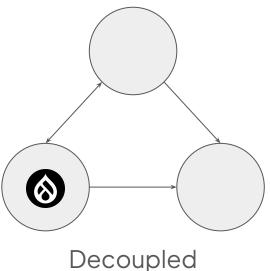




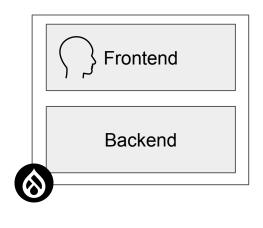
# What is decoupled

- Multiple components
- Distributed systems
- Service oriented architecture
- Microservices

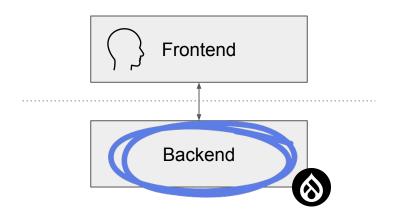




# What is headless



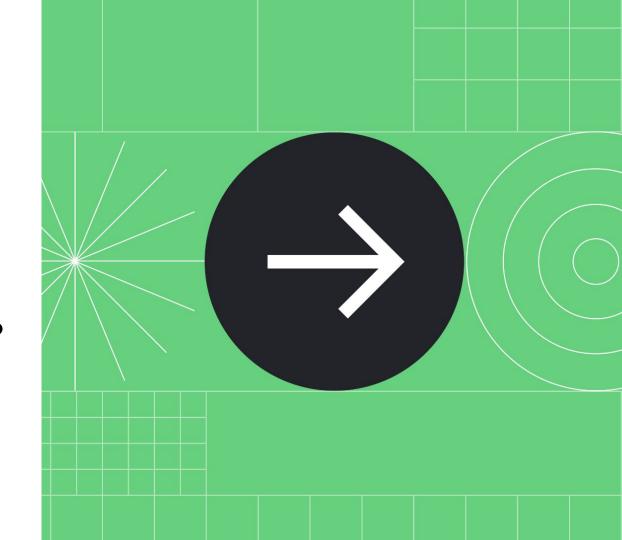
Monolith



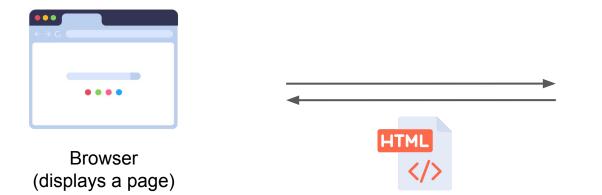
Decoupled

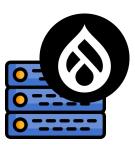
A decoupled solution with a headless CMS

How does it work?



# How Drupal typically works





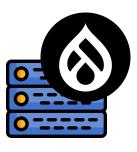
Server

# How Decoupled Drupal works



Browser (runs an app)





Server

# What is <del>headless</del> decoupled Drupal



# A Drupal backend to do backend stuff

- Content modeling
- CMS features
- Storage (data, media, ...)



# A separate web stack to do frontend stuff

- Fetch the data
- Present the data
- Stateless

An API in between



# Push the limits

- Advanced UX, interactions and animations
- Better performance, Increased security
- Multiple channels, sharing content
- Reinforce your content governance
- Leverage existing teams, skillset and components
- Long term backend investment





### Installation

Shortcuts

Media capture

microphone of a device

Authentication

external USB Security Key.

Contact picker

the ann icon

Using the beforeinstallprompt event, a native dialog can be displayed to install a web app

Shortcuts provide quick access to pages in your app from

Media capture allows web apps to use the camera and

Web Authentication API (WebAuthn) enables passwordless

authentication through your device's fingerprint reader or an

The Contact Picker API allows web apps to select the user's

The Media Session API allows web apps to display controls

Element Capture enables screen capturing web apps to record specific HTML elements.

The Storage API enables web apps to persist structured

Augmented reality enables web apps to place virtual objects

contacts after permission has been granted.

The Shape Detection API detects faces in images.

for media playback on a device's lock screen.

Element Capture

data in the user's browser.



### Offline support

View Transitions

Picture-in-picture

Protocol Handling

Audio Session API

should mix with audio from native apps.

Background Sync API

connection is restored.

write values to it.

to open links with particular URL schemes.

arbitrary HTML content

Web share

between pages

The Service Worker enables web apps to work offline

The View Transitions API enables app-like transitions

The Document Picture-in-Picture API makes it possible to

open an always-on-top window that can be populated with

Protocol handling enables web apps to register their ability

The Web Share API invokes the native share mechanism of

The Vibration API enables web apps to make a mobile device

The Audio Session API configures how audio from web apps

The Background Sync API enables web apps to defer tasks

when it's offline so they can be run when the network

The Web Bluetooth API enables web apps to connect to

Bluetooth Low Energy (BLE) devices and read values from or

The Payment Request API provides a browser-based method

to enable users to make payments on the web, using a credit

The DeviceMotionEvent gives information about the speed

of changes for the position and orientation of the user's

Speech recognition is part of the Web Speech API and

the device and allows users to share text, URLs or files.



### Notifications

The Notifications API enables web apps to display notifications, even when the app is not active.



### Geolocation

The Geolocation API enables users to share their location with web apps.



### File System

Access to the file system of the user's device



File Handling API The File Handling API enables web apps to register as file



### handlers with the operating system



### Barcode detection

The Barcode Detection API detects barcodes and gr-codes



Audio recordina Record audio using MediaRecorder and visualize audio using



Web Audio API.



### Screen Capturing

Capture Handle and Captured Surface Control enable screen capturing web apps to remotely control captured web apps.





### Background Fetch API

The Background Fetch API enables web apps to download large files in the background even when the app is running.



The Web NFC API enables web apps to read and write to



The Screen Wake Lock API enables web apps to prevent devices from dimming or locking the screen when the app needs to keep running.



### Network info

Multi touch

The NetworkInformation API provides information about the connection of a device, allowing web apps to adapt functionality based on network quality.

Touch events enable web apps to capture complex touch



card, Apple Pay or Google Pay.

Speech recognition

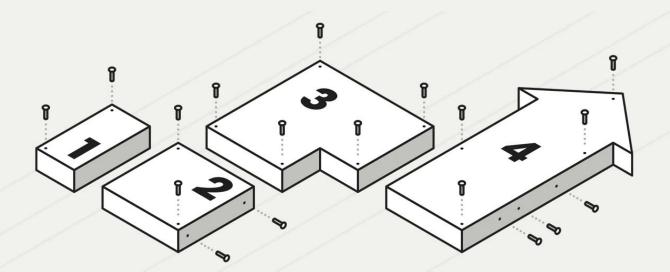
The DeviceOrientationEvent gives information about the

### Speech synthesis Speech synthesis provides text-to-speech and allows

physical orientation of the user's device.

# **Architecture decisions**

- Structure the content
- Connect backend and frontend
- Build the application
- Deploy!



# Content architecture

- Think semantically, not visually
- No WYSIWYG in most cases
   but supports preview of draft revisions
- A Paragraphs-based structure is usually preferred
- Layout Builder is possible

# JSON: API vs GraphQL

Mostly equivalent in terms of features.

- Listing entities
- Fetching specific entities
- Retrieve complex content (multiple entities)
- Invoke business logic

Can be complementary.

JSON:API is part of Drupal Core since Drupal 8.

# Deployment models

- Single Page Application (SPA)
  - The "classic" dynamic deployment model of the code.
- Static Site Generation (SSG)
  - Pre-render (extract) content from the CMS
  - Code change and content change

# Pick a frontend stack



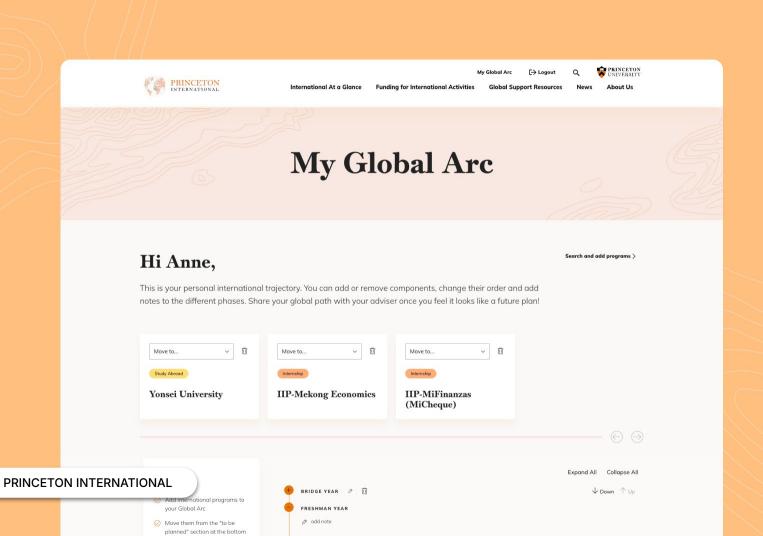
# Selecting next.js

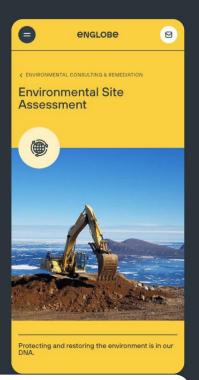
- Popularity of React
- plus a backend layer
- Great integration support with Drupal
- Supports Static site generation

https://next-drupal.org/learn/quick-start
https://www.drupal.org/project/next



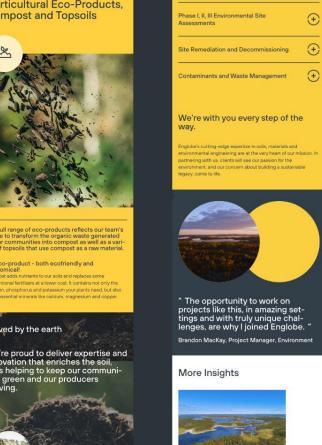
# Some examples





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https://www.englobecorp.com/

Certified eco-products\* drawing on our vast expertise

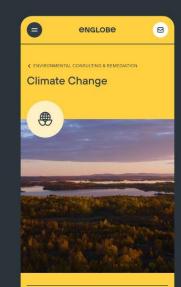
> See all insights

interdisciplinary, open-ended approach is distinctive. It begins with the operational reality of each client to generate real, concrete progress toward climate resilience and carbon Related Sectors TRANSPORTATION ENERGY & RESOURCES

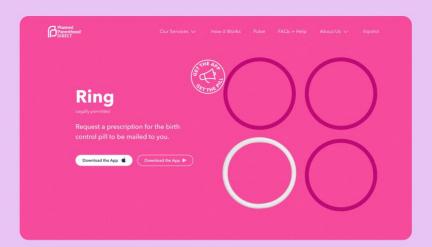
### Moved by the sustainability

COMMERCIAL, INDUSTRIAL & REAL ESTATE

At Englobe, we understand both the local and the global implications of greenhouse gas emissions. We have the knowledge and tools to make projects resilient and include diverse organizations along for the transition to more sustainable development.



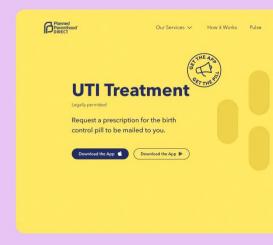




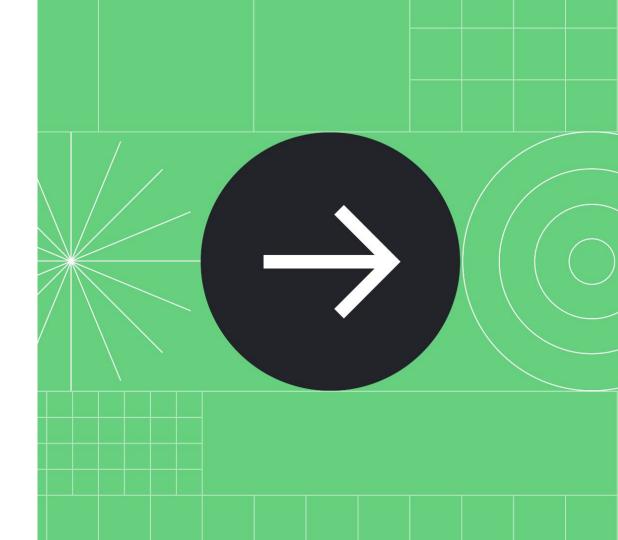








Implementation details



# Decoupled architecture grocery list

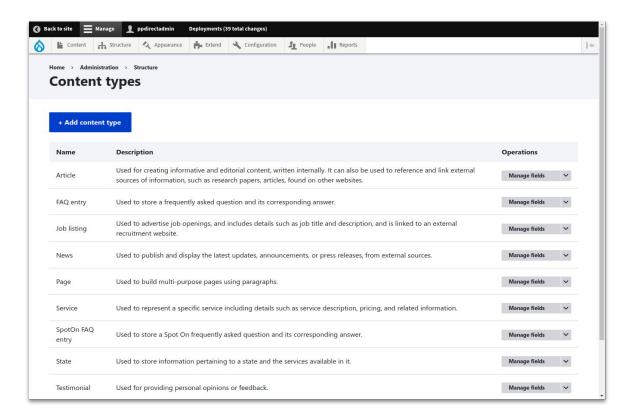
# We need to Implement the content model Provide an administrative UI to manage the content Render component-based content Render navigation menus Render the right content based on the path Generate the static artifact Support a moderation workflow Support content translation

# Decoupled architecture grocery list

# We need to Render component-based content Render navigation menus Render the right content based on the path Generate the static artifact

# Content types modeling

Drupal standard approach.





# Content types modeling

Drupal standard approach + React standard approach.

## Drupal config

- mode.type.article.yml
- mode.type.faq\_entry.yml
- node.type.job\_listing.yml
- M node.type.news.yml
- M node.type.page.yml
- mode.type.review.yml
- III node.type.service.yml
- mode.type.state.yml

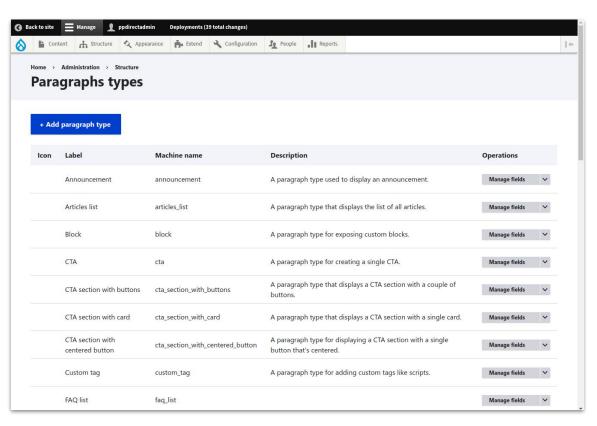
### React components

- node--article.tsx
- mode--article--card.tsx
- node--article--featured.tsx
- node--faq\_entry.tsx
- mode--job\_listing--card.tsx
- node--news--card.tsx
- mode--page.tsx
- node--service.tsx
- node--service--card.tsx
- node--state.tsx

# Implementation

# Paragraph based page building

Drupal standard approach.





# Paragraph based page building

Drupal standard approach. React standard approach.

# Drupal config

- paragraphs.paragraphs\_type.announcement.yml
- paragraphs.paragraphs\_type.app\_hero\_banner.yml
- paragraphs.paragraphs\_type.articles\_list.yml
- paragraphs.paragraphs\_type.block.yml
- paragraphs.paragraphs\_type.cta.yml
- paragraphs.paragraphs\_type.cta\_section\_with\_buttons.yml
- paragraphs.paragraphs\_type.cta\_section\_with\_card.yml
- paragraphs.paragraphs\_type.cta\_section\_with\_centered\_button.yml
- paragraphs.paragraphs\_type.custom\_tag.yml
- magraphs.paragraphs\_type.faq\_list.yml
- magraphs.paragraphs\_type.faq\_topic.yml
- paragraphs.paragraphs\_type.featured\_article.yml
- paragraphs.paragraphs\_type.hero\_banner\_compact.yml
- material paragraphs.paragraphs\_type.hero\_banner\_generic.yml
- material paragraphs.paragraphs\_type.hero\_banner\_simple.yml
- magraphs.paragraphs\_type.job\_listing.yml
- magraphs.paragraphs\_type.news\_list.yml
- paragraphs.paragraphs\_type.newsletter\_subscription\_form.yml
- magazine paragraphs type related articles vml

### React components

- paragraph--announcement.tsx
- paragraph--app-hero-banner.tsx
- paragraph--articles\_list.tsx
- paragraph--block.tsx
- paragraph--cta.tsx
- paragraph--cta-section-with-buttons.tsx
- 👺 paragraph--cta-section-with-card.tsx
- paragraph--cta-section-with-centered-button.tsx
- paragraph--custom\_tag.tsx
- paragraph--fag\_list.tsx
- paragraph--fag\_topic.tsx
- paragraph--featured\_article.tsx
- paragraph--hero-banner-generic.tsx
- 👺 paragraph--hero\_banner\_compact.tsx
- paragraph--hero\_banner\_simple.tsx
- paragraph--job\_listing.tsx
- paragraph--news\_list.tsx
- paragraph--newsletter-subscription-form.tsx



# Resolving the target path

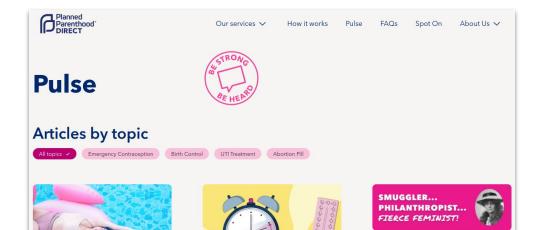
https://www.plannedparenthooddirect.org/pulse



/node/43



GET /jsonapi/node/page/a4579fef-0df0-4205-89a1-daa4e5bfefc8





# Resolving the target path

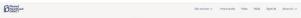
/router/translate-path?path=/pulse

drupal/decoupled\_router contrib module
https://www.drupal.org/project/decoupled\_router

```
"resolved": "https:\/\/live-ppd-api.pantheonsite.io\/pulse",
"isHomePath": false,
"entity": {
    "canonical": "https:\/\/live-ppd-api.pantheonsite.io\/pulse",
    "type": "node",
    "bundle": "page",
    "id": "43",
   "uuid": "a4579fef-0df0-4205-89al-daa4e5bfefc8",
    "langcode": "en",
   "path": "\/pulse"
"label": "Pulse",
"isonapi": {
   "individual": "https:\/\/live-ppd-api.pantheonsite.io\/jsonapi\/node\/page\/a4579fef-0df0-4205-89a
   "resourceName": "node--page",
   "pathPrefix": "jsonapi",
   "basePath": "\/isonapi",
   "entryPoint": "https:\/\/live-ppd-api.pantheonsite.io\/jsonapi"
"meta": {
    "deprecated": {
        "jsonapi.pathPrefix": "This property has been deprecated and will be removed in the next versi
```

# Page building

Paragraphs •		Edit all
↔ Hero banner (0	Com Pulse, BeStrong_beheard.svg	Edit
← Featured article		Edit
Articles list		Edit
- Block	Become a Tester	Edit
- Block	Newsletter	Edit



### Pulse



### Articles by topic

Allapax + Energency Contacopton (2nt Contact UT Southern Aborton HI)



# Summer Self-Care Guide: Surviving UTIs in Hot Weather

# Navigating Time Zones and Birth Control for Your Summer Travels

Weather

Symmetr is right around the comed With
the chap gatting longer and the exactor
heating up, it's important not to let UTIs
ruln your plans. These peels infections as
more comman in his manifes, but self-a
less simple tios, you sen keep them at lary.



# What to Do If You Miss a









How to Talk to Your Partner About Safer Sex

Is Birth Control Delivery



### April is STI Awareness Month



What To Know After Taking

WHAT IS CONSENT? **a** 🖨 🥰 99

What is Consent?

Birth Control and

Antibiotics: What You Need to Know





### Newsletter

Sign up for our monthly newsletter to read about sexual health topics and learn more about our services



# Page building with next.js

```
node--article': NodeArticle,
node--article--featured': NodeArticleFeatured,
node--fag_entry': NodeFagEntry,
node--job_listing--card': NodeJobListingCard,
node--news--card': NodeNewsCard,
'node--page': NodePage,
'node--service': NodeService,
node--service--card': NodeServiceCard,
node--state': NodeState,
paragraph--announcement': ParagraphAnnouncement,
paragraph--app_hero_banner': ParagraphAppHeroBanner,
paragraph--articles_list': ParagraphArticlesList,
paragraph--block': ParagraphBlock,
paragraph--cta': ParagraphCta,
paragraph--cta_section_with_buttons': ParagraphCtaSectionWithButtons,
paragraph--cta_section_with_card': ParagraphCtaSectionWithCard,
paragraph--cta_section_with_centered_button': ParagraphCtaSectionWithCenteredButton,
paragraph--custom_tag': ParagraphCustomTag,
paragraph--faq_list': ParagraphFaqList,
paragraph--faq_topic': ParagraphFaqTopic,
noncompany footuned entialely Department continued Antiale
```

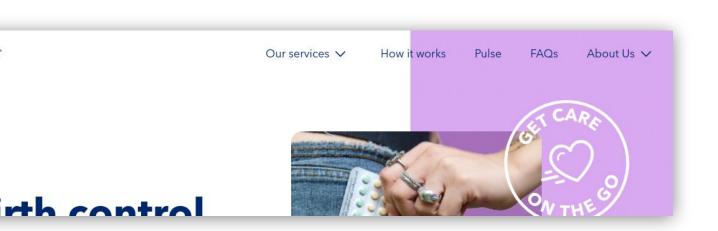
## Instantiation

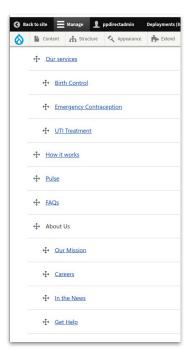
```
export default function NodePage({
  entity,
  ...props
}: DrupalPageEntity<NodePageEntity>) {
  const {
    field_paragraphs: paragraphs : any[] ,
  } = entity;
  return (
    <article>
      {_map(paragraphs, (paragraph) => (
        <section key={paragraph.id}>
          <Entity entity={paragraph} {...props} />
        </section>
      ))}
    </article>
```

#### Implementation

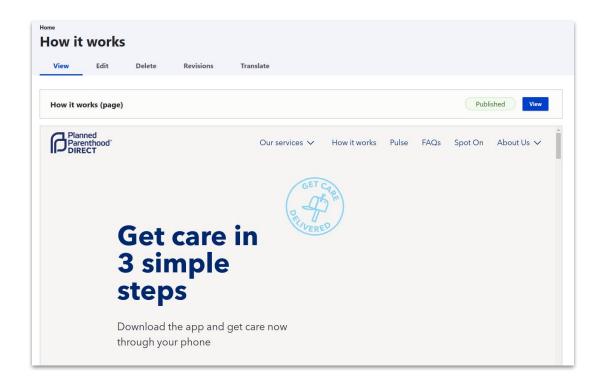
# Retrieving menus

- Menus are managed in the CMS
- drupal/jsonapi\_menu\_items contrib module
- <a href="https://www.drupal.org/project/jsonapi\_menu\_items">https://www.drupal.org/project/jsonapi\_menu\_items</a>





# Previewing from the Drupal UI



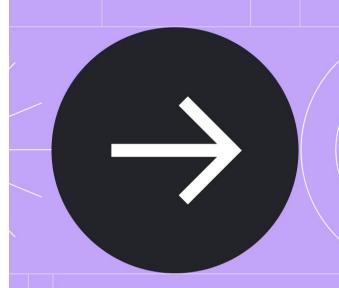
#### Implementation

## Building for production

We have the content (Drupal backend) and the frontend code base

- Next.js build chain: next build
- CI/CD environment :
   Gitlab, Github, an hosting provider integration, ...
- A way to trigger it : drupal/deploy\_hooks

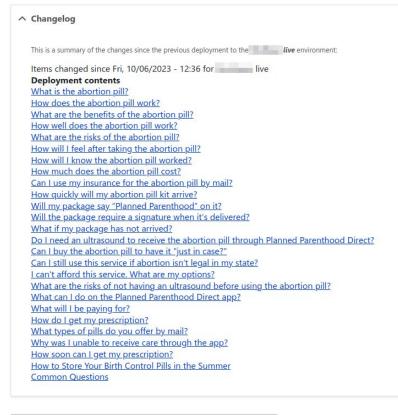




Implementation

# Content changelog

deploy\_hooks displays the list updated contents since the last deploy.



Start a new deployment to the live environment

#### Wrap-up

### In a nutshell

#### **Dependency on Drupal contribs**

Major contribs used to build the Drupal backend

- drupal/build\_hooks
- drupal/consumer\_image\_styles
- drupal/decoupled\_router
- drupal/jsonapi\_extras
- drupal/jsonapi\_menu\_items
- drupal/next

#### **Drupal custom code (modules)**

None.

#### To learn more

https://next-drupal.org/learn/quick-start

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

A secret...



# the headless equation:

1 project = 2 projects

Another secret...



## No need for custom modules

Drupal = No-code headless CMS!

# A wide range of CMS options















So what's next.js?

# Make it easier!

We have a no-code headless CMS...

...only after quite a lot of composer and drush black magic.

No-code for the Drupal coders

Decoupled Drupal needs to be:

- easier to discover on the headless CMS market
- easier to quick start

**Quick Start** 

Introduction

Install Drupal

Apply Patches

**Enable Modules** 

Configure Path Aliases

Create Next.js project

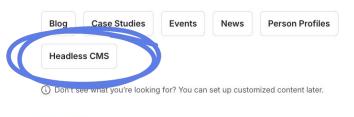
Create Content

Done



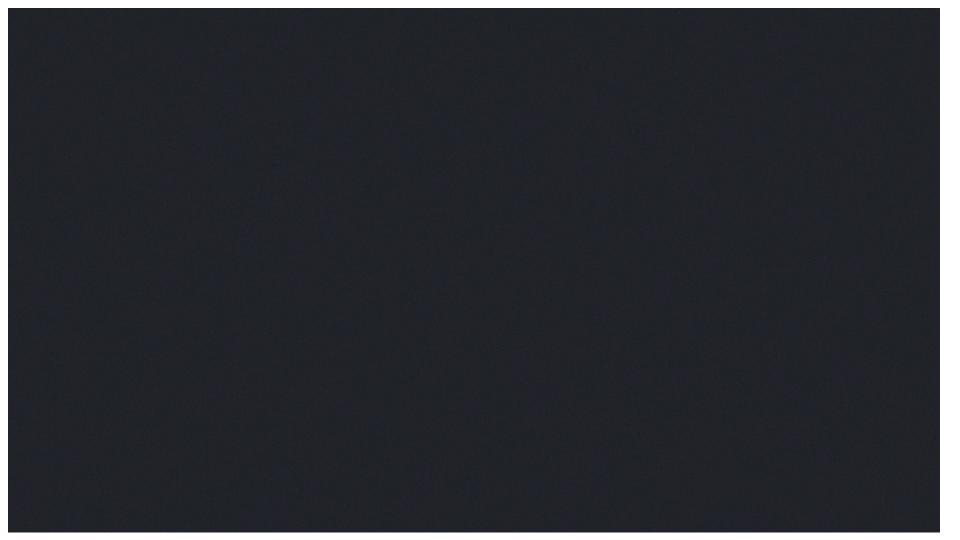
#### **Get started**

You can select pre-configured types of content now, or add them later.



Next → Skip this step

# Thank you



# Let's React!

evolvingweb.com





# Connect Learn Inspire

1-Day Digital Innovation Summit Case Studies in Open-Source, AI & UX