We'll do it live!

Enterprise content staging with Workspaces

Devin Zuczek
drupal.org/u/djdevin

Drupal Architect
Purple Innovation

Content staging: the before times

Client says "I want to see how these new images will look on these 42 pages."

1. Login to the stage site

2. Oops, the stage site is out of date

3. Reauthor all the pages or….

4. Copy the production site to the stage site…

Fix your DevOps issue...

pull_prod_db_to_dev
failed last week in 51s

[Search logs]   [👥 Explain error]   ↻   ⚙

> ✓	Install dependencies		0s
> ✓	Configure AWS credentials		0s
∨ ✗	Pull prod db from s3 to DEV		47s

```
 1
11
12   Current task status: PROVISIONING
13   Current task status: STOPPED
14   Traceback (most recent call last):
15     File "/home/runner/work/purple-drupal-devops/purple-drupal-devops/.github/workflows/runtask_v1.py", line
     160, in <module>
16       main()
17     File "/home/runner/work/purple-drupal-devops/purple-drupal-devops/.github/workflows/runtask_v1.py", line
     149, in main
18       exit_code = check_task_status(session, args.cluster, task_arn)
19                   ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
20     File "/home/runner/work/purple-drupal-devops/purple-drupal-devops/.github/workflows/runtask_v1.py", line 24,
     in check_task_status
21       return task["containers"][0]["exitCode"]
22              ~~~~~~~~~~~~~~~~~~~~~~~^^^^^^^^^^^^
23   KeyError: 'exitCode'
24   Error: Process completed with exit code 1.
```

> ✓	Post Configure AWS credentials		0s
> ✓	Post Checkout repository		0s

Sidebar

Summary

Jobs
- ✓ notify-teams-start
- ✓ set_env_variables
- ✓ push_awsprod_db_to_s3
- ✓ push_awsprod_files_to_s3
- ✗ pull_prod_db_to_dev
- ✗ pull_prod_files_to_dev
- ✓ drush-deploy
- ✓ notify-teams-end

Run details
- ⏱ Usage
- 🗂 Workflow file

Fix your Config issue…

```
ev n z@purple 6471c667 2511            tando drush deploy
[notice] Database updates start.
 [error]  Content Browser requires the Masonry library. Download the newest release
 from
 https://github.com/desandro/masonry/releases and place it in /libraries

Requirements check reports errors. Do you wish to continue? (yes/no) [yes]:
 > [success] No pending updates.
[success] Config import start.

 ---------------+--------------------------------------------------------+------------+
 Collection | Config                                                      | Operation |
 ---------------+--------------------------------------------------------+------------+
            | core.entity_view_display.commerce_product_variation.pillows.default | Update    |
            | core.entity_form_display.commerce_product_variation.pillows.default | Update    |
            | core.entity_view_display.node.product_display.two_column    | Update    |
            | core.entity_view_display.node.product_display.top_section_grid | Update |
            | core.entity_view_display.node.product_display.top_section    | Update    |
            | core.entity_view_display.node.product_display.thumbnail      | Update    |
            | core.entity_view_display.node.product_display.teaser         | Update    |
            | core.entity_view_display.node.product_display.recently_viewed | Update   |
            | core.entity_view_display.node.product_display.overview_compact | Update  |
            | core.entity_view_display.node.product_display.overview       | Update    |
            | core.entity_view_display.node.product_display.one_column     | Update    |
            | core.entity_view_display.node.product_display.menu_item      | Update    |
            | core.entity_view_display.node.product_display.layout_one     | Update    |
            | core.entity_view_display.node.product_display.full           | Update    |
            | core.entity_view_display.node.product_display.financing_card | Update    |
            | core.entity_view_display.node.product_display.default        | Update    |
            | core.entity_view_display.node.product_display.content_browser | Update   |
            | core.entity_view_display.node.product_display.comfort_card   | Update    |
            | core.entity_view_display.node.product_display.card           | Update    |
            | core.entity_view_display.node.product_display.callout        | Update    |
            | core.entity_view_display.node.product_display.blog_title     | Update    |
            | views.view.webform_submissions                              | Update    |
            | editor.editor.webform default                               | Update    |
```

Field all the questions

"Uh, is the stage site down?"

"Did someone delete my page on stage?"

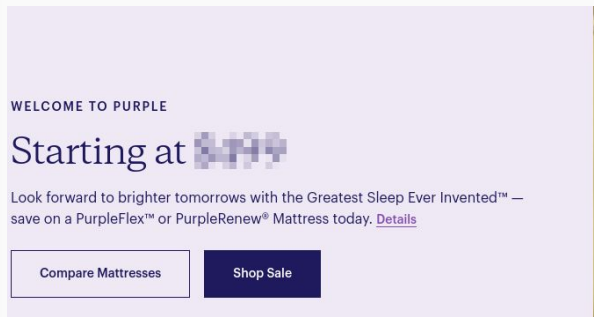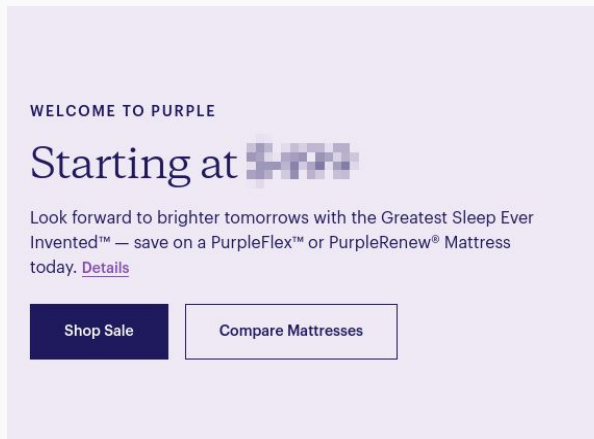"We were running a demo on stage, can someone fix it?"

"Stage isn't responding!"
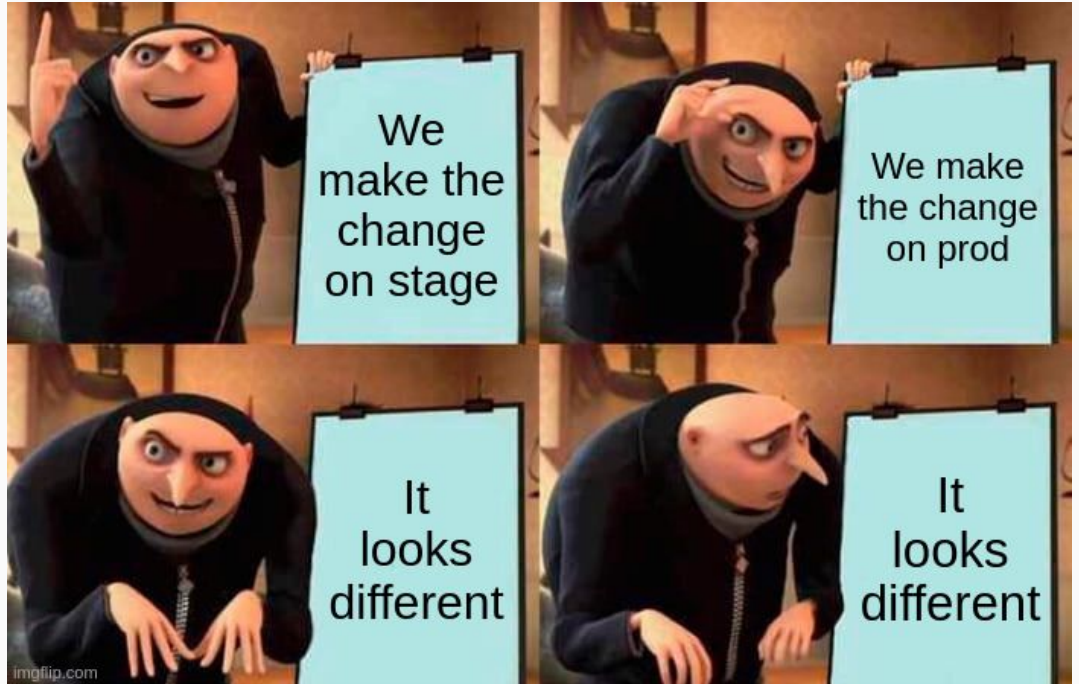
"Is stage acting up?"

Finally...

1. Change on stage
2. See how pretty it looks
3. Get approval
4. Change on production
5. ...
6. See how different it looks

Big problems

- Can't experiment on prod

- Site builders doing work in 2+ places

- No way to share proposed changes

- Expensive environments

Enterprise Content Staging

Hard to describe

- Creation

- Governance

Current solution

- Content moderation (Drupal core)

    - New edits go to pending revisions

    - With Workflows (Core), can enforce governance

    - But, for a single item, bulk with VIews

    - Need to setup moderation on every supported type

    - No full-site preview

Enter Workspaces

- Stable module since Drupal 10.3!

- Mimics a separate environment

- Potential to stage the entire site

- UI to manage Workspaces

- Stage anything revisionable

- Publish when ready

FUTURE!

First things first: Pending revisions

"Forward", "Draft", etc. - having a revision of a page that is not yet published.

Content Moderation uses this for staging changes.

Very short demo

1. drush -y si
2. drush -y en workspaces_ui

(in 10.3, just workspaces)

If the demo fails: Enable the `workspaces` module

Shortcuts   admin   Go to

Little custom header

Hey I changed

Home   New link   My account   Lo

View   Edit

Home

What

I created this inside

View   Edit   Delete   Layout   Revisions

Home

A staged title

LB block

This is a layout builder inline block

Anything can be staged

+ Publish content

Workspace changes

1 taxonomy term, 2 content items

Title	Type	Last changed	Author	Operations
Thai green curry test two	Content: Recipe	Wed, 12 Mar 2025 - 22:11	Umami	Edit ⌄
Changed the page name	Content: Recipe	Wed, 12 Mar 2025 -	Umami	Edit ⌄
Desserts	Taxon gory			

Publish *Stage* workspace ☆

There are 3 items that can be published from *Stage* to *Live*

- 1 taxonomy term
- 2 content items

Publish 3 items to Live   **Cancel**

Showing the changes - swap out the entity!

We swap a different revision from the negotiated Workspace!

```php
function hook_entity_preload(array $ids, $entity_type_id) {
    $entities = [];
    foreach ($ids as $id) {
        $entities[] = mymodule_swap_revision($id);
    }
    return $entities;
}
```

Workspaces is **safe!**

If a Workspace is active, live changes can't be made

Protections on forms and entities

That's it

Really

I'm kidding

Going beyond Core

Contribs!

Core patches!

Experiments!

Workspaces Extra - drupal.org/project/wse

Is awesome:

- Open/Close status for Workspaces
- Rollback (Undo) a Publish
- Move or Discard changes
- UI improvements

Submodules:

- Workspaces Scheduler
- Workspaces Preview
- Workspaces Config

Schedule (WSE)

Pretty simple, you can also schedule your publications!

As long as cron is running on your site, just set it and forget it.

Provided by `wse_scheduler` module.

Edit workspace *April fool's release* ☆

Manage   **Edit**   Delete   Devel

Label *

April fool's release

Owner

nobody (10)   🔍

The workspace owner.

Parent

- None -   ⌄

The parent workspace.

Publish On

04 / 01 / 2025 📅   12 : 00 : 00 AM

Define a date the workspace gets published on.

Save   🗑 **Delete**

Previews (WSE)

Send an expiring link to any stakeholders to see the Workspace before publishing!

Uses a negotiator to activate the workspace from a link!

Behaves just like a regular site!

Preview link ☆

| Manage | Edit | Delete | **Preview link** |

Expiry time

8 hours

The time period should be specified as '8 hours', '1 day', '10 days, 12 hours', etc.

Redirect URL

/

An URL to redirect to when this preview is accessed.

Latest preview link

https://drupal.lndo.site/en/workspace-preview/8hSl3zmWC6x41TeMKqQp36EIQZ0

Generate   **Delete one existing preview**

So how does that work?

Negotiators determine what workspace to activate, based on the request.

Preview looks at a cookie and activates a workspace. Neat.

```php
class TestWorkspaceNegotiator implements WorkspaceNegotiatorInterface, WorkspaceIdNegotiatorInterface {

  /**
   * Constructor.
   */
  public function __construct(
    protected readonly RequestStack $requestStack
  ) {}

  public function applies(Request $request) {
    return $request->cookies->has( key: 'devin_workspace');
  }

  public function getActiveWorkspaceId(Request $request): ?string {
    return $request->cookies->get( key: 'devin_workspace');
  }
}
```

```yaml
services:
  custom.negotiator:
    class: Drupal\custom\Negotiator\TestWorkspaceNegotiator
    arguments:
      - '@request_stack'
    tags:
      - { name: workspace_negotiator, priority: 150 }
```

Moderation

Uh oh

Marketing says:

"We need to make a dozen changes to our front matter.

We have a vendor who is really good at internet!

Can you give them admin access to the prod site?"

- First, say "no"

- Have them make edits on stage first

- Deal with all the same stage site issues

- Get approval (and someone with access) to make changes on production

Access

Edit workspace *Vendor* ☆

| Manage | Edit | Delete | Devel |

Label *

Vendor

Owner

nobody (10)

The workspace owner.

Out of the box!

1. Create user
2. Give permission "Bypass content entity access **in own workspace**"
3. Create workspace
4. Make owner of workspace
5. Let user wreak havoc in their own space
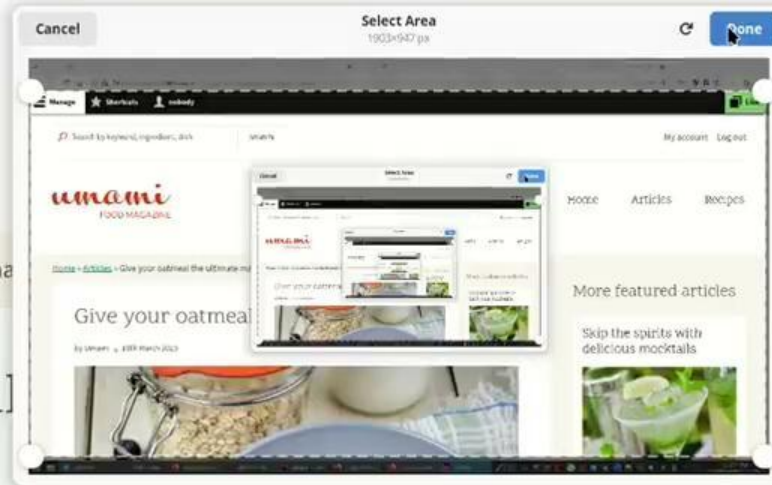
Content moderation

Wait…content moderation?

Yes, but!

We're using it to moderate items inside the workspace!

- Each item in a Workspace moderated
- Content moderation prevents publish of Workspace if any items are Draft

Mostly out of the box!

Core recommendation:

Add the state to the workspace changes list!

🚫 **Error message**

The Stage workspace can not be published because it contains 3 items in an unpublished moderation state.

Workspace changes

3 content items

Title	Type	Last changed	Author	Operations
Some brownie	Content: Recipe	Thu, 13 Mar 2025 - 21:27	Umami	Edit ⌄
woooo Let's hear it for carrots	Content: Article	Thu, 13 Mar 2025 - 21:27	Umami	Edit ⌄

Approvals

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

Applies Workflow to a Workspace

Transition buttons we all know and love!

Approving the vendor's work - just like Workflows!

Vendor ☆

| Manage | Edit | Delete | Preview link | **Workspace approvals** | W... w... |

+ Add request

Request	Requester	Approver	Requested	Status	Operations
Vendor workspace go live	admin	Holly Foat	Thu, 13 Mar 2025 – 22:27	*Pending*	Dismiss ⌄
Vendor workspace go live	admin	Grace Hamilton	Thu, 13 Mar 2025 – 22:27	*Pending*	Dismiss ⌄
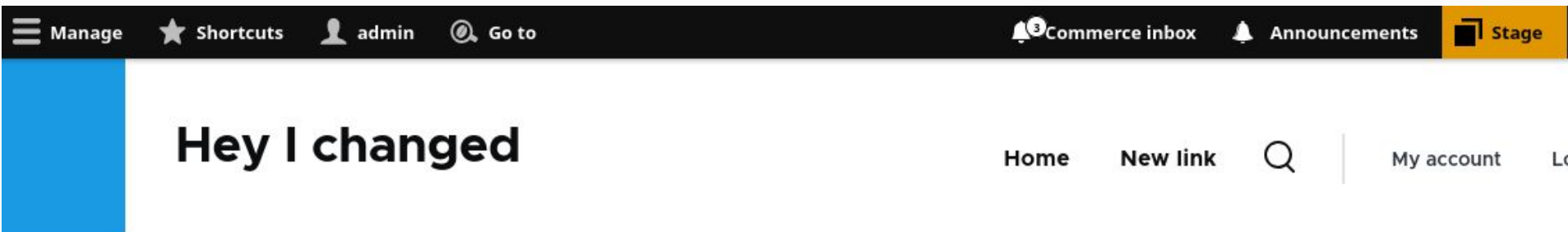
Let's get crazy - config staging with wse_config

Little custom header block

Home   🔍 | My account

Hey I changed

Home   New link   🔍 | My account

Config staging with wse_config

Workspace changes

1 workspace config, 1 custom menu link, 1 content block, 1 content item

Title	Type	Last changed
Block 1	Basic block	Mon, 3 Mar 2025 - 19:05
New link	Custom menu link	Mon, 3 Mar 2025 - 18:24
A staged title 2	Content: Basic page	Mon, 3 Mar 2025 - 19:37
olivero.settings	Workspace config	Wed, 12 Mar 2025 - 15:41

Ready for a brain melt?

Workspaces Core restrictions:

- A content item can only have changes in one Workspace

- Changes to live cannot happen when a change is staged in a Workspace

Core Patch/Module - Workspaces Parallel:
https://www.drupal.org/project/workspaces_parallel

Workspaces in parallel

Node 1		
Rev	**Status**	**Workspace**
22		A
21		A
20	Published	**Live**
19		B

Block 2		
Rev	**Status**	**Workspace**
17		B
16	Published	**Live**
15		A
14		Live

Node 3		
Rev	**Status**	**Workspace**
36	Published	**Live**
35		B
34		A
33		Live

Workspaces in parallel

Workspace A

Workspace B

Live

Node 1		
Rev	**Status**	**Workspace**
22	Latest	A
21		A
20	Published	**Live**
19	Latest	B

Block 2		
Rev	**Status**	**Workspace**
17	Latest	B
16	Published	**Live**
15	Latest	A
		Live

Node 3		
Rev	**Status**	**Workspace**
36	**Latest, Published**	**Live**
35	Latest	B
34	Latest	A
33		Live
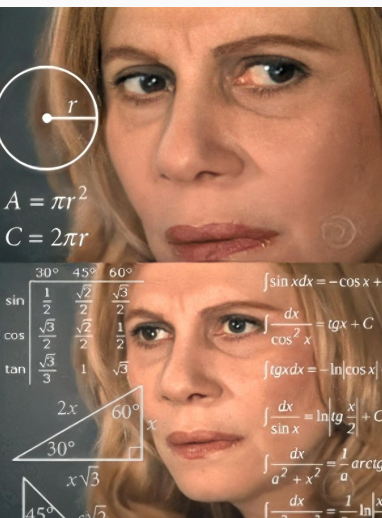
Workspaces in parallel

Workspace A

Workspace B

Live

Node 1		
Rev	Status	Workspace
23	**Latest, Published**	**Live**
22	Latest	A
21		A
19		B

Block 2		
Rev	Status	Workspace
18	**Latest, Published**	**Live**
17		B
16		Live
15	Latest	A

Node 3		
Rev	Status	Workspace
37	**Latest, Published**	**Live**
36	**Latest, Published**	**Live**
35		B
34	Latest	A
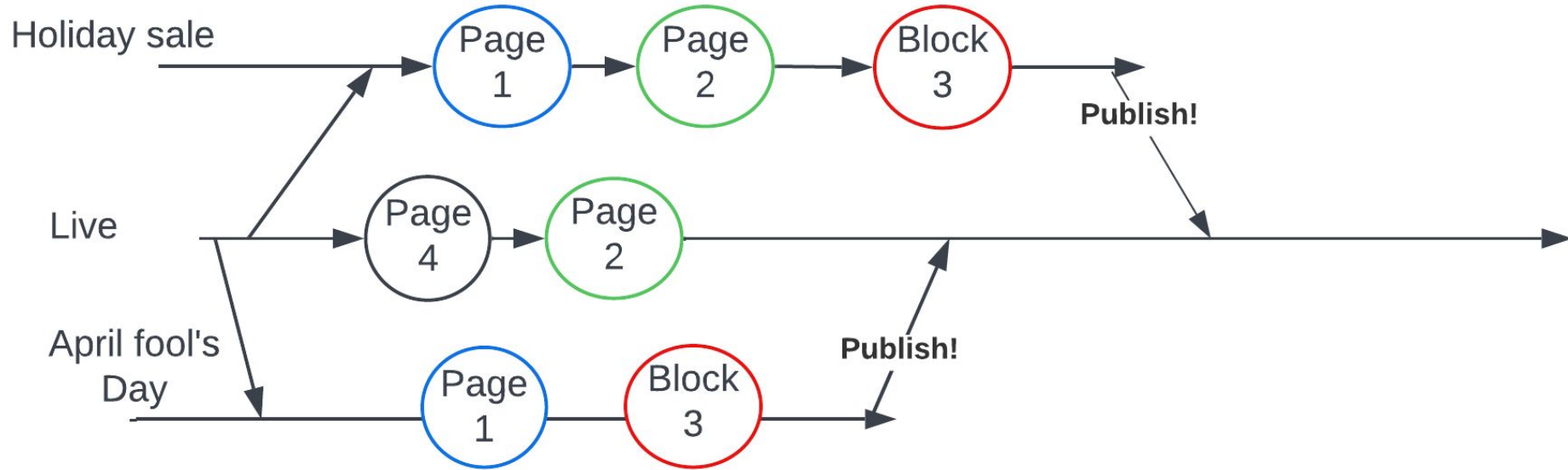
* Holiday sale will win out, and overwrite any changes from Live or April Fool's

Experience testing

You're being tested

Dependent on having an A/B testing tool, like Optimizely, Convert, Google Analytics etc.

Ideas for using Workspace as A/B testing:

- Moving a button, measure clicks
- Which frontpage gets the least bounces
- Which workspace has the least clicks on "support"

Remember previews?

```
document.cookie='wse_pr
eview=JhkCEXEH8QFYL7ngr
nS97xLfmqc;path=/`;
```

So remember workspace negotiators?

The preview link:

- Authorizes the request
- Sets the cookie `wse_preview` to `rnzT-lNm7gq_mlbkffAxxKJt-IM`
- Redirects

We can just set that cookie manually, and deliver a different version of the site.
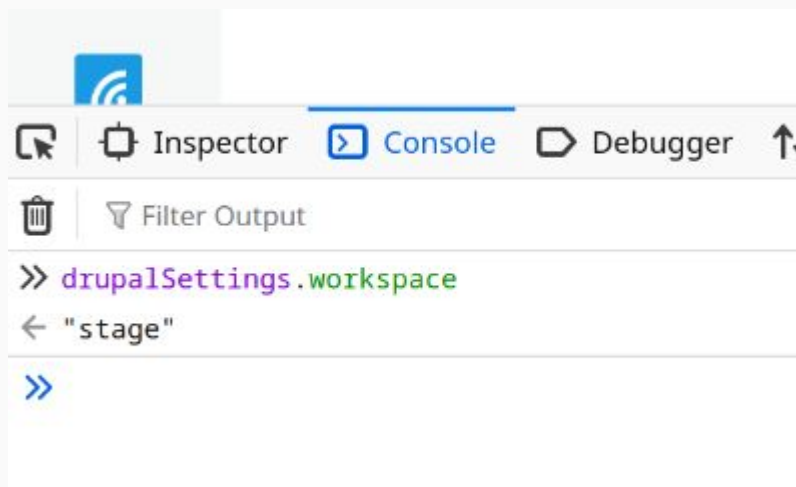
Latest preview link

`https://drupal11.lndo.site/workspace-preview/JhkCEXEH8QFYL7ngrnS97xLfmqc`

Workspaces datalayer

```php
<?php

function custom_page_attachments(array &$attachments) {

 $workspaceManager = \Drupal::service('workspaces.manager');
 if ($workspace = $workspaceManager->getActiveWorkspace()) {
   $attachments['#cache']['context'] = 'workspace';
   $attachments['#attached']['drupalSettings']['workspace'] = $workspace->id();
 }
}
```
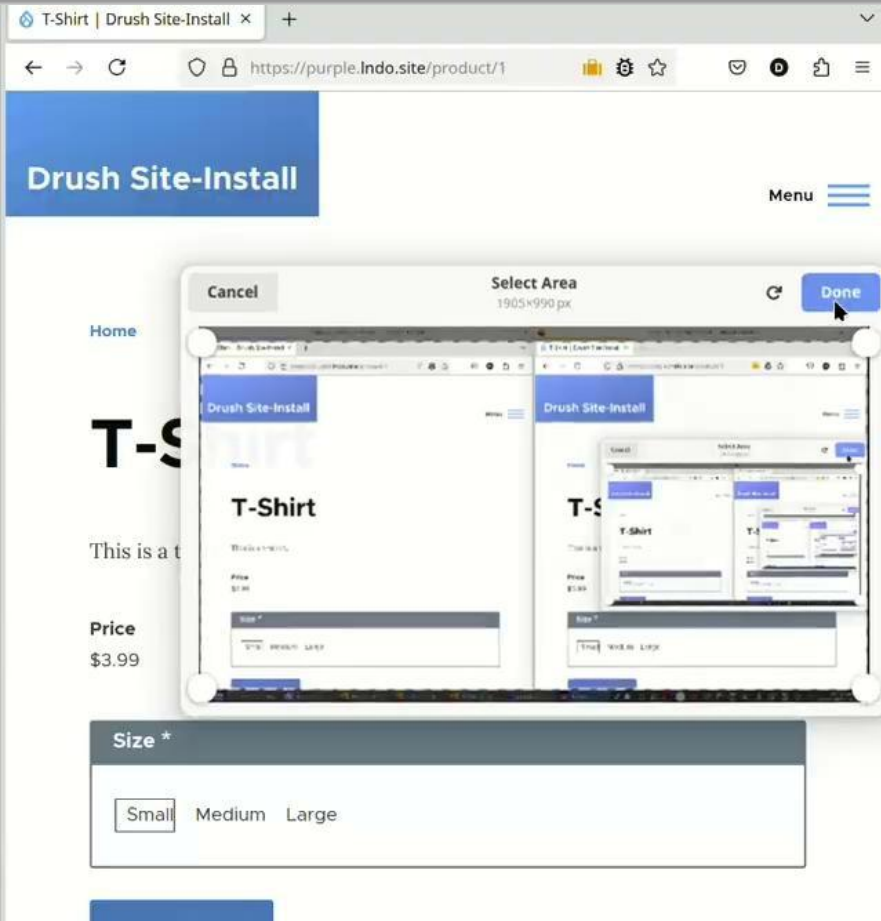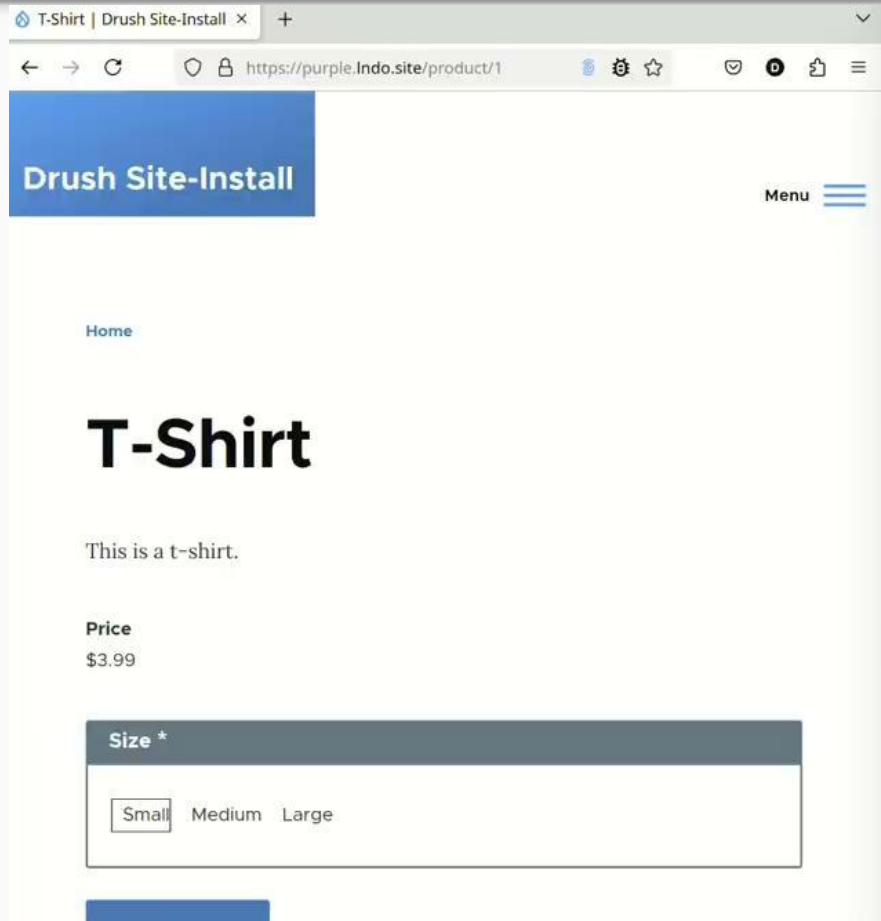
Price experimentation

!!!

Workspaces with Commerce

Sneaky

How...?

Add revisions to Commerce

https://www.drupal.org/project/commerce/issues/2656896

Add revision support to products and product variations

View   Edit   View history

We removed revisions from products and product variations when it became obvious we'd need to rewrite all of the core revision (UI) code ourselves, and because syncing revisions between a product and variations would be difficult.

Since then several things have started happening:
1) The Entity API module has been created and is getting the generic revision code
2) Entity Reference Revisions is now a module that handles the syncing between nested entities.
3) Multiversion will allow revisionable entities to be deployed, etc.

In order to benefit from #3 we need to integrate #1 and #2. Marking as postponed so that

Needs work	
Project:	Commerce Core
Version:	3.0.x-dev
Component:	Product
Priority:	Normal
Category:	Task
Assigned:	Unassigned

Exclude from Workspaces

Some content, like cart items and orders, should not be staged in a workspace (they will throw errors otherwise).

Workspaces has an `IgnoredWorkspaceHandler` that must be set on **Order** and **OrderItem**

Can we wrap the above work into a module...?

Some forms also need to bypass Workspace logic, through Workspaces Extras configuration:

Add to cart form

Stepped checkout form

Workspace safe forms

commerce_order_item_add_to_cart_form_commerce_product_1
commerce_checkout_flow_multistep_default

So what did we learn?

Client says: "We need to update all 42 pages of copy with new media."

1. Do it live, in a workspace
2. Make changes
3. Show client preview
4. Approvals if necessary
5. Publish

Feedback

Things that are great

- No need to merge down for most callout fixes
- Ability to view a full set of changes, and not have to manually stage
- Significant reduction in UAT and final check time
- Workspace revert has saved time, cases of flash promotions
- A/B testing reduced complexity, dependency on using Javascript to change the page

Things to improve

- General complexity of managing 10+ workspaces, needs UI improvements (WSE doing some of this)
- Menu/Navigation staging is tricky
- Parallel workspaces often causes bleed, due to frequent context switching (tabs)
- More confirmations like "Save this change to the X Workspace?"
- Publishing is slow with 500+ items

Resources

Workspaces Extra
https://drupal.org/project/wse

Workspace Approval
https://www.drupal.org/project/workspace_approval

Commerce revisions
https://www.drupal.org/project/commerce/issues/2656896

Workspaces parallel
https://www.drupal.org/project/workspaces_parallel

Paragraphs Support
https://www.drupal.org/project/paragraphs/issues/3431240

Crop support
https://www.drupal.org/project/crop/issues/3058224

#workspaces on Drupal Slack

Thank you!

Questions?