



# Princeton Site Builder: Behind The Scenes

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**Web Development Services**

Office of Information Technology

## We Do Sites

Web Development Services (WDS) provides comprehensive website design, development, project management, information architecture, and technical support for our University partners. We create a wide range of websites from basic to sophisticated systems. We take usability seriously and aim to create a website that meets the needs of your team and your audience.

### Advantages

WDS provides a secure and robust website platform with ready-made features to meet the needs of most University departments. We give you the flexibility to design and build websites with little to no technical skills and access to a professional team when you need extra help. Our centralized maintenance and support approach frees up department staff time to focus on specific departmental needs.

All of our solutions offer at no cost:

- › Point and click website building (no code required)
- › Guidance on University website requirements and IT policies
- › Accessible design theme
- › Professional design, content, and development services
- › Worry free website hosting
- › Security
- › Data backups
- › Routine code updates
- › Support and Training

### Options

#### Tier 1: No Cost (self-service)

WDS provides you with a framework for a content-ready site, using an existing design template. WDS provides online documentation and occasional instructor-led training. See the [demonstration website](#) and [theme options](#).

*Cost: Free*

#### Tier 2: Low Cost

WDS offers content strategy, design, and development services to further enhance your website. Simple design changes such as the addition of photography, unique layouts, or the creative use of colors can individualize your site for a very reasonable fee.

*Cost: Varies*

#### Tier 3: Full Project

WDS works with you from start to finish. You'll collaborate with a WDS project team on many aspects of the website including information architecture, design, development, and usability testing. Costs vary depending on the level of complexity of your site's needs. Our rates start at \$125/hour. As with all our sites, technical support, and hosting are provided free of charge.

*Cost: Starts at \$5K*



# Planning Site Builder

Site Builder

# Key Platform Goals

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- Non-technical audience
- Economy of scale
- Centralize security & a11y
- Simple but extensible
- Remove need for “Custom” sites
- Maintainable

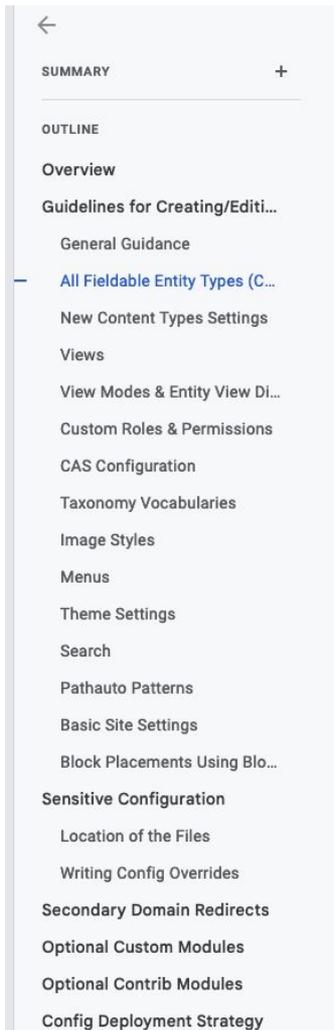
# Architecture Document

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- Layout & Page Building
- Displaying lists of content
- Media management
- Theming
- Configuration management
- Search
- Access control for viewing pages
- Optional functionality & customizations
- Hosting
- Local development environment

# Site Building Guide

- Reference for customizing sites
- Ensures consistency
- Always evolving



A screenshot of a sidebar menu for a site building guide. The menu is titled 'SUMMARY' and includes a back arrow on the left and a plus sign on the right. Below the title is an 'OUTLINE' section. The menu items are listed vertically, with 'All Fieldable Entity Types (C...' highlighted in blue. The items include: Overview, Guidelines for Creating/Editi..., General Guidance, All Fieldable Entity Types (C..., New Content Types Settings, Views, View Modes & Entity View Di..., Custom Roles & Permissions, CAS Configuration, Taxonomy Vocabularies, Image Styles, Menus, Theme Settings, Search, Pathauto Patterns, Basic Site Settings, Block Placements Using Blo..., Sensitive Configuration, Location of the Files, Writing Config Overrides, Secondary Domain Redirects, Optional Custom Modules, Optional Contrib Modules, and Config Deployment Strategy.

- ←
- SUMMARY +
- OUTLINE
- Overview
- Guidelines for Creating/Editi...
- General Guidance
- All Fieldable Entity Types (C...
- New Content Types Settings
- Views
- View Modes & Entity View Di...
- Custom Roles & Permissions
- CAS Configuration
- Taxonomy Vocabularies
- Image Styles
- Menus
- Theme Settings
- Search
- Pathauto Patterns
- Basic Site Settings
- Block Placements Using Blo...
- Sensitive Configuration
- Location of the Files
- Writing Config Overrides
- Secondary Domain Redirects
- Optional Custom Modules
- Optional Contrib Modules
- Config Deployment Strategy

## All Fieldable Entity Types (Content/Block/Media Types)

- **It's OK to create new content types and block types as needed.** Our base set of modules is meant to satisfy the 80% use case for our sites. But it's understandable that the remaining 20% will require some custom data modeling. For media types, please consult with all developers on if there's a potential alternative.
  - **Re-use some fields:** For content types, you should reuse the `ps_featured_image`, `ps_body`, and `ps_summary` fields. This is especially helpful for featured images because we have some custom code that moves that field to the right sidebar. In almost all other cases, it's best to NOT reuse fields, because it makes it more difficult for us to maintain and refactor the content type if we think there are other custom content types using the field as well.
  - **Form widgets & organization:** Keep the most important and frequently used form fields at the top of the form display. Evaluate all the options for form widgets available and choose the most appropriate one for the best authoring experience, don't just stick with the default.
  - **Required fields:** Be sure to mark any required fields as required and to double check they are set appropriately before the site launches. In some cases a template or preprocess function may assume every entity of a specific type has data in it and may cause a fatal error if it doesn't.
  - **For text fields:**
    - **Force one text format:** When editing a text field, you can select which text formats to make available. It almost never makes sense to allow multiple formats, so be sure to limit to the most appropriate format. Use "Limited HTML" unless more advanced HTML is needed.
    - **Hide "About text formats" link and "text format guidelines".** These can be confusing, aren't that useful, and clutter the UI. Just hide them by editing the field widget settings.
  - **For paragraph fields, collapse by default.** The paragraph form widgets have the option to create an empty paragraph by default to make content entry easier. However, this should *only be used if the paragraph field is required*. Otherwise, an editor may leave it blank, and Drupal will create an empty paragraph entity. This can cause issues with theming.
  - **Revision settings should make sense.** In most cases, we want revisions to be automatically created for updates. After the content type is complete, you should test that revision comparison and revert works as expected.
- **Do not modify existing types**
  - Don't edit any configuration related to these content types unless explicitly noted.
  - For content types, there is an exception. You can add an entity reference field on our default content types. Do not use the "ps\_" prefix. The form widget is hardcoded to always be an autocomplete and render at the bottom of the form.



# Site Builder Capabilities

# Quick Stats

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80,000

Lines of custom PHP

150

Contrib modules

250,000

Nodes

60

Custom modules

1,000

Websites

50,000

Taxonomy Terms

# Custom v. Contrib

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Why so much custom code!?!

- Lots and lots of little tweaks
- Contrib solutions often get us 80% there
- We customize them to get the last 20%
- Lots of code we *don't need*

# Some Custom Modules

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- Access Control
- Feed Blocks
- External Site Node Redirect
- Detail Page Disabler
- Search
- Taxonomy Reference Manager
- Accordions
- Alerts
- Courses
- Events
- News
- Pages
- People
- Posts
- Publications
- Presentations
- Resource Links
- Timeline Features

# Feed Blocks

## Feed Block Sources

[Home](#) » [Administration](#) » [Configuration](#) » [Web services](#)

[+ Add Feed Block Source](#)

Feed sources are checked for updates automatically in 15 minute intervals. You can manually refresh items using each feed in the table below.

| TITLE      | ITEMS    | LAST UPDATE      | OPERATIONS                          |
|------------|----------|------------------|-------------------------------------|
| Phish Bowl | 28 items | 5 min 59 sec ago | <a href="#">Edit</a> <span>▼</span> |

### The Phish Bowl

Assistance request for doctoral research

Suspicious email

Quick Assistant

Manage Space Notification

Email Administrator Team

Urgent request, what number can I text you on?

[View All](#)

[+ Add block](#)

#### Edit block

Block description External RSS feed

Title

Display title

Title heading level

Level 2 (h2)

Level 3 (h3)

Title link

Type the name of a page to link to, then select it from the dropdown that appears. You can also enter full URL to some other website (e.g. <https://google.com>). This link will not appear if this page section is set to "Group into tabs."

Add a summary or description below title

Feed Block Source

Select the feed block source to display items from

Phish Bowl

[Manage available feed sources.](#)

Display Configuration

Number of items to display

6

Show date

Show summary

Text displayed when no items are found. Leave blank to hide block instead of showing a message.

# Create Page

Home » Add content

Title \*

Body (Edit summary) (Edit lede)

Rich text editor toolbar with icons for bold, italic, strikethrough, link, unlink, list, indent, outdent, undo, redo, source, and other editing functions.

Show row weights

## RELATED LINKS

URL

Start typing the title of a piece of content to select it. You can also enter an internal path such as `/node/add` or an external URL such as `http://example.com`. Enter `<front>` to link to the front page. Enter `<noink>` to display link text only. Enter `<button>` to display keyboard-accessible link text only.

Link text

Add another item

## RELATED DOCUMENTS

Private Document

Add new document

Add existing document

Published

Save

Save and add another

Last saved: Not saved yet

### Featured Image

#### FEATURED IMAGE

No media items are selected.

Add media

One media item remaining.

#### Featured Image Display

Hide

Control how the featured image is displayed on the full page view of this content. The floated option is displayed using the "freeform" crop.

#### FEATURED ICON

No media items are selected.

Add media

One media item remaining.

#### Featured Icon Display

Hide

Control how the featured icon is displayed on the full page view of this content.

### Menu settings (Not in menu)

Provide a menu link

Create jump link menu

Enable to create a sticky jump link menu based on headings in the content area of this page. May not be supported on all themes.

### Categorization

# Document library

[Content](#)[Media](#)[Documents](#)[Reusable blocks](#)[Publications](#)[Feeds](#)[Files](#)[Public Documents](#)[Private Documents](#)

Home » Administration » Content library

[+ Bulk upload](#)[+ Add public document](#)

Name/Filename

[Apply](#)

Action

[Delete documents](#)[Apply to selected items](#)

| <input type="checkbox"/> | NAME                  | FILENAME                  | TYPE            | FILE SIZE | AUTHOR   | UPDATED               | OPERATIONS           |
|--------------------------|-----------------------|---------------------------|-----------------|-----------|----------|-----------------------|----------------------|
| <input type="checkbox"/> | Sample PDF            | sample_pdf.pdf            | application/pdf | 116.48 KB | bosborne | 10/10/2022 - 9:44 am  | <a href="#">Edit</a> |
| <input type="checkbox"/> | Voiceover MacOS Guide | voiceover-macos-guide.pdf | application/pdf | 137.26 KB | mdmuzzie | 07/08/2021 - 5:19 pm  | <a href="#">Edit</a> |
| <input type="checkbox"/> | Sample Document B     | sample-document-b.txt     | text/plain      | 17 bytes  | bosborne | 02/19/2021 - 11:09 am | <a href="#">Edit</a> |
| <input type="checkbox"/> | Sample Document A     | sample-document-a.txt     | text/plain      | 17 bytes  | bosborne | 02/19/2021 - 11:08 am | <a href="#">Edit</a> |
| <input type="checkbox"/> | test pdf 4            | tes4.pdf                  | application/pdf | 81.58 KB  | rivan    | 01/12/2021 - 11:14 am | <a href="#">Edit</a> |
| <input type="checkbox"/> | Test Document         | Test-Document.pdf         | application/pdf | 24.9 KB   | maritzac | 01/24/2020 - 4:58 pm  | <a href="#">Edit</a> |

[Apply to selected items](#)

# Content List Blocks

### Edit block

Block description Page List

Title

Content Type List

Display title

Add a summary or description below title

Source of content

Dynamically generated from filters set below

Choose each content item manually

Content items

+ Alert (171) [icon]

+ Course (1351) [icon]

+ Event (176) [icon]

Add 1 more items

Show row weights

Display

Row Style

Standard list

Grid

Compact list

Controls how the list of content is displayed.

### Fields

Title

Link title to detail page

Featured icon

Featured image

Link image to detail page

Summary

Page Category

Sitewide Category

### "View All" link

Enable "view all" link

Adds a link to another page that lists all content.

### No Results behavior

Text displayed when no items are found

No content available to show.

Edit this text if a custom message is desired.

Hide block completely if there are no results

The setting will be ignored with exposed filters set.

### Sort

Sort By

Title

Sort Direction

Ascending

### Pagination

Max number of items to display

10

The highest number that can be chosen is 75. Enable pagination to support displaying additional total items beyond this limit.

Pagination

Adds pagination links to allow visitors to view more content items.

Offset amount

0

Offset the the start of the list by this amount. This can be useful if you have a separate block above this one that shows the first few items styled differently.

### Filters

Page Category

x Content Types

Exclude content items that are not tagged with this vocabulary.

Expose filter to visitors

Sitewide Category

- Select -

# Taxonomy Reference Manager

## Edit vocabulary

[List](#) [Edit](#) [Manage fields](#) [Manage form display](#) [Manage](#)

[Home](#) » [Administration](#) » [Structure](#) » [Taxonomy](#)

**Name \***  
 Machin

**Description**

**Disable detail page**  
Disables the detail page for taxonomy terms in this vocabulary.

**Enable search**  
Include taxonomy terms from this vocabulary in the site search results. If there are existi

**Content types**

Alert  
 Page  
 Event  
 Person

Select content types that can reference terms from this vocabulary. Only standard content types are list

**Maximum number of terms that can be referenced**

This controls the number of terms an editor can select from this vocabulary for a single piec

**Form widget**

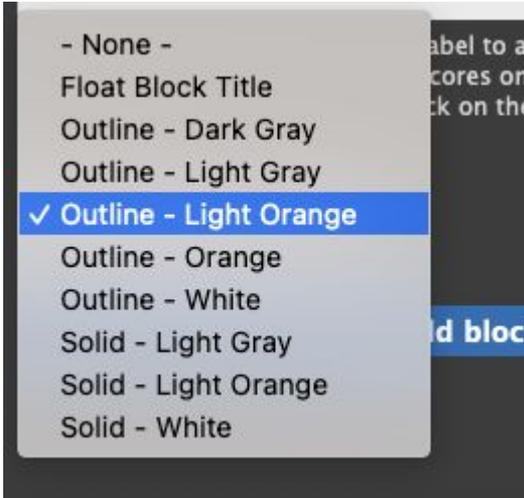
Select list  
 Checkboxes/radio buttons

What type of form widget should be used to select terms from this vocabulary? Select lists are better if

**Place form widget in "Categorization" sidebar group**  
When checked, the form widget for selecting terms from this vocabulary on content form

[Save](#) [Delete](#)

# Layout Builder Styles



## Layout builder styles

Styles Groups

[Home](#) » [Administration](#) » [Configuration](#) » [Content authoring](#)

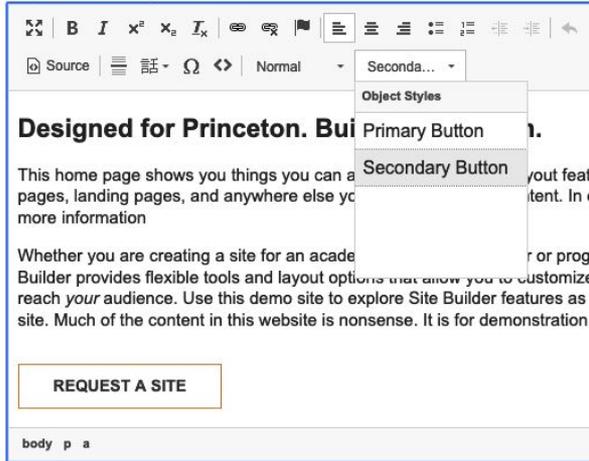
[+ Add layout builder style](#)

[Show row](#)

| LABEL  | MACHINE NAME            | TYPE      | GROUP | OPERATIONS   |
|--|-------------------------|-----------|-------|--|
|  Float Block Title    | ps_float_block_title    | component | Style | <a href="#">Edit</a>  |
|  Outline - Dark Gray  | ps_outline_dark_gray    | component | Style | <a href="#">Edit</a>  |
|  Outline - Light Gray | ps_outline_light_gray   | component | Style | <a href="#">Edit</a>  |
|  Outline - Light      | ps_outline_light_orange | component | Style | <a href="#">Edit</a>  |

# CKEditor Styles

Body (Edit summary) (Edit lede)



The screenshot shows the CKEditor interface with a dropdown menu open for 'Object Styles'. The menu lists 'Primary Button' and 'Secondary Button'. The main content area contains the following text:

**Designed for Princeton. Built for you.**

This home page shows you things you can do with Site Builder. You can create beautiful pages, landing pages, and anywhere else you want. In addition, you can add content to your pages. For more information, see the Site Builder documentation.

Whether you are creating a site for an academic institution or a business, Site Builder provides flexible tools and layout options that allow you to customize your site to reach your audience. Use this demo site to explore Site Builder features as they apply to your site. Much of the content in this website is nonsense. It is for demonstration purposes only.

[REQUEST A SITE](#)

body p a

## CKEditor Styles

[Home](#) » [Administration](#) » [Configuration](#) » [Content authoring](#)

[+ Add CKEditor style](#)

| LABEL                       | MACHINE NAME         | ELEMENT    | CLASSES               | OPERATIONS             |
|-----------------------------|----------------------|------------|-----------------------|------------------------|
| <a href="#">+</a> Lock Icon | a_lock_icon          | a          | fa-lock               | <a href="#">Edit</a> ▼ |
| <a href="#">+</a> Simple    | ps_simple_blockquote | blockquote | cke-simple-blockquote | <a href="#">Edit</a> ▼ |
| <a href="#">+</a> Button    | a_button             | a          | button                | <a href="#">Edit</a> ▼ |
| <a href="#">+</a> Table     | table_table          | table      | table                 | <a href="#">Edit</a> ▼ |

[Save](#)

Save layout

Discard changes

Revert to defaults

Show content preview

You are editing the layout for this footer.

+ Add section

Section 1  Edit  Remove

 **Web Development Services** 

+ Add block

Template System Documentation 

Request a Website 

Contact Us 

Feeds 

+ Add block



+ Add block

+ Add section

# Access Control

## ▼ [Access](#)

### Roles

- Authenticated user
- Faculty
- Staff
- Registrar Staff
- Managed

Restrict this content to the selected user role(s). The "Authenticated user" role is assigned to anyone that can log into your site.

## Access Settings

[Home](#) » [Administration](#) » [Configuration](#) » [System](#)

### Node access method

- Simple
- Advanced

The **simple** method only protects access to node detail pages. The **advanced** method also hides nodes from search results, views listings, and menu links if the user has no access.

### Restricted search results

Restricted pages in search results will have their excerpts hidden from users lacking the proper permissions.

### Restricted link indicator

Adds a visual indicator to links that a user does not have access to.

### Hide "Authenticated user" role from access control form elements

This is useful if a site was developed to only use custom roles for access control. This improves user experience by hiding an option that will never be used. Option is disabled unless additional custom roles are created.

[Save configuration](#)

# Content Type Settings

|   |   |
|---|---|
| <b>Submission form settings</b><br>Title                        | <b>Access control method</b><br><input checked="" type="radio"/> Allow individual control<br><input type="radio"/> Disallow individual control<br><b>Individual control</b> allows editors to choose which roles to restrict each item to on the edit form. Default roles can be selected below. <b>Disallowing individual control</b> allows you to specify which roles have access for all items of this type below.<br><br><b>Roles</b><br><input type="checkbox"/> Authenticated user<br><input type="checkbox"/> Faculty<br><input type="checkbox"/> Staff<br><input type="checkbox"/> Registrar Staff<br><input type="checkbox"/> Managed<br><br>If individual control is selected above, roles selected here will be checked by default on forms (for new content only). If individual control is disabled, then the selected roles are used for access control across all items of this type. |
| <b>Publishing options</b><br>Published, Create new revision     |   |
| <b>Display settings</b><br>Don't display post information       |   |
| <b>External site node redirect</b>                              |   |
| <b>Menu settings</b>  |   |
| <b>Access control settings</b>                                  |   |
| <b>Detail page &amp; search disabler</b>                        |   |
| <b>Simple XML Sitemap</b><br>Included in sitemaps: Site Builder |   |
| <b>Scheduler</b><br>Publishing enabled                          |   |
|   |   |

| NAME                              | DESCRIPTION   | STATUS  | ACTIONS                  |
|-----------------------------------|---|---------|--------------------------|
| Accordion (Advanced)              | Provides an Accordion Item content type and an Accordion list block for displaying items as an accordion.                   | Enabled |                          |
| Accordion (Simple)                | Provides a simple accordion block type for displaying a collapsible set of items.   | Enabled |                          |
| Alerts                            | Provides an "Alert" content type used for displaying important announcements and alerts prominently on your site.           | Enabled |                          |
| Courses                           | Import and display Princeton courses on your website.   | Enabled | <a href="#">Settings</a> |
| Events                            | Provides an "Event" content type and a block for displaying events on your site.  | Enabled | <a href="#">Settings</a> |
| Events: My PrincetonU Integration | Import events from My PrincetonU (Campus Groups).   | Enabled | <a href="#">Settings</a> |
| Events: Speaker Extension         | Provides a distinct "Event Speaker" content type that integrates with Events. Most useful when building conference content. | Enabled | <a href="#">Settings</a> |
| Feed Blocks                       | Display items from an RSS feed (typically news) or ICS feed (typically events) in a block.                                  | Enabled |                          |
| Glossary                          | Create a glossary of words and definitions. Any time the word is used, the definition                                       | Enabled | <a href="#">Settings</a> |

# Custom Module Settings

- Allow site owners some control
- Centrally located

**Events Settings**

**DETAIL PAGE DATE FORMATS**

**Day format**  
Mar 13, 2023  
Choose the format to use when outputting the day.

**Time format**  
8:44 pm  
Choose the format to use when outputting the time. Not used for all-day dates.  
These settings do not affect date formats for event list blocks which have their own separate settings for date formats.

Include "add to calendar" links on event detail pages  
This feature may not be supported in all themes.

Use the older (deprecated) design for event detail pages

**TAXONOMY VOCABULARIES**  
Control how taxonomy terms are displayed on detail pages.

**EVENT AUDIENCE**

**Display**  
Names only  
The "Grid of names with images" option requires that the taxonomy terms have a featured image. They will be hidden otherwise.

**EVENT CATEGORY**

**Display**  
Do not display



# Local Development

# Tooling

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- Standalone Docker
  - No ddev, lando, docksal
  - Finally, decent performance on a Mac
- Acquia BLT (Build Launch Tool)
  - Create build artifacts, sync down prod sites to local
  - Extended a little bit for better multisite support
- Bitbucket Pipelines
  - Code quality enforcement
  - Behat test suite
  - Build artifacts
- Tugboat.qa
  - Nearly instant previews of our pull requests



# Release Process

# Monthly Release Process

## Monthly Planning Meeting

- 2 hours w/ most of us
- Review last release
- Discuss what should be in the next release

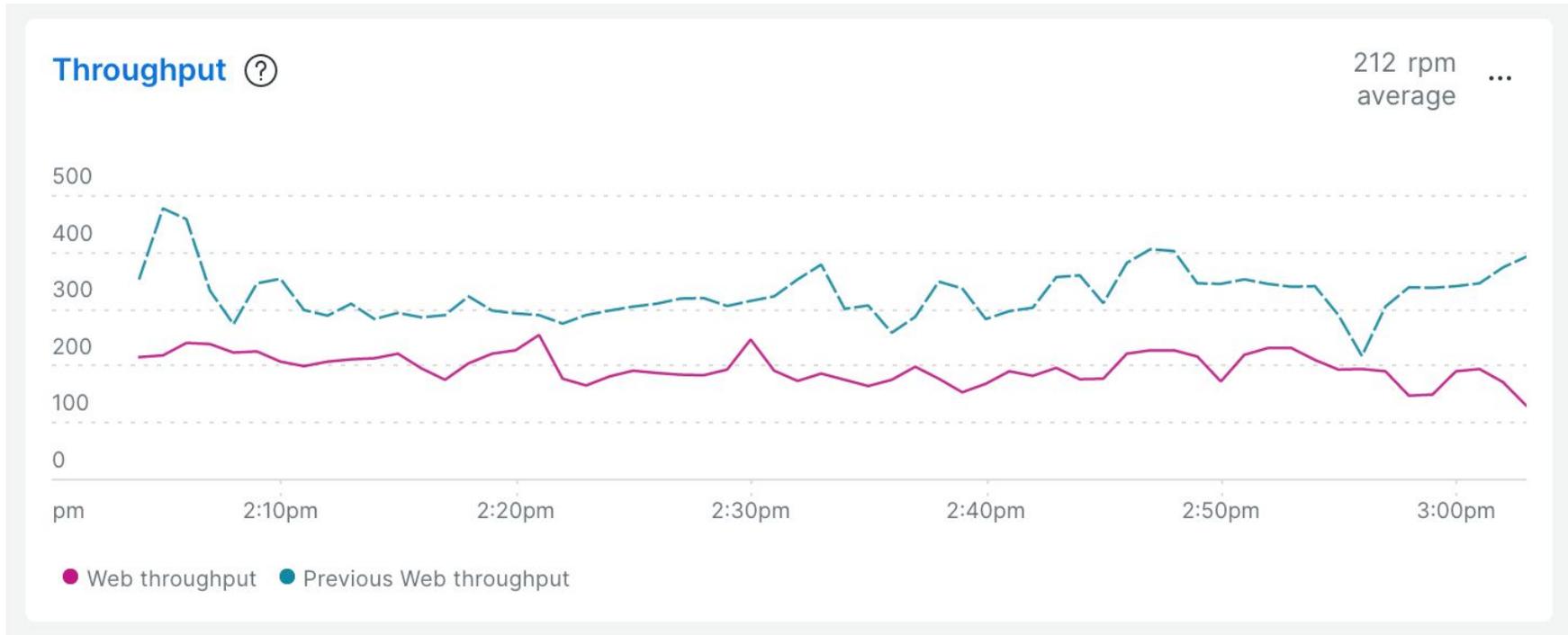
## Development

- Use Jira “swimlanes” to track issue progress
- Code reviews and collaboration
- Merging code in

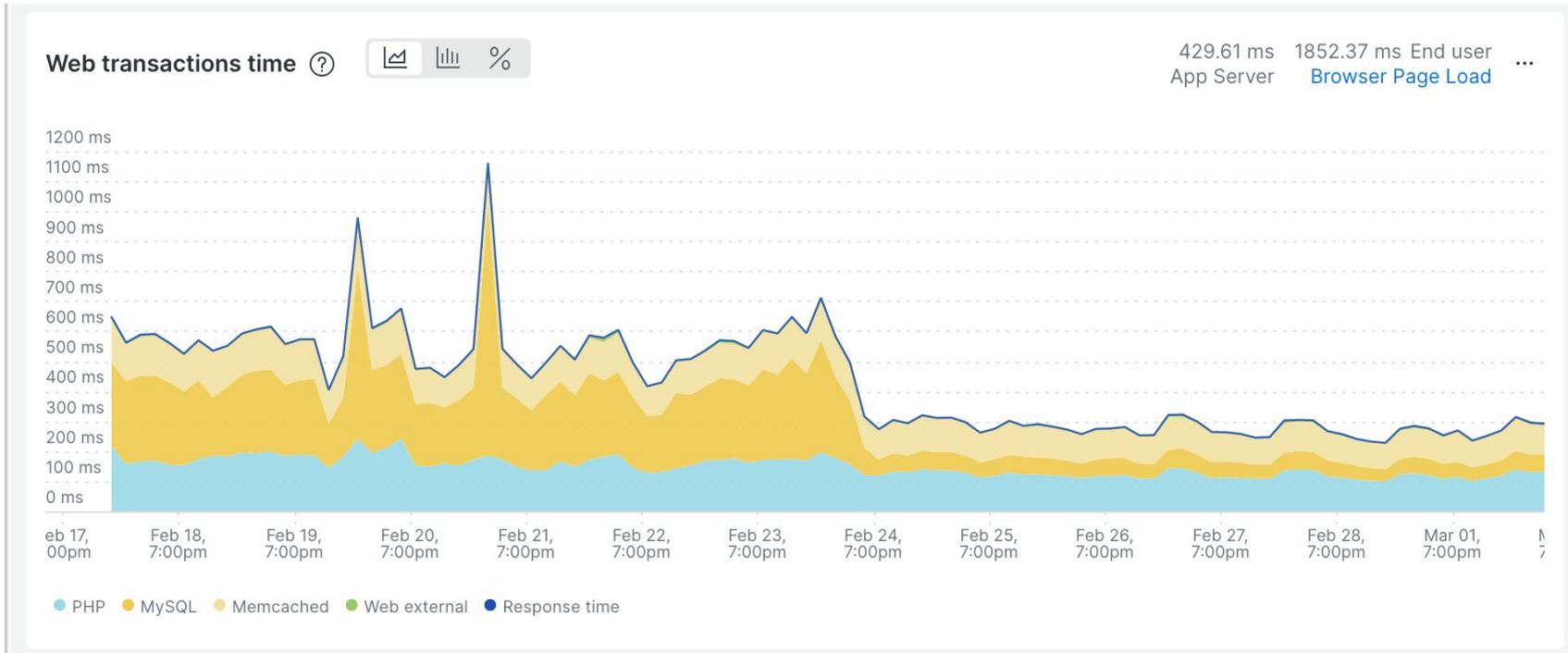
## Testing & Release

- 1 week before release
- Scanning existing sites to help testing
- Sync sites down to dev
- Deploy to QA
- Deploy to Prod

# Performance Monitoring



# Performance Monitoring





If we started today...



# Questions?