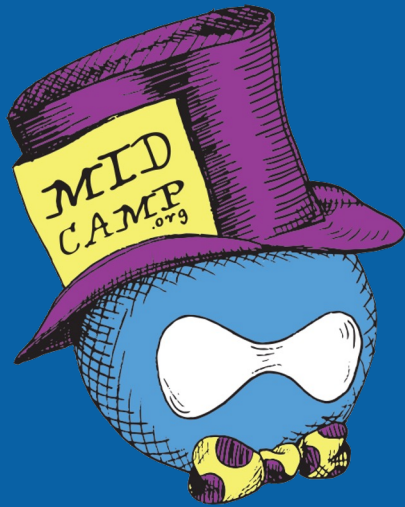




# Modern strategies for dependency management

**If you don't use a dependency manager, you are the dependency manager**

May 20, 2025

# Modern strategies for dependency management



[midcamp.org](https://midcamp.org)



MidCamp 2025

**Rick Hawkins**  
Drupal Lead  
at Slalom  
[@rlhawk](https://twitter.com/rlhawk)

[info@midcamp.org](mailto:info@midcamp.org)

# Agenda

- Current state
- Goals
- Options
- New approaches
- The future
- Live demo

# Types of dependencies in a Drupal project

- PHP packages
- Asset libraries
  - JavaScript
  - CSS
  - Fonts
  - Icons
- Development
- Non-development



# PHP dependency tree for Drupal 11.1.6

```
drupal/core
├── vendor/stack-cors ^2.1
│   ├── php ^7.3|^8.0
│   └── symfony/http-foundation ^5.3|^6|^7
│       ├── php >=8.2
│       ├── symfony/deprecation-contracts ^2.5|^3.0
│       ├── php >=8.1
│       ├── symfony/polyfill-mbstring ~1.1
│       ├── php >=7.2
│       └── symfony/polyfill-php83 ^1.27
├── symfony/http-kernel ^5.3|^6|^7
│   ├── php >=8.2
│   ├── psr/log ^1|^2|^3
│   ├── php >=8.0.0
│   ├── symfony/deprecation-contracts ^2.5|^3
│   ├── symfony/error-handler ^6.4|^7.0
│   ├── php >=8.2
│   ├── psr/log ^1|^2|^3
│   ├── php >=8.0.0
│   ├── symfony/var-dumper ^6.4|^7.0
│   ├── php >=8.2
│   ├── symfony/polyfill-mbstring ~1.0
│   ├── php >=7.2
│   └── symfony/event-dispatcher ^6.4|^7.0
├── symfony/event-dispatcher ^6.4|^7.0
│   ├── php >=8.2
│   ├── symfony/event-dispatcher-contracts ^2.5|^3
│   ├── php >=8.1
│   └── psr/event-dispatcher ^1
├── symfony/http-foundation ^6.4|^7.0
│   ├── php >=7.2.0
│   ├── php >=8.2
│   ├── symfony/deprecation-contracts ^2.5|^3.0
│   ├── php >=8.1
│   ├── symfony/polyfill-mbstring ~1.1
│   ├── php >=7.2
│   ├── symfony/polyfill-php83 ^1.27
│   └── symfony/polyfill-ctype ^1.8
├── composer-runtime-api ^2.1
├── composer/semver ^3.3
├── php ^5.3.2 || ^7.0 || ^8.0
├── doctrine/annotations ^2.0
├── doctrine/lexer ^2 || ^3
│   ├── php ^7.1 || ^8.0
│   ├── ext-tokenizer *
│   ├── php ^7.2 || ^8.0
│   ├── psr/cache ^1 || ^2 || ^3
│   ├── php >=8.0.0
├── doctrine/lexer ^2.0
├── doctrine/deprecations ^1.0
├── php ^7.1 || ^8.0
├── twig/twig ^3.15.0
├── egulias/email-validator ^3.2.1|^4.0
├── doctrine/lexer ^2.0 || ^3.0
├── doctrine/deprecations ^1.0
├── php ^7.1 || ^8.0
├── php ^7.1 || ^8.0
├── symfony/polyfill-intl-idn ^1.26
├── php >=7.2
├── symfony/polyfill-intl-normalizer ^1.10
├── php >=7.2
```

```
ext-date *
ext-dom *
ext-filter *
ext-gd *
ext-hash *
ext-json *
ext-pcre *
ext-pdo *
ext-session *
ext-simplexml *
ext-spl *
ext-tokenizer *
ext-xml *
ext-zlib *
guzzlehttp/guzzle ^7.5
├── ext-json *
├── guzzlehttp/promises ^1.5.3 || ^2.0.3
│   ├── php ^7.2.5 || ^8.0
├── guzzlehttp/psr7 ^2.7.0
│   ├── psr/log ^1|^2|^3 || ^8.0
│   ├── symfony/http-factory ^1.0
│   ├── php >=7.1
│   ├── psr/http-message ^1.0 || ^2.0
│   ├── php ^7.2 || ^8.0
│   ├── ralouphie/getallheaders ^3.0
│   ├── php >=5.6
│   ├── php ^7.2.5 || ^8.0
│   ├── psr/http-client ^1.0
│   ├── php ^7.2.0 || ^8.0
│   ├── psr/http-message ^1.0 || ^2.0
│   ├── php ^7.2 || ^8.0
├── symfony/deprecation-contracts ^2.2 || ^3.0
├── php >=8.1
├── guzzlehttp/psr7 ^2.4.5
│   ├── php ^7.2.5 || ^8.0
│   ├── psr/http-factory ^1.0
│   ├── php >=7.1
│   ├── psr/http-message ^1.0 || ^2.0
│   ├── php ^7.2 || ^8.0
│   ├── psr/http-message ^1.1 || ^2.0
│   ├── php ^7.2 || ^8.0
│   ├── ralouphie/getallheaders ^3.0
│   ├── php >=5.6
├── masteminds/html5 ^2.7
├── ext-dom *
├── php >=5.3.0
├── nck89/peast ^1.14
├── ext-mbstring *
├── php >=7.2
├── php >=5.4.0
├── pear/pear-core-minimal ^1.10.0alpha2
├── pear/console_getopt ~1.4
├── pear/pear_exception ~1.0
├── php >=5.2.0
├── php >=5.4
├── php >=5.2.0
├── php >=8.0
├── php-tuf/composer-stager ^2-rc5
├── ext-json *
├── php >=8.1.0
├── symfony/filesystem ^6.2 || ^7.0
├── php >=8.2
├── symfony/polyfill-ctype ~1.8
├── php >=7.2
```

```
symfony/polyfill-mbstring ~1.8
symfony/process ^6.4.14 || ^7.1.7
php >=8.2
symfony/translation-contracts ^3.1
├── psr/log ^3.0
│   ├── php >=8.0.0
│   ├── revolt/event-loop ^1.0
│   ├── php >=8.1
│   ├── sebastian/diff ^4^5
│   ├── php >=8.1
│   ├── symfony/console ^7.2
│   ├── php >=8.2
│   ├── symfony/polyfill-mbstring ~1.0
│   ├── php >=7.2
│   ├── symfony/service-contracts ^2.5|^3
│   ├── php >=8.1
│   ├── psr/container ^1.1|^2.0
│   ├── php >=7.4.0
│   ├── symfony/deprecation-contracts ^2.5|^3
│   ├── php >=8.1
│   ├── symfony/string ^6.4|^7.0
│   ├── php >=8.2
│   ├── symfony/polyfill-ctype ~1.8
│   ├── symfony/polyfill-intl-grapheme ~1.0
│   ├── php >=7.2
│   ├── symfony/polyfill-intl-normalizer ~1.0
│   ├── php >=7.2
│   ├── symfony/polyfill-mbstring ~1.0
│   ├── php >=7.2
├── symfony/deprecation-injection ^7.2
├── php >=8.2
├── psr/container ^1.1|^2.0
├── php >=7.4.0
├── symfony/deprecation-contracts ^2.5|^3
├── php >=8.1
├── symfony/service-contracts ^3.5
├── php >=8.1
├── psr/container ^1.1|^2.0
├── php >=7.4.0
├── symfony/deprecation-contracts ^2.5|^3
├── php >=8.1
├── symfony/var-exporter ^6.4.20|^7.2.5
├── php >=8.2
├── symfony/event-dispatcher ^7.2
├── php >=8.2
├── symfony/event-dispatcher-contracts ^2.5|^3
├── php >=8.1
├── psr/event-dispatcher ^1
├── php >=7.2.0
├── symfony/filesystem ^7.2
├── php >=8.2
├── symfony/polyfill-ctype ~1.8
├── php >=7.2
├── symfony/polyfill-mbstring ~1.8
├── php >=7.2
├── symfony/finder ^7.2
├── php >=8.2
├── symfony/http-foundation ^7.2
├── php >=8.2
├── symfony/deprecation-contracts ^2.5|^3.0
├── php >=8.1
├── symfony/polyfill-mbstring ~1.1
├── php >=7.2
├── symfony/polyfill-php83 ^1.27
```

```
php >=7.2
symfony/http-kernel ^7.2
php >=8.2
psr/log ^1|^2|^3
php >=8.0.0
symfony/deprecation-contracts ^2.5|^3
php >=8.1
symfony/error-handler ^6.4|^7.0
php >=8.2
psr/log ^1|^2|^3
php >=8.0.0
symfony/var-dumper ^6.4|^7.0
php >=8.2
symfony/var-dumper ^6.4|^7.0
symfony/polyfill-mbstring ~1.0
php >=8.2
symfony/event-dispatcher ^6.4|^7.0
php >=8.2
symfony/event-dispatcher-contracts ^2.5|^3
php >=8.1
psr/event-dispatcher ^1
php >=7.2.0
symfony/http-foundation ^6.4|^7.0
php >=8.2
symfony/deprecation-contracts ^2.5|^3.0
php >=8.1
symfony/polyfill-mbstring ~1.1
php >=7.2
symfony/polyfill-php83 ^1.27
symfony/polyfill-ctype ^1.8
php >=7.2
symfony/serializer ^7.2
egulias/email-validator ^2.1.10|^3|^4
doctrine/lexer ^2.0 || ^3.0
doctrine/deprecations ^1.0
php ^7.1 || ^8.0
symfony/validator ^7.2
php >=8.2
symfony/deprecation-contracts ^2.5|^3
php >=8.1
symfony/polyfill-ctype ~1.8
php >=7.2
symfony/polyfill-mbstring ~1.0
php >=7.2
symfony/polyfill-php83 ^1.27
php >=7.2
symfony/translation-contracts ^2.5|^3
php >=8.2
symfony/validator ^7.2
php >=8.0.0
symfony/event-dispatcher ^6.4|^7.0
php >=8.2
symfony/event-dispatcher-contracts ^2.5|^3
php >=8.1
psr/event-dispatcher ^1
php >=7.2.0
symfony/mime ^7.2
php >=8.2
symfony/polyfill-intl-idn ^1.10
php >=7.2
symfony/polyfill-intl-normalizer ^1.10
php >=7.2
symfony/polyfill-mbstring ^1.0
php >=7.2
symfony/service-contracts ^2.5|^3
php >=8.1
psr/container ^1.1|^2.0
php >=7.4.0
symfony/deprecation-contracts ^2.5|^3
php >=8.1
```

```
symfony/mime ^7.2
php >=8.2
symfony/polyfill-intl-idn ^1.10
php >=7.2
symfony/polyfill-intl-normalizer ^1.10
php >=7.2
symfony/polyfill-mbstring ^1.0
php >=7.2
symfony/psr-http-message-bridge ^7.2
php >=8.2
psr/http-message ^1.0|^2.0
php ^7.2 || ^8.0
symfony/deprecation-contracts ^2.5|^3.0
php >=8.2
symfony/polyfill-mbstring ~1.1
php >=7.2
symfony/polyfill-php83 ^1.27
symfony/routing ^7.2
php >=8.2
symfony/deprecation-contracts ^2.5|^3
php >=8.1
symfony/serializer ^7.2
php >=8.2
symfony/deprecation-contracts ^2.5|^3
php >=8.1
symfony/polyfill-ctype ~1.8
php >=7.2
symfony/deprecation-contracts ^2.5|^3
php >=8.1
symfony/polyfill-mbstring ~1.1
php >=7.2
symfony/polyfill-php83 ^1.27
php >=7.2
symfony/translation-contracts ^2.5|^3
php >=8.2
symfony/validator ^7.2
php >=8.1
symfony/polyfill-ctype ~1.8
php >=7.2
symfony/polyfill-mbstring ~1.0
php >=7.2
symfony/polyfill-php83 ^1.27
php >=7.2
symfony/translation-contracts ^2.5|^3
php >=8.2
symfony/validator ^7.2
php >=8.0.0
symfony/event-dispatcher ^6.4|^7.0
php >=8.2
symfony/event-dispatcher-contracts ^2.5|^3
php >=8.1
psr/event-dispatcher ^1
php >=7.2.0
symfony/mime ^7.2
php >=8.2
symfony/polyfill-intl-idn ^1.10
php >=7.2
symfony/polyfill-intl-normalizer ^1.10
php >=7.2
symfony/polyfill-mbstring ^1.0
php >=7.2
symfony/service-contracts ^2.5|^3
php >=8.1
psr/container ^1.1|^2.0
php >=7.4.0
symfony/deprecation-contracts ^2.5|^3
php >=8.1
```

## Examples of PHP dependencies in contributed extensions

- Address ([commerceguys/addressing](https://github.com/commerceguys/addressing))
- S3 File System ([aws/aws-sdk-php](https://github.com/aws/aws-sdk-php))
- Migrate Source CSV ([league/csv](https://github.com/league/csv))
- Geofield ([itamair/geophp](https://github.com/itamair/geophp))
- Sodium ([paragonie/halite](https://github.com/paragonie/halite))



# Improvements to Composer support

- drupal/core-recommended
- drupal/core-composer-scaffold
- drupal/core-project-message
- drupal/recommended-project
- drupal/core-dev
- drupal/core-vendor-hardening



## Asset libraries included in Drupal 11.1.6

```
docroot/core/  
├── assets  
│   └── vendor  
│       ├── backbone  
│       ├── ckeditor5  
│       ├── floating-ui  
│       ├── jquery  
│       ├── jquery.ui  
│       ├── js-cookie  
│       ├── loadjs  
│       ├── normalize-css  
│       ├── once  
│       ├── sortable  
│       ├── tabbable  
│       ├── transliteration  
│       ├── tua-body-scroll-lock  
│       └── underscore
```

# Examples of asset library dependencies in contributed extensions

- Bootstrap-based themes
- Chosen
- DropzoneJS
- Leaflet
- Font Awesome Icons
- Webform



# Goals

- Maintainability
- Security
- Reliability
- Performance



# Methods of including asset library dependencies

- Use a bundled library
- Use a content delivery network
- Download manually
- Use Composer
- Use NPM or Yarn



METHODS OF INCLUDING ASSET LIBRARIES

## Use a bundled library

- License must be compatible with Drupal
- Examples:
  - CKEditor (Drupal core)
  - Bootstrap (Bootstrap 5 theme)



METHODS OF INCLUDING ASSET LIBRARIES

## Use a content delivery network

- Popular CDNs: Cdnjs, jsDelivr, UNPKG, Google Fonts
- Examples:
  - Font Awesome Icons
  - CKEditor Plugin Pack



METHODS OF INCLUDING ASSET LIBRARIES

## Download manually

- Library is committed into your repository
- Examples:
  - Chosen
  - Select2
  - Slick Carousel
- Drush command to download library sometimes
  - `drush chosenplugin`
  - `drush webform:libraries:download`



METHODS OF INCLUDING ASSET LIBRARIES

## Use Composer

- Directly available (Bootstrap, Font Awesome)
- Asset Packagist
- Custom repository



METHODS OF INCLUDING ASSET LIBRARIES

## Use Composer and Asset Packagist

```
"repositories": {
  "asset_packagist": {
    "type": "composer",
    "url": "https://asset-packagist.org"
  }
},

"require": {
  "npm-asset/dropzone": "^5.5.1"
},

"extra": {
  "installer-paths": {
    "web/libraries/{$name}": [
      "type:drupal-library",
      "type:npm-asset",
      "type:bower-asset"
    ]
  }
}
```

METHODS OF INCLUDING ASSET LIBRARIES

## Use Composer

```
"repositories": {
  "chosen": {
    "type": "package",
    "package": {
      "name": "noli42/chosen",
      "version": "3.0.0",
      "source": {
        "url": "https://github.com/noli42/chosen",
        "type": "git",
        "reference": "3.0.0"
      }
    }
  }
},

"require": {
  "noli42/chosen": "^3.0"
},
```

METHODS OF INCLUDING ASSET LIBRARIES

## Use NPM or Yarn

- The right tool
- Updating is under your control
- Asset library not bundled with application
- Files must be copied



# Copying files

- `copy-files-from-to`
- `vendor-copy`
- `copyfiles`
- `cpx`



**Monorepo:  
a software development  
strategy in which the code for a  
number of projects is stored in  
the same repository**

# Why make a monorepo?

- Define an extension's dependencies within that extension
- Allows you to not be the dependency manager
- Future functionality in Drupal



# How to make a monorepo in Drupal

- Define custom extensions as dependencies
- Define workspaces in NPM or Yarn



# The future

- Managing PHP dependencies through a user interface
  - Drupal CMS Launcher
  - Project Browser
  - Automatic Updates
- `drupal/core-recipe-unpack`



# The future

- Replace .info.yml with composer.json?
- Drupal extensions in Vendor directory?
- Standardization of management of asset libraries?
- Continued discussion and evolution



# Summary

- Consider methods of including asset library dependencies
- Use the right dependency manager for your needs
- Make your Drupal project a monorepo

