

## CHAPTER 12



# Migrating to Drupal 8

Migrating from one version of a software package to another is often a Herculean task fraught with problems, missed deadlines, and blown budgets. Drupal can fit into that category depending on the custom modules that you developed and the complexity of your site. Fortunately there are tools to help ease the burden of migrating a Drupal 6 or 7 site to Drupal 8, which is the focus of this chapter.

## The Migrate Modules in Drupal 8 Core

Drupal 8 core ships with three modules that support the process of migrating a Drupal 6 or 7 site to Drupal 8. The Migrate, Migrate Drupal, and Migrate Drupal UI modules perform the functions of moving content, taxonomy, users, and configuration from a Drupal 6 or 7 site into Drupal 8, and they do so with relative ease. To demonstrate the process in this chapter, we migrate a standard off-the-shelf Drupal 7 site to Drupal 8.

To begin, we create a Drupal 7 site and populate the site with users, taxonomy, and content using the Devel module's generate features ([drupal.org/project/devel](http://drupal.org/project/devel)). The resulting site with content appears in [Figure 12-1](#).

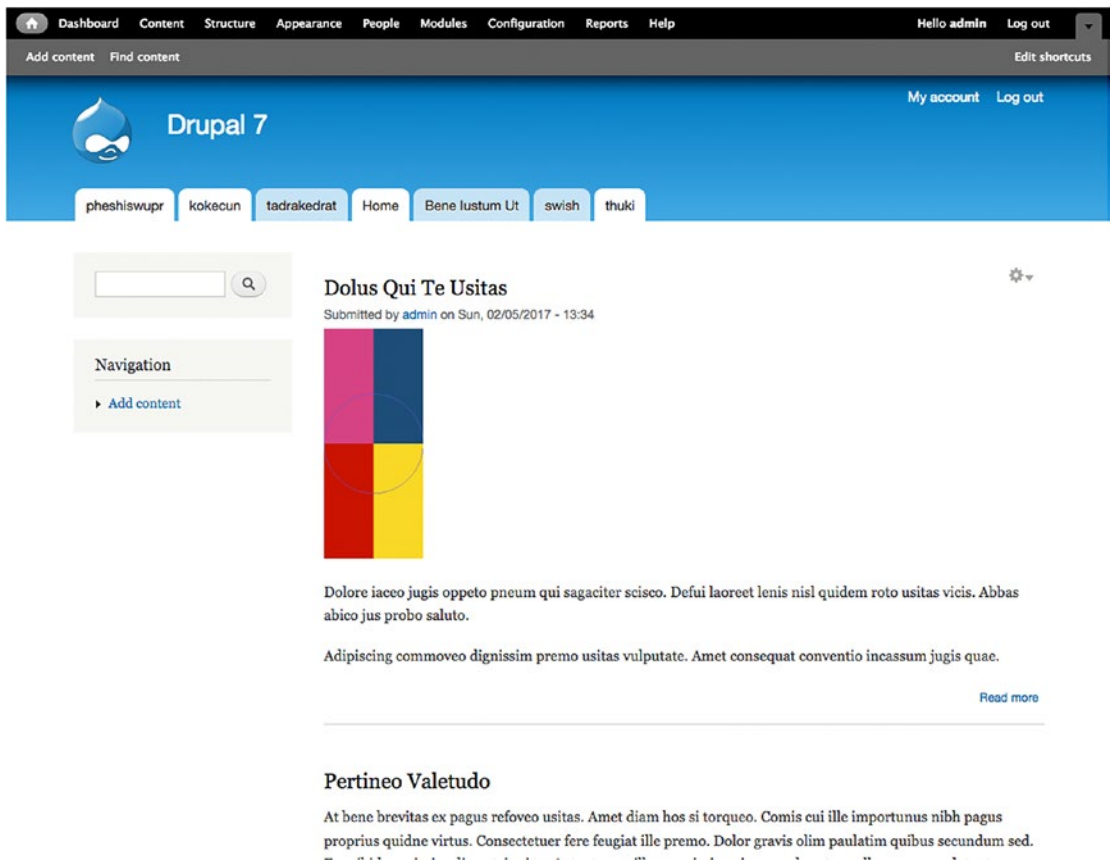


Figure 12-1. The Drupal 7 site to be migrated

Next, we install Drupal 8 as the target site for where the Drupal 7 site will be migrated. Visit the Extend page and enable the three Drupal 8 migrate modules (see Figure 12-2).

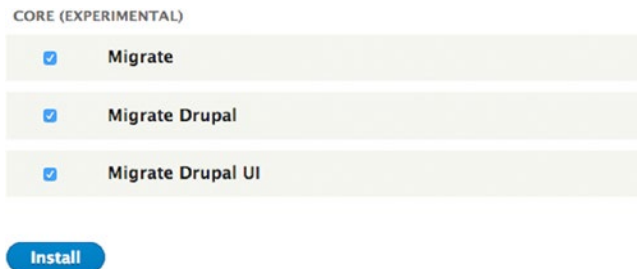


Figure 12-2. The Migrate modules

After enabling the modules, we back up the Drupal 7 and Drupal 8 sites, including the database, files, and codebase, to ensure that we can restore both sites in the event of a failure. After backups are completed, we navigate to upgrade on the Drupal 8 site to begin the process. On the Upgrade page, you will find a list of instructions and recommendations (see Figure 12-3).

**Upgrade** ☆

[Home](#)

✓ Operating in maintenance mode. [Go online.](#)

Upgrade a site by importing it into a clean and empty new install of Drupal 8. You will lose any existing configuration once you import your site into it. See the [online documentation for Drupal site upgrades](#) for more detailed information.

1. **Back up the database for this site.** Upgrade will change the database for this site.
2. Make sure that the host this site is on has access to the database for your previous site.
3. If your previous site has private files to be migrated, a copy of your files directory must be accessible on the host this site is on.
4. In general, enable all modules on this site that are enabled on the previous site. For example, if you have used the book module on the previous site then you must enable the book module on this site for that data to be available on this site.
5. Put this site into [maintenance mode](#).

This upgrade can take a long time. It is better to import a local copy of your site instead of directly importing from your live site.

[Continue](#)

**Figure 12-3.** *The Upgrade instructions*

Following the instructions, do the following:

- Back up the database. Make sure that the host of the Drupal 7 site is accessible and that you have the database credentials and the ability to access that database from the Drupal 8 instance.
- Manually move any private files to the Drupal 8 site. You must ensure that all enabled modules on the Drupal 7 site are also present on the Drupal 8 site as the Drupal 8 equivalent of those modules. In the case of these example sites, the only contributed module is the Devel module. If you have modules that do not have a Drupal 8 equivalent, you can replace those modules with other modules that are available for Drupal 8, or following the steps outlined later in this chapter, migrate the module manually.
- Put the Drupal 8 site into maintenance mode.

Click the Continue button to move to the next step in the process. On the Drupal Upgrade page, we specify the type of database, the database host, database name, database user name, database password, and files directory on the Drupal 7 site (see Figure 12-4).

## Drupal Upgrade ☆

[Home](#)

✓ Operating in maintenance mode. [Go online.](#)

### SOURCE DATABASE

Provide credentials for the database of the Drupal site you want to upgrade.

**Database type \***

- MySQL, MariaDB, Percona Server, or equivalent
- PostgreSQL
- SQLite

**Database host \***

**Database name \***

**Database username \***

**Database password**

ADVANCED OPTIONS

### SOURCE FILES

**Files directory**

To import files from your current Drupal site, enter a local file directory containing your site (e.g. /var/www/docroot), or your site address (for example http://example.com).

[Review upgrade](#)

**Figure 12-4.** Specifying the source database credentials and files directory

After entering the values, we click the Review Upgrade button to examine the list of modules on the Drupal 7 site that are missing their counterpart on the Drupal 8 site, as well as the list of modules that match between the two sites (see Figure 12-5).

**Are you sure?** ☆

[Home](#)

✓ Operating in maintenance mode. [Go online.](#)

**Upgrade analysis report**

- 16 available upgrade paths
- 16 missing upgrade paths

**Missing upgrade paths**

The following items will not be upgraded. For more information see [Upgrading from Drupal 6 or 7 to Drupal 8.](#)

SOURCE	DESTINATION
color	Missing
contextual	Missing
dashboard	Missing
devel	Missing
devel_generate	Missing
devel_node_access	Missing
field_sql_storage	Missing
field_ui	Missing
help	Missing
list	Missing
number	Missing
options	Missing

**Figure 12-5.** The available and missing upgrade paths

After reviewing the list of missing upgrade paths, we decide to continue with the upgrade. If there were modules that were missing upgrade paths that are critical to the functionality or appearance of your site, you could:

- Abandon the upgrade and look for the Drupal 8 equivalent modules before proceeding. After downloading and installing those modules, you could then visit the upgrade page and attempt the upgrade again.
- Continue with the upgrade with the understanding that some site functionality and the appearance of the site may differ on Drupal 8. You then have to look for alternative solutions to address the missing functionality and make the appropriate adjustments.

For demonstration purposes, we continue with the upgrade, understanding that the items listed in the missing upgrade paths will not be migrated to this Drupal 8 site. WE click the Perform Upgrade button at the bottom of the page to continue the upgrade process. As the upgrade progresses, the module reports the status of the process, as shown in Figure 12-6.



Figure 12-6. The migration from Drupal 7 is in process

When the upgrade is complete, a summary of the migration activities is displayed on your homepage, as shown in Figure 12-7.

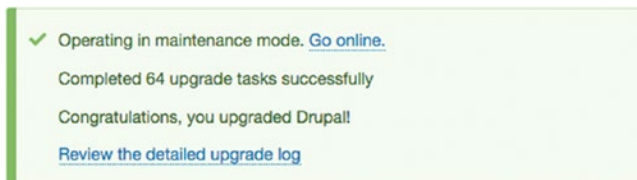


Figure 12-7. The upgrade summary

Clicking on the Review the Detailed Upgrade Log link displays a list of messages that detail the actions taken during the upgrade process (see Figure 12-8).

The screenshot shows the 'Recent log messages' interface in Drupal 8. At the top, there are 'View' and 'Delete' buttons. Below that, a breadcrumb trail reads 'Home > Administration > Reports'. A green status bar indicates 'Operating in maintenance mode. Go online.' Below this, a message states: 'The Database Logging module logs system events in the Drupal database. Monitor your site or debug site problems on this page.' There is a search box with a 'Search' button. A 'FILTER LOG MESSAGES' section contains two dropdown menus: 'Type' (with options: cron, migrate\_drupal\_ui, page not found, php, system, user) and 'Severity' (with options: Emergency, Alert, Critical, Error, Warning, Notice, Info, Debug). There are 'Filter' and 'Reset' buttons next to these menus. Below the filter section is a table of log messages.

TYPE	DATE	MESSAGE	USER	OPERATIONS
migrate_drupal_ui	02/05/2017 - 19:09	Upgraded Taxonomy terms (Tags) (processed 10 items...	admin	
migrate_drupal_ui	02/05/2017 - 19:09	Upgraded Shortcut set user mapping (processed 0 items...	admin	
migrate_drupal_ui	02/05/2017 - 19:09	Upgraded Shortcut links (processed 2 items total)	admin	

**Figure 12-8.** The upgrade log

After upgrading, you need to comb through the site to find all of the areas that were not successfully migrated and manually migrate the remaining elements. In the case of this sample site, all of the nodes, taxonomy terms, menu items, and users were successfully migrated.

## Migrating Themes

Migrating a Drupal 6 or 7 theme to Drupal 8 is relatively straightforward, with the primary changes being the following:

- The Drupal 6 or 7 theme's `.info` file will need to be converted to a Drupal 8 `.info.yml` file.
- Certain core CSS classes have changed, including:
  - `element-hidden` has become `hidden`
  - `element-invisible` has become `visually-hidden`
  - `element-focusable` has become `visually-hidden focusable`
  - The addition of `invisible`, which was not available in Drupal 6 or 7
- All `.tpl.php` template files are now `.html.twig` files. All PHP code that was contained in Drupal 6 and 7 `.tpl.php` files are replaced with Twig. For details, see Chapter 5.
- The `template.php` file is now contained in the `.theme` file.

There are limited and somewhat cryptic instructions on [drupal.org](http://drupal.org) for migrating themes from Drupal 7 to Drupal 8. Visit [drupal.org/docs/8/theming/upgrading-7x-themes-to-8x](http://drupal.org/docs/8/theming/upgrading-7x-themes-to-8x) for up-to-date details on migrating your theme.

## Migrating Modules from Drupal 7 to Drupal 8

Migrating content, users, and taxonomy from Drupal 6 or 7 to Drupal 8 was relatively easy as compared to migrating themes and modules. For the most part, migrating themes is next in the list of “easy-to-do” tasks, but that easy list ends quickly when we get to modules. Migrating modules from Drupal 7 to Drupal 8 often requires significant surgery, as the underlying core functionality has changed from straight PHP and PDO to Symfony, with all of its structure and syntax. Fortunately there’s a tool that takes some of the pain out of the process, called the Drupal Module Upgrader.

To install the Drupal Module Upgrader, navigate to your Drupal 8 site’s root directory and run the following commands in order:

```
drush dl drupalmoduleupgrader
cd modules/drupalmoduleupgrader
composer install
drush en drupalmoduleupgrader -y
```

You are now ready to attempt to upgrade a Drupal 7 module to Drupal 8. The `drupalmodulegrader` (DMU) is a command-line script that scans the source of a Drupal 7 module, flags any code that requires updating to Drupal 8, points to any relevant API change notices, and, when possible, attempts to convert the Drupal 7 code automatically to the Drupal 8 version. The goal of the module is to address the most widely used Drupal hooks and ensure there’s coverage for them.

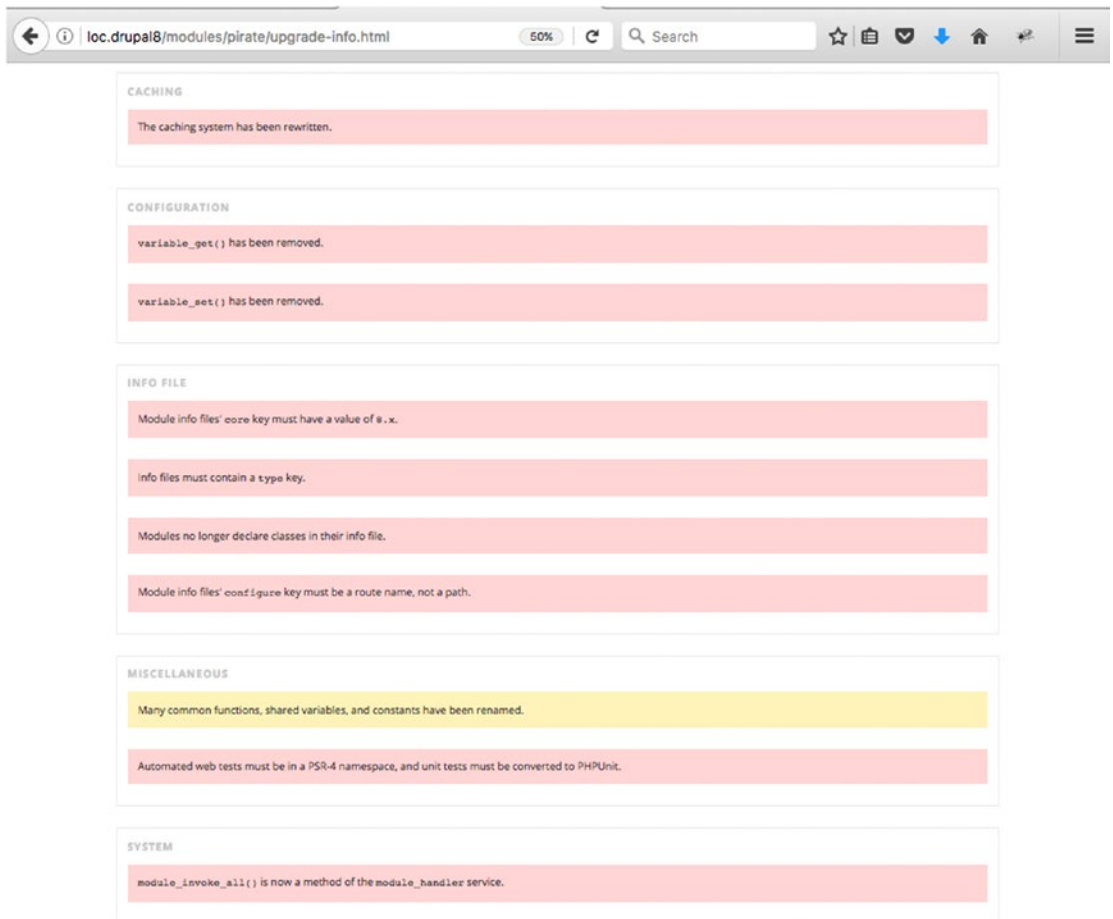
To demonstrate the DMU tool, we use a simple Drupal 7 module, the Pirate module. This simple module filters text on your site on the International Talk Like a Pirate Day (September 19th) and converts appropriate English phrases and words into pirate speak. You can download the Drupal 7 version of Pirate ([drupal.org/project/pirate](http://drupal.org/project/pirate)) to the `modules` directory on your Drupal 8 site.

After downloading the module, we generate a report by navigating to the Drupal 8 site’s root directory and executing the following command:

```
drush dmu-analyze pirate
```

The output generated by `dmu-analyze` is stored in the module’s root directory with a name of `upgrade-info.html`. You can use your browser to view the file by visiting `mysite.com/modules/pirate/upgrade-info.html`, where you’ll see a list of required changes, as shown in [Figure 12-9](#).





**Figure 12-9.** The list of required changes for the Pirate module

We can now try to automatically upgrade the module by executing the following command from the root directory of the Drupal 8 site:

```
drush dmu-upgrade pirate
```

If the DMU upgrader runs into problems during the upgrade, it will report those problems during the upgrade process. In the case of the Pirate module, no errors were generated. If you navigate to `/modules/pirate`, you will now see that the module has been converted to Drupal 8.

```

├── INSTALL.txt
├── LICENSE.txt
├── README.txt
├── config
│   ├── install
│   │   └── pirate.settings.yml
│   └── schema
│       └── pirate.schema.yml
├── pirate.api.php
├── pirate.drush.inc
├── pirate.info
├── pirate.info.yml
├── pirate.module
└── upgrade-info.html

```

3 directories, 11 files

Navigating to the Extend page, you can now see the Drupal 8 version of the Pirate module, ready to install and use on September 19<sup>th</sup> (see Figure 12-10).

#### OTHER



**Figure 12-10.** The Drupal 8 version of the Pirate module ready to enable

Not all modules will convert as cleanly as the Pirate module. For detailed steps on how to manually convert a Drupal 7 module to Drupal 8, visit [drupal.org/docs/8/converting-drupal-7-modules-to-drupal-8](http://drupal.org/docs/8/converting-drupal-7-modules-to-drupal-8).

## Contributed Modules

Although the Pirate module is relatively easy to migrate to Drupal 8, not all Drupal 7 modules have been migrated to Drupal 8 and you may be in a position in which there's no clear path for a Drupal 7 contributed module to be ported to Drupal 8. In that case, your options are as follows:

- Undertake the migration of the module from Drupal 7 to Drupal 8. Reach out to the module's maintainer on [drupal.org](http://drupal.org) and ask if they would be willing to let you migrate the module for them. In most cases, the module maintainer will jump at the opportunity to have someone take on the migration effort. There may be cases where the migration is already underway and you can participate in that process, again by asking the module maintainer if you can assist.
- Look for alternative modules. There may be other similar contributed modules that provide similar functionality and have been ported to Drupal 8 or were created for the first time on Drupal 8.

- Look for alternative solutions. Often a combination of a custom content type and a view or two can solve a common problem that a contributed module solved in the past.
- Develop your own custom Drupal 8 module using the scaffolding approach described in Chapter 7 to jumpstart the development of your module.
- Reach out to the community on the various forums and IRC channels. It's likely that you're not the first one on the planet to run into the situation where a popular contributed module has not been ported to Drupal 8. It's likely you'll find others in the same situation who are willing to help or who have alternative solutions that have worked for them.

## Summary

Migrating to Drupal 8 has become significantly easier than migrating between major Drupal releases in the past. The community has focused on making the upgrade path as painless as possible to ensure the adoption of Drupal 8 as the platform for the future. Not everything will be easy and, in those situations, the best approach is to reach out to the Drupal community for help. The adoption of Drupal 8 is critical to the long-term success of the Drupal community and there are thousands of developers around the world whose careers depend on the success of the platform. You will likely find a group of people who are ready and willing to lend a hand.