

DurableDrupal Lean

Tool up for solid web apps now and maintain them for years with a powerful Drupal distro

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Introduction

Tool up for solid web apps now and maintain them for years with a powerful Drupal distro

This book is for web app development teams, called upon by their clients to move their business model to the internet, their back-office to the cloud.

This book will empower you and your team, no matter what your level of expertise, to simplify the building of solid solutions for your clients' real needs, and to facilitate in a productive and cost-effective manner the maintenance these solutions will be crying out for from the moment they are born.

In the process, you will actually be evolving for yourselves a lean web factory to output durable solutions that can be maintained for years to come.

Change, maintenance, continuous delivery and the long haul

Successful web developers and agencies know that the real challenge is how to embrace continuous delivery throughout the web app life cycle.

Delivering websites and web apps is only the beginning. The real question for success in web development is how to continue to ply your client with continual fixes and releases in order to fix problems and satisfy change requests.

Because constant change is inevitable, and ever-present throughout the web app life-cycle:

- First in the minimum of 40% in changes that will be requested in the weeks or months of development.
- Secondly, in the feature and usability requests the solution will have to assimilate in order to maintain its value over time.
- Thirdly in the security threats that will have to be dealt with in as fully an automated way as possible.
- Fourthly in the architectural and deployment changes that will be required as time goes by, in the struggle to scale with growth and cut costs with new technological breakthroughs.

Because it's not about the "single click site generation" and easy scaffolding any decent framework or "hosting" solution offers. We'll soon see how to fire up a framework in seconds, in just a few clicks, but the devil is in how we empower ourselves with a process that is going to facilitate, stabilize and simplify our work in the face of this constant change. by using the most exciting best of breed industry standard tools, like Ansible, Vagrant and Docker, Cloud-based hosting, and the all important Git branch model; just to mention a few of the things we will be working with here.

The theme of embracing change, while not new at all, marks the difference between success and failure, is born of the inevitable failures we all live through as we gain experience, and runs throughout the book so that web development can be fun and not chock-full of ugly surprises.

We're here for the long haul.

And we're using [Drupal](https://www.drupal.org/)¹ now.

Overview of Book Contents

So here's what we'll be doing:

- Chapter 1: Overcoming Choice Panic - What frameworks should we use?

We need to free ourselves from choice panic which can paralyze us or disrupt our work at any time if the project stakeholders aren't all on board with the major framework and other choices that will be made during the appropriate iterations. We need to have this discussion sooner rather than later, and realize that as time goes on we'll always be migrating. Realizing that will allow us to prepare gradually and ease the pain. Hey, it's part of the job!

- This is what we need and we need it now

We need to adopt a process which bases itself brutally on what we need and what our clients need, and which abandons vested vendor lock-in of all kinds. We can't be married to frameworks: it's one big open-source community and its one big set of solutions we must achieve

- Building from scratch or not? Frameworks or not?
- Proprietary or not? Open-source or not?
- WordPress or not?
- Drupal or not?
- Drupal 8 or not?
- Backdrop or not?
- Vanilla Drupal 7 or not? Distro or not?
- Presenting DurableDrupalDistro: fork it, tailor it, maintain it, branch and release it over all your projects!
- Preparing to migrate gradually all along, so we'll be ready when the time comes

- Chapter 2: Setting up just enough shop to deliver our first web app

¹<https://www.drupal.org/>

- Every team member has their own dev environment
 - * On Pantheon
 - * On Amazon
- What the client needs
 - * The tangle of User Stories and Design
- Fork the distro and make it our own
- User stories and doing it with agile
- Delivery as client empowerment
- Post mortem: We did it! But...
 - * Agile is the new waterfall (pixel perfect design -> “implementation”)
 - * Team couldn’t really work in parallel
 - * Client took delivery of a monolithic blob he wasn’t sure how to use
 - We had to do special training (not to mention train the trainers)
 - Client began a slew of change requests that could have come earlier if they had been familiar with the system
- Chapter 3: Agile is the new waterfall - we need Lean!
 - New project!
 - Value hypotheses
 - Design studio for nerds... and for the client too
 - Getting the team working in parallel
- Chapter 4: Functional prototypes
- Chapter 5: Grabbing the legacy content
- Chapter 6: Candidate architecture
 - Choices panic revisited
 - We’re evolving on top of best of breed
- Chapter 7: Build the recursive MVP of MVP’s
 - Every user story is an MVP
 - No project is ever anything more than an MVP
- Chapter 8: Go team test team go go go

The advantage of using frameworks isn’t just that they’re tried and tested, but that they empower testing and TTD
- Chapter 9: Build, deploy, maintain
 - Rinse and repeat over “development”

Formatting Conventions

Obtaining and using the DurableDrupal Lean Distro

Please fork the repo at This is a book we need to work through together, so a starter Drupal Distro has been provided. It’s available right now at ... Thanks to all the modern tools that have

come along, all you really need is a laptop with some disk space and a decent amount of RAM. And we promise not to dirty it up with a lot of “server” stuff, thanks to Vagrant, Virtual Box, Ansible and Docker. We’ll be setting up complete self-contained server replicas that won’t affect your regular configuration at all.

Contact and feedback

Victor Kane... Book page... mailing lists

Acknowledgements

But more than a book this is a community of teams. Dive in!

Chapter 1 - Overcoming Choice Panic - What frameworks should we use?

In this chapter we'll be facing up to what some call Choice Panic: we'll lay all our doubts about CMS frameworks out on the table, sift through the options, and choose our best bet, given what we need to do now and what we really have to go on. We'll settle upon a particular solution and the characteristics that make it the most versatile and dynamic option open to us, and make sure we feel comfortable with that.

We need to free ourselves from choice panic which can paralyze us or disrupt our work at any time if the project stakeholders aren't all on board with the major framework options devs will actually be considering. We need to have this discussion sooner rather than later. We also need to realize that as time goes on we'll always be migrating. This will allow us to prepare gradually and ease the pain. Hey, it's part of the job!

This is what we need and we need it now

We need to adopt a process which bases itself brutally on what we need and what our clients need, and which abandons vested vendor lock-in of any kind. We can't be married to any one set of frameworks any more.

Let's suppose we are a new web development team and we have our first job together. In the best agile tradition it's a "light" one, so that we can get to know each other and build some synergy to prepare us for a bigger project we'll be starting in a month or so (an online magazine).

A neighborhood non-profit runs programs for youth in the community. They've had a webmaster who managed the content on their site for them, but he seems to have disappeared and they've lost access to their old stuff. Actually they've been wanting to re-do their site for some time, so they have some ideas, but they're stuck. They want to be able to manage their content without depending on anyone else for that.

So what to do?

Building from scratch or not? Frameworks or not?

Proprietary or not? Open-source or not? ## [WordPress](https://wordpress.org/)² or not? ## [Drupal](https://drupal.org/)³ or not? ## Drupal 8 or not? ## Backdrop or not? ## Vanilla Drupal 7 or not? Distro or not?

²<https://wordpress.org/>

³<https://drupal.org/>

Won't everything we build in Drupal 7 be obsolete in a few months? Well no, actually Drupal 7 is an extremely mature project, with all kinds of tested and true themes and modules, including options for including much of the hotness of Drupal 8 right now and without the learning curve.

The thing is, we can't start downloading the latest version, adding in the modules and themes we always use again, configuring them again, testing everything again. We need a rich starting point. Fortunately we can get that in a distribution profile, a Drupal distro.

Let's not just use Drupal 7, let's use a re-usable distro that we can evolve over time and even migrate... something that will last us several years

Use a distro that gives us a powerful and versatile starter kit, so we don't have to go combing through all the alternatives for modules, themes, plugins (unless we want to)

Everything in code with install profile and configuration management

Built in migration of content between legacy sites, development, test and staging, and live instances.

Easy to set up complete development environments for all team members no matter what their skill set.

A distro that can be part and parcel of a repeatable Agile and Lean process that can evolve together with changes in the industry as well as the needs our clients have and realize that they have over time.

It's not just about building, we have to be experts in maintenance, for the long haul. There are going to be security releases, upgrades of all kinds, new technology to integrate with, varying backends...

And a distro is something we can evolve, maintain over time as we grow and better identify a productive baseline we can build on.

The devil is in the maintenance

And we don't have to get married to any of the frameworks we're using. In fact, we want to be preparing to migrate gradually all along, so we'll be ready when the time comes

Presenting DurableDrupalDistro: fork it, tailor it, maintain it, branch and release it over all your projects!

Introducing DurableDrupalDistro with Lean process

..... in this chapter we In Chapter 2 - DurableDrupalDistro, we'll ...

Chapter 2 - DurableDrupalDistro

Having made ourselves comfortable with the decision to fork, tailor and maintain a particular Drupal 7 distro, this chapter will explain how each team member can actually create a working environment for themselves, and the details of how a simple project can be built, as our team follows an agile and modern agile development process.

“We’ll first show you [how to set up a workspace](#)⁴, getting a folder somewhere you can configure as a Drupal doc root, that is, the main Drupal directory that can be picked up by a LAMP stack and made available to a browser as a URL.

This can be done on a dedicated server, on a VPS, on a virtual machine or directly on your laptop, even on a good shared hosting, but you’ve got to have ssh access to the command line.

We all need to be able to do this no matter what our role on the team, so we’ll show you a couple of examples.

Then we’ll see [how to grab our very own DurableDrupalDistro and fire it up](#)⁵.

Finally, we’ll [check out what we have going for us](#)⁶ under the hood right off-the-shelf, we’ll [take our first steps](#)⁷, and then I’ll give an example of [updating and maintaining the distro itself](#)⁸”.

Getting a workspace in a LAMP stack

El Viejo shows here how to set up a workspace from scratch, in his usual opinionated fashion.

- on a [VPS](#) like Linode or Digital Ocean,
- on personal laptop/workstation alternatives
 - [Water Works stack](#)
 - [Bitnami](#)
 - * Drupal App
 - * Drupal Server
 - [Kalabox](#)
- [Roll your own](#)
- on a [shared hosting account](#) with command line access and drush

⁴[a_workspace_in_a_lamp_stack.html](#)

⁵[obtaining_and_installing_the_durable Drupal distro.html](#)

⁶[whats_included_in_durable Drupal distro.html](#)

⁷[durable Drupal distro first steps.html](#)

⁸[updating_durable Drupal distro itself.html](#)

VPS

TODO linode

TODO digital ocean

Water Works stack

Well, Water Works never got around to offering one, or else they did and then started charging for it, so nobody used it and it died. But Acquia has one! Very convenient for running Drupal apps on your laptop, but it isn't a virtual machine, it's an app only, so that means that while you can run it and everything, it doesn't emulate the target live environment (a GOOD idea) the app will be running on when it is launched. Get it [here](#)⁹.

Bitnami

[Bitnami](#)¹⁰ swings both ways, with the app approach and the VirtualBox VM alternative (recommended but [a lot of work](#)¹¹ and then [more work](#)¹²).

Pantheon

Single click

And you can have the best of both worlds, with pantheon in the cloud and on your desk... Kalabox!

Kalabox

Ah, the amigos at [Kalamuna](#)¹³ are a breath of fresh air. They've not only come up with [Kalabox](#)¹⁴ but are now developing [Kalabox 2](#)¹⁵, the [NodeWebkit](#)¹⁶ and [Docker](#)¹⁷ wonder, as a completely open source project after a successful [Kickstarter campaign](#)¹⁸.

I've tried it out quite a bit. See [how I installed Kalabox 1](#)¹⁹ and used it as a Pantheon workflow solution. Integration with [Pantheon hosting](#)²⁰ and their one-click Drupal Distro site builder is a

⁹<http://www.acquia.com/downloads>

¹⁰<https://bitnami.com/stack/drupal>

¹¹<http://aweefactory.com/node/524>

¹²<http://aweefactory.com/node/525>

¹³<http://www.kalamuna.com/>

¹⁴<http://www.kalamuna.com/products/kalabox>

¹⁵<https://github.com/kalabox>

¹⁶<https://github.com/rogerwang/node-webkit>

¹⁷<https://www.docker.com/>

¹⁸<https://www.kickstarter.com/projects/kalabox/kalabox-advanced-web-tools-for-the-people>

¹⁹<http://aweefactory.com/node/522>

²⁰<https://www.getpantheon.com/>

hallmark of Kalabox 1. Very useful considering its [revolutionary architecture](#)²¹ and [standardizing workflow](#)²² (at least as far as Drupal hosting is concerned). Alternative hosting support plug-ins are expected with Kalabox 2.

Ansible

(study up on Ansible for Dev-Ops book first! buy the bundle!) * Ansible on a Mac to run a server *
Ansible on a Mac to run a local vagrant/vbox instance

Roll your own

sthg about virtual box & vagrant, with puppet, chef, ansible...

Shared hosting account

We shouldn't even be talking about this, but recent improvements in shared hosting accounts have made something like a reseller account somewhat (only just) viable, at least for hosting small to middling projects.

First thing to do is get Drush on there, once you've gotten ssh command-line access, if you can't get that switch hosting now (and if you're even reading this section, second thing is to create a subdomain for each site: don't go running Drupal from a sub-directory).

Obtaining and installing the DurableDrupalDistro

What's included in DurableDrupalDistro

DurableDrupalDistro: First Steps

So we're in our workspace, let's say on a VPS.

What we want to do

- Create virtual host
- Create database
- Clone and set up distro
- Install with drush on the command line
- Check it out

²¹<https://www.getpantheon.com/how-it-works>

²²<https://www.getpantheon.com/how-it-works>

Create virtual host

Create database

Clone and set up distro #### Install with drush on the command line #### Check it out

Updating DurableDrupalDistro itself

```

1  $ drush pm-refresh
2  Refreshing update status information ...
3  Done.
4  $ drush pm-update
5  Name                      Installed  Proposed  Message
6  Version                   version
7  Drupal                    7.31      7.32      SECURITY UPDATE available
8  Calendar (calendar)      7.x-3.4   7.x-3.5   Update available
9  CKEditor (ckeditor)      7.x-1.15  7.x-1.16  SECURITY UPDATE available
10 Profiler Builder          7.x-1.1   7.x-1.2   Update available
11 (profiler_builder)
12
13
14 Update information last refreshed: Tue, 10/21/2014 - 13:20
15 NOTE: A security update for the Drupal core is available.
16 Drupal core will be updated after all of the non-core projects are updated.
17
18 Security and code updates will be made to the following projects: Calendar [cale\
19 ndar-7.x-3.5], CKEditor - WYSIWYG HTML editor [ckeditor-7.x-1.16], Profiler Buil\
20 der [profiler_builder-7.x-1.2]
21
22 Note: A backup of your project will be stored to backups directory if it is not \
23 managed by a supported version control system.
24 Note: If you have made any modifications to any file that belongs to one of the\
25 e projects, you will have to migrate those modifications after updating.
26 Do you really want to continue with the update process? (y/n):
27 Project calendar was updated successfully. Installed version is now 7.x-3.5.
28 Backups were saved into the directory [ok]
29 /home/drupallean/drush-backups/drupal_lean/20141021132817/modules/calendar.
30 Project ckeditor was updated successfully. Installed version is now 7.x-1.16.
31 Backups were saved into the directory [ok]
32 /home/drupallean/drush-backups/drupal_lean/20141021132817/modules/ckeditor.
33 Project profiler_builder was updated successfully. Installed version is now 7.x-\
34 1.2.

```

```

35 Backups were saved into the directory [ok]
36 /home/drupallean/drush-backups/drupal_lean/20141021132817/modules/profiler_build\
37 er.
38
39 Code updates will be made to drupal core.
40 WARNING: Updating core will discard any modifications made to Drupal core files\
41 , most noteworthy among these are .htaccess and robots.txt. If you have made an\
42 y modifications to these files, please back them up before updating so that you \
43 can re-create your modifications in the updated version of the file.
44 Note: Updating core can potentially break your site. It is NOT recommended to up\
45 date production sites without prior testing.
46
47 Do you really want to continue? (y/n):
48 Project drupal was updated successfully. Installed version is now 7.32.
49 Backups were saved into the directory [ok]
50 /home/drupallean/drush-backups/drupal_lean/20141021132817/drupal.
51 No database updates required [success]
52 'all' cache was cleared. [success]
53 Finished performing updates. [ok]
54 $ git status
55 $ git add .
56 $ git commit -am "Maintenance update to drupal core 7.32 plus updated contrib mo\
57 dules"
58 $ git tag
59 $ git tag -a "October2014" -m "Maintenance core and contrib update"
60 $ git push --tags

```

Now we need to prepare the site (see [Quick install for developers \(command line\)](#)²³)

```
1 cp sites/default/default.settings.php sites/default/settings.php
```

Give the web server write privileges (666 or u=rw,g=rw,o=rw) to the configuration file.

```
1 chmod a+w sites/default/settings.php
```

Give the web server write privileges to the sites/default directory.

```
1 chmod a+w sites/default
```

so we can re-install from scratch to test. Check out incredible options available with drush help:

²³<https://www.drupal.org/documentation/install/developers>

```

1  $ drush help site-install
2  Install Drupal along with modules/themes/configuration using the specified
3  install profile.
4
5  Examples:
6  drush site-install expert --locale=uk      (Re)install using the expert install
7                                              profile. Set default language to
8                                              Ukrainian.
9  drush site-install                        Install using the specified DB
10 --db-url=mysql://root:pass@localhost:por params.
11 t/dbname
12 drush site-install                        Install using SQLite (D7+ only).
13 --db-url=sqlite://sites/example.com/file
14 s/.ht.sqlite
15 drush site-install --account-name=joe      Re-install with specified uid1
16 --account-pass=mom                        credentials.
17 drush site-install standard               Pass additional arguments to the
18 install_configure_form.site_default_coun profile (D7 example shown here - for
19 try=FR                                     D6, omit the form id).
20 my_profile_form.my_settings.key=value
21 drush site-install                        Disable email notification during
22 install_configure_form.update_status_mod install and later. If your server
23 ule='array(FALSE,FALSE)'                 has no smtp, this gets rid of an
24                                           error during install.
25
26 Arguments:
27 profile                                  the install profile you wish to run.
28                                           defaults to 'default' in D6,
29                                           'standard' in D7+
30 key=value...                             any additional settings you wish to
31                                           pass to the profile. Fully supported
32                                           on D7+, partially supported on D6
33                                           (single step configure forms only).
34                                           The key is in the form [form
35                                           name].[parameter name] on D7 or just
36                                           [parameter name] on D6.
37
38 Options:
39 --account-mail uid1 email. Defaults to
40                admin@example.com
41 --account-name uid1 name. Defaults to admin
42 --account-pass uid1 pass. Defaults to a randomly

```



```

43                                     generated password. If desired, set
44                                     a fixed password in drushrc.php.
45 --clean-url                         Defaults to 1
46 --db-prefix                         An optional table prefix to use for
47                                     initial install. Can be a key-value
48                                     array of tables/prefixes in a
49                                     drushrc file (not the command line).
50 --db-su=<root>                      Account to use when creating a new
51                                     database. Must have Grant permission
52                                     (mysql only). Optional.
53 --db-su-pw=<pass>                  Password for the "db-su" account.
54                                     Optional.
55 --db-url=<mysql://root:pass@host/db> A Drupal 6 style database URL. Only
56                                     required for initial install - not
57                                     re-install.
58 --locale=<en-GB>                   A short language code. Sets the
59                                     default site language. Language
60                                     files must already be present. You
61                                     may use download command to get
62                                     them.
63 --site-mail                         From: for system mailings. Defaults
64                                     to admin@example.com
65 --site-name                         Defaults to Site-Install
66 --sites-subdir=<directory_name>    Name of directory under 'sites'
67                                     which should be created. Only needed
68                                     when the subdirectory does not
69                                     already exist. Defaults to 'default'
70
71 Aliases: si

```

So let's install in Spanish, specifying db credentials, uid1 user name and password, uid1 user email, site email and site name

```

1 site-install drupallean --locale=es --db-url=mysql://drupal_lean:lean@localhost/\
2 drupal_lean --account-name=admin --account-pass=omg --account-mail=victorkane@gm\
3 ail.com --site-mail=drupallean@awebfactory.com.ar --site-name=DrupalLean
4
5 You are about to DROP all tables in your 'drupal_lean' database. Do you want to \
6 continue? (y/n): y
7 No tables to drop. [ok]
8 Starting Drupal installation. This takes a few seconds ... [ok]
9 WD php: Warning: Invalid argument supplied for foreach() in [warning]

```

```
10 _features_restore() (line 966 of
11 /home/drupallean/drupal-lean/sites/all/modules/contrib/features/features.module).
12 Installation complete.  User name: admin  User password: omg      [ok]
```

Chapter 3 - Value Hypotheses for the project

Chapter 4 - Functional prototypes

Chapter 5 - Grabbing the legacy content

Chapter 6 - Candidate architecture

Chapter 7 - Build the recursive MVP of MVPs

Chapter 8 - Go team test team go go go

If I hear “Get out of the building” one more time I think I’ll scream

It’s not just about code that runs right, even though it must.

It’s about value! People’s needs!

Chapter 9 - Build, deploy, rinse, repeat

If I hear “Rinse and repeat” one more time I think I’ll scream

“Whatever happened to getting it right the first time?” muttered Jason, sick and tired of stuff he thought was already done being “postponed” to “the next iteration”.

Appendix 1 - how to

how to