



Community Experience Distilled

# Plone 3.3 Site Administration

Manage your site like a Plone professional

*Foreword by Tarek Ziadé, Python core developer and Distribute maintainer*

**Alex Clark**

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PUBLISHING community experience distilled

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Manage your site like a Plone professional

**Alex Clark**



BIRMINGHAM - MUMBAI

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# Foreword

Back in the old days, Zope was a big monolithic Python package that contained the entire web framework. Creating and customizing a **Plone site** was accomplished by adding "Products" (special Python packages that only Zope 2 understands) to a special directory. When Zope 2 launched, it would scan this directory and look for special initialization functions to activate each Product. This plugin-based approach was nice in some ways, but not nice in others.

For example, how can you efficiently manage your web applications when installing means you need to manually unzip hundreds of Products on to your filesystem, and make sure all the Product dependencies were satisfied? This was a nightmare!

I remember some Zope sprints back in 2002 where we had to set up specific Zope environments to work. We had to go through every Product's README to list all its dependencies, and make sure we had all of them, whether they were other Products or Python packages. That usually took us half a day before we could start coding.

Nowadays, setting up any kind of Plone-based application can be performed automatically in a few minutes, thanks to **zc.buildout!** This tool reads a configuration file, sets up your environment by downloading Python packages from the Python Package Index, and performs any additional steps as needed.

But `zc.buildout`, and all its underlying technology, like `Distribute` or `Distutils`, takes a long time to understand and master. It's not the silver bullet either – there are traps all along the road. Plus, it may compete with your server's own packaging system, which sometimes can be an issue.

But the pain is worthwhile! Learning all these tools that became a standard in the Plone community will give you all the power you need to set up and manage industrial-level Plone sites.

And what's great is that the Zope and Plone communities have now adopted the Python `Distutils` standard as a basis for their building blocks, making it easier to share code between the two worlds.

That is what this book is all about!

Alex, who is a brilliant Plone site administrator and developer, will guide you through the whole process, from setting up your Python environment, to installing, upgrading, and managing your Plone applications with ease, and avoiding pitfalls along the way.

Enjoy! (And keep it under your pillow.)

**Tarek Ziadé, Turcey, France, May 2010**  
**Python core developer and Distribute maintainer**  
**<http://ziade.org>**

# About the Author

**Alex Clark** is a Plone consultant from Bethesda, MD, USA. He currently operates a busy open source consulting firm, along with his wife and business partner, Amy Clark. He also operates a non-profit organization that supports the local Python developer community by organizing monthly meetings, trainings, sprints, conferences, and more. For more information, please see <http://aclark.net> and <http://zpugdc.org> respectively.

Alex is a co-author of "*Practical Plone 3*", *Packt Publishing* (<https://www.packtpub.com/practical-plone-3-beginners-guide-to-building-powerful-websites/book>) and this book marks his first sole authorship. He hopes it will empower individuals, organizations and the world to use and contribute to Plone!

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I would like to thank the following people for their assistance in writing this book: Amy Clark, Chris McDonough, Chris Shenton, Darshana Shinde, David Glick, Erik Rose, Fernando Correa Neto, Gilles Lenfant, Hanno Schichting, Krutika Katelia, Martin Aspeli, Matt Bowen, Matthew Wilkes, Michael Dunlap, Rashmi Phadnis, Reed O'Brien, Ricardo Newbery, Steve McMahon, Tarek Ziadé, Veda Williams, Wichert Akkerman, Zainab Bagasrawala, and you, if I forgot to thank you!

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---

# About the Reviewer

**Steve McMahon** is a partner in Reid-McMahon, LLC, a Davis, California, web development company specializing in deploying Plone for non-profit and governmental organizations. He is chief maintainer for Plone's "Unified" and OS X installers and release manager for the popular PloneFormGen add-on. Steve is serving his third term on the Plone Foundation Board of Directors and his second as board secretary. He also does extensive volunteer work for the Davis Community Network, where he helps build local community with Internet resources.

Steve was one of the many authors of "*Practical Plone 3*", *Packt Publishing* (<https://www.packtpub.com/practical-plone-3-beginners-guide-to-building-powerful-websites/book>) and has been a technical reviewer for several Plone books.



*For my other half, Amy Elyse.*



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# Preface

Plone is a powerful web application used mainly for website content management and comprised of many different, but related Python packages. But it wasn't always this way.

Over the years, Plone has grown from just a few packages built on top of the powerful Zope 2 application server, while Zope 2 itself has grown from a single, monolithic package to a collection of smaller, and often reusable Python packages.

All of this hardly matters to Plone's end users, but unfortunately it has been difficult to hide such details from them. Some day that goal may be achieved, but in the meantime there is this book, which aims to clear up some of the confusion.

That confusion mostly surrounds the use of a tool called Buildout, which is used to assemble the various Python packages. Buildout is a fantastic tool for developers, but not such a good choice for end users.

That said, if you are interested in learning about Buildout and how to use it to build Plone sites, then this book is for you.

## What this book covers

Chapter 1, *Background* introduces you to Python, the version that may already be on your computer, or the version you may choose to install if it is not. After Python installation, installation of various tools such as Distribute, PIP, and Buildout is covered. Finally, an installation of Python using Buildout is covered.

Chapter 2, *Site Basics* covers a variety of Plone site basics including the creation of the Plone site object itself (inside the Zope database), followed by some simple customizations of some of Plone's navigational elements and content types.

Chapter 3, *Appearance* covers the first thing everyone wants to do after installing Plone – change the appearance. In addition, various aspects of through the web versus filesystem theming are covered.

Chapter 4, *Administration* describes various mail settings used in development, plus users and groups management with out of the box features versus LDAP add-ons.

Chapter 5, *Deployment and Maintenance* starts off with the creation of a production buildout, in which various database and log-related tasks are incorporated and automated throughout.

Chapter 6, *Optimization* optimizes site deployments with various techniques to add caching agents, load balancers, process monitors, and performance analyzers.

Chapter 7, *Security* secures site deployments with various techniques to manage hosts, ports, users, permissions, and security fixes.

Chapter 8, *The Future* looks to the future with various techniques to ensure we can manage our buildouts successfully now, as well as one year from now.

## What you need for this book

This book aims to take you through Plone site administration shortly after operating system installation. Some operating systems ship with Python, some don't. In either case, you will be escorted through Python installation and its basic use. This is followed by the rest of the story, which simply builds on top of Python. In other words, you will just need a modern computer and an operating system.

## Who this book is for

This book is for folks who want to become more familiar with how to professionally manage their Plone sites, with techniques used by Python, Zope, and Plone professionals. That means everyone from content editors, to system administrators, to end users of Plone may be interested in the subject matter.

Ideally the reader will have some experience with Python and Plone already, but it is not strictly required.

Some basic computer skills are required, such as the ability to use a terminal window, text editor, and web browser.

## Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text are shown as follows: "If so, just create the directory and then re-run the `buildout` command."

A block of code is set as follows:

```
[buildout]
extends = buildout.cfg
parts += plonesite
[plonesite]
recipe = collective.recipe.plonesite
```

Next, we specify that we want the checkout to occur in the `src` directory (instead of the `parts` directory, which is the default) by setting the `location` parameter:

```
location = src
```

When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
[buildout]
extends = http://dist.plone.org/release/3.3.5/versions.cfg
versions = versions
parts =
    zope2
    instance
find-links =
    http://dist.plone.org/thirdparty/PILwoTk-1.1.6.4.tar.gz
```

Any command-line input or output is written as follows:

```
$ buildout -c 01-background-python.cfg
```

Some of the code lines were too long to fit on one line. In that case, you may see a back slash (`\`) like this to indicate that the next line is really a part of the current line of the code, for example:

```
urls=http://dist.plone.org/thirdparty/\
    PILwoTk-1.1.6.4.tar.gz
```

**New terms** and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Select the checkbox next to the **Plone site** object, and click on **Delete**."

 Warnings or important notes appear in a box like this. ]

 Tips and tricks appear like this. ]

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# 1 Background

In the past few years, the Plone community has experienced some dramatic changes in the way Plone sites are being developed, deployed, and maintained:

- Once upon a time, add-ons to Zope 2 were distributed as specialized Python packages (called **Products**); nowadays they are distributed as generic Python packages (called **Eggs**)
- Originally, the Zope 2 application server was distributed as a single monolithic package; nowadays many parts of Zope 2 have been factored out into smaller packages, which comprise a portion of a larger set of reusable Zope packages (called the **Zope Toolkit**)

To make things more challenging, the Zope community has recently renamed various projects and has redefined the Zope ecosystem in the process:

- The web framework formerly known as Zope 3 is now called **Bluebream** (<http://bluebream.zope.org/>)
- The set of libraries formerly known as Zope 3 is now called the **Zope Toolkit** (<http://docs.zope.org/zopetoolkit/>)

While this influx of new technology alongside the old has presented a challenge for many, it represents a fundamental step in the forward direction for Plone:

- With the adoption of Eggs, Plone joins the rest of the Python community in sharing a common packaging framework with a rich set of features, including the ability to specify version dependencies
- With the adoption of the Zope Toolkit, Plone joins the rest of the Zope community in using the Zope Component Architecture to manage application complexity

Unfortunately, there is a price to pay for all of this progress – confusion. Many people are confused about the best way to develop, deploy, and maintain their Plone site. This is very much expected with a complex system like Plone, but is not ideal.

 Although not quite there yet, Plone is moving rapidly towards a better development, deployment, and maintenance story. Every day the situation improves, and there has never been a better time to start using Plone! The author truly believes in the Plone software and community, and hopes this book will inspire others to feel the same.

By presenting clear instructions and using best practices and techniques from the Python and Zope communities, this book aims to eliminate any remaining confusion.

In this chapter, you will learn:

- Site administration essentials
- What you need to get started
- About the Plone installers
- About Python software distributions
- How to install **Distribute** – a framework for managing Python packages
- How to install **PIP** – a more user friendly Python package installer
- How to install **Buildout** – a tool for building software
- More about Python software distributions
- How to install a C compiler
- How to install **Subversion** – a version control system
- How to install Python with Buildout

## Site administration essentials

Before we begin, let's put into perspective the effort we are about to undertake. Everything you learn in this book is intended to make you a better Plone site administrator.

In order to disseminate the subject matter, we will divide the site administrator's tasks into three categories:

- Development
- Deployment
- Maintenance