Greg Moss

Working with Odoo 10

Second Edition

Configure, manage, and customize Odoo to build professional-level business applications





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Greg Moss



BIRMINGHAM - MUMBAI

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Greg is a Certified Information Systems Auditor (CISA), a Certified Six Sigma Black Belt, and was the Chief Information Officer for Crownline Boats, Inc. In addition to both Music and Computer Science studies at Southern Illinois University, Greg completed a BS in Business Administration and Information Systems from Walden University. Greg also has an Information Assurance Certification from Carnegie Melon University.

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In Greg's spare time he enjoys playing trumpet, saxophone, keyboard, and guitar with local bands and taking cross-country road trips with his African Grey Parrot, Bibi.

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Preface

Working with Odoo 10, Second Edition provides a comprehensive walkthrough for installing, configuring, and implementing Odoo in real-world business environments. This book will assist you in understanding the value of Enterprise Resource Planning (ERP) systems and best practice approaches for getting a system up and running in your organization. For those that are new to ERP systems, this book will serve as an introduction so that you will be better prepared for understanding more advanced ERP concepts. If you are already experienced in ERP systems this book will give you an overview of the primary applications for Odoo and how those applications can be used in a real business environment.

Odoo is a very feature filled business application framework with literally hundreds of applications and modules available. We have done our best in this book to cover the most essential features of the Odoo applications you are most likely to use in your business. Unfortunately, there are just not enough pages to cover more advanced topics. In the Appendix we have included additional resources you can look to for more advanced subjects.

After the book is released, be sure to check for online updates in which we can cover more advanced subjects.

Also, PACKT offers other Odoo books that cover more advanced Odoo topics:

What this book covers

The book is divided into three sections:

- 1. Installation of Odoo and the basics for implementing Odoo in your business (chapters 1 through 5)
- 2. Introduction to accounting and finance setup and modules to help your business run more efficiently (chapters 6 through 8)
- 3. Advanced configurations and customization of Odoo (chapters 9 through 15)
- 4. Comprehensive comparison between Odoo Community and Odoo Enterprise (chapter 16)

Now let's discuss in some detail what each chapter will cover:

Chapter 1, Setting Up Odoo 10, gets you started right away by showing how you can use online without any setup. Just open up your browser and you are ready to get going. Next the chapter goes on to cover the different installation types and prerequisites for both Windows and Ubuntu. Instruction is provided on finding the right download package and setting up Odoo on your own server. The chapter then goes into the basics for configuring Odoo. At the end of the chapter is a useful collection of tips on how to troubleshooting your Odoo installation.

Chapter 2, *Installing Your First Application*, begins by introducing you to the real-world case study that will be used as an example throughout the book. We continue by learning how to create the company database and configure the basic company settings required to quickly get your first Odoo system up and running. The first module, Sales Management, will be installed, and we will walk through the steps of entering a customer and a product. The chapter concludes by entering a sales order and completing the sale and producing an invoice.

Chapter 3, *Exploring Customer Relationship Management in Odoo 10*, starts with a basic overview of CRM systems and their importance in today's modern business environment. After we cover the installation of the CRM module, a lead is entered for our sample company. We will demonstrate CRM workflow by turning the lead into a customer. Next, a quote is generated for our newly acquired customer, and a call is scheduled for follow-up using Odoo's meeting functionality. We also cover the Open Chatter feature that is used throughout Odoo to provide notes and messages associated with Odoo documents.

Chapter 4, *Purchasing with Odoo*, shows us how to install the purchasing module, setup suppliers, and begin purchasing and receiving products in Odoo. Later in the chapter we learn how to tie purchasing into sales orders to automatically generate draft purchase orders based on your business requirements.

Chapter 5, *Making Goods with Manufacturing Resource Planning*, begins to explore some of the primary functionality of ERP systems for manufacturing operations. You will learn how to setup your manufacturing orders and define bill of materials to specify the raw materials that will go into your final products. Manufacturing operations can then be extended with routing and work centers to provide you more control in tracking time and resources.

Chapter 6, *Configuring Accounting Finance*, discusses the Accounts Receivable and Accounts Payable basic functions. Next we will introduce the chart of accounts and discover how to set up fiscal periods. This chapter will also include the basic accounting reports.

Chapter 7, Administering an Odoo Installation, begins by discussing overall considerations for implementing Odoo into a business environment. This includes advice on server configurations, documenting your processes, and the importance of considering business continuity. We then go into how to manage users, groups and setup security roles to manage access to various applications within Odoo. Finally we look how to implement Internationalization for multiple languages and currencies.

Chapter 8, *Implementing the Human Resources Application*, begins by installing the basic HR modules and going over the employee directory. Other topics in the chapter will include time-sheets, recruitment process, and leave management. At the end of the chapter we look at how to hire employees using the tools in Odoo.

Chapter 9, *Understanding Project Management*, covers the features of the Project Management module in Odoo. We will create a project, see how to enter tasks and tie a project to a specific customer. Next, team members are assigned to the project, and we configure task stages. We then will go over real-world examples of using the Project Management module to more easily manage complex orders and customer needs. Finally we see how Project Management can be used along with analytic accounting provide better reporting.

Chapter 10, *Creating Advanced Searches and Dashboards*, demonstrates how to utilize the advanced search features and configure custom dashboards in Odoo. By the end of the chapter, the reader with be able to create and save custom searches to re-use later as well as add search results to dashboards.

Chapter 11, *Building a Website with Odoo*, is dedicated to exploring Odoo's powerful new website building platform. At the beginning of the chapter we look at what a Content Management System (CMS) is and some of the other popular website building platforms. We follow along with Odoo's website building tutorial and then look at the features that can be used to promote your website right from within Odoo.

Chapter 12, *Implementing E-Commerce with Odoo*, builds on the previous website chapter by adding a fully functioning online shopping cart to the website. We see how to publish products to the website and the various options to change their appearance. Midway through the chapter we cover product variants that adds additional flexibility to how you manage your products within Odoo. Finally we conclude by examining how to setup a payment processor to take payment online through PayPal.

Chapter 13, *Customizing Odoo for Your Business*, explains how to enter developer mode for making a variety of custom changes to Odoo. We will walk through how to make a backup of the Odoo database and how to restore that database using the manage database tools in Odoo. Next, we will go step-by-step on how to customize Odoo by adding fields to the database and ultimately to your forms and views.

Chapter 14, *Modifying Documents and Reports*, goes over the basic reporting options that allow you to change the footer and access the QWeb source for your internal and external reports. Next we see how to modify existing reports in Odoo.

Chapter 15, *Discovering Custom Odoo Modules*, introduces the process of developing custom solutions in Odoo. We build on what we have learned in customizing Odoo and create a module that will persist our custom field and views within our module. You will then learn how to create a simple web page that accesses the Odoo framework. Finally we go over the basics of how to utilize the Odoo API

Chapter 16, Comparative Analysis of Community vs Enterprise Edition, explains the primary differences between Odoo Community and Odoo Enterprise. Moving further we take a look at the powerful dynamic accounting reports as well as the bank account integration. Next, we examined the sales application and studied how Odoo Enterprise offers VoIP integration as well as a subscriptions application. Finally, we will learn about Odoo's new manufacturing applications that are only available in the Enterprise edition.

Appendix, *Locating additional Odoo resources*, includes a list of resources that can extend your knowledge in supporting an Odoo installation

What you need for this book

You should have Odoo version 10 installed on your system. It can be downloaded from the following link https://github.com/odoo/odoo.

Most often it is installed in VMware or on in the cloud like AWS.

- 1. Chapter 1, *Setting up Odoo 10*, in the book provides the basic Odoo Installation for both Windows and Ubuntu
- 2. Odoo now provides quality documentation on how to install Odoo on a variety of platforms: https://www.odoo.com/documentation/10.0/setup/install.htm l

Once Odoo is installed, no other software installation is required throughout the book.

To get the most out of this book you should understand basic business operations. For example, you should know the purpose of a sales order and a purchase order. The reader should also have basic computer skills for understanding file systems and installing software. For more advanced customization topics in the book, the reader should have a basic knowledge of databases and programming concepts.

Who this book is for

This book is for everyone who is interested in implementing an ERP system in a business organization. If you are an IT professional looking to get a functional understanding of Odoo, then this book is for you. This book is also appropriate for business and operations managers who wish to get a comprehensive understanding of Odoo and how it can be used to improve business processes.

Conventions

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

Code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles are shown as follows: "We will now look at the Odoo configuration file so we can find the directory for our Odoo installation and modify the addons_path to contain our new directory."

A block of code is set as follows:

```
{
    'name': 'Screen Printing',
    'version': '1.0',
    'description': """
    This module adds functionality for screen printing companies
    """,
    'author': 'Greg Moss',
    'depends': ['base','sale'],
    'data': ['silkworm_view.xml'],
    'demo': [],
    'installable': True,
    'auto_install': False,
}
```

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

sudo nano /etc/odoo/odoo.conf

New terms and **important words** are shown in bold. Words that you see on the screen, for example, in menus or dialog boxes, appear in the text like this: "For our example, let's go ahead and install the **CRM** application by clicking on the **CRM** button."

Warnings or important notes appear in a box like this.



Tips and tricks appear like this.

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L Setting Up Odoo 10

Odoo is a powerful set of open source business applications built on the OpenObject framework. When you first install Odoo, the only functionality you will have is limited messaging options between users. From there, Odoo allows you to install the modules you need, as you need them. This flexibility makes Odoo much more accessible than many business software solutions.

In this chapter, we will get started working with Odoo by covering the installation and the basics of setting up an Odoo database.

The topics we will cover include:

- Exploring Odoo Online
- Setting up a trial company
- Installing Odoo on Windows and Ubuntu
- Troubleshooting and configuring your installation

Community and Enterprise Editions of Odoo

Beginning with Odoo 9, Odoo SA started releasing two versions of Odoo; a **Community Edition** and an **Enterprise Edition**. The Community Edition is free, open source, and primarily supported by the Odoo community. Odoo Enterprise, while also open source, requires a license based on the number of users. More recently, Odoo pricing for the Enterprise version varies depending on region.

Odoo Enterprise offers an alternative (arguably better) user interface. Additionally, there is better functionality in some applications as well as support by SA, and perhaps most critical of all, migration to the new releases of Odoo. More information on the differences between Odoo Community Edition and Odoo Enterprise Edition is available in the Odoo Enterprise Chapter 16, *Comparative Analysis of Community vs Enterprise Edition*.

This book primarily targets the Community Edition of Odoo.

Getting started with Odoo Online

Not long ago, nearly all companies kept their primary information systems in-house. This approach requires, not only a lot of capital expense in purchasing servers and software licenses, but also creates a lot of responsibility and risk in backing up data and ensuring business continuity. Today, more and more companies are choosing to host their business applications in online networks commonly called the cloud. Odoo allows you the flexibility of both options–either hosting on your own hardware, or utilizing Odoo's online software services.

Taking advantage of Odoo online instant access

The best thing about accessing Odoo online is that you can jump in and start using the software right away. You don't have to decide what operating system to use. You don't have to install any software at all. Just enter the URL into your web browser and you are ready to get started.

Another added benefit of taking this approach is, you will verify that your web browser is up-to-date and compatible with the latest version of Odoo. So even if you intend to install Odoo on your own hardware, it is still worth taking a minute to test out the online trial version of Odoo. Expect to put a great deal of time into determining which Odoo applications are right for your company.

Taking a few hours to use the Odoo online version is time well spent and you can put off installing Odoo until you are more certain it is the right software for your business.



Use the Odoo trial edition to verify browser compatibility with any older machines.

Odoo browser requirements

Odoo is designed to run on a variety of modern web browsers. Supported browsers include:

- Google Chrome (recommended)
- Firefox
- Internet Explorer
- Safari



Macintosh users will need to make sure they are running **Mac OS X** or above. Users running older Macintosh systems are currently having difficulties running Odoo version 7. Also, in my experience, Google Chrome tends to offer the best experience in working with Odoo. Firefox is also often recommended by others in the Odoo community.

Odoo mobile phone and tablet support

Beginning with Odoo 8, Odoo includes native support for mobile phones and tablets. This has been further improved in Odoo 10. Menus are designed to flow and format properly. The new website application even includes a preview within the portal administration to emulate how the site would appear on a mobile phone. While you still suffer many of the limitations that come with a small screen size, the applications are functional and make it even easier for developers to create mobile Odoo applications.

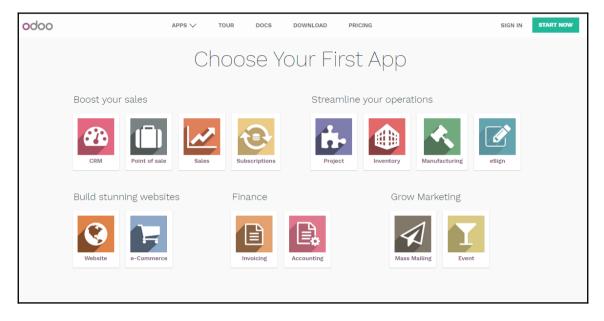
Odoo's mobile application support covers both the Android and Apple iOS platforms. Make sure, however, that for any processes you intend to implement for your business, you test all processes thoroughly for both desktop and any mobile solutions. The smaller screen sizes might make some data unreadable or very awkward to work with.

Accessing the Odoo free online trial

Accessing the online trial version of Odoo online could not be simpler. Just open up your browser and navigate to https://www.odoo.com/trial.



Please be aware that Odoo online's trial is the Enterprise Edition of Odoo. While very similar to the Community Edition, the interface will be slightly different. You will then be prompted to choose one of Odoo's primary business applications as shown in the following screenshot:



Don't worry, you can add more applications later.

Clicking on the appropriate button for the application immediately begins installing your own unique Odoo instance.

For our example, let's go ahead and install the **CRM** application by clicking on the **CRM** button:

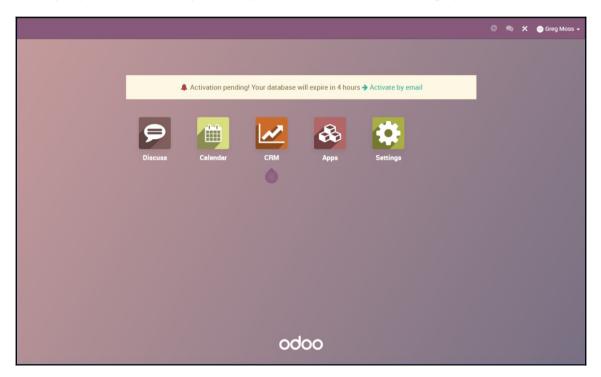


Next you will be taken to a simple sign up page:

Odoo Online Sul Instant access.	bscription	
Name		
Email		
Company Name	Phone Number	
Country	Language	
United States •	English	•
Company size	Primary Interest	
		•
Start Now		

After filling out the form, simply click **Start Now**. Be patient as it can take thirty seconds or longer for the servers to build the database and bring up the starting page. When the installation is complete, Odoo automatically signs you in so you can begin trying out the software. The goal of this approach is to get users to directly start using the software right away and avoid having to fill out lengthy forms or create logins and passwords to begin using the software.

It really is just one click and you have your own version of Odoo to play with:



The screen now contains the Odoo dashboard for the Enterprise Edition. Please be aware that this will look a lot different to the Community Edition of Odoo even though they are very similar in terms of functionality.

We will discuss the CRM application in detail in Chapter 3, Exploring Customer Relationship Management in Odoo 10.

Take a few minutes to look around in Odoo to get familiar with the interface. You don't have to worry about breaking anything or doing anything wrong. If you run into problems or get confused, just close your web browser and try again.



This is a demonstration and will only last for one four-hour session. If you close your browser, you will lose your setup and have to start over again.

Continuing to use the trial version of Odoo

At the very top of the Odoo application, just under the address bar in the browser, you will see a message that informs you of how much longer your trial version of Odoo will run before you need to register. Also, remember that it is possible to lose this instance of Odoo before the time runs out:



Clicking on the **Activate by email** link will send an e-mail to the e-mail address that you have filled out with a link to activate your Odoo database. Currently, Odoo lets you use Odoo for free as long as you only install one application.



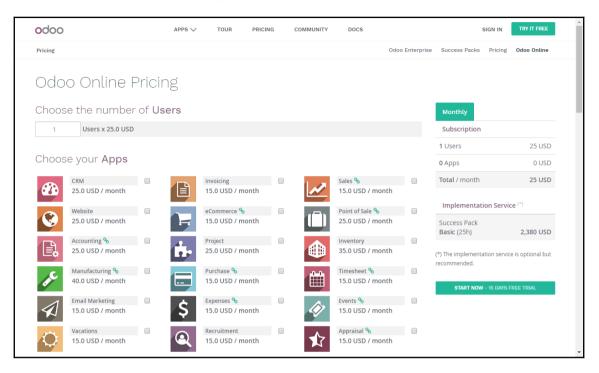
Odoo SA has experimented quite a bit with different trial terms so do not be surprised if the trial options are slightly different by the time you are reading this.

Subscribing to Odoo

You can use one Odoo application for free without subscribing. If you wish to install more applications (as you likely will), you must subscribe to Odoo in order to keep using their enterprise cloud hosted version of the software. The first two users of Odoo are free indefinitely.

This means you can sign up and continue using Odoo with just two users without having to pay any monthly fees. For additional users, the current pricing is \$25 per month, per user at the time of writing. Each application you use will also incur a monthly cost depending upon the specific application.

Below is the Odoo Online Pricing calculator in December 2016 in the United States:



You can locate the Odoo Online Pricing page at: https://www.odoo.com/pricing-online.



Odoo Online is priced for employees that use the applications. You are not charged for customers or suppliers that access Odoo through the web portal.

Depending on your requirements, an Odoo subscription might be a good decision. Installing and maintaining an Odoo installation takes a degree of expertise and has risks for production systems. You must maintain adequate disaster recovery procedures in case of server crashes or hard drive failures. There are also complexities in applying bug fixes and migrating to newer versions of Odoo. This book will help you with many of these tasks. Yet, it can be quite convenient to have an Odoo subscription so you can focus on the functional, rather than the technical, aspects of working with Odoo.

Using Odoo without subscription fees

If you choose not to pay the subscription fee, do not fear! The remainder of this chapter will assist you with installing Odoo on your own hardware.

Getting to know the Odoo architecture

Setting up and managing an Odoo installation will require a basic understanding of the components that make up Odoo. Every business system has a set of technologies and underlying software platforms that are required for the system to function. Fortunately, unless you plan to customize Odoo, you only need to understand the very basics of the Odoo architecture to complete a successful installation.



In this book, we provide a basic overview of the Odoo architecture. If you wish to get more detailed documentation on the Odoo architecture and technical documentation visit https://www.odoo.com/documentation/10.0/.

Introducing the PostgreSQL database

Like most ERP systems, Odoo has specific database requirements. In this case, it is PostgreSQL. PostgreSQL is an open source, cross-platform **Object Relational Database Management System (ORDMS)**. While not popular on the scale of Microsoft SQL Server or MySQL, PostgreSQL is an enterprise-class database server with many advanced features. In fact, PostgreSQL stacks up very well against far more expensive databases such as Microsoft SQL Server and Oracle database.

PostgreSQL runs on every major operating system. For most Odoo installations, Ubuntu is the operating system of choice. However, PostgreSQL will also run quite well under other versions of Linux, Microsoft Windows, and even Mac OS X.

You can learn more about PostgreSQL at: http://www.postgresql.org/.

Writing code with Python

The primary programming language of Odoo is Python. Like the other technologies underlying Odoo, the Python language is open source and runs on all the major contemporary operating systems. It is an extremely popular programming language which makes it very easy to find resources to help you get started.

You can learn more about the Python programming language at: http://python.org/.

Following the Model-View-Controller design

Odoo is built upon a **Model-View-Controller** (**MVC**) architecture. One of the primary goals of this architecture is to separate the visual display of the information from the business rules and management of the underlying data. For example, if you need to change the way data is organized in the model, it is desirable not to have to make dramatic changes to how you view the data. This is true for maintaining flexibility in viewing data. Today, it is common to have many different client applications sharing the same underlying data.

Designing models

The model essentially is the data that makes up your Odoo installation, which is stored in the PostgreSQL database. Odoo is unique, in that, database structures are typically defined by the Odoo modules at the time they are installed. The Odoo framework takes the model definitions and automatically creates the necessary table structures inside of the PostgreSQL database. Furthermore, a web interface in Odoo allows administrators to easily extend the Odoo data model in a variety of ways without having to modify the Odoo source code.

Rendering views

Each view in Odoo is defined in XML documents. The Odoo framework is responsible for rendering these view files in a web browser. Alternative views can be built to render Odoo functionality upon other platforms such as mobile devices.

Authoring controllers

The controller component of the architecture is where the business logic and workflow rules of the Odoo application are applied. The controller components in Odoo are written in Python code and stored as objects in Odoo modules.

Choosing your installation operating system

In this section, we will discuss some of the advantages and disadvantages of choosing Ubuntu or Windows for your first Odoo installation.

Choosing a Microsoft Windows Odoo installation

For the most part, Ubuntu has been the platform of choice for most Odoo installations. However, there are some reasons why you might choose to run Odoo under a Windows installation.

Some of you, after buying this book, might have already jumped ahead and installed Odoo on their Microsoft Windows computer. So, for you go-getters, that working installation of Odoo might function just fine for researching and testing its features. Often the Windows all-in-one installer provides a simple method to get Odoo up and running in a snap on your hardware. Basically, you do not have to install a new operating system.

Learning Ubuntu is not required

If you are familiar with Windows and have no Ubuntu experience, you might get going a little faster by sticking with a Windows install for your first setup. Downloading and installing modules and making changes to configuration files will be much easier if you are familiar with the operating system.

Introducing Ubuntu

While Microsoft Windows does not really need an introduction, it is probably worth giving a brief introduction to Ubuntu. In short, Ubuntu (pronounced oo-BOON-too) is a very popular open source operating system based on the Linux kernel. It has enjoyed increasing popularity because it is easy to install and very stable. Ubuntu can be installed either as a server operating system without a graphical interface or as a desktop operating system with a graphical interface that closely resembles Windows.

You can learn more about the Ubuntu operating system and why it is so popular at: http://www.ubuntu.com/.

Choosing an Ubuntu Odoo installation

It is generally accepted that Ubuntu is the recommended operating system for running a production installation of Odoo. There are several reasons why this is true:

- **Ubuntu is the primary target platform**: While Odoo is released for Windows and still well-supported, the Ubuntu installation continues to be favored. The development team for Odoo works primarily with Ubuntu for bug fixes and platform releases. It can be expected that for the most part, Odoo development will be optimized around Ubuntu, not Windows or Mac.
- **Ubuntu is open source**: Installing Odoo on any Windows operating system is going to require a license from Microsoft. While using Odoo on your Windows PC or Mac is a viable and perhaps desirable solution for testing and development, it is unlikely you will want to run Odoo on a Windows desktop system for any production environment. Why? Well, this requires Windows Server, which has much higher license costs than desktop editions. With an Ubuntu installation, you get an entirely open source and virtually cost-free solution.
- **Ubuntu has additional scalability options**: It is possible to configure a more scalable solution under Ubuntu than what you can currently configure under Microsoft Windows Server.
- **Ubuntu has strong community support for Odoo**: The fact is that a vast majority of the production installations of Odoo are running under Ubuntu. When you run into trouble or management issues with your Odoo installation, you may find it easier to get assistance if you are running an Ubuntu installation.

Choosing another OS option for Odoo

Although this book will focus on Windows and Ubuntu installations, you do have several other options. In the past, Odoo has been deployed under a variety of Linux distributions and even the Mac OS. There are also many community members actively developing client frontends for mobile platforms such as Google's Android OS.

Understanding Odoo releases

When deploying an Odoo system, it is important to understand the various Odoo versions as well as the release and upgrade policies. There is currently one major release for versions 8.0, 9.0, and 10.0 as well as a master branch, that is the latest development version, which will soon become Odoo Version 11.0. The stable versions are the standard support versions

of Odoo, and typically, the ones you should choose to install for most situations. The master version is the development version and will often contain bugs and unfinished features. This is primarily downloaded by developers or those who wish to get a look at the latest features.

Upgrading Odoo

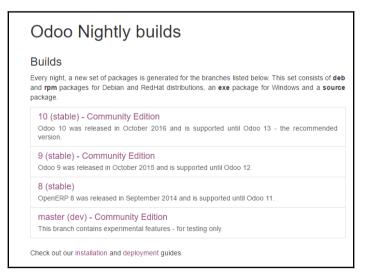
The goal of the Odoo development team is to release two stable version upgrades each year. Odoo further labels some stable versions as **Long Term Support (LTS)** versions. These releases are supported by Odoo for those that have an Odoo Enterprise support contract. For any production environment, it is smart to choose an LTS version. Most importantly, installing an LTS release of Odoo will make bug fixes and patches much easier to implement.



At the time of writing this, the most recent stable LTS version is version 10.0.

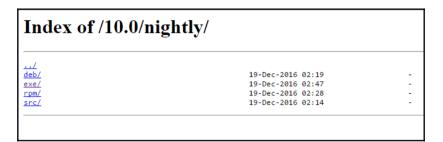
Installing Odoo on Windows OS

We begin our installation by locating the packages that are currently available to install. You can find the current list at: http://nightly.odoo.com/.



The preceding screenshot is the **Odoo Nightly builds** page that is the jumping off point for downloading the source files for installation.

The examples and case studies in this book use Odoo 10.0. This means you should select the 10.0 (stable) version of Odoo to download. You can navigate directly to the Odoo 10.0 downloads here: http://nightly.odoo.com/10.0/nightly/.





It is entirely possible that Odoo will change the URL as new versions are released. To best follow the examples in this book, download a 10.x installation of Odoo.

Windows installations use the EXE packages. Click on the exe directory to get the list of downloads that are available.

Naturally, the specific download packages are going to change on a nightly basis.

The latest version of the stable LTS release will contain the most current Odoo build with bug fixes included and will appear at the bottom of the list. By the way, the upload dates you'll see are in **Coordinated Universal Time (UTC)** and therefore, might be many hours ahead of your time zone, especially if you live in the Western Hemisphere.

Click the latest EXE file to download the latest build to your computer.

Performing an all-in-one Odoo installation on Windows

Installing Odoo using the all-in-one package is very simple. After the package has finished downloading, double-click on the exe file to begin the installation wizard.

The first screen will prompt you to select the language for your install.