Community Experience Distilled

Working with Odoo

Learn how to use Odoo, a resourceful, open source business application platform designed to transform and modernize your business

Greg Moss

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About the Author

Greg Moss has been a business and information systems consultant for over 25 years. Starting in 1988, Greg began to work extensively on financial and accounting-related applications. He wrote his first custom billing system for a rehabilitation facility at the age of 20. He has worked extensively in the healthcare, point of sale, manufacturing, telecommunications, and service sectors.

Greg is a Certified Information Systems Auditor (CISA) and a Certified Six Sigma Black Belt and was the chief information officer for Crownline Boats, Inc. In addition to studying music and computer science at Southern Illinois University, he completed a BS in business administration and information systems at Walden University. Greg also has an information assurance certification from Carnegie Mellon University.

In addition to Odoo, he has experience in a variety of ERP systems and was a Sage Pro partner for several years. Greg is the CEO of First Class Ventures, LLC and the owner of FirstClassComputerConsulting.com (`http://firstclasscomputerconsulting.com/`) and OdooClass.com (`http://www.odooclass.com/`). He is also an Odoo Ready Partner.

In 2014, Greg started a game studio called FirstClassGameStudios.com (`http://firstclassgamestudios.com/`) and designed and developed *NeuroMage*, a game that utilizes an inexpensive research-grade EEG headset to allow you to learn spells in the game using only your mind. *NeuroMage* was first demonstrated at the Neurogaming conference in 2014. As a result, Greg has become a recognized leader in Neurogaming and is humbled to be on an expert panel at the Neurogaming conference in 2015.

Greg is an experienced stock and options trader and has recently started dabbling in currency trading. In his spare time, he enjoys playing trumpet and saxophone with local bands and taking cross-country road trips with his African grey parrot, Bibi.

Acknowledgments

I would like to thank my wonderful wife, Kelly, for all her love and support; my brother, Eric, for his kindness and generosity and for always being there when someone needs him; and my mom, a lifelong public school teacher who never hesitated to support me in anything that involved learning or creativity.

Many thanks to the great team at Silkworm for being the absolute best.

Also, many thanks to all the reviewers, the great people at Packt Publishing, and the Odoo community for all their support.

About the Reviewers

Robert Baumgartner earned a degree in business informatics from Austria, Europe, where he is living today. He began his career in 2002 as a business intelligence consultant working for different service companies. After that, he worked in the paper industry sector as a consultant and project manager for an Enterprise Resource Planning (ERP) system. In 2009, he founded his own company, datenpol gmbh—a service integrator specialist in selected open source software products focusing on ERP and data warehousing. Robert is an open source enthusiast who has given several speeches at open source events. The products he is working on are Odoo, Talend Data Integration, Saiku, and JasperReports. He contributes to the open source community by sharing his knowledge with blog entries on the company website at `http://datenpol.at/`. He commits software to GitHub, such as the OpenERP Talend Connector component, which can be found at `https://github.com/baumgaro`. His Odoo contributions can be found at `https://github.com/datenpol` and the Odoo Community Association at `https://github.com/OCA`. You can follow him on Twitter at `@baumgaro`.

Bruce Letterle is an IT industry veteran with over 30 years of experience running system integration firms and web development agencies. Currently, he is the managing director and founder of Red Lab Media, a digital agency providing web development, hosting, and marketing services.

He has been a reviewer on *trixbox CE 2.6*, *Kerry Garrison*, *Packt Publishing*.

Alan Lord has nearly 30 years of experience in the IT industry. He has worked for start-ups that were some of the pioneers of the early Internet (and before!) through to global telecommunication giants.

For the last 15 years or so, Alan has been building and running Linux systems both for business and pleasure. In 2006, he cofounded the open source consulting company Libertus Solutions (`http://libertus.co.uk/`) to offer expertise, help, and advice on free software to businesses, the public sector, and charity organizations alike.

As well as being a business-minded free software evangelist, Alan's areas of expertise include Ubuntu Linux and several popular open source business applications including Odoo and vtiger CRM.

This is the second book that Alan has reviewed for Packt Publishing, the first being *vtiger CRM Beginner's Guide*, published in July 2011.

Alan occasionally writes blogs at `http://www.theopensourcerer.com/` and can easily be found on various social media networks.

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Preface

Working with Odoo provides a comprehensive walk-through for installing, configuring, and implementing Odoo in real-world business environments. This book will help you to understand the value of Enterprise Resource Planning (ERP) systems and the best practices and approaches for getting a system up and running in your organization. For those who are new to ERP systems, this book will serve as an introduction so that you will be better prepared to understand 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. Silkworm, Inc. is a highly respected custom apparel, promotional products, and graphic design company in the Midwest, United States. Silkworm has been serving its customers, team members, and community for more than 30 years. Silkworm has been kind enough to allow us to include some basic aspects of their business processes as a set of real-world examples on implementing Odoo into a manufacturing operation. While the examples in this book are extremely simplified, using real-life examples will assist in understanding how to utilize Odoo to solve real-world business problems.

Although Silkworm is actively implementing Odoo, Silkworm, Inc. does not directly endorse or recommend Odoo for any specific business solution. Every company must carry out their own research to determine if Odoo is a good fit for their operation.

We have done our best in this book to cover the most essential features of the Odoo applications that you are most likely to use in your business. Unfortunately, there are just not enough pages to cover more advanced topics. In *Appendix*, *Locating Additional Odoo Resources*, we have included additional resources that 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 Publishing offers other Odoo books that cover more advanced Odoo topics.

What this book covers

The book is divided into three sections:

- The installation of Odoo and the basics of implementing Odoo in your business (chapters 1 through 5)
- An introduction to accounting and finance setup and modules to help your business run more efficiently (chapters 6 through 8)
- Advanced configuration and customization of Odoo (chapters 9 through 13)

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

Chapter 1, *Setting Up Odoo*, gets you started right away by showing you how to use Odoo online without any setup. Just open 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. Instructions are provided to find the right download package and set up Odoo on your own server. The chapter then goes into the basics of configuring Odoo. At the end of the chapter is a useful collection of tips on how to troubleshoot 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 showing you 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 to enter 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*, 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 application, a lead is entered for our sample company. We will demonstrate the 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 by using Odoo's meeting functionality. We also cover the OpenChatter 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 application, set up suppliers, and begin purchasing and receiving products in Odoo. Later in the chapter, you 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 functionalities of ERP systems for manufacturing operations. You will learn how to set up your manufacturing orders and define the 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 give you more control over 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 and how to close a period.

Chapter 7, *Administering an Odoo Installation*, begins by discussing the 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 set up security roles to manage access to various applications within Odoo. Finally, we look at how to implement Internationalization for multiple languages and currencies.

Chapter 8, *Implementing the Human Resources Application*, begins by installing the basic HR applications and goes over the employee directory. Other topics in the chapter will include timesheets, the recruitment process, and leave management. At the end of the chapter, we will look at how to create online interviews and hire employees using the tools in Odoo.

Chapter 9, *Understanding Project Management*, covers the features of the Project Management application 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 application to more easily manage complex orders and customer needs. Finally, we see how Project Management can be used along with analytic accounting to 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, you will be able to create and save custom searches to reuse 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 will look at what a CMS (Content Management System) 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 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 add additional flexibility to how you manage your products within Odoo. Finally, we conclude by examining how to set up a payment processor to take payment online through PayPal.

Chapter 13, *Customizing Odoo for Your Business*, explains how to enter the developer mode for making a variety of custom changes to Odoo. We will walk through the steps to add fields to the sales order form and then include the fields in tree views for sorting and reporting. From here, we will get into advanced configuration topics to better customize Odoo for your specific business requirements.

Chapter 14, *Modifying Documents and Reports*, goes over the basic reporting mechanisms available in Odoo and weighs up the advantages and disadvantages of the various options. We learn how to use the powerful qWeb template language to modify the default Odoo sales order form.

Chapter 15, *Understanding Workflows*, introduces the workflow editor and analyzes the basic sales order workflow. Using our case study example, the workflow is modified to improve the flow of information through the business. By the end of the chapter, you should have a basic understanding of modifying workflows to better handle unique business processes.

Chapter 16, *Discovering Custom Odoo Modules*, introduces the process of developing custom solutions in Odoo. We build on what we learned in *Chapter 13*, *Customizing Odoo for Your Business* and create a module that will persist our custom field and views within our module. Next, we build on the workflow modifications we made in the previous chapter and upgrade our module to approve art designs for our real-world example.

Appendix, *Locating Additional Odoo Resources*, covers 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 8 installed on your system. It can be downloaded from `https://github.com/odoo/odoo`.

Most often, it is installed in VMware or on a cloud such as AWS.

Chapter 1, *Setting Up Odoo*, provides the basic Odoo installation for both Windows and Ubuntu.

Many people use this guide for a more manual Odoo installation `http://www.theopensourcerer.com/2014/09/how-to-install-openerp-odoo-8-on-ubuntu-server-14-04-lts/`.

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

To get the most out of this book, you should have an understanding of basic business operations. For example, you should know the purpose of a sales order and a purchase order. You should also have basic computer skills to understand file systems and how to install software. For more advanced customization topics in the book, you 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 want to get a comprehensive understanding of Odoo and know 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 then copy the `state` column from `sale.py` and paste it into our module."

A block of code is set as follows:

```
from osv import osv, fields


class silkworm_sale_order(osv.Model):
    _inherit = 'sale.order'

    _columns = {
        'x_daterequired': fields.date('Date Required'),
        'x_rush': fields.boolean('Rush Order'),
       }
```

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: "Click on the **Install** button to begin the installation process."

Warnings or important notes appear in a box like this.

Tips and tricks appear like this.

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1
Setting Up Odoo

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:

- Using the free two-user edition of Odoo
- Setting up a trial company
- Installing Odoo on Windows and Ubuntu
- Troubleshooting and configuring your installation

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 known as 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

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 that 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 free 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

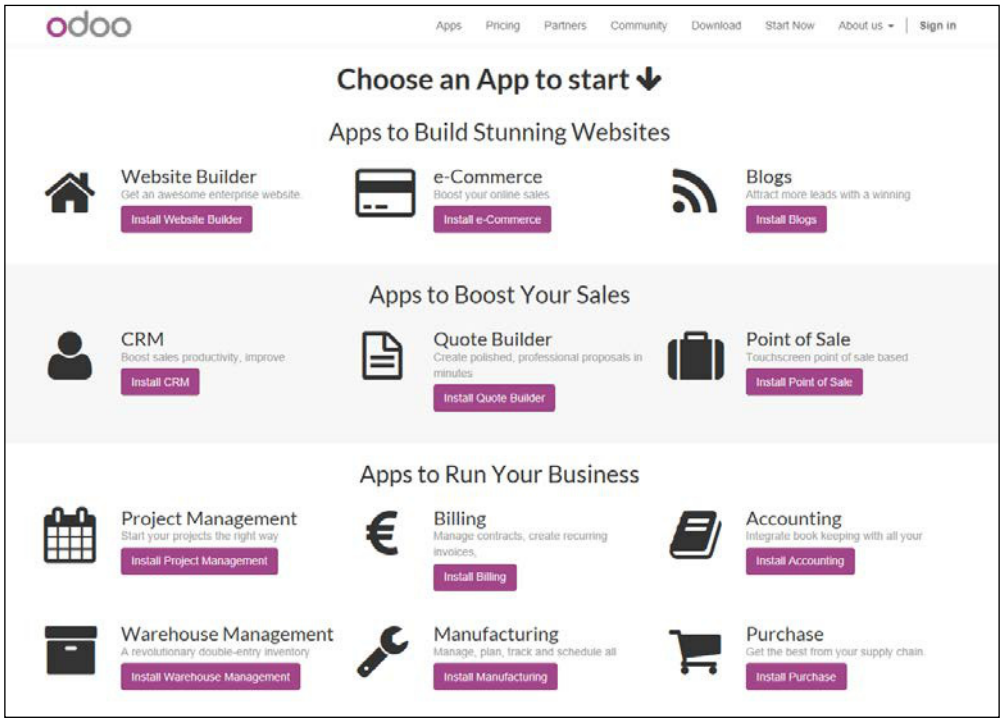
Beginning with Odoo 8, Odoo has native support for mobile phones and tablets. Menus are designed to flow and format properly. The new website application even includes a preview within the portal administration to emulate how the site would appear on a mobile phone. While you still suffer many of the 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. Smaller screen sizes might make some data unreadable or very awkward to work with.

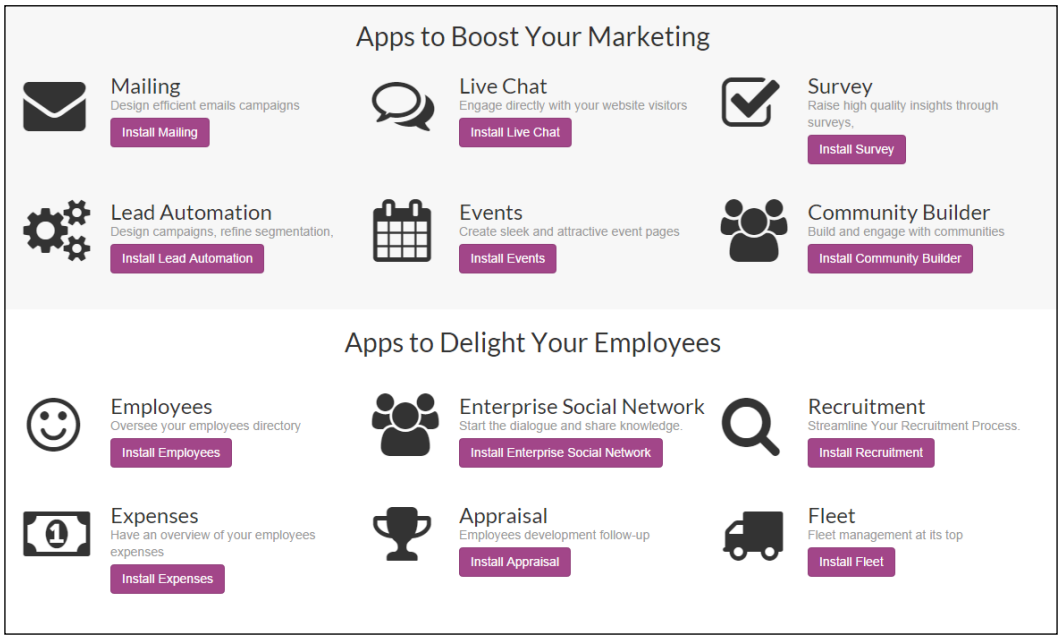
Accessing the Odoo free online trial

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

You will then be prompted to choose one of more than 20 business applications, as shown in the following screenshot:

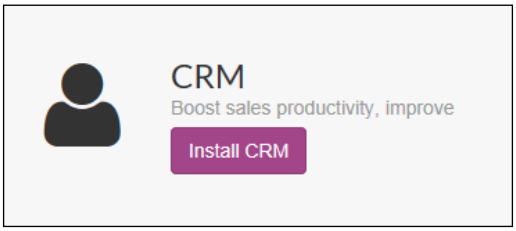


Don't worry, you can add more applications later:

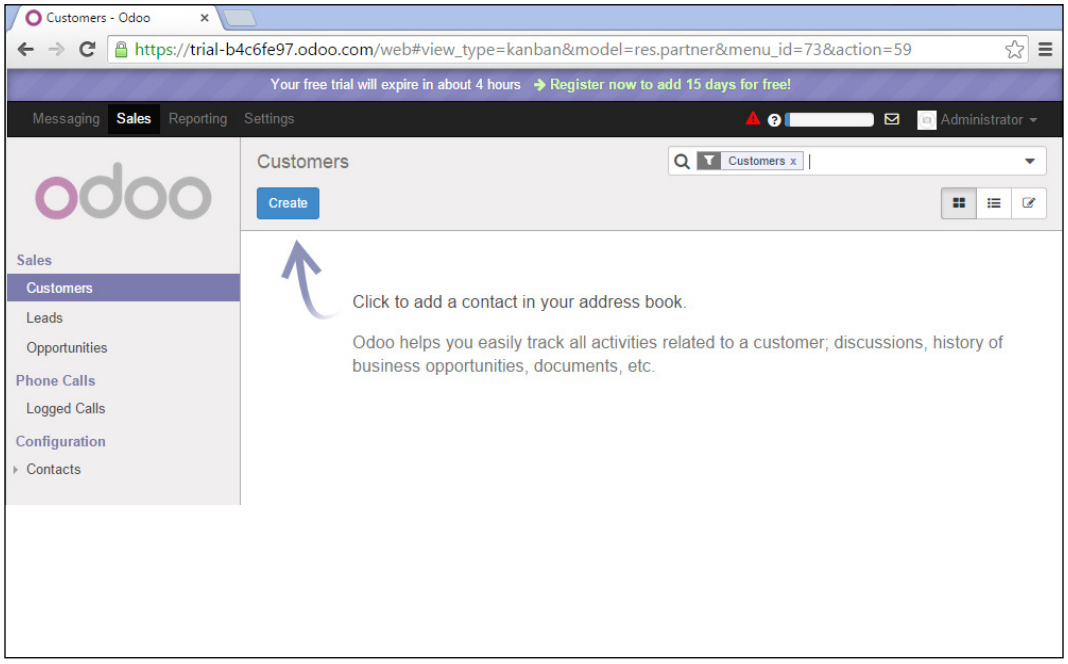


Clicking on the appropriate button for the application immediately begins installing your own unique Odoo instance.

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



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.



In the preceding screenshot, you can see the screen that appears after installing the CRM application. With it, you can manage your customers, leads, and opportunities. We will discuss the CRM application in detail in *Chapter 3, Exploring Customer Relationship Management in Odoo*.

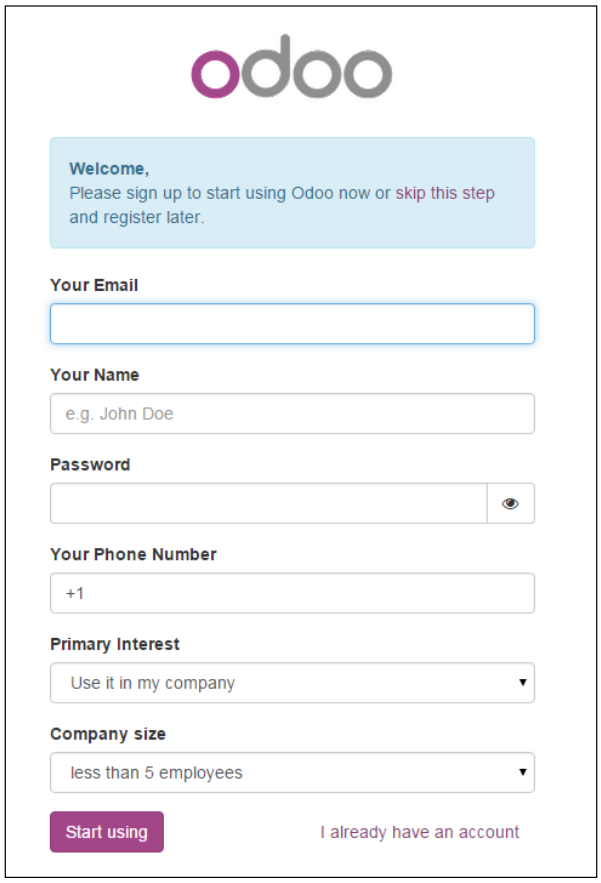
Take a few minutes to look around in Odoo to get familiar with the interface. You don't have to worry about breaking anything or doing anything wrong. If you run into problems or get confused, just close your web browser and try again.

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 about 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 message will take you to the typical standard signup form to provide your name, e-mail, and other information to register your trial version of Odoo:



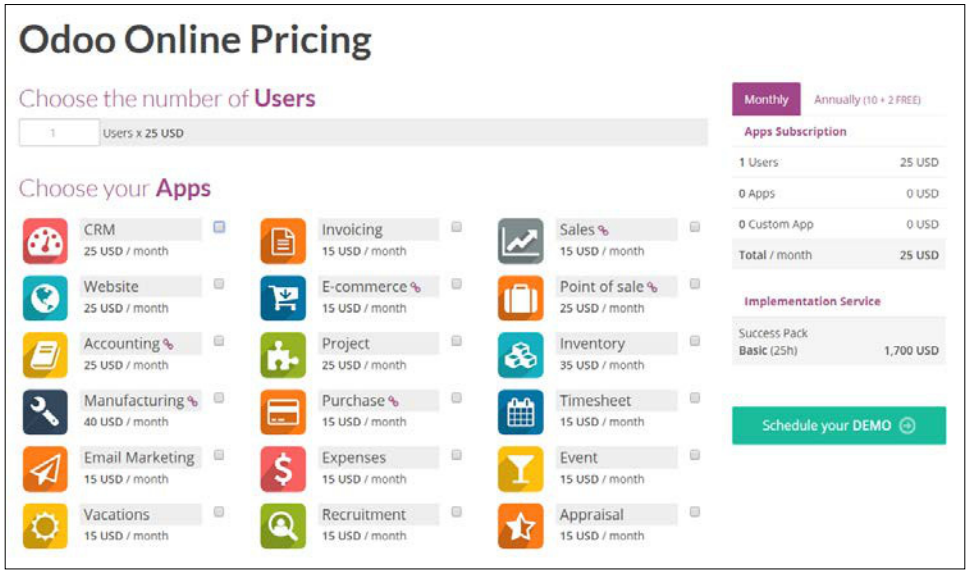
After you have filled out the form and clicked on **Start using**, the Odoo application will once again reload. Now, you will see in the top-right-hand corner that you are logged in under the name you provided in the signup form. Also, you will see at the top, a countdown of how many days are remaining in your trial version.

Subscribing to Odoo

For 15 days, you can use Odoo for free without subscribing. Once your 15 days run out, 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 that you use also will incur a monthly cost depending upon the specific application.

The following screenshot is the Odoo Online Pricing calculator in July of 2015:



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.

To subscribe to Odoo online and continue using Odoo past the 15 day trial period, click on the **Subscribe to keep it running** link at the top of the page:

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, visit `https://doc.Odoo.com/trunk/server/02_architecture/`.

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 is essentially 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 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 who bought 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 instantly 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 of 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 on the Macintosh 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 6.0, 7.0, and 8.0, as well as a master branch that is the latest development version which will soon become Odoo Version 9.0. The stable versions are the standard support version of Odoo and, typically, the one 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.

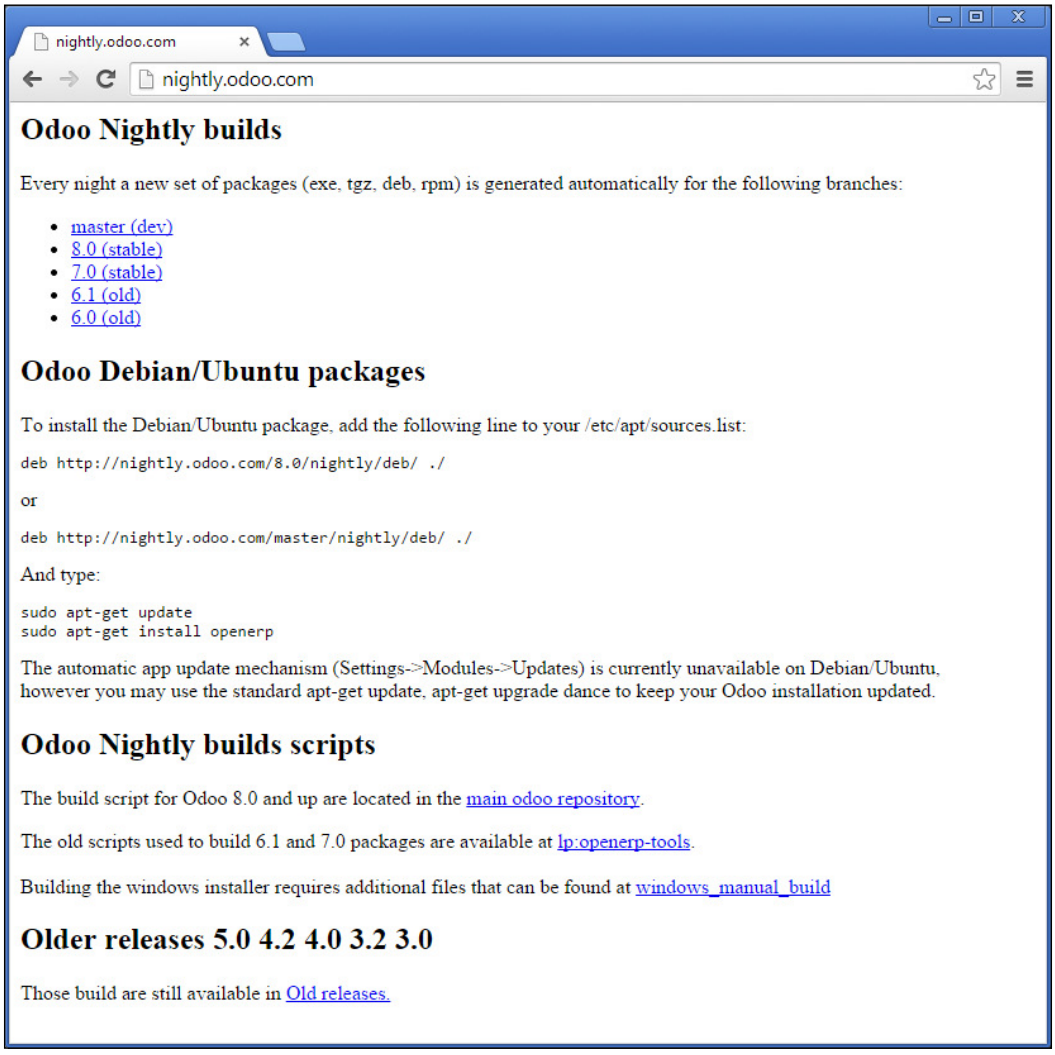
Upgrading Odoo

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 8.0.

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/`.



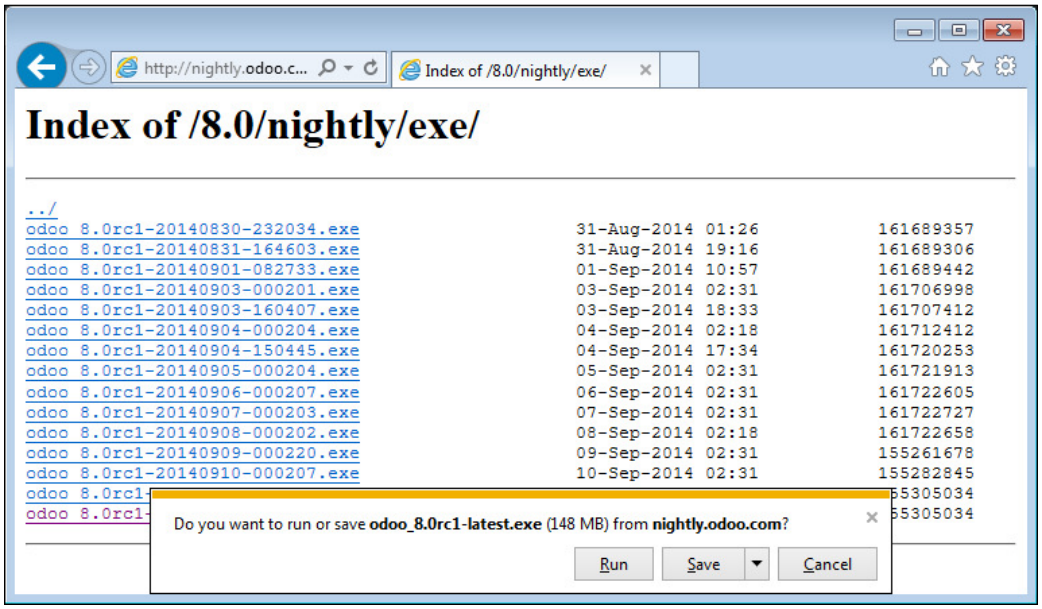
The preceding screenshot is the **Odoo Nightly builds** page that is the jumping off point for downloading the source files for installation.

The examples and case studies in this book use Odoo 8.0. This means you should select the 8.0 LTS (stable) version of Odoo to download. You can navigate directly to the 8.0 Odoo downloads here `http://nightly.odoo.com/8.0/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 an 8.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 built 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.

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 installation.

After you have selected the language and clicked on **OK**, the wizard will continue with the installation. From here, everything will continue like a normal Windows installation.

I highly recommend that you choose the **Custom** install, so you can select the directory for installation. The default directory name contains the lengthy build number making it rather difficult to work with in the command prompt.

Configuring Postgres on Windows

During the installation, you will be asked to provide information for the PostgreSQL connection.

It is recommended that you change the username and password for security purposes. These values will be written into the Odoo configuration file. The username and password provided will be the administration credentials for the PostgreSQL database, so be sure to remember them.

After the wizard is complete, if you leave **Start Odoo** checked and then click on **Finish**, Odoo should open up in your default browser.

If Odoo fails to launch, you can look at the *Troubleshooting Odoo Installations* section later in this chapter for solutions to some of the problems commonly encountered during installation.

Installing Odoo on Ubuntu

This book will walk you through the installation procedure for Odoo on Ubuntu using the latest all-in-one nightly package. Depending on your Ubuntu installation and how you want to work with Odoo, there are alternative installation methods.

At the time of this writing, Odoo is most commonly installed on Ubuntu Version 14.04.

Modifying the sources.list file

Installing Odoo on Ubuntu is easy when you use the Debian repository. You can use any standard text editor, such as Nano, to modify the `/etc/apt/sources.list` file and add the following line:

```
deb http://nightly.Odoo.com/8.0/nightly/deb/ ./
```

This installs the package.

After saving `sources.list`, you can start the installation process by entering these commands into a terminal window:

```
sudo apt-get update
sudo apt-get install openerp
```

The Odoo packages will be first downloaded and then installed. This is an all-in-one installation and should set up all the necessary packages, PostgreSQL, and library dependencies required to run Odoo.

Take note that the installation itself still uses `openerp`, instead of the new `odoo` brand name.

Testing your Odoo installation

Point your browser to `http://localhost:8069` and you should see the Odoo login page appear.

Troubleshooting and Odoo management tips

As far as ERP installations go, Odoo is typically very easy to install. Unfortunately, it is possible for an installation to fail for a variety of reasons. In this next section, we will discuss some of the most common installation issues and provide some troubleshooting tips for diagnosis problems with an Odoo installation.

Checking your browser destination

If you have followed the default installation, then your Odoo installation should be accessing Odoo at `http://localhost:8069`.

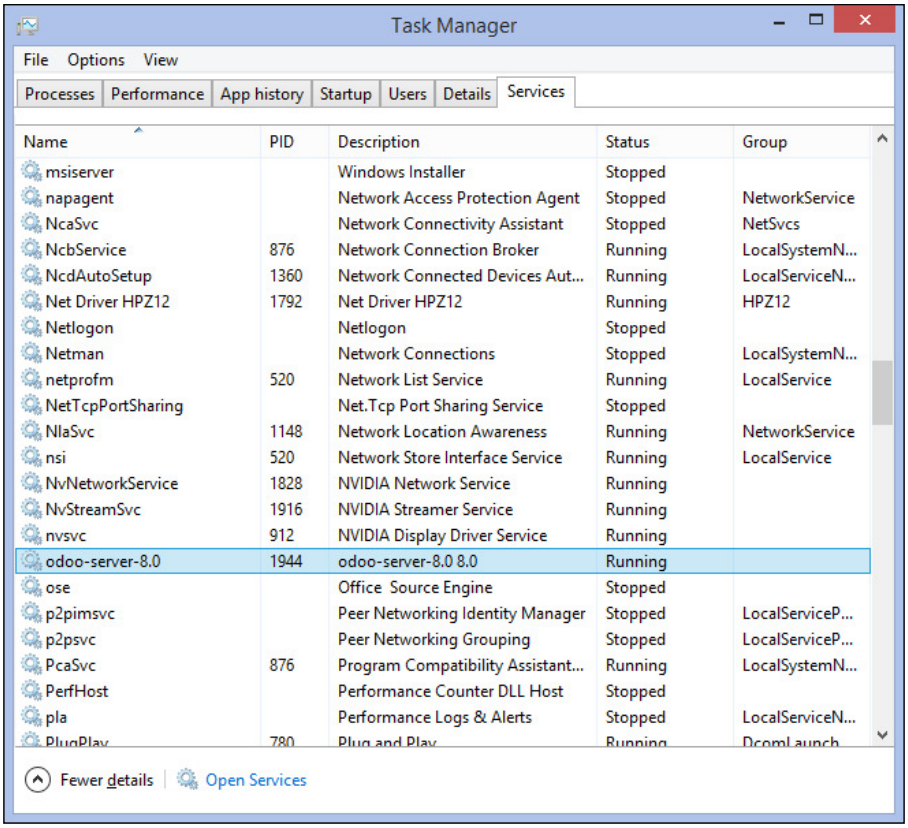
Make sure the URL is exactly as you can see it above. If you did change the port number during installation, make sure you change the port in the URL.

Verifying that the Odoo service is running

If you are unable to pull up Odoo in the browser, it can be good to verify that the Odoo services are running.

Checking for Odoo services running in Windows

Pull up the **Task Manager** and go to the **Services** tab, then look for **Odoo-server8.0**. The status should be running, as shown in the following screenshot:



Here is an example of the Odoo-server-8.0 service successfully running on Windows.

Additional Odoo troubleshooting steps for Windows can be found at `https://doc.odoo.com/install/windows/server/complementary_install_information/`.

Checking for Odoo services running in Ubuntu

In Ubuntu, you can locate the Odoo services by running the following command in a terminal window:

```
ps aux | grep Odoo
```

You will then see the Odoo service listed if it is running.

Starting and stopping Odoo services in Ubuntu

When managing an Odoo server, one of the most common tasks you will find yourself performing is starting and stopping the Odoo services. Odoo allows you to start and stop the services with a command switch.

To start the services, use:

```
sudo /etc/init.d/Odoo-server start
```

To stop the services, use:

```
sudo /etc/init.d/Odoo-server stop
```

Finding the primary Odoo log file

Odoo writes many messages, warnings, and error messages to a log. Often, when troubleshooting problems, this log file is valuable in determining what action you should take. In a default installation, the log file is located at `{install directory}/server/server/Odoo-server.log`.

The log is especially valuable to locate problems you may have when installing new modules.

Modifying the Odoo configuration file

The Odoo framework allows you to specify a configuration file for your installation. By default, this file is located at `/etc/Odoo/Odoo-server.conf`.

Using this file, you can change many of the attributes of Odoo.

Changing port numbers

By default, Odoo runs on port `8069`. For many installations, the default port will work fine. There are situations, however, where it can be useful to change this default port. One common scenario would be the need to run more than one version of Odoo. Multiple installations cannot run on port `8069`, so you will need to modify the port. Sometimes there are security reasons behind changing ports, as many hackers are aware of the default ports that people use.

Fortunately, changing the default port number is easy.

Simply specify:

```
Port=[port]
```

For example, `Port=8059` will change the default port for the web client to port 8059.

Accessing the database management tools

Odoo offers database management tools that can be accessed easily through your web browser. This makes it easy to create, backup, and even delete database, all through a web interface. While there are sometimes links available on the login page that will take you to these tools, it is possible that when installing some applications, such as the website builder, you will not find a link easily.

To access the database management tools, use the following path:

```
[ServerAddress]:[port]/web/database/manager
```

Changing the admin password

As mentioned earlier, by default, Odoo sets the password for these operations to `admin`. To secure your server, it is necessary to change this password in your configuration file:

```
Admin_password=[your password]
```

Also, be careful while starting up your Odoo server from the command line without specifying an alternative password or the path to the configuration file. If you do, you leave the instance open with the default password.

Finding additional resources for installing Odoo

Installing and configuring Odoo can quickly become a very complex task that is outside the scope of this book. In *Appendix*, *Locating Additional Odoo Resources*, you will find links to additional resources that can assist you with installing Odoo.

Summary

In this chapter, we saw how easy it was to get started using Odoo online. We discussed how to set up a trial company and the basics of creating a database and installing your first module. If you choose not to use the online services, you likely found the topics on installing Odoo on Windows or Ubuntu helpful. Finally, we discussed various methods of troubleshooting and configuring Odoo.

In the next chapter, we will begin to jump into our first real business applications in Odoo. You will get introduced to our real world case study and set up the basic configuration of the company. We will walk you through setting up your first product and, finally, creating and printing your first sales order.

2
Installing Your First Application

You have learned about the various applications that Odoo has to offer and how you can install Odoo on your own system. Before the release of Odoo 8, most users were focused on ERP- and financial-related applications. Now, Odoo 8 has added several important applications that allow companies to use Odoo in much greater scope than ever before. For example, the website builder can be installed to quickly launch a simple website for your business. A task that typically would have been accomplished with a content management system such as WordPress.

Despite all these new options that are available in Odoo 8, the overall process is the same. We begin by looking at the overall business requirements and decide on the first set of applications we wish to implement. After understanding our basic objectives, we will create an Odoo database and configure the required company information.

Next, we begin exploring the Odoo interface to create and view information. We will see just how easy Odoo is to use by completing an entire sales order workflow. We will finish up the chapter by reviewing some of the more advanced sales order configuration options.

The topics we will cover include:

- Adding a password-protected database to our installation
- Installing and configuring the Sales Management module
- Using interface features to view, edit, and find information
- Entering a new customer
- Adding our first product to sell
- Writing an order and confirming it for invoicing

Gathering requirements

Setting up an Odoo system is no easy task. Many companies get into trouble by believing that they can just install the software and throw in some data. Inevitably, the scope of the project grows and what was supposed to be a simple system ends up becoming a confusing mess. Fortunately, Odoo's modular design will allow you to take a systematic approach to implement Odoo for your business.

Implementing Odoo using a modular approach

The bare bones installation of Odoo simply provides a limited messaging system. To manage your Odoo implementation, you must begin with the planning of the applications with which you will work first. Odoo allows you to install just what you need now and then install additional Odoo applications as you better define your requirements. It can be valuable to take this approach when you are considering how to implement Odoo for your own business.

Don't try and install all the applications and get everything running all at once. Instead, break down the implementation into smaller phases.

Introducing Silkworm – our real-world case study

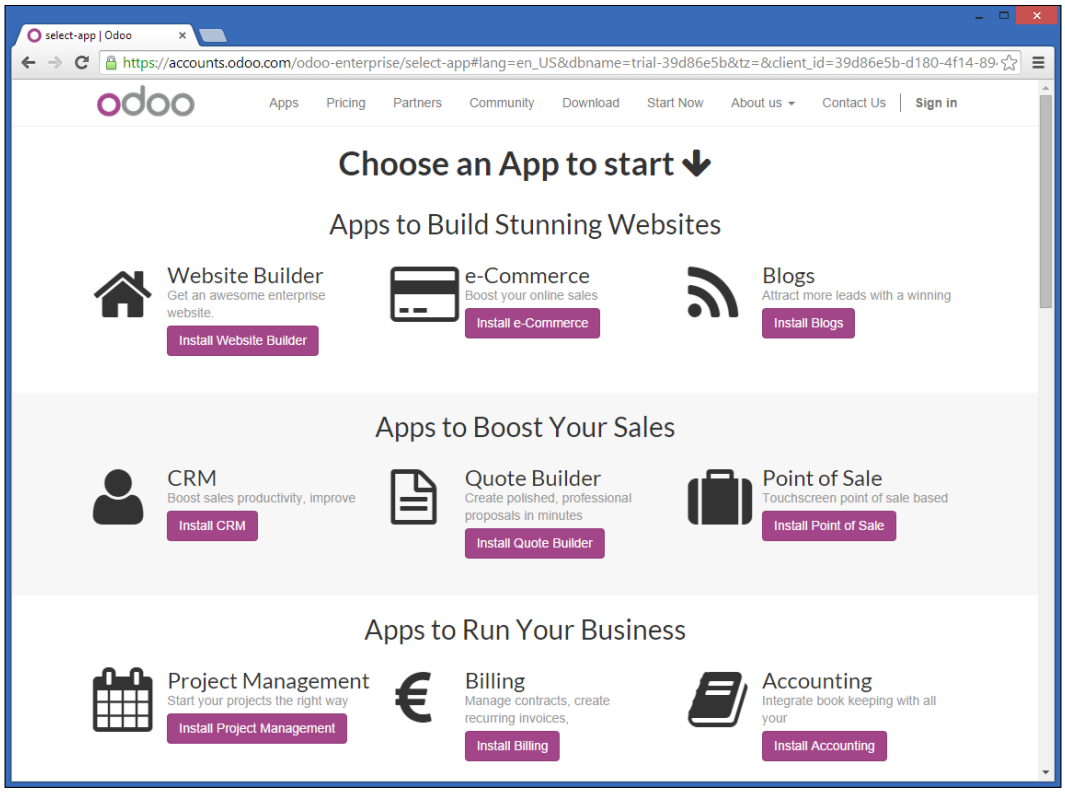
To best understand how to work with Odoo, we will build our exercises around a real-world case study. Silkworm is a custom apparel, promotional products, and graphic design company that provides unparalleled customer service. Using Odoo's modular design, we will begin by implementing the sales management application to set up the selling of basic products. In this specific case, we will be selling t-shirts. As we proceed through the book, we will continue to expand the system by installing additional applications.

When implementing Odoo for your organization, you will also want to create a basic requirements document. This information is important for the configuration of the company settings in Odoo and should be considered essential documentation when implementing an ERP system.

Using Odoo online – installing your first application

When you use Odoo's online trial on enterprise services, they will handle all the details, not only for installation of the Odoo software but also for creating the database. All you have to do is select the first application you wish install from the list provided on Odoo's setup page.

For our purposes, we are going to begin by implementing the sales order application. In Odoo's trial version, the sales order application is bundled inside the Quote Builder on their installation page.



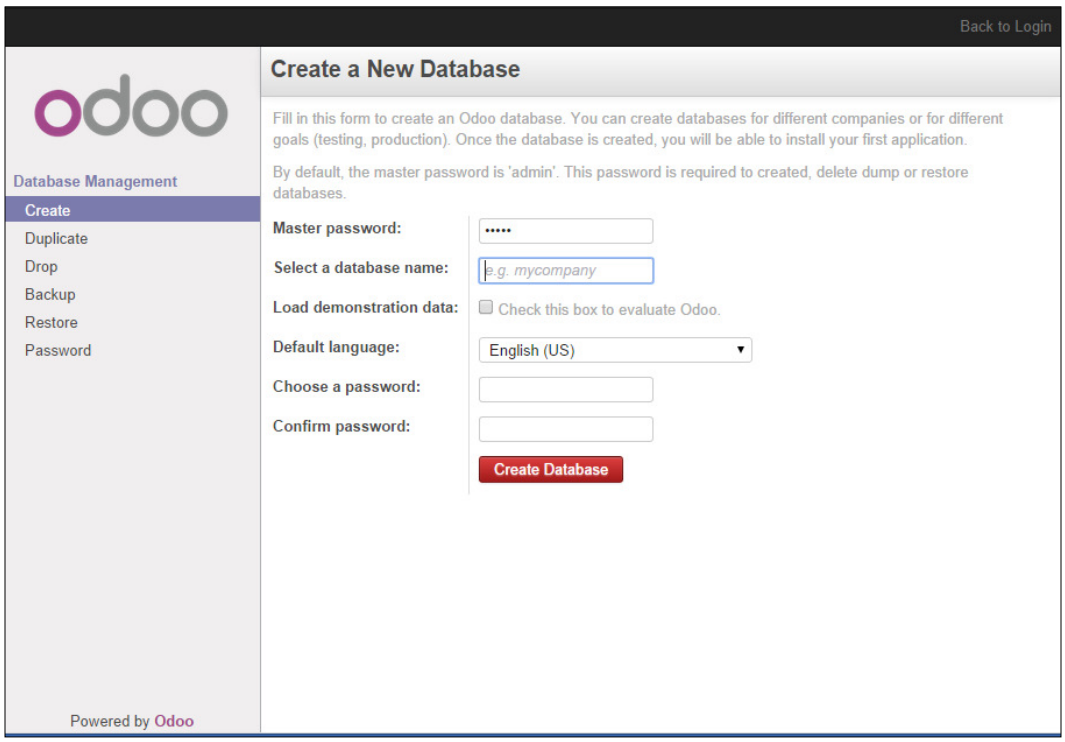
Creating a new database in Odoo

If you have installed Odoo on your own server, you will first need to create a database. As you add additional applications to Odoo, the necessary tables and fields will be added to the database you specify.

Odoo online

If you are using Odoo online, you will not have access to create a new database and instead will use Odoo's one click application installer to manage your Odoo installation.

If you have just installed a fresh copy of Odoo, you will be prompted automatically to create a new Odoo database:



In the preceding screenshot, you can see the Odoo form to create a new database.

Odoo provides basic instructions for creating your database. Let's quickly review the fields and how they are used.

Specifying the master password

The master password is set in the Odoo configuration file. In this form, you are not setting the master password. Instead, you are supplying the master password so that Odoo can be sure you are authorized to create databases. If you enter an incorrect master password or do not enter a master password, you will get an access denied message when you try to create the database.

By default, the master password for Odoo is `admin`.

For security reasons, it is essential that you change the default master password. Refer to the installation in *Chapter 1*, *Setting Up Odoo*, to see how you can change the configuration file to specify an alternative master password.

Selecting a database name

When selecting a database name, choose a name that describes the system and will make the purpose of the database clear. There are a few rules:

- Your database name cannot contain spaces and must start with a number or letter
- Also, you will need to avoid commas, periods, and quotes
- Underscores and hyphens are allowed if they are not the first character in the name

It can also be a good idea to specify in the name whether the database is for development, testing, or production purposes.

For the purposes of our real-world case study, we will use the database name `SILKWORM-DEV`.

We have chosen the `-DEV` suffix as we will consider this to be a *development* database that will not be used for production or even for testing.

Take the time to consider what you will name your databases. It can be useful to have standard prefixes or suffixes, depending on the purpose of your database. For example, you might use `-PROD` for your production database or `-TEST` for the database that you are using for testing.

Loading demonstration data

You will see the **Check this box to evaluate Odoo** box. If you mark this checkbox when you create a database, Odoo will preload your tables with a host of sample data for each module that is installed. This may include fake customers, suppliers, sales orders, invoices, inbox messages, stock moves, and products. The purpose of the demonstration data is to allow you to run modules through their paces without having to key in a ton of test data.

For the purposes of our real-world case study in this book, *do not* load any demonstration data.

Specifying our default language

Odoo offers a variety of language translation features with support for more than 20 languages. All of the examples in this book will use the English (US) language option. Be aware that depending on the language you select in Odoo, you might need to have that language also installed in your base operating system.

Choosing a password

Each Odoo database is created with an administrator account, named `admin`. This is also known as the superuser account. The password you choose during the creation of the database will be the password for the admin account.

Choose any password you wish and click on **Create Database** to create the `SILKWORM-DEV` database.

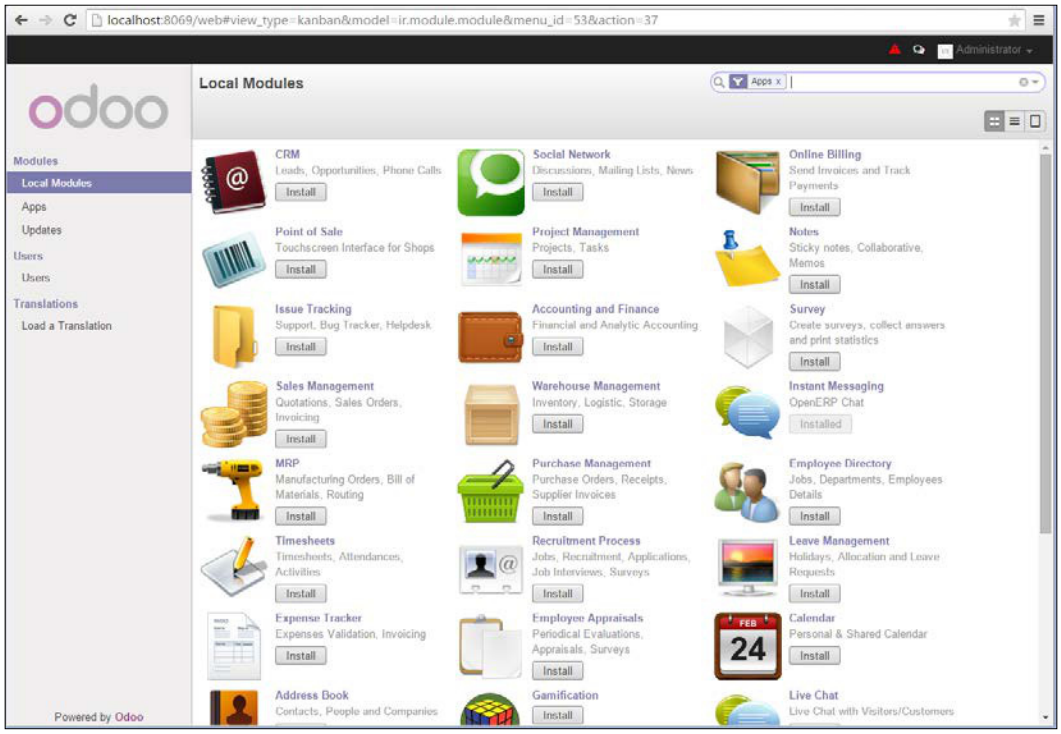
Managing databases in Odoo

The database management interface allows you to perform basic database management tasks, such as backing up or restoring a database. Often with Odoo, it is possible to manage your databases without ever having to go directly into the Postgres database server. It is also possible to set up multiple databases under the same installation of Odoo. For instance, in the future, you might want to install another database, which will load demonstration data and might be used to install applications simply for testing purposes.

If you have trouble getting to the interface to manage databases, you can access the database management interface directly by going to the path `/web/database/manager`.

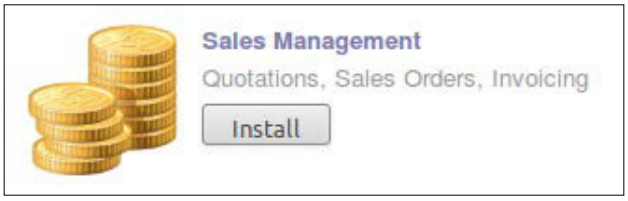
Installing the Sales Management application

After clicking on **Create Database**, it can take a little time depending on your system before you are shown a page that lists the available applications.



This screen lets you select from a list of the most common Odoo applications to install.

There is very little you can do with just an Odoo database, without any applications installed. Now, we will install the **Sales Management** application so we can begin setting up our business selling t-shirts.



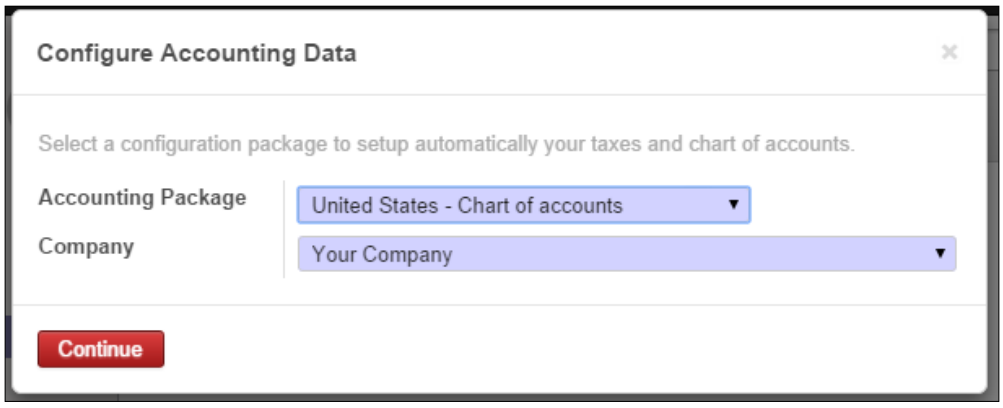
Click on the **Install** button to install the Sales Management application.

During installation of applications and other long operations, you will often see a **Loading...** icon at the center of your screen.

Configuring accounting data

With the installation of the Sales Management application, Odoo prompts you to configure the accounting package you will use with your company. For our example, we will be using the United States chart of accounts. As we have only installed one company in this installation, you will leave the company field as **Your Company**. We will see how to change the name of our company later in the chapter.

The following screenshot is the screen you will see during the installation of the Sales Management application:



Setting your accounting options

There are several basic chart templates that are included with Odoo. These templates include:

- Advertising
- Agriculture
- Construction trades
- Financial services
- General Service-based business
- Legal Services
- General Product-based business

Odoo allows you customize your chart of accounts later. Most businesses will probably need to spend some time organizing their chart of accounts according to their requirements. We will cover how to manage accounts in Odoo in *Chapter 8, Implementing the Human Resources Application*.

The following screenshot is presented during the setup of the Sales Management application:

You are welcome to experiment with the currency and sales/purchase tax settings. For the purpose of our case study, we have selected the **General Product-Based Business** chart template and the **USD** currency. Once again, we have left the company field as **Your Company**. Click on **Apply** to finish installing the Sales Order Management application.

Knowing the basics of the Odoo interface

After the installation of the sales order application, Odoo takes you directly to the customers form. Let's take a moment to look at the screen elements that will appear consistently throughout Odoo. In the top left of the main form, you can clearly see that we are in the **Customers** section.

Using the search box

In the top-right corner of our form, we have a search box:

The search box allows you to quickly search for records in the Odoo application. If you are in the customer section, naturally, the search will be looking for customer records. Likewise, if you are looking at the product view, the search box will allow you to search the product records that you have entered into the system.

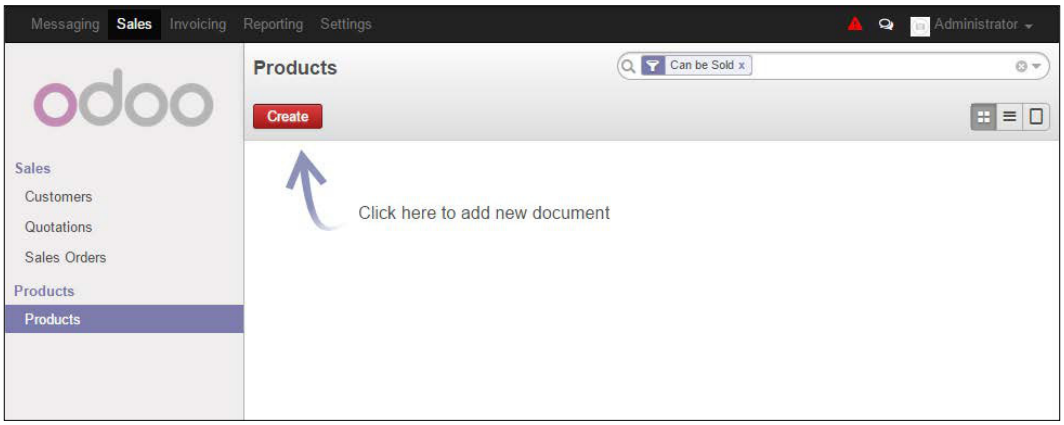
Picking different views

Odoo also offers a standard interface to switch between a list view, form view, or other views such as Kanban or graph views. You can see the icon selections under the search box in the right corner of the form:

The currently selected view is highlighted in black. If you hover over the icon, you will get a tooltip that shows you the description of the view. As we have no records in our system currently, let's add a record so that we can further explore the Odoo interface.

Creating your first customer

Helpful instructions prompt you to begin entering your first customer into Odoo by clicking on the **Create** button:



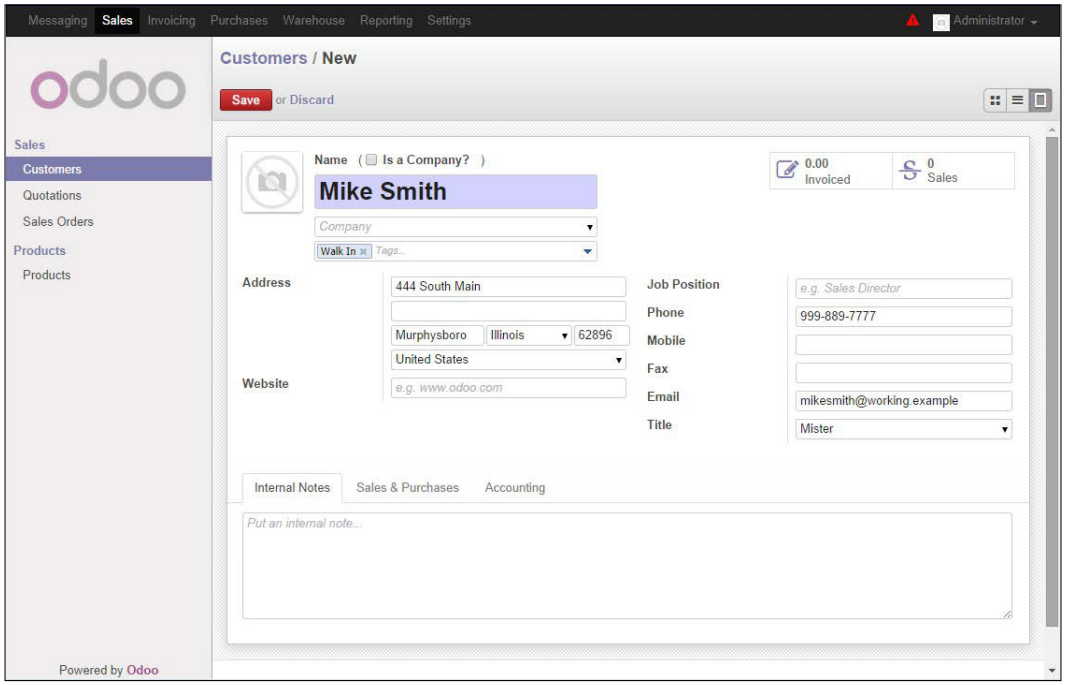
This is the Odoo Customers form. Clicking on **Create** will generate a customer record.

Silkworm sells t-shirts to both businesses and retail customers. For this example, we will use a fictional customer named `Mike Smith`, who wishes to purchase several t-shirts. Odoo offers flexibility in collecting customer information, and by default, most fields are not required. Three main fields are required in a default installation of Odoo sales management:

- Customer name
- Accounts receivable account
- Accounts payable account

The rest of the fields are optional. Later in the chapter, you will learn how to configure Odoo to make additional fields required.

In this example, we have filled out some of the basic fields for our fictional customer `Mike Smith`:



Is this customer a company?

At the very top of the form is a check box to inform Odoo whether this customer is a company. For our example, we are using a walk-in retail customer. If you were doing a business-to-business type operation, then often your customers would have the **Is a Company** checkbox selected.

When you set up a customer as a company, you will have the option to have multiple contacts available for that customer. If, however, you leave this option unchecked, as we have in our example, you will not have the option to have contacts associated with that customer.

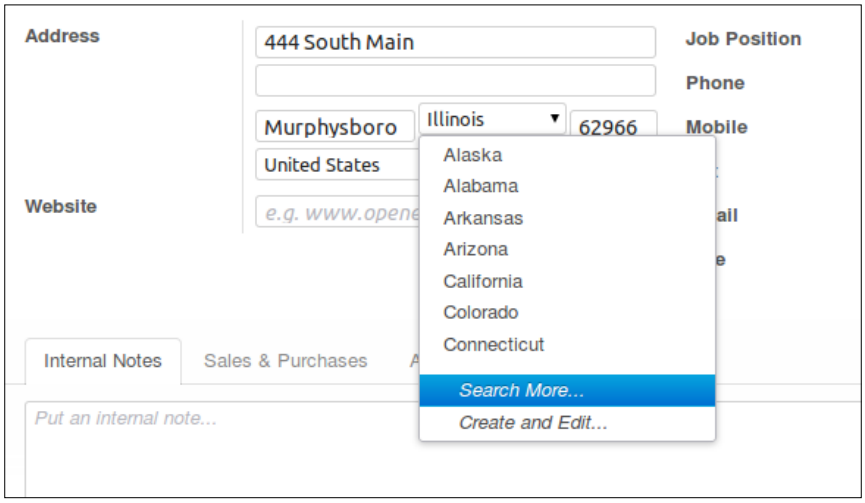
Entering data into an Odoo form

Odoo utilizes a consistent interface to enter data throughout the application. Once you have learned how to enter data into one form, you should have no problem entering data into other forms in Odoo.

The required fields will always be in purple. If you see a purple field, you must fill in that data or you will not be able to save the record. You can move between fields by using your mouse or the *Tab* key. *Shift* + *Tab* will take you back to the previous field. Unlike some systems, you cannot move between fields in Odoo by using the arrow keys.

In many forms, you will have to select lists that allow you to choose from a list to populate the field. You can use your keyboard to type and limit the items that are displayed in a select list. By using the tab key and your keyboard to find the appropriate item in the list, it is possible to enter data into a form with limited use of the mouse.

Many select lists have two options at the bottom that will allow you to use additional search options, or to create an item that is not in the list.

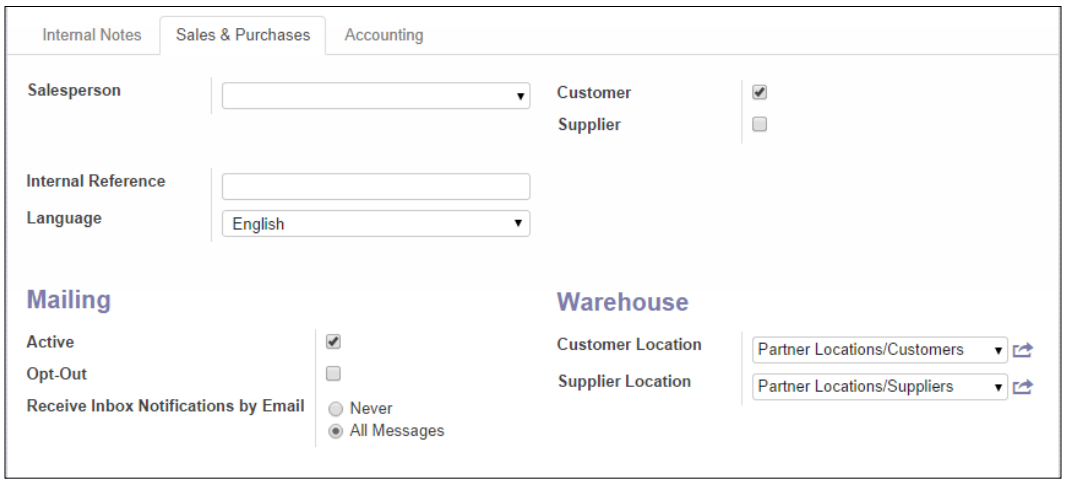


In this example, we see a list of states with the option for additional searching or to create a new state that is not in the list.

Use the **Internal Notes** area to enter any additional notes that you wish to keep on the customer.

Editing a customer – Sales & Purchases

The bottom area of the customer screen is divided into a series of tabs or pages that assist in organizing customer information. In the **Sales & Purchases** tab, we can assign such options as a salesperson and various e-mail options:



The following are the available options in the customer's **Sales & Purchases** tab.

Salesperson

The **Salesperson** field allows you to select who the direct salesperson will be for this customer. While this field is not required, it is often populated if you are integrating your sales management system with the **Customer Relationship Management** (**CRM**) application. We will use this field in the chapter on CRM; for now, we can leave the field blank.

Reference

Often when implementing Odoo, a company already has an existing customer numbering system in place. The **Internal Reference** field is the perfect field to populate with an existing customer number. Otherwise, this field can be left blank or used for another purpose. For our example, we are going to leave this field blank.

Language

Odoo has the ability to work with customers in a variety of languages. For our example, we will leave this as **English**. If, however, you were working with a company that preferred their documents in other languages, you could specify that language and Odoo will manage the translation.

Date

The **Date** field does not specify exactly what date this refers to for the customer. In most implementations, the business would define this date to be the date on which the customer was acquired. Depending on your needs, you could define the customer date to have an alternative definition. It is also perfectly acceptable to leave this field blank, as we will in our example.

Customer

The **Customer** checkbox is known in Odoo as a Boolean field. It is marked as either yes or no or on or off. Odoo has a unique method of storing data related to people in the system. All individuals are stored in the same table (`res_partner`), regardless of whether they are a customer or supplier. The customer flag tells Odoo that this is in fact a customer record. This field MUST be checked for Odoo to recognize `Mike Smith` as a customer.

Supplier

Because Odoo stores customer and supplier data in the same table, it is possible to be both a customer and a supplier. In this example, we will leave `Mike Smith` as a customer.

Odoo uses a common table to store customer and supplier records. This makes it easier to manage data, as customers and suppliers are designated by simple checkboxes in the **Sales & Purchases** tab on the customer screen.

Active

Turning off the **Active** flag allows you to hide a customer from the customer list, without deleting them from the database. A sample use for the active field would be to uncheck it if a customer has not made a purchase in a few years. For our example, we will leave this checked.

Odoo provides an **Active** field for most records in the system. This allows you to easily make a record inactive, without having to remove the record from the database.

Receiving messages by e-mail and opting out

The **Receive Inbox Notifications by Email** option allows you to decide the communication level that you wish to have with your customer and under what conditions they should receive e-mails. The available options include:

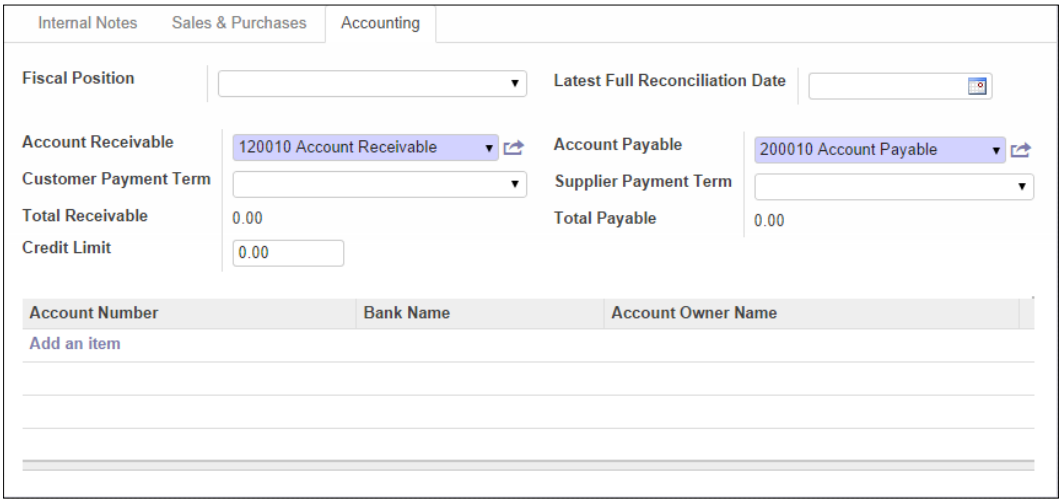
- **Never**
- **Incoming Emails only**
- **Incoming Emails and Discussions**
- **All Messages** (discussions, emails, followed system notifications)

The **Opt-Out** flag will allow you to prevent any automatic or campaign e-mails from being sent to the e-mail address in the customer record. It is worth noting that the **Opt-Out** setting will even prevent the customer from receiving e-mail messages sent manually via OpenChatter. For the purposes of our example, we will maintain the default settings.

Editing a customer – Accounting

At first, the accounting page on the customer screen can feel a bit intimidating, but in order to enter a new customer, we must provide some essential information. Fortunately, there are only two required fields on this page: the accounts payable and the accounts receivable fields. We will leave the more complex accounting configuration for a later chapter.

The AR and AP options available in the select lists will vary if you chose to install a chart of accounts other than United States:



Here are the available options in the customer accounting page.

Fiscal Position

The **Fiscal Position** field is sometimes also known as the tax status and in some systems, it is represented simply as taxable. In Odoo, you have two options for fiscal position:

- **Normal Taxes**
- **Tax Exempt**

Tax exempt is common in business-to-business situations in which taxes are waived because the customer is purchasing the product for resale. Customers might also be exempted from tax if they represent a nonprofit business. This field is not required, and it is possible to override this selection when producing a sales order.

Account Receivable

This field specifies the default accounts as receivable account for the customer. It is a required field, and the account will be automatically debited when a customer is invoiced. When the invoice is paid, the account's receivable account will be credited.

Customer Payment Term

It is common in many businesses for different customers to have different payment terms. Perhaps for a lifelong customer, you would extend 30 or even 60 day net terms for them to pay their invoice. For a new customer, you might require immediate payment. Additional terms can be configured in Odoo, depending on your needs. The default payment terms included are:

- **Immediate Payment**
- **15 Days**
- **30 Net Days**

For our example, we will set the payment term to **Immediate Payment**.

Total Receivable

This is a computed field and is currently **0.00** dollars, because this is a new customer. As customers are invoiced, this field will change to reflect how much they currently owe.

Credit Limit

The **Credit Limit** field allows you to establish credit limits for your customer. The system can then configure warnings to alert you if a sales order would push a customer beyond their credit limit. For our example, we have immediate payment required, so we will leave the credit limit at **0.00** dollars.

Latest Full Reconciliation Date

This is the date on which the accounting entries for the customer were last reconciled. As there have been no automatic or reconciliation operations performed, this field is blank.

Account Payable

While this account is required, it is unlikely to be utilized by customers in Odoo. If, however, the **Supplier** field on the **Sales & Purchases** tab is checked, then this would be the accounts payable account that will be used in supplier-related transactions. Still, you will need to specify an accounts payable account to finish entering the customer.

Supplier Payment Term

Much like the customer payment term, this field will determine the payment terms for the supplier. Because a partner can be both a customer and supplier, we have separate terms for each.

Bank accounts

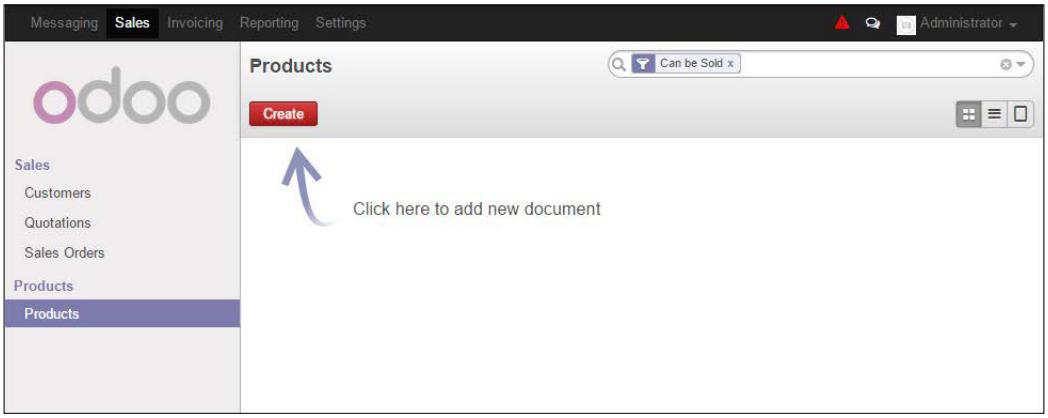
At the very bottom of our **Accounting** tab, we can set up optional bank accounts for our customer. Clicking **Add an item** will bring up a bank account screen to collect information that would be valuable in sending payment data or issuing ACH drafts against a customer's bank account. For our example, we will not enter a bank account.

Saving the customer record

With the basic customer information entered, we can now hit the **Save** button to commit our changes to the record.

Entering a product in Odoo

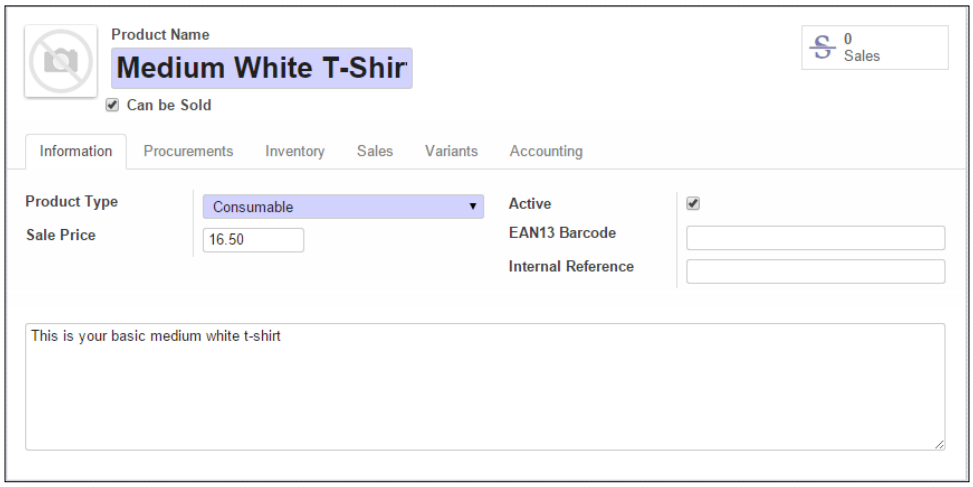
Now that we have a customer, it is time we enter some products to sell to our new customer. For our example, we are going to enter a medium white cotton t-shirt. Click on the **Products** item in the menu, on the left:



Creating products in Odoo

Create a new product by clicking on the **Create** button.

The following is the form to enter a product record into Odoo:



Product name

The product name is what will be displayed on the sales orders, invoices and in all other screens that refer to this specific product. For our example, we are selling a **Medium White T-Shirt**.

Can be Sold

Much like the customer **Active** flag, you can use **Can be Sold** to remove products from showing up on product lists by unchecking **Can be Sold**. For our example, we want to sell this t-shirt to `Mike Smith`, so we will leave the option checked.

Product Type

Product Type is the first option on the **Information** tab on the product screen. There are two available product types:

- **Consumable**
- **Service**

Service product types will not create procurements in purchase orders. Consumables are products that you actually sell and can be configured to generate purchase orders. For our example, we will set the product type to **Consumable**.

Sale Price

This field sets the sales price of the item as it will appear on the sales order. For our example, we are setting the sales price of the t-shirt to `$16.50`.

Internal Reference

For the most part, Odoo utilizes the name field and the description when displaying product information. It is very common for a company to have a coding system for their products. The internal reference field is useful to enter an alternative product code or number for the product. In this example, we will leave the **Internal Reference** field blank.

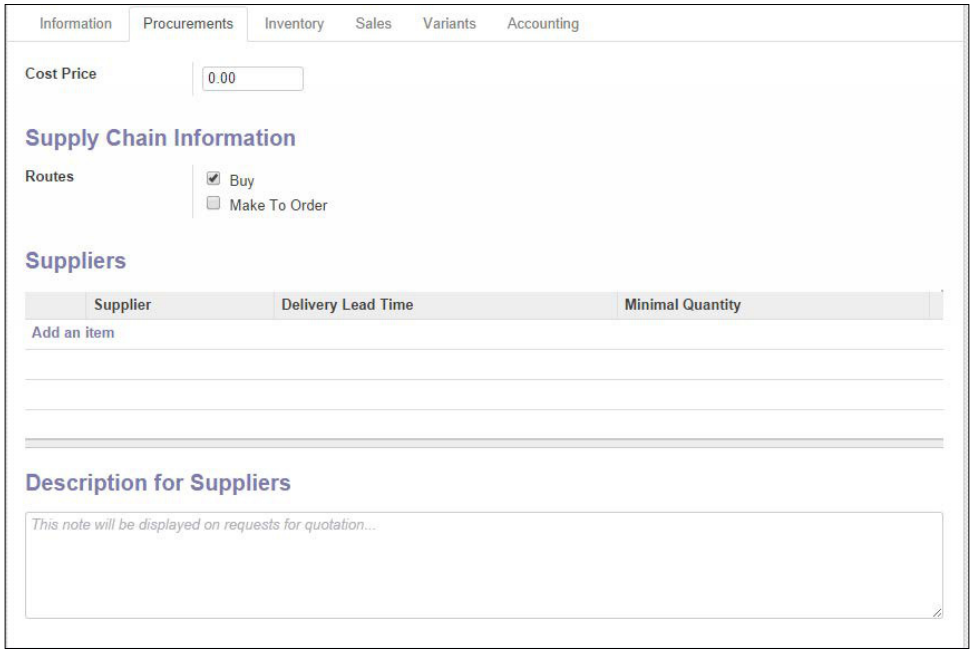
EAN13 Barcode

Odoo provides the **EAN13 Barcode** field, so that product records can be easily integrated with scanning solutions. For now, we will be leaving this field blank.

Entering a product – the Procurements tab

The second tab on the product screen collects any information related to procurements.

The following is the **Procurements** tab on the product screen:



Cost Price

This number will be used for standard stock valuation in accounting and will also serve as the base price on purchase orders once the purchasing application is installed. In fact, because much of this information can be ignore until we install the purchase application, we are just going to leave the cost at $**0.00**.

Supply Chain Information

Beginning in Odoo 8, Odoo now provides great flexibility in routing products. Fortunately, for our purposes, Odoo provides the basic route—**Buy** that is required for us to purchase this product. Leave the **Buy** checkbox set to true.

Suppliers

In the suppliers list, you can specify which suppliers you use to purchase the product. For now, we are focusing on selling the product and will wait until the later chapter on purchasing to learn more about suppliers.

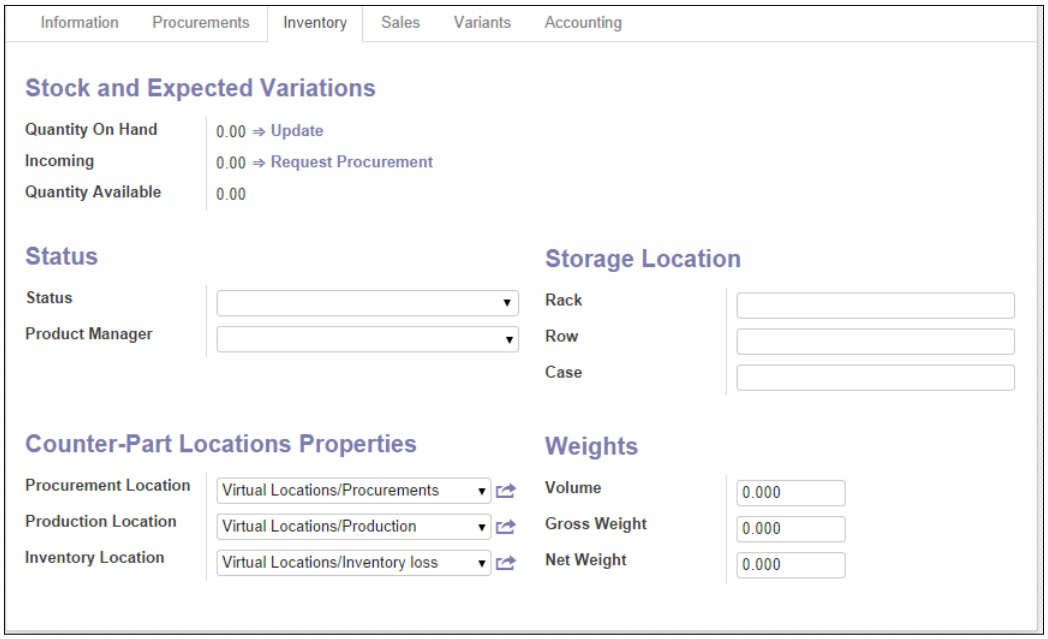
Description for Suppliers

It is not uncommon in business to use different names for the same products, depending on whether you are talking to a supplier or the customer. This field allows you to specify the product description for the supplier. Some industries will find this essential for communicating product information to the supplier. For our example, we will leave this field blank.

Entering a product – the Inventory tab

The **Inventory** information tab lets you collect information on the current status of the product and to assign a product manager.

The following is the **Inventory** tab from the product form:



Stock and Expected Variations

In this section, you see the quantity on hand, the quantity that is incoming, as well as the quantity that is available. Quantity available, for example, would exclude products that may still be in inventory but have been allocated to delivery orders. Naturally, as we are just setting up this project, all these values are zero.

Status

The status field allows you to specify the various product stages and provides an additional level of classification in the inventory. The default status values are:

- **In Development**
- **Normal**
- **End of Lifecycle**
- **Obsolete**

For our example, we will select the **Normal** status. This is not a required field and the product can be still entered on a sales order if this field is left blank.

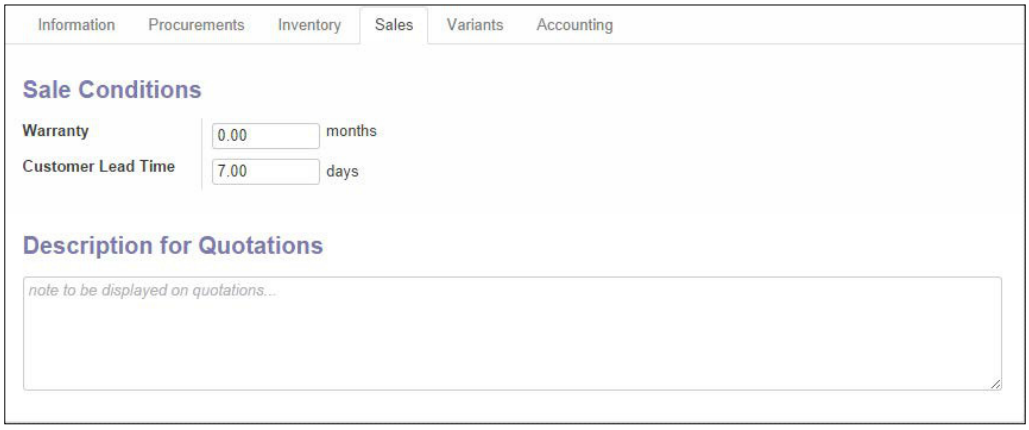
Product Manager

Each product can be assigned a dedicated product manager. This can be useful for reporting purposes and creating intelligent dashboards. For example, an engineer could have their dashboard configured to only show them the products in which they are the product manager. For our example, we will leave this field blank.

Entering a product – the Sales tab

The **Sales** tab on the product form allows you to specify optional information on the product, as it relates to sales and quotations. If there is a warranty on the product, you can specify the warranty duration in months. You can also specify a description that will show up just on quotations. This would be used, for example, if you wanted a different description on the quotation than you have on the invoice. We will leave these fields as their defaults for our case study.

The following is the **Sales** tab, located on the product form:

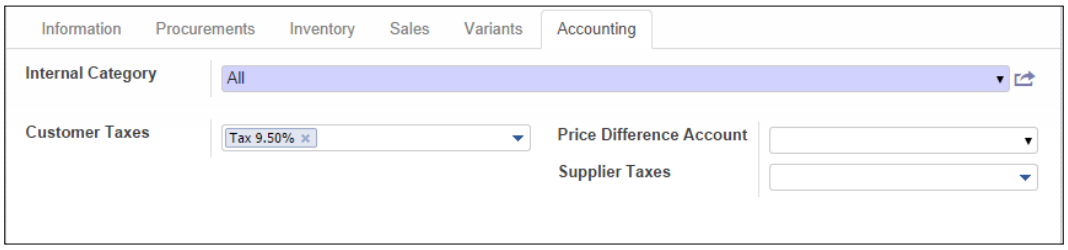


Entering a product – the Accounting tab

The **Internal Category** field for now can just be left as **All**. Categories can be used to group products and organize them in a way that makes sense for your internal requirements. Beginning with Odoo 8, you can now have alternative categories defined for the products on your website.

We set up a default tax of **9.5%** when we installed the sales management application. However, there will be times when you have a product that has a specific tax. In the United States, one example is that cigarettes often have a more substantial tax than other items, such as food. Odoo allows you to specify additional tax options for a given product in the accounting page. Taxes can be specified for both the customer and the supplier separately.

The following is the **Accounting** tab that is located in the product form:



For our example, we will set the customer taxes to the **9.50%** rate that we defined in the sales order accounting setup.

Saving the product

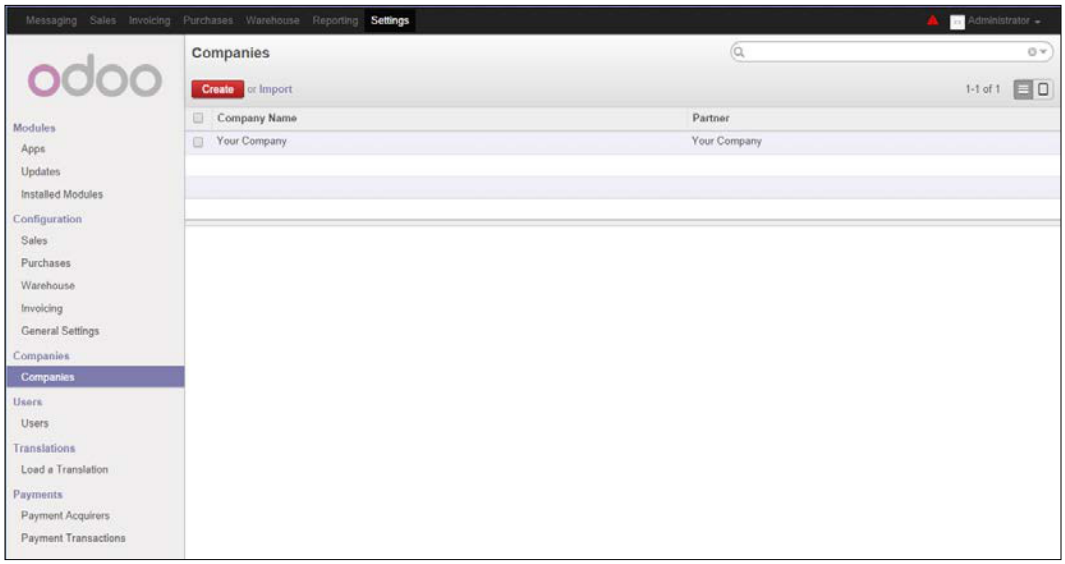
Clicking on the **Save** button stores the product record in Odoo. If you click on **Discard**, you will get prompted with a warning message that you will lose your changes.

Setting the company information

We have entered both a customer and a product. However, before we create a sales order, we still have some work to do in setting up our company. Currently, Odoo does not even know the name of our company and has used **Your Company** as the name, by default.

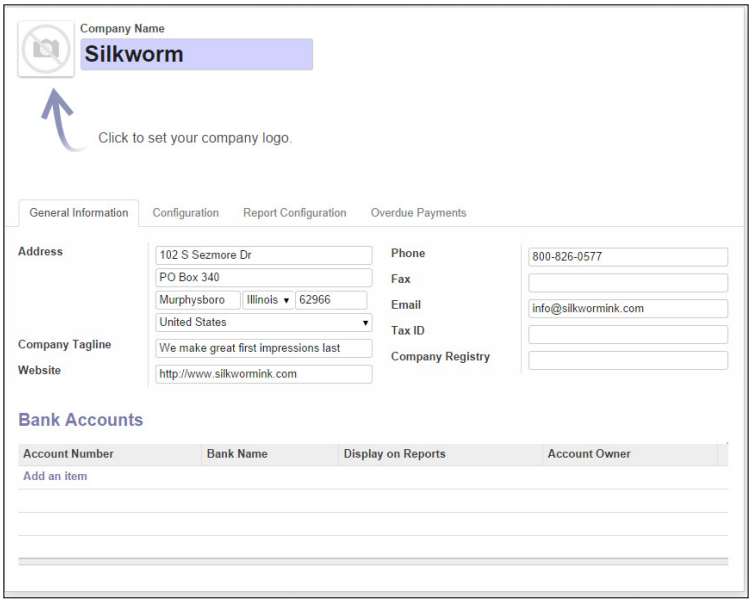
We can locate the company information by choosing **Settings** from the top menu and then choosing **Companies** from the submenu on the left.

The following is a list of the companies in the current Odoo database:



You can now click once on **Your Company** to open up the company information screen. Click on the **Edit** button so that we can enter edit mode and update the company information.

The following is a company record, filled in with the data for our sample case study:



Here, we have supplied the company name, along with address, e-mail, phone, website, and the company slogan. It is also possible to click on the photo icon at the top left to assign a logo to the company. At the bottom of the screen, you can add bank accounts for the company. We will wait to configure bank accounts for a later chapter.

The Configuration tab

The **Configuration** tab simply allows you to set the default currency for the company. This field was set to USD (US Dollars) during the sales order management setup.

Overdue Payments

The **Overdue Payments** tab will allow you to change the statement that will appear to customers who are flagged for being late with their payments. For our example, we will keep the default.

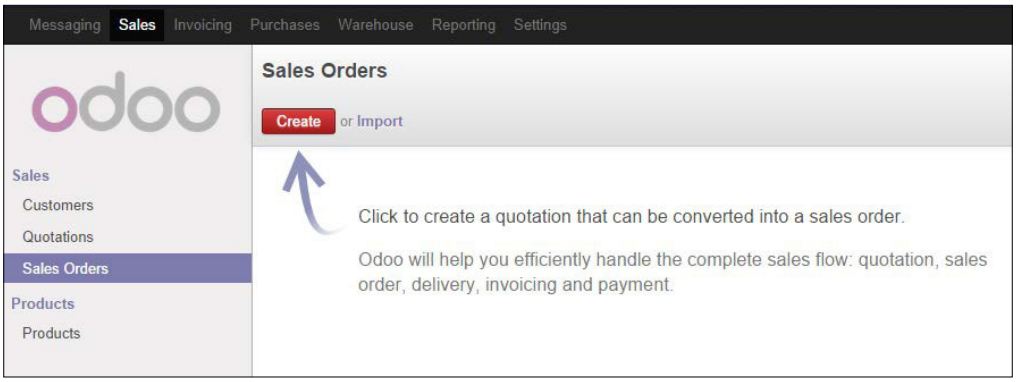
Saving company information

Click on **Save** to update the company information. We are now ready to enter our first sales order.

Entering your first sales order

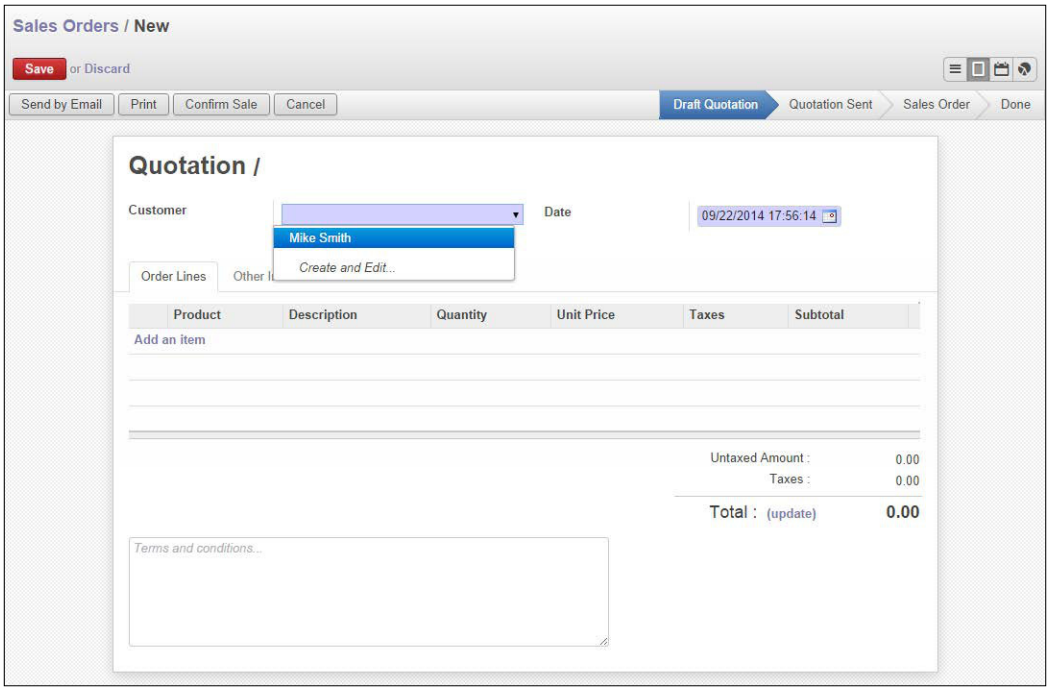
Now, for the moment we have all been waiting for. We finally get to sell our products by entering a sales order. To get to the sales order entry screen, click on **Sales** in the top menu and then choose **Sales Order** from the submenu on the left.

The following screen lists existing sales orders and allows users to create a new sales order:



Click on the **Create** button to create a new sales order. Every brand new sales order begins as a quotation and stays in that state until you confirm the sale. Only after confirming the quotation will your sale be referred to as a sales order.

The following is a new sales order form, with the cursor set on the **Customer** field:



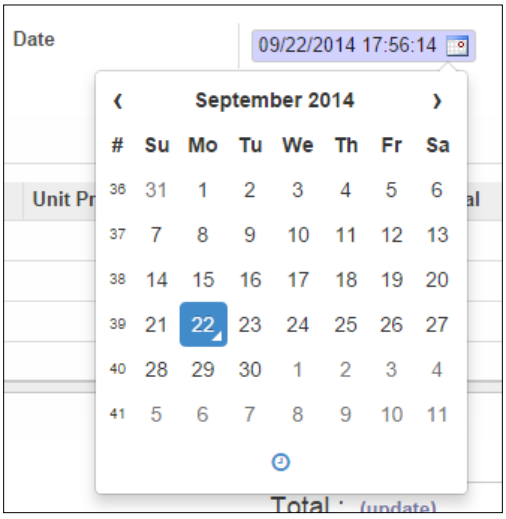
Selecting the customer

When you create a new quotation sales order, you are prompted to first select the customer from the select list. As you add customers, you will have the option to search and locate customers for the sales order. For now, we will be selecting the customer we entered early in the chapter, **Mike Smith**.

You will not be able to begin entering line items until you have specified the customer for the sales order.

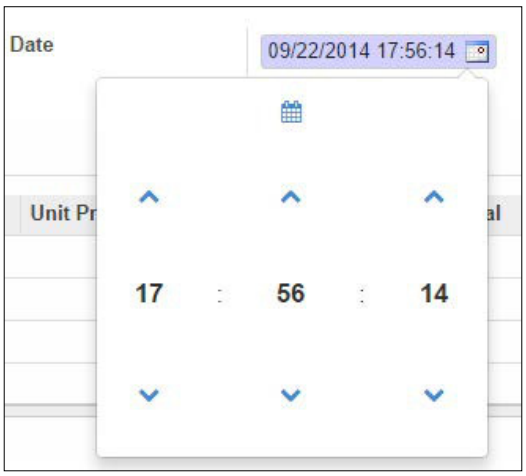
Date

By default, the current date is populated into the **Date** field. If necessary, you can modify this date:



Selecting a date in Odoo

If you click on the little clock at the bottom of the date, you get a selector that allows you to set the time:

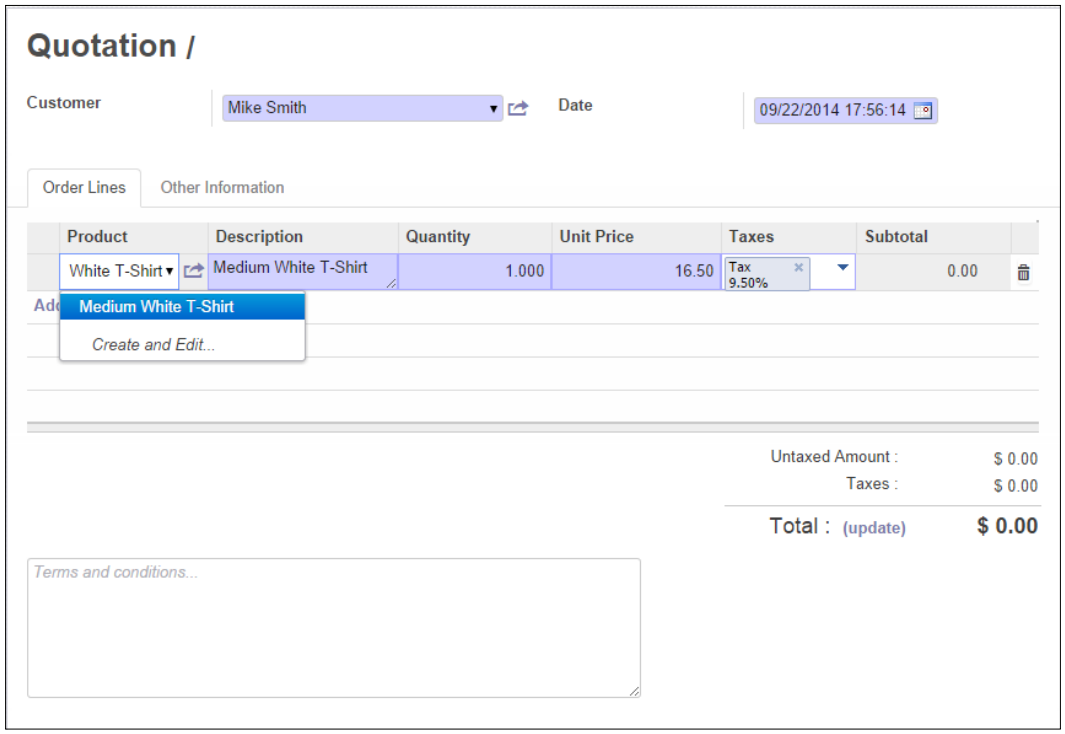


Customer Reference

The **Customer Reference** field can be used to collect information that you might wish to associate with the sale. For example, you might wish to store a reference to how the customer was acquired. We are leaving this field blank for our example.

Entering line items on a quotation sales order

Now, we are ready to begin specifying the product we wish to sell. Click on **Add an item** in the line item area to add a line to the grid. The first field will be **Product**. Select **Medium White T-shirt** from the list box. Your line item fields should populate and look like this:



The Product field

Each line item starts out by selecting the product. You can add products on-the-fly by choosing **Create and Edit…** from the bottom of the list. Once there are more products in the list, you can also bring up a product search window using the **search more…** option. After you select the product field, Odoo retrieves the tax and pricing information from the server to display it in the line item.

Odoo does not automatically refresh the total. If you wish to see the total before clicking on the save button, click on the **(update)** link that is located next to the **Total** at the bottom of the form.

Description

Odoo will pull over the description from the product record to populate the description field on the line item. It is possible to override the description on the quotation sales order. For this example, we will leave the description as it pulled over from the product record.

Quantity

Product quantity will default to 1. Naturally, you will change this field to the quantity of products you have sold. We will just leave quantity as 1 for this example.

Taxes

Odoo supports taxes by line item and will automatically pull over the **9.5%** tax rate that we have defined in the product record. Additional taxes can be added or removed from the line item. For this example, we will leave the tax at **9.5%**.

Unit price

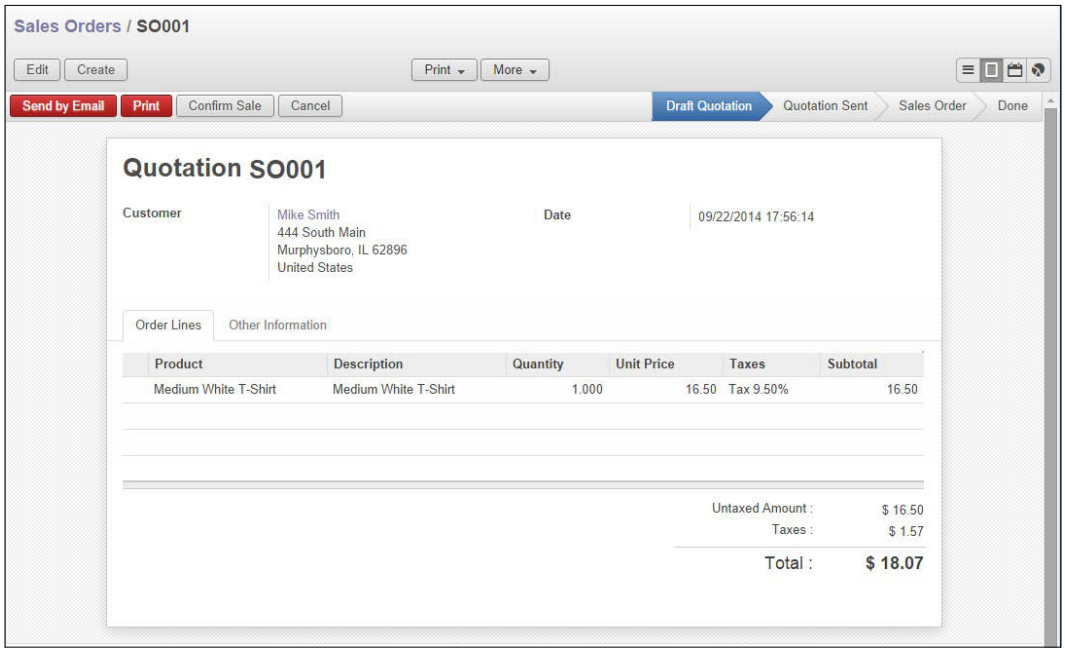
Odoo pulls the sale price from the product record to populate the unit price in the line item. It is possible to override the price in the line item. For this example, we will leave the unit price at $**16.50**.

Be careful while changing prices in the line items of Odoo. It is possible that if you click back on the **Product** field or tab through other fields in the line item that the unit price will flip back to the price in the product record. If you are changing prices in the line items, make sure to double-check your unit prices before you confirm your sales order.

Saving the quotation sales order

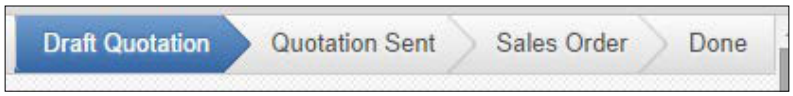
Click on **Save** to save the quotation. The form will refresh, displaying the full customer address, as well as updating the tax and final total of the quotation sales order.

The following is a screenshot of our first quotation in Odoo:



Understanding the sales order workflow

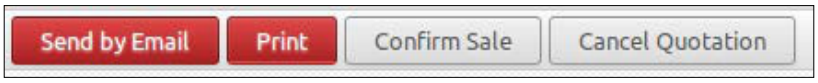
Although we started out entering a sales order, the current state of this order is a **Draft Quotation**. Odoo 8 displays the current state of transactions in the top-right corner of the form.



This indicator makes it very easy to see the current stage of a transaction throughout the Odoo workflow. In this example, we can see that this is currently a **Draft Quotation** status. We can also see that the quotation would first need to be sent and/or be confirmed as a sales order, before the quotation can finally be considered 'Done'.

The available actions you can take on this quotation are displayed at the top-left corner of the form.

The following is a list of available actions for an Odoo quotation:



Send by Email

Clicking on the **Send by Email** button will send a copy of the quotation to the e-mail address in the customer's file.

Print

Even in the digital age, it is still very common to need a printed copy of a quotation or sales order. Clicking on the **Print** button will generate a PDF document containing your quotation.

Confirm Sale

The confirm sale button will convert the quotation into a sales order and push the transaction further down the sales workflow.

Cancel Quotation

Clicking on the **Cancel Quotation** button will prompt you to cancel this quotation. The quotation is not deleted and can still be viewed. Canceling the quotation ends the sales order workflow, and the quotation will only be kept in the system for archive purposes.

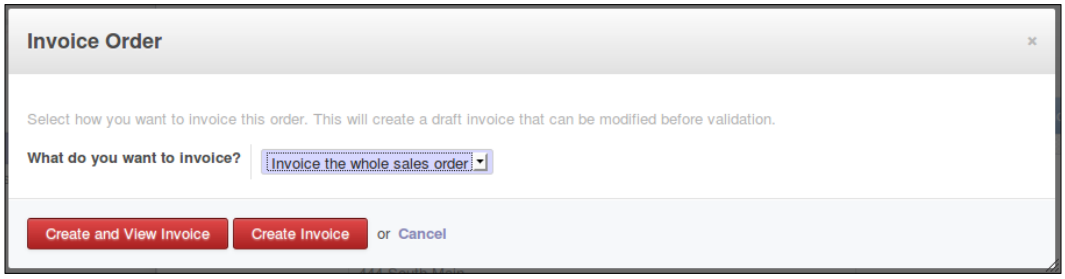
Click on the **Confirm Sale** button to convert this quotation into a sales order.

Invoicing the sale

Depending on the workflow of the business, a lot of different things can happen after you have confirmed a sales order. In manufacturing companies, you might need to both purchase products and create a manufacturing order to produce the final product before you invoice the customer. In our example, we are going to go ahead and invoice the customer for the t-shirt they have ordered. Click on the **Create Invoice** button to generate an invoice for the sales order.

An Odoo **Invoice Order** wizard pops up to walk you through the invoice creation process.

The following is the **Invoice Order** wizard:



What do you want to invoice?

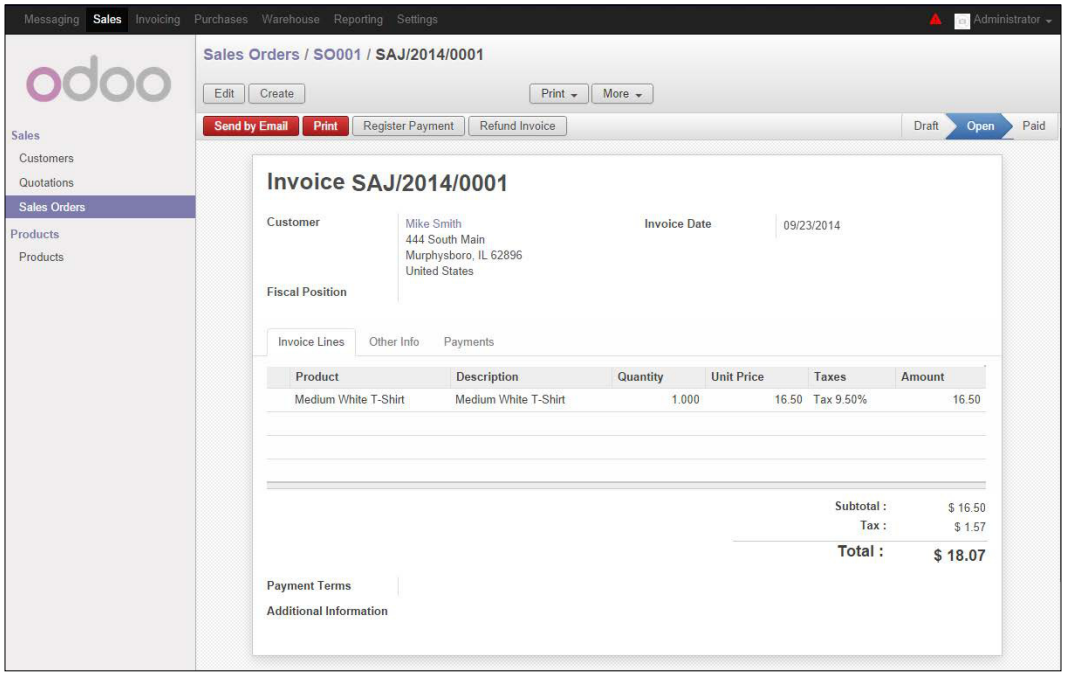
Odoo provides a variety of options for invoicing the entire sales order or, instead, invoicing based on other methods. The available choices are:

- **Invoice the whole sales order**: If this option is selected then the invoice will be created for the whole sales order.
- **Percentage**: If this option is selected, you are prompted to specify what percent of the total sale you wish to invoice in advance.
- **Fixed Price (deposit)**: Choose this option if you have received a deposit on a product. You will be prompted to enter the amount of the deposit, as well as the opportunity to designate an advance product.
- **Some Order Lines**: This option will prompt you to select specific line items you wish to invoice.

Creating the invoice

For our example, we will be invoicing the whole sales order. Click on **Create Invoice** to generate the invoice. Initially, the invoice is created in a draft state. Clicking on **Validate** will confirm the invoice and post the transaction.

If you have followed along and everything worked as it should, then you will see an invoice similar to the following screenshot:



At this time, it is worth noting Odoo's use of an interface feature called **breadcrumbs**. These links, which appear on form views just below the topmost menu, allow you to traverse from your invoice back to the relevant sales order from which it derived. The use of these links is the preferred method of backtracking to prior screens, as opposed to using your browser's back button.

Summary

In this chapter, we started by creating an Odoo database. We then installed the Sales Management application and created our first customer. With our customer created, we turned our attention to setting up a product in Odoo and entering our basic company information. Next, we created a quotation and followed the workflow all the way through to confirming the sales order and generating an invoice.

In the next chapter, let's look our sales strategy and what we want to achieve via the CRM software.

3
Exploring Customer Relationship Management in Odoo

Until recently, most business and financial systems had product-focused designs while records and fields maintained basic customer information; processes and reporting typically revolved around product-related transactions. Earlier, businesses were centered on specific products, but now the focus has shifted to the customer. Customer Relationship Management (CRM) systems provide the tools and reporting necessary to manage customer information and interactions.

In this chapter, we will begin by covering the following topics:

- Looking at what it takes to implement a CRM system as part of an overall business strategy
- Installing the CRM application, and setting up salespersons that can be assigned to our customers
- Learning how to create and manage leads
- Creating opportunities and schedule events in Odoo
- Discovering the Odoo OpenChatter feature
- Managing multiple sales teams

Using CRM as a business strategy

Before jumping into the specific CRM features of Odoo, it is important to discuss briefly the importance of a comprehensive approach to implementing a CRM system in your business. The fact is that successfully implementing a CRM system requires much more planning than just installing software and asking employees to fill in the data. CRM software systems are only a technical tool in assisting your sales and marketing department in acquiring and keeping customers. Certainly the software will play an important role, but to obtain real benefits from a CRM system, you must perform research to understand your customer and how exactly you wish to shape the customer experience.

It is critical that salespeople share account knowledge and completely understand the features and capabilities of the system. They often have existing tools that they have relied on for many years. Without clear objectives and goals for the entire sales team, it is likely they will not use the tool. A plan must be implemented to spend time training and encouraging the sharing of knowledge to successfully implement a CRM system.

Managing the customer experience

Today, customers face a wide range of choices when it comes to purchasing products and services. At the most fundamental level, customers often build great loyalty to brands that give them a positive customer experience. Companies such as Apple and Harley Davidson are successful largely because of fierce brand loyalty based on positive customer experiences. Making the most of a CRM system requires you to put yourself in the role of your customer and develop a consistent strategy to improve their overall customer experience.

Treating your customer like a real person

As computers became more common, it wasn't long until people began to feel as if they were treated *like a number* by many companies. In many ways, CRM systems turn the tables around. Instead of treating customers like cattle, a smart account manager, using a CRM system, can greatly personalize the customer experience. With a CRM system, you treat your customer like an individual, and they will reward you with their loyalty.

Because you are looking to create a personalized customer experience, it is important to thoroughly look at your customer's interactions with the company when designing your own CRM system. A company that sells high-end security systems to government institutions will need to provide drastically different customer experiences than a company that provides a pool maintenance service.

Using your mission statements and company goals to drive the design of your CRM system

A good CRM system will be built around the core goals and mission of your company. If your company does not have customer-focused goals or a mission statement, then you should address that before you begin designing a CRM system. Most critically, a focus must be placed on concerns and interactions that have a direct impact on customer experience. A good CRM system will not just manage the sales process but the entire customer experience and interactions before and after the sale.

The real-world case study – improving customer experience

Now we will take a detailed look at how a real-world CRM system can be implemented to improve customer experience. We begin by looking at a company slogan. *We make great first impressions last*.

Here, we have a slogan that most certainly speaks of the value of customer experience. To make that great first impression and keep it, there are several critical service expectations:

- Orders must be accurate and easy for customers to place
- Orders must be delivered on time
- Quality must be excellent

While listing these customer service goals may seem obvious, explicitly enlisting your objectives is important when building a CRM system. In the building process, there is often a natural tendency to focus almost exclusively on customer acquisition and pre-sale activities. We must take care to remember that a CRM system must also support processes that manage the entire customer experience. How are problem orders handled? How is the customer contacted if there is a product back order? If the customer calls, can the service representative easily provide delivery-tracking information? These are the kind of scenarios to consider when building your own CRM system.

Installing the CRM application

If you have not installed the CRM application, log in as the administrator and then click on the **Settings** menu. In a few seconds, the list of available apps will appear. The CRM will likely be in the top-left corner:

Click on **Install** to set up the CRM application.

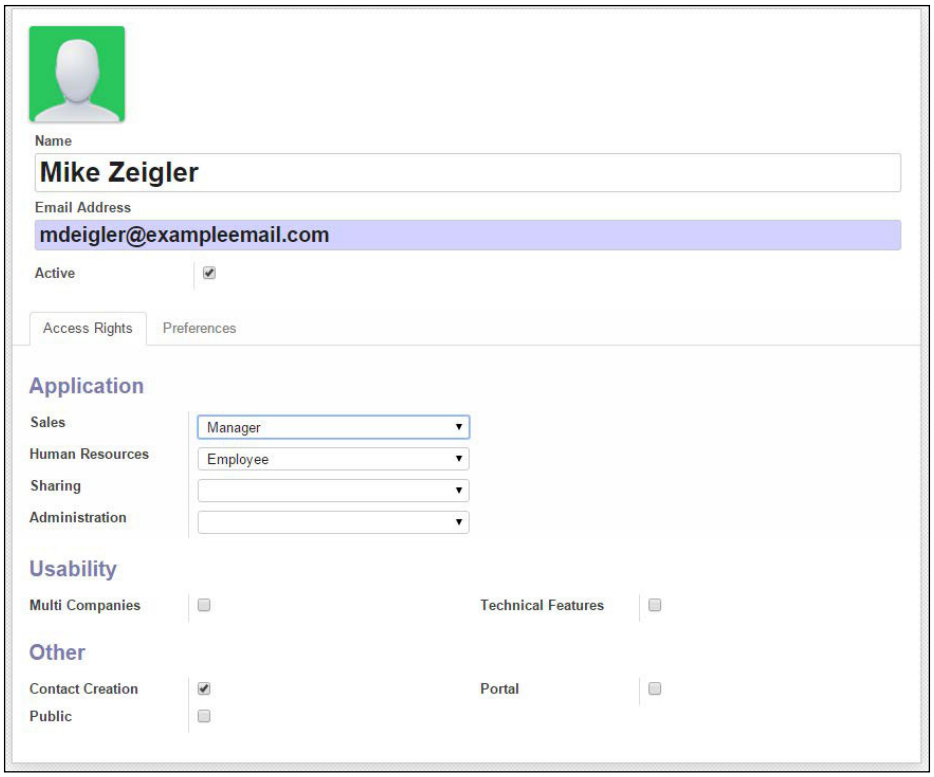
Assigning the sales representative or account manager

In Odoo, like in most CRM systems, the sales representative or account manager plays an important role. Typically, this person will ultimately be responsible for the customer account and a satisfactory customer experience.

While most often a company will use real people as their salespeople, it is certainly possible to instead have a salesperson record refer to a group or even a sub-contracted support service.

We will begin by creating a salesperson who will handle standard customer accounts. Note that a sales representative is also a user in the Odoo system.

Create a new salesperson by going to the **Settings** menu, selecting **Users**, and then clicking on the **Create** button. The new user form will appear. We have filled in the form with values for a fictional salesperson, `Mike Zeigler`. The following is a screenshot of the user **Access Rights** tab:



Email Address

Beginning in Odoo 8, the user and login form prompts for e-mail as opposed to a username. It is still possible to use a username instead of an e-mail address, but given the strong encouragement to use an e-mail address in Odoo 8, it is possible that in future versions of Odoo, the requirement to provide an e-mail address will be more strictly enforced.

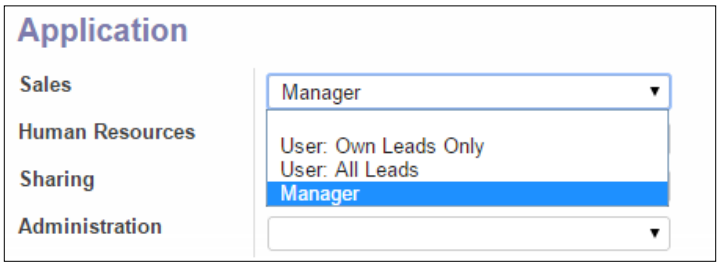
Access Rights

The **Access Rights** tab lets you control which applications the user will be able to access. There is no need to give Mr. Zeigler access to the **Sharing** or **Administration** privileges. By default, Odoo will specify Mr. Ziegler as an employee, so we will accept that default.

Depending on the applications you may have already installed or the dependencies Odoo may have had in various releases, it is possible you will have other access rights listed.

Sales application settings

When setting up your salespeople in Odoo, you have three different options on how much access an individual user has to the sales system:



User : Own Leads Only

This is the most restrictive access to the sales application. With this access level, the user is only allowed to see the leads they have entered themselves or those that have been assigned to them. They will not be able to see leads assigned to other salespeople in the system.

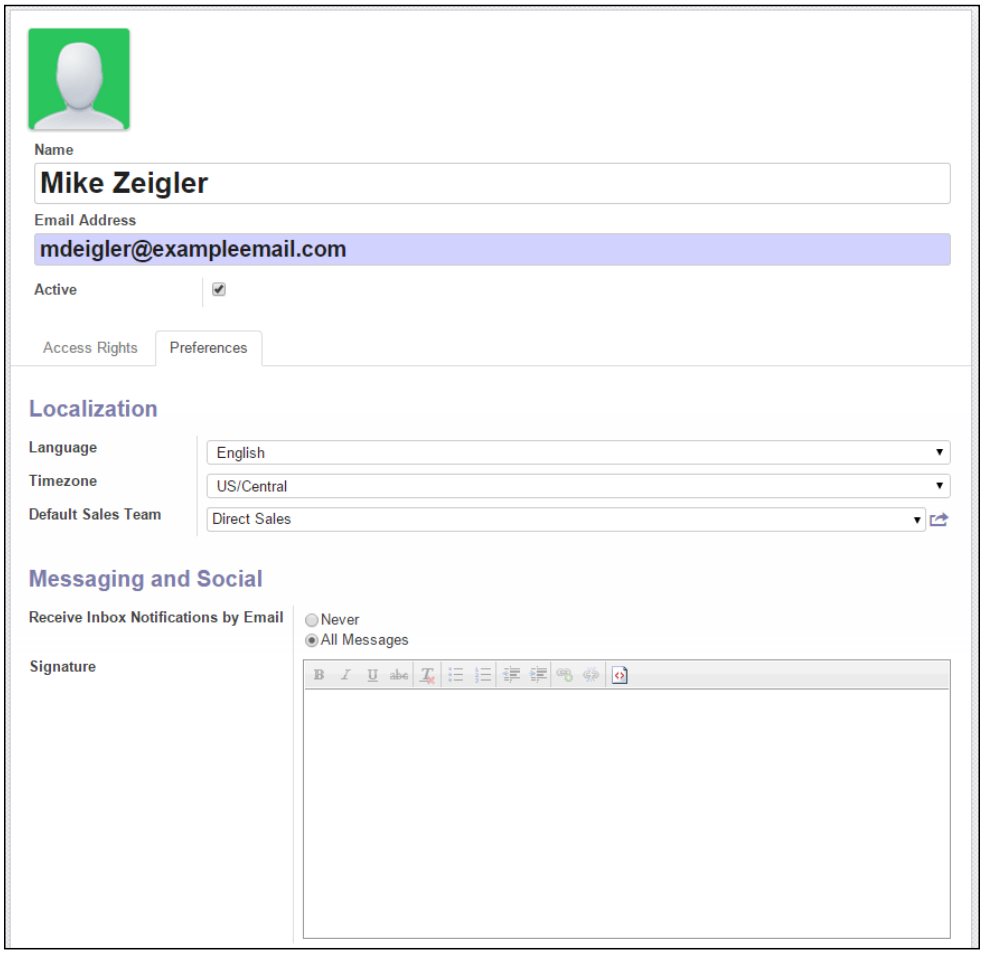
User : All Leads

With this setting, the user will have access to all leads within the system.

Manager

The **Manager** setting is the highest access level in the Odoo sales system. With this access level, the user can see all leads, as well as access the configuration options of the sales application. The **Manager** setting also allows the user to access statistical reports.

For the purposes of our example, we are going to assign Mike Zeigler the role of manager. The following form is to enter a new user into Odoo:



Language and Timezone

Odoo allows you to select the language for each user. Currently, Odoo supports more than 20 language translations. Specifying the **Timezone** field allows Odoo to coordinate the display of the date and time on messages.

Make sure you specify a timezone when creating a user record. Leaving timezone blank for a user may sometimes lead to unpredictable behavior in the Odoo software. Check the customization chapter to find out how you can make timezone a required field!

Receive Inbox Notifications by Email

In Odoo 7, messaging became a central component of the Odoo system. In version 8, the support has been improved, and it is now even easier to communicate important sales information between colleagues. Therefore, determining the appropriate handling of email along with the circumstances in which a user will receive an e-mail is very important. The **Receive Inbox Notifications by Email** option lets you determine when you will receive e-mail messages from notifications that come into your Odoo inbox.

For our example, we have chosen to receive **All Messages**. This is now the new default setting in Odoo 8. However, since we have not yet configured an e-mail server, no e-mails will be sent or received at this stage.

Let's review the user options that are available in communicating by e-mail.

Never

Selecting **Never** suppresses all e-mail messaging for the user. Naturally, you will wish to use this setting if you do not have an e-mail server configured. This is also a useful option for users to use Odoo's built-in inbox to retrieve their messages.

All Messages – discussions, e-mails, and followed system notifications

This option sends an e-mail notification for any action that would create an entry in your Odoo inbox. Unlike the other options, this action could include system notifications or other automated communication.

Default Sales Team

In Odoo, sales teams allow you to organize salespeople. For example, you could have sales teams organized by region or by product category. Even if you do not load demo data during an Odoo installation, the system will have one sales team record named **Direct Sales**. In version 7 of Odoo, this default team was called the Sales Department.

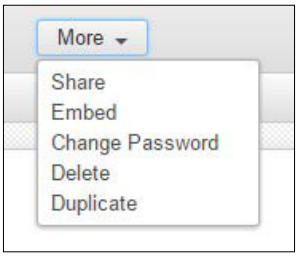
Signature

The **Signature** section allows you to customize a signature that will automatically be appended to Odoo-generated messages and e-mails.

Manually setting the user password

You may have noticed that there is no visible password field in the user record. That is because the default method is to send the user an account verification email that they can use to set their password. However, if you do not have an email server configured, there is an alternative method to set the user password.

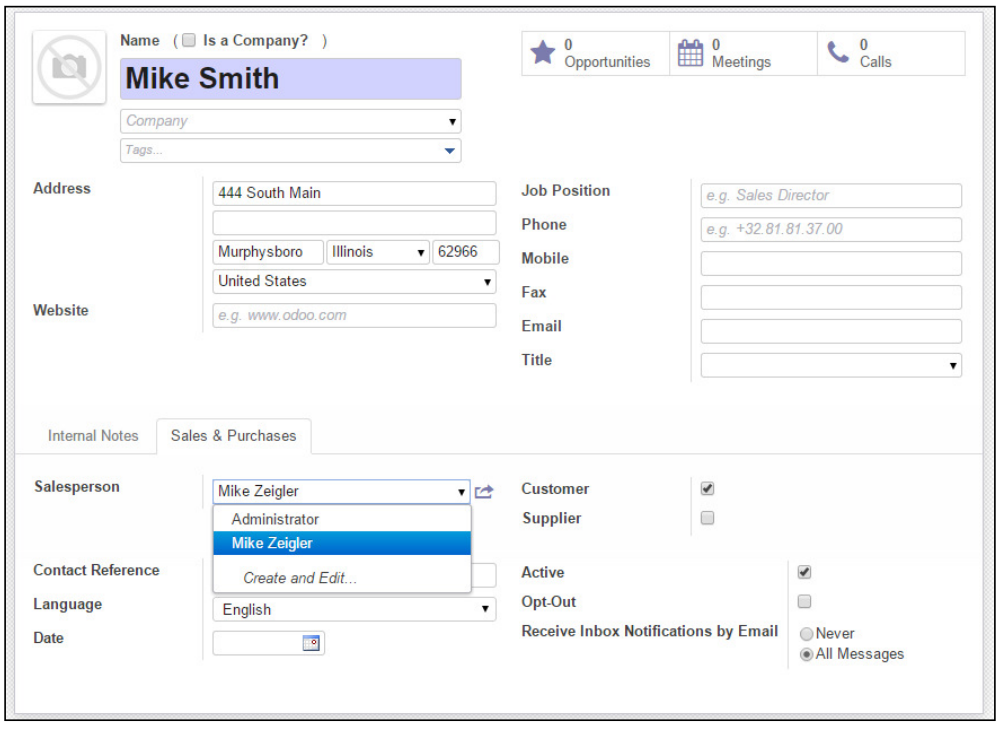
After saving the user record, use the **More** menu at the top of the form and select **Change Password**, as shown in the following screenshot:



A form will then appear allowing you to set the password for the user.

Assigning a salesperson to a customer

Now that we have set up our salesperson, it is time to assign him his first customer. Previously, no salesperson was assigned to our one and only customer, Mike Smith. So let's go to the sales menu and then click on **Mike Smith** to pull up his customer record and assign Mr. Ziegler as his salesperson. The following is a screenshot of the customer screen opened to assign the salesperson:



Here, we have set the salesperson as **Mike Zeigler**. By assigning your customers a salesperson, you can better organize your customers for additional statistical analysis and report development.

In Odoo 7, you were required to supply both the salesperson and the department. Now in Odoo 8, you specify only the salesperson.

Leads and opportunities

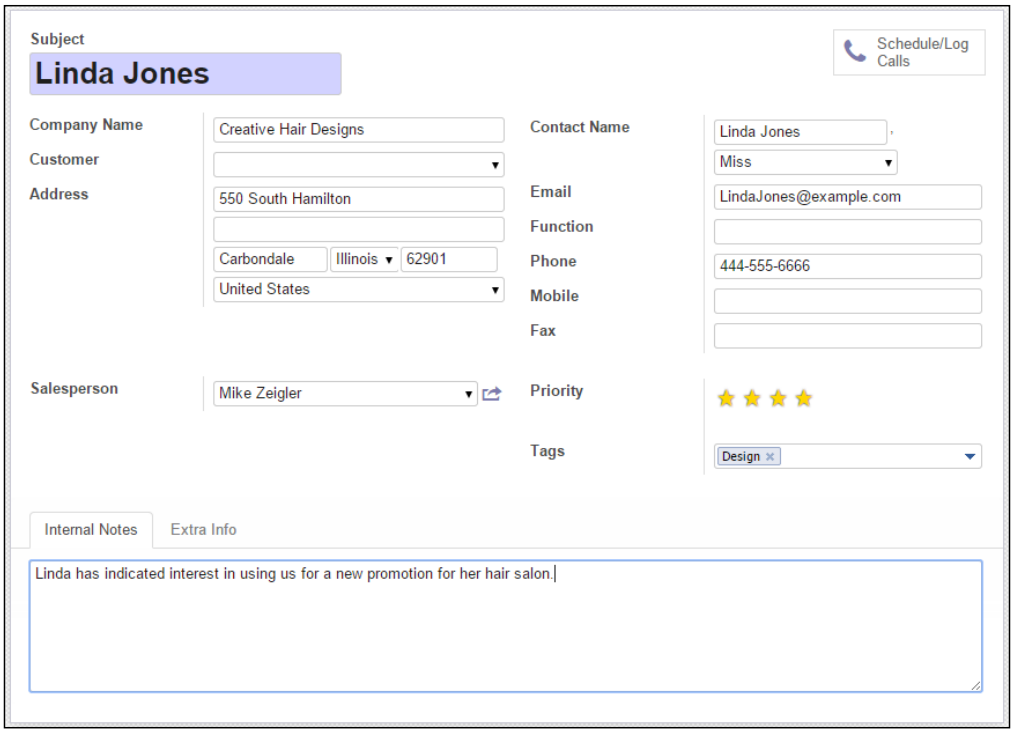
Odoo provides two primary documents to manage interactions with your customers or potential customers. You can think of leads as less critical—and perhaps less likely to turn into a real sales situation—than an opportunity. A good example of leads would be the few dozen business cards you get from people you met at a conference. You could add each of them as a lead for further follow-up. An example of an opportunity would be meeting someone at the conference and having a detailed conversation on how your company provides appropriate services.

Many people get confused between when to use leads and when to use opportunities. The best way to remember the difference is that leads are intangible and are essentially potential contacts. Opportunities should be more clearly defined, have some sort of expected income if successful, and provide significant project details and scope compared to a simple lead.

Creating leads in Odoo

Many a time, it can take quite a bit of work to uncover an opportunity. Use Odoo to create leads when you need a qualification step before creating an opportunity or a customer. For example, you may receive a business card or an unqualified lead from your website. Another common situation is that leads are purchased, perhaps from a mailing list, and then imported into Odoo.

Let's create a new lead for a potential customer we met at a local event. Under the **Sales** menu, click on **Leads** and then on the **Create** button to open a new lead. The following is the screenshot of the form used to create a new lead:



As you will see, the form is very similar to the standard customer screen. There is a good reason for this, as Odoo uses a standard structure to hold address information for leads, customers, suppliers, and users/employees. In our example, we have filled out the basic contact and address information as well as assigned our sales representative to this lead.

For this example, we are not yet creating a customer. Notice, however, that there is a customer field available in the form. It is possible that you come across a lead that perhaps is tied to an existing customer you already have in the system. In this case, you could select the customer and the rest of the information would be filled in.

Converting a lead into an opportunity

Leads will stay leads indefinitely until you take some action to either turn them into opportunities or mark them as lost/dead. You will notice a button labeled **Convert to Opportunity** at the top-left corner of your form. At any point, you can convert a lead into an opportunity simply by clicking on this button.

Once you click on **Convert to Opportunity**, you will be presented with an Odoo wizard that will allow you to choose how you wish to handle the conversion of the lead into an opportunity.

Each of the options presented are pretty self-explanatory. The **Conversion Action** field determines if you will create a new opportunity or merge this lead with an existing opportunity. You also have the option of assigning the opportunity to a specific salesperson. Finally, you get to tell Odoo if you wish to create a new customer for this opportunity or if instead you wish to assign this opportunity to an existing customer.

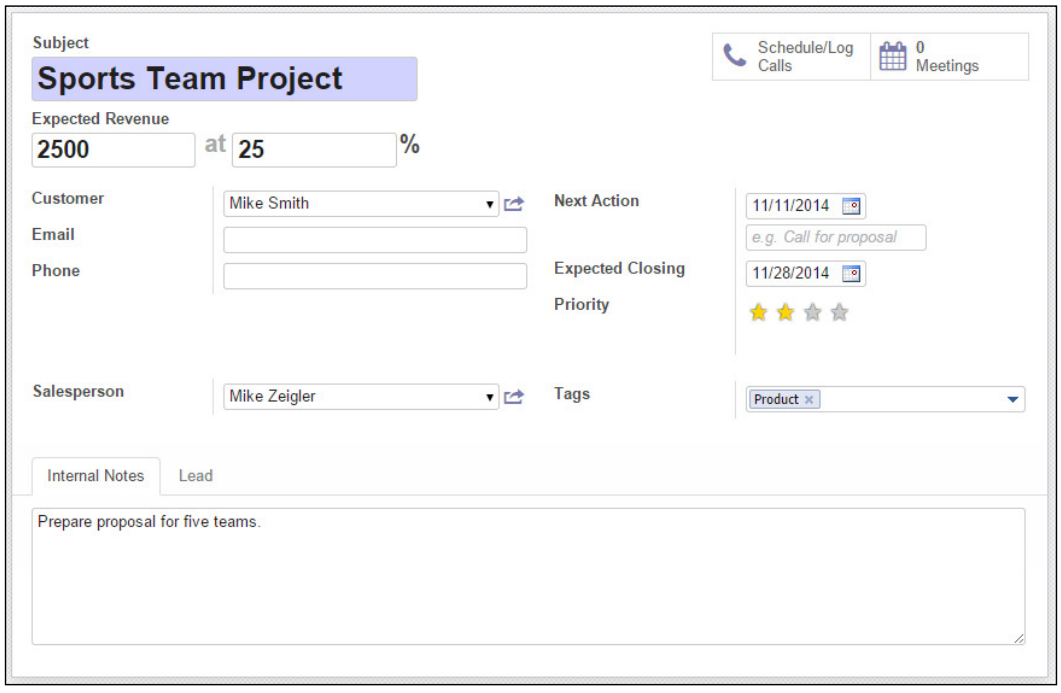
Marking a lead as lost or dead

Sometimes, a lead cannot be converted into an opportunity, and you must mark it as lost. To do so, identify the lead you wish to mark as lost. You can mark a lead as lost by choosing Mark as Lost from the **More** menu at the top of the page or by clicking on the **More** status on the far right of the form and choosing **Dead**. There is no difference between the two methods. Lost and Dead mean the same thing. Odoo just names them differently in the interface.

Creating a new opportunity

In Odoo, a potential sale is defined by creating a new opportunity. An opportunity allows you to begin collecting information about the scope and potential outcomes of a sale. Opportunities can be created from new leads or originate from an existing customer.

For our real-world example, let's assume Mike Smith has called and was so happy with his first order that he now wants to discuss using Silkworm for his local sports team. After a short conversation, we decide to create an opportunity. To do so, we click on the **Opportunities** button. This is a screenshot of a new opportunity:



Subject

The subject used for your opportunity can be anything you wish. It is naturally important to choose a subject that makes it easy to identify the opportunity in a list. This is the only field required to create an opportunity in Odoo.

Expected Revenue and percentage

Here, you specify the amount of revenue you can expect from the opportunity if you are successful and then the percentage likelihood that this opportunity will result in a sale. These values are useful in many statistical reports, although they are not required to create an opportunity.

An increasingly number of reports looks to the expected revenue and percentage of opportunity completions. Therefore, depending on your reporting requirements, you may wish to encourage salespeople to set target goals for each opportunity to track conversion better.

Customer

This field is automatically populated if you create an opportunity from the customer form. However, you can assign a different customer if you like. This is not a required field, so if you have an opportunity that you do not wish to associate with a customer, that is perfectly fine. For example, you may leave this field blank if you are attending a trade show and expect to have revenue but do not yet have any specific customers to attribute to the opportunity.

Next Action

When following up on your opportunities, one of the most important triggers will be the **Next Action** date. Here, you decide when you should next take some sort of action on the opportunity. You are provided a small note field to remind you of the action that you should be taking. This could be anything from placing a phone call to sending an email to performing a presentation. For our example, we intend to present a proposal on the action date.

Expected Closing

When managing your opportunities, it is important to establish a goal for when you wish to close the sale. Providing an expected closing date is handy for managing opportunities and running reports identifying which opportunities are due to be closed. The priority setting ranges from lowest to highest, with three settings in between. In defining your CRM system, you should identify business rules to determine under what conditions an opportunity will receive the highest priority.

Tags

Odoo allows you to assign multiple tags to an opportunity. For example, you could choose 'trade show' and 'sports' as tags to designate an opportunity that is sports-related and will take place at a trade show.

Email and Phone

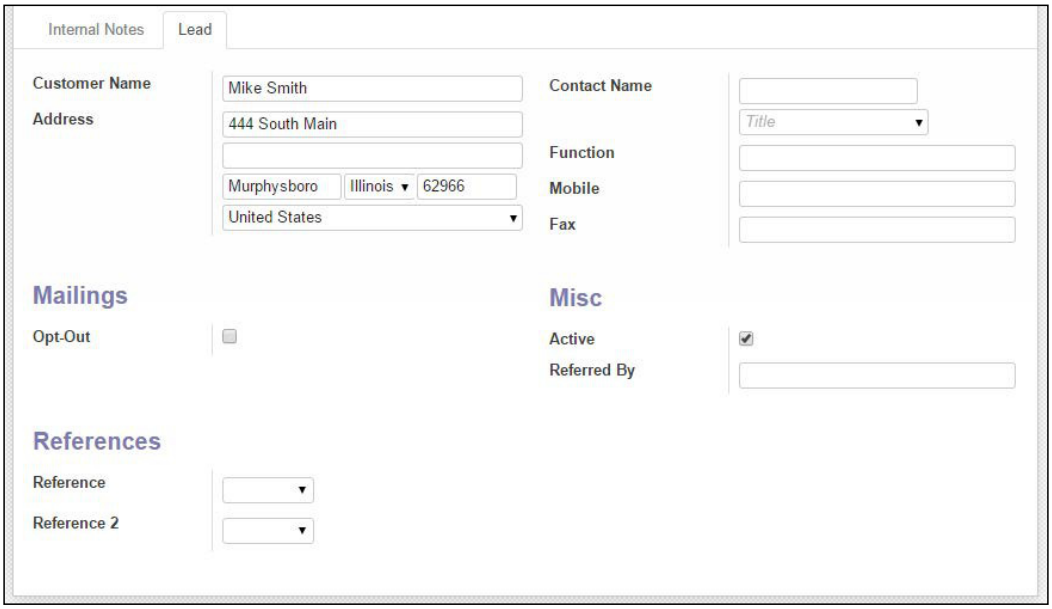
The **Email** and **Phone** fields allow you to specify the primary contact methods you will likely use to communicate with your opportunity.

Internal Notes

The **Internal Notes** area is where you provide all the details of the opportunity. For our example, we kept the notes brief. However, when you are working with real opportunities, make sure you take advantage of the **Internal Notes** area to document anything that will help you close the sale.

The Lead tab

When you create an opportunity from either a customer or a lead, the information is automatically brought over into the **Lead** tab in the opportunity. The following is a screenshot of the **Lead** tab of an opportunity:



Lead address and contact information

The top half of the **Lead** tab contains the standard fields for an address and other contact information. This information is automatically populated but can be overwritten for the opportunity if you desire. The **Function** field is used to provide a bit of detail on the event that triggered the opportunity.

Odoo does not provide separate fields for first and last names like many other accounting systems. Consider this as you plan how to organize customers in your system.

Mailings

The **Opt-Out** checkbox prevents the lead or customer associated with this opportunity from receiving mass mailings.

Active

This field is useful if you have an opportunity that perhaps has gone cold. Instead of deleting the opportunity, you can make it inactive by unchecking the box. Later if the opportunity becomes viable again, you can make it active once again.

Referred By

This is a simple text field that is not tied to any other data. It is just a field where you can make a note of who may have referred this opportunity to you.

References

The two places to specify references at the bottom of the screen have a great deal of flexibility in tying other information in Odoo to the opportunity. Not only can you select the type of reference, you can tie the opportunity directly to many records in the system. The list includes:

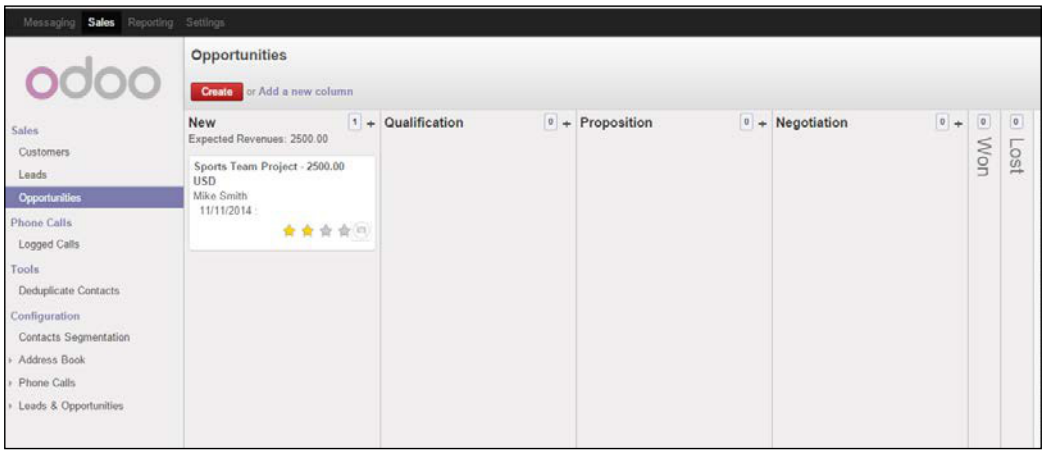
- Partner
- Product
- Invoice
- Voucher
- Sales Order

- Event
- Meeting

Save the **Opportunity** by clicking on the **Save** button at the top of the form.

Looking at your opportunities in the Kanban view

When you navigate to the **Sales** menu and choose **Opportunities**, you will see your opportunities displayed in the Kanban view. Here, we see our brand new $2,500 opportunity along with the customer and the next action we need to take. The following is a screenshot of the Kanban view for opportunities:



Clicking on the small arrow on the Kanban card will bring up a small menu allowing you to perform actions related to the opportunity.

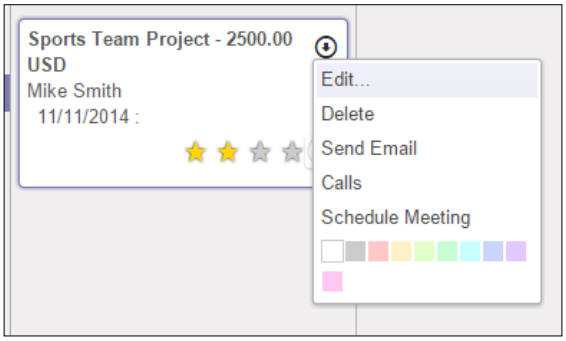
An introduction to sales stages

At the top of the Kanban view, you can see the default stages that are provided by the Odoo CRM installation. In this case, we see **New**, **Qualification**, **Proposition**, **Negotiation**, **Won**, and **Lost**. Notice that **Won** and **Lost** are currently collapsed and you can use the + icon to expand them.

As an opportunity moves between stages, the Kanban view will update to show you where each opportunity currently stands. Here, we can see that because **Sports Team Project** has just been entered, it is in the **New** column.

View the details of an opportunity

If you click the small arrow at the top right of the opportunity card in the Kanban view, you will see a pop-up menu with your available options. The following is a screenshot of the actions available on an opportunity:



Actions you can take on an opportunity

Selecting the **Edit...** option takes you to the opportunity record and into edit mode for you to change any of the information. In addition, you can delete the record, send an email to the contact associated with the opportunity, and schedule a call or meeting. The color palette at the bottom lets you color code your opportunities in the Kanban view. The small star on the opportunity card allows you to highlight opportunities for special consideration. You can also easily drag and drop the opportunity into other columns as you work through the various stages of the sale.

Using Odoo's OpenChatter feature

One of the biggest enhancements brought about in Odoo 7 was the new OpenChatter feature that provides social networking style communication to business documents and transactions. This feature has been improved in Odoo 8 and is more important than ever to create clear communication processes within an organization.

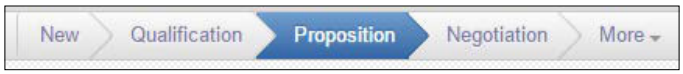
As we work on our brand new opportunity, we will utilize the OpenChatter feature to demonstrate how to communicate details between team members and generate log entries to document our progress.

The best thing about the OpenChatter feature is that it is available for nearly all business documents in Odoo. It also allows you to see a running set of logs of the transactions or operations that have affected the document.

Changing the status of an opportunity

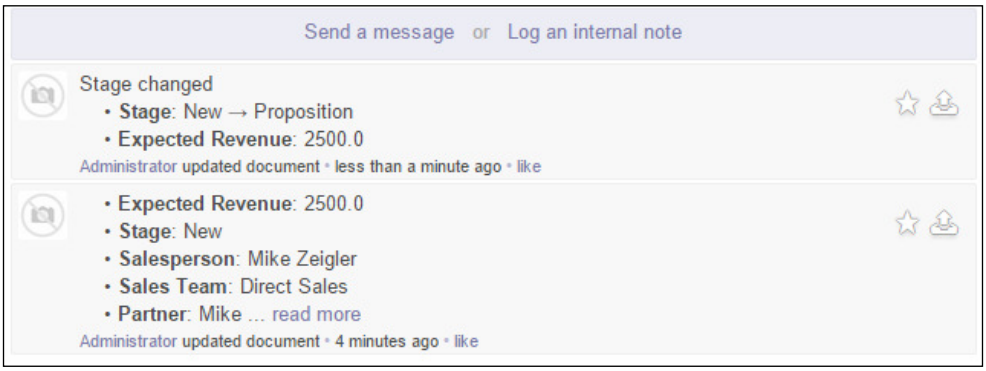
For our example, let's assume that we have prepared our proposal and made the presentation. Bring up the opportunity by using the right-click menu in the Kanban view or by going into the list view and clicking the opportunity in the list.

It is time to update the status of our opportunity by clicking on the **Proposition** tab at the top of the form.



Notice that you do not have to edit the record to change the status of the opportunity.

At the bottom of the opportunity, you will now see a logged note generated by Odoo that documents the change of the opportunity from a **New** opportunity to a **Proposition**. The following is a screenshot of OpenChatter displaying the changed stage of the opportunity:



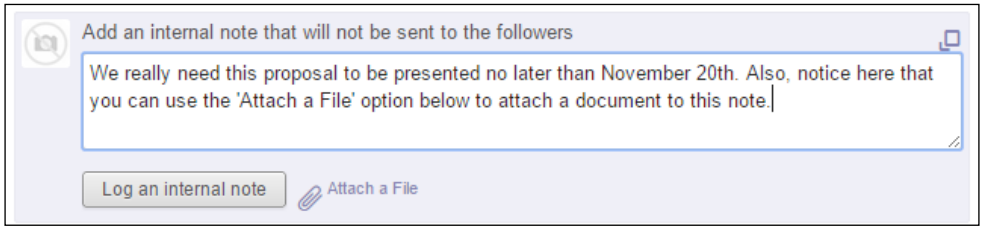
Notice how Odoo is logging the events automatically as they take place.

Managing the opportunity

With the proposal presented, let's take down some details from what we have seen so far, which may help us later when we come back to this opportunity. One method of collecting this information could be to add the details to the **Internal Notes** field in the opportunity form. There is value, however, in using the OpenChatter feature in Odoo to document our new details.

Most importantly, using OpenChatter to log notes gives you a running transcript with automatically generated date and time stamps. With the generic notes field, it can be very difficult to manage multiple entries. Another major advantage is that the OpenChatter feature can automatically send messages to team members' inboxes, thus updating them on the progress. Let's see it in action!

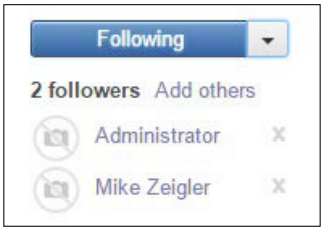
Click on the **Log a Note** link to attach a note to the opportunity. Here's a screenshot showing how to create a note:



When you create a note, it is attached to the business document; but no message will be sent to followers. You can even attach a document to the note by using the **Attach a File** feature. Clicking on the **Log an internal note** button saves the note and makes it part of the OpenChatter log for that document.

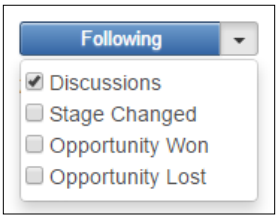
Following a business document

Odoo brings social networking concepts into your business communications. Fundamental to this implementation is that you can get automatic updates on a business document by following the document. Then, whenever a note, action, or a message is created related to a document you follow, you will receive a message in your Odoo inbox. In the bottom right-hand corner of the form, you are presented with notification options and the option to add or remove followers from the document. The following is a screenshot of the OpenChatter **Following** options:



In this case, we can see that both **Mike Zeigler** and **Administrator** are set as followers for this opportunity. The blue **Following** button at the top indicates that I am following this document. Using the **Add others** link, you can add additional users to follow the document.

Now in Odoo 8, the items that followers are notified of can be viewed by clicking on the arrow to the right of the **Following** button. This brings up a list of the actions that will generate notifications to the followers:



The checkbox next to **Discussions** indicates that I will be notified of any discussions related to this document. However, I will not be notified, for example, if the stage changes.

When you send a message, by default, the customer will become a follower of the document. Thus, whenever the status of the document changes, the customer will receive an email. Test out all your processes before integrating with an e-mail server. For additional resources on community modules that help manage the OpenChatter features, refer to *Appendix*, *Locating Additional Odoo Resources*.

Modifying the stages of the sale

We have seen that Odoo provides a default set of sales stages. Many times, however, you will want to customize the stages to best deliver an outstanding customer experience. Moving an opportunity through stages should trigger actions that create a relationship with the customer and demonstrate your understanding of their needs. A customer in the qualification stage of a sale will have significantly different needs and expectations than a customer in the negotiation phase.

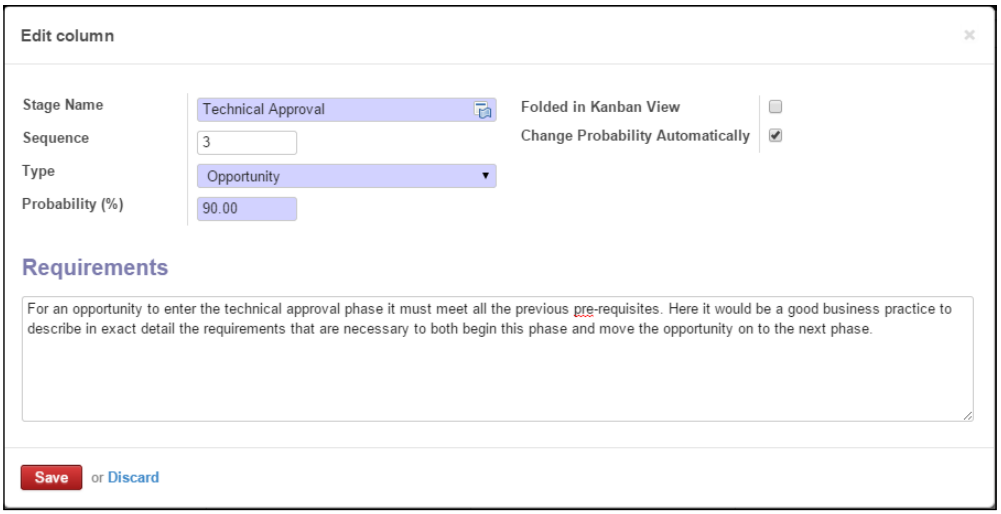
In terms of our case study, there are sometimes printing jobs that are technically complex to accomplish. With different jerseys for a variety of teams, the final details need to go through a final technical review and approval process before the order can be entered and verified.

From a business perspective, the goal is not just to document the stage of the sales cycle; the primary goal is to use this information to drive customer interactions and improve the overall customer experience.

To add a stage to the sales process, switch to the Kanban view, then click on the **Add column** link in the top-left corner of the form.

You can find the Kanban button in the top-right corner of the form. This is what the Kanban button looks like:

The **Add column** form is in the following screenshot:



After you have added the column to the sales process, you can use your mouse to drag and drop the columns in the order you wish them to appear. We are now ready to begin the **Technical Approval** stage of this opportunity.

In Odoo 7, there was also a **Status** property that was confusing for many users. Therefore, **Status** has been removed in Odoo 8.

Drag and drop the Sports Team Project opportunity over to the **Technical Approval** column in the Kanban view, as seen in the following screenshot:

We have now moved the opportunity over to the Technical Approval column in our Kanban. You will also notice that any time you change the stage of an opportunity, an entry is created in the OpenChatter section at the bottom of the form. In addition to the ability to drag and drop an opportunity into a new stage, you also have the ability to change the stage of an opportunity by going into the form view.

Closing the sale

After a lot of hard work, we have finally won the opportunity, and it is time to turn this opportunity into a quotation. At this point, Odoo makes it easy to take that opportunity and turn it into an actual quotation.

Open up the opportunity and click on the **Convert to Quotation** button at the top of the opportunity form:

Taking this action will bring you to the **Make Quotation** screen, where you can confirm the customer and mark the opportunity as **Won**. Since we definitely want to update our opportunity and get credit for the win, we make sure that the **Mark Won** box is checked. Notice that it is also possible to create a quotation for other customers as well by simply selecting them from the list. The following is a screenshot of the **Make Quotation** action for an opportunity:

Clicking on the **Create** button will move your opportunity to the **Won** stage and automatically populate the reference field in the opportunity with a link to your newly created quotation.

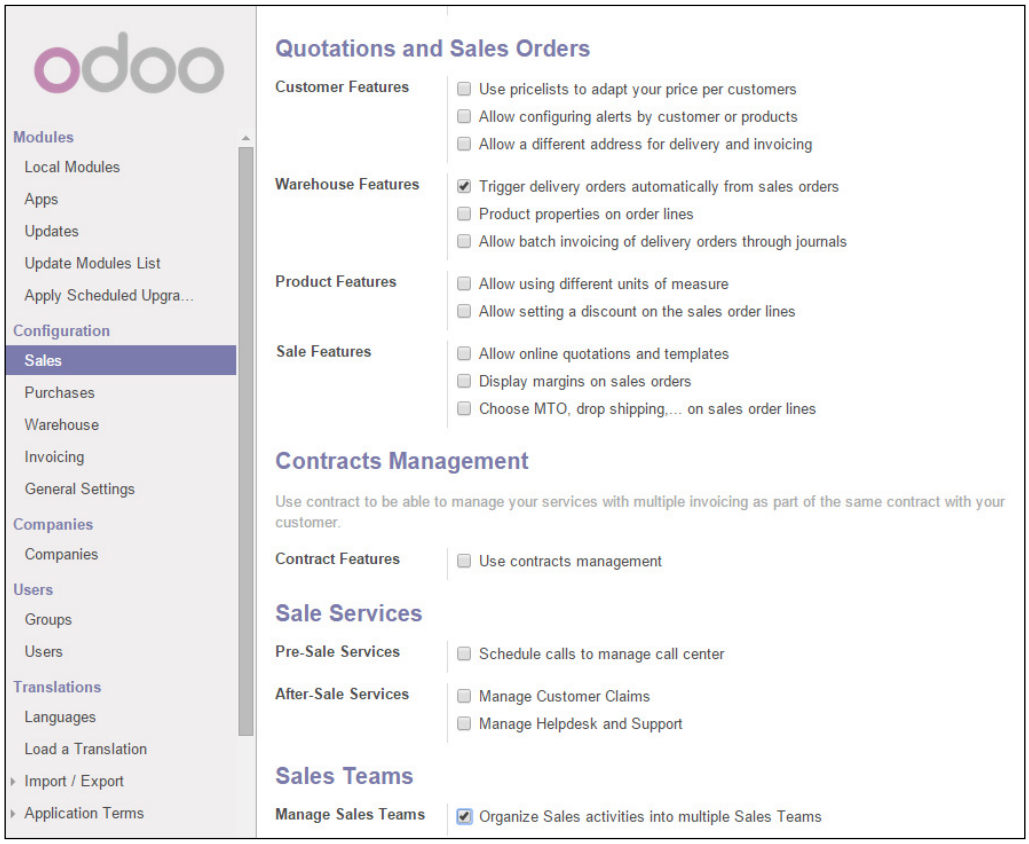
Your opportunity converted to a quotation

The workflow in Odoo handles moving over all the required information from your opportunity to your quotation document. At this point, you are ready to begin adding line items and creating a quotation just as we did in *Chapter 2*, *Installing Your First Application*.

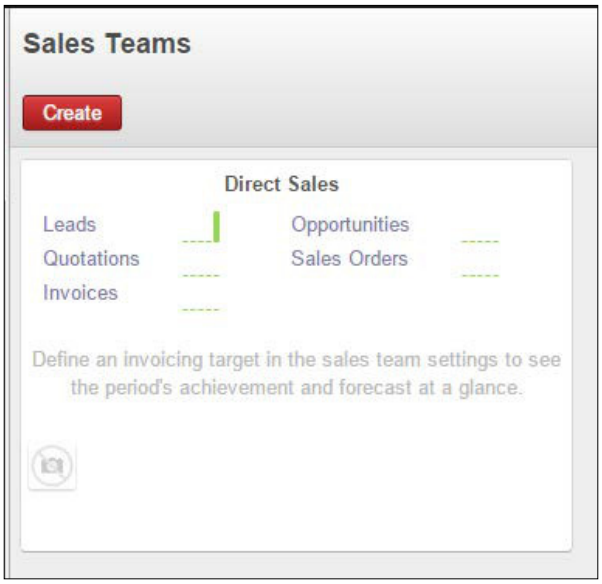
Managing multiple sales teams

Like most Odoo applications, by default, most settings are pre-configured to provide a simple out-of-the-box solution. Many companies, however, may have multiple sales teams that handle different customer types, perhaps by product line or by geographical territory. When your company has those requirements, you will want to turn on the option to handle multiple sales teams within Odoo.

You can access these settings through the **Sales** application under the **Configuration** options:



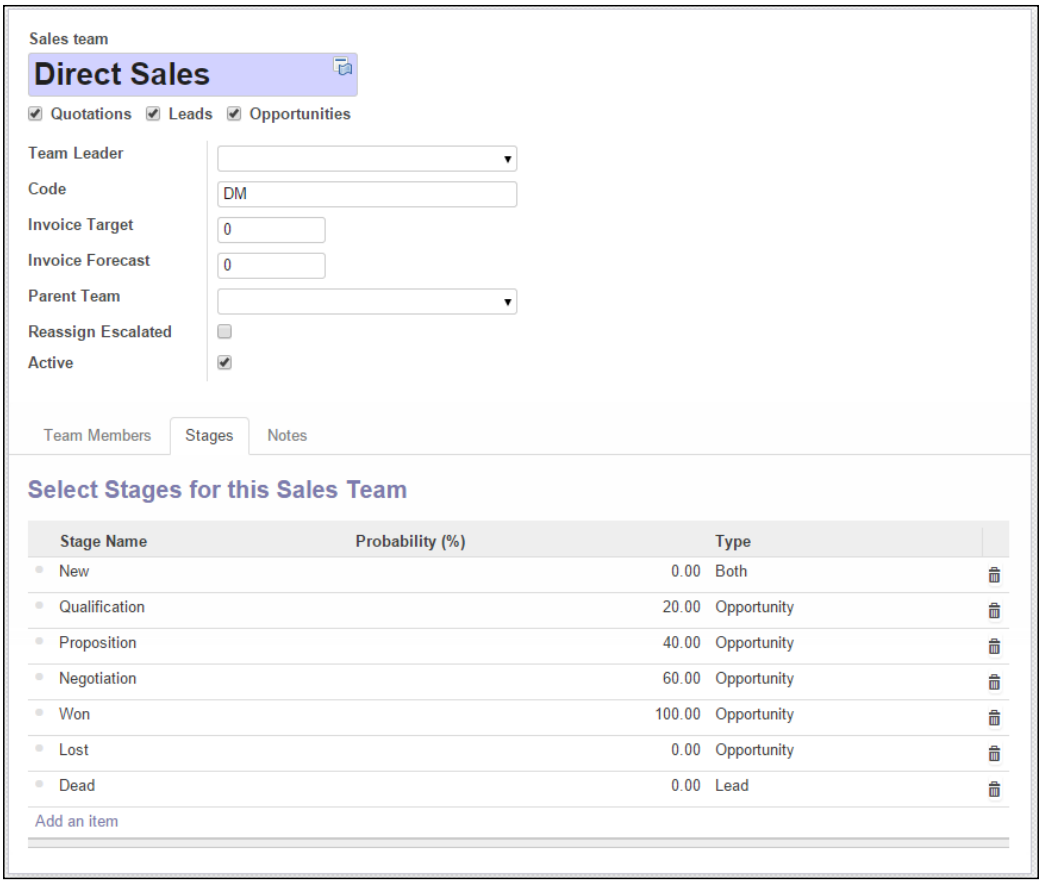
Clicking on the checkbox under **Sales Teams** | **Manage Sales Teams**, allows you to organize sales activities into multiple sales teams. You will also notice that when you now click on the **Sales** menu, you will get a new default view that breaks operations down by sales team.



Creating custom stages through Sales Teams

For many sales operations, a company may use the same stages for all their sales. However, depending on the complexity of your company's product line, it may be better to create custom stages for different sales teams. For our case study, Silkworm provides creative design services that require a different set of stages when managing the sales process. As we have discussed, the primary purpose of stages in a CRM system is to support a positive customer experience.

To configure the stages of a sales team, click on the small arrow in the Kanban view or switch to the row view and double-click on the row. Click on the appropriate sales team and then the **Stages** tab to see the current stages assigned to the sales team, as seen in the following screenshot:



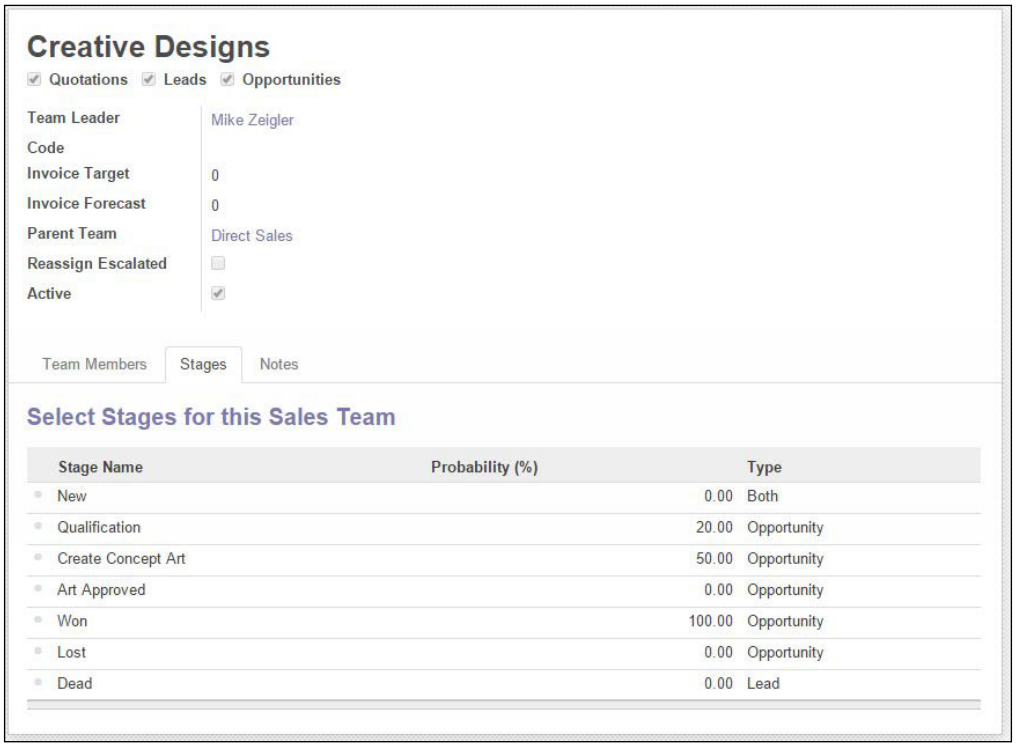
On the far left of the list, you can click and drag the little dot to reorder the stages. The far right of the grid has a small trash icon that can be used to delete a stage.

Each stage is assigned to a related status, and you can determine whether a stage is applicable to a lead or an opportunity, or to both.

Creating a new sales team

We can create a new sales team to handle creative designs and more artistic projects that require extra customer service. Click on **Create** in the **Sales Team** view to create a new sales team.

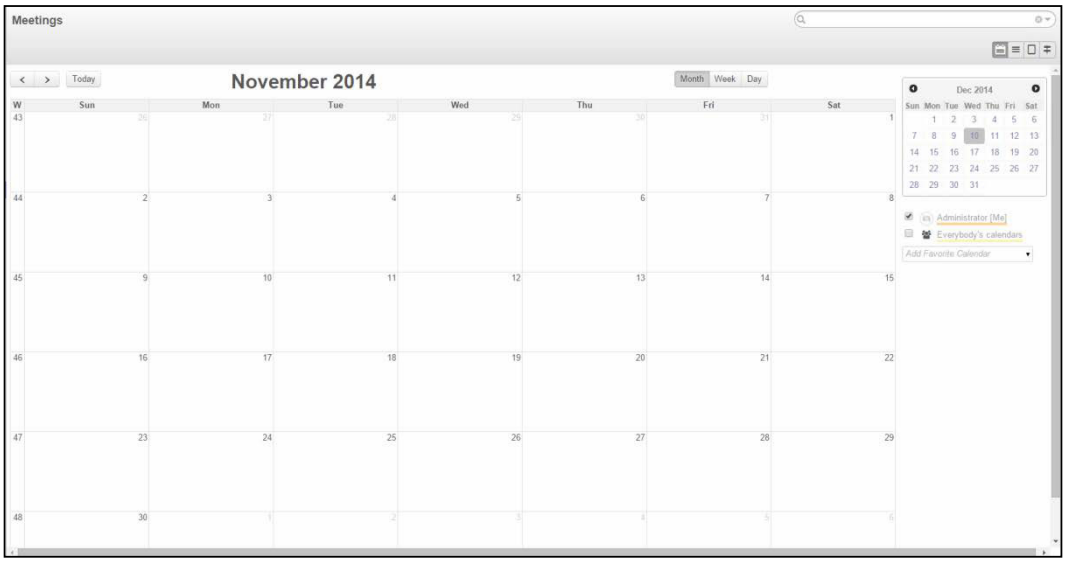
For our new **Creative Designs** team, we have added a few stages to better represent the sales cycle for this service category:



Using Odoo to schedule calls, meetings, and events

Often when working with leads and opportunities, you will find it beneficial to schedule meetings and calls. Odoo provides a built-in meeting scheduler you can use specifically to manage your schedule and relate those events to customers within Odoo. Let's take a look at how we can schedule an event in Odoo. Meeting scheduling is handled in the messaging menu of Odoo. Begin by going to the messaging menu and choosing **Calendar**.

Odoo will then display your personal calendar and bring up the current month.

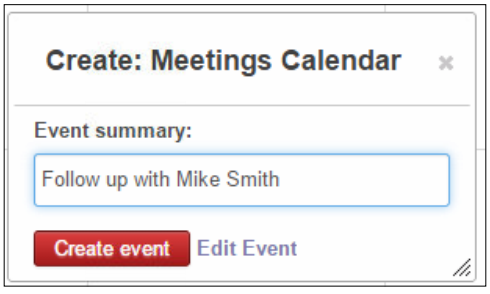


The arrows at the top left of the form allow you to quickly navigate to the previous and next month respectively. To the right of the title is the option to look at the calendar by month, week, or day. This can be particularly valuable to see more information when you have many meetings scheduled.

On the far right, you have a small calendar for the next month. This small calendar is interactive, and you can use it to quickly jump to that month and even a specific day.

Scheduling an event

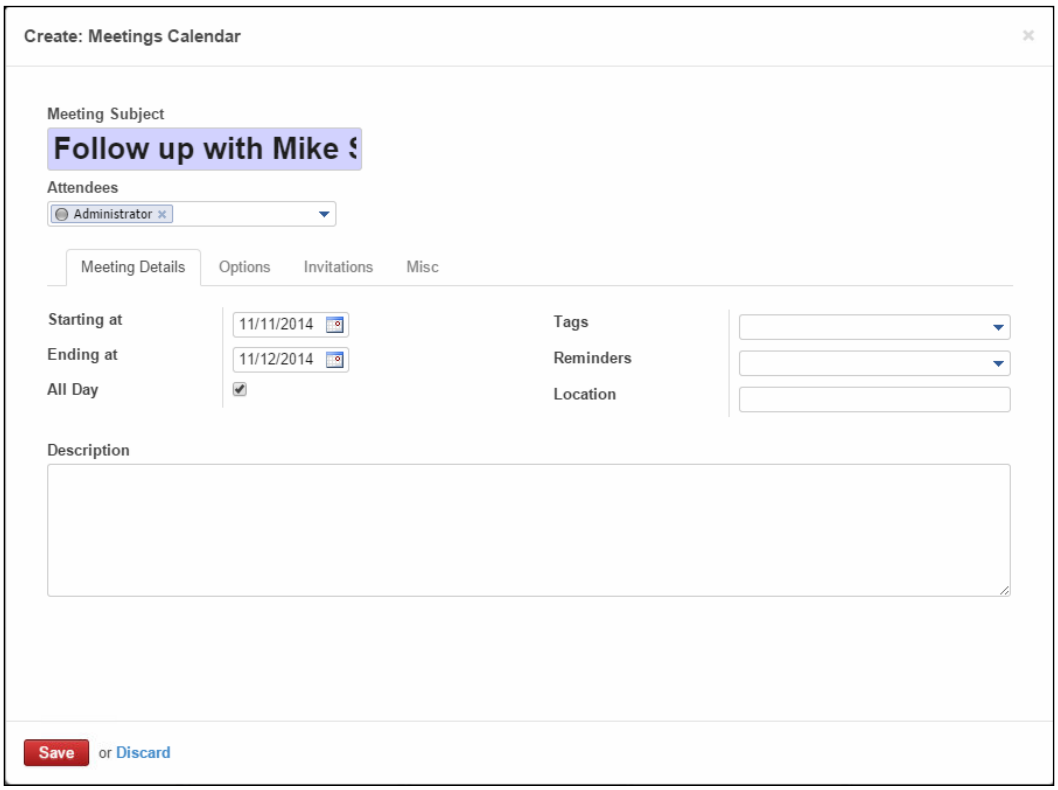
Scheduling an event is very easy. Simply click on the day you wish to schedule an event. You will then be prompted to name the event.



After entering the event summary, you will have two options. You can directly create the event, or you can choose **Edit Event** to provide additional details about the event.

Depending on how you want to organize and manage your meetings, it may work for you just fine to create the event; provided the event summary is enough information for you to take the action you require. Typically, however, it will be a better practice to edit this event and provide some more details.

Click on **Edit Event** to create an event and automatically bring it up for editing:



Odoo will automatically bring over the event summary that you filled in after clicking on the day. Notice, however, that instead of **Event summary**, the title is now **Meeting Subject**. Perhaps Odoo will modify this in the future for greater consistency. Make sure that the **Ending at** date is one day after the **Starting at** date and the **All Day** option is checked.

Adding attendees to your meeting

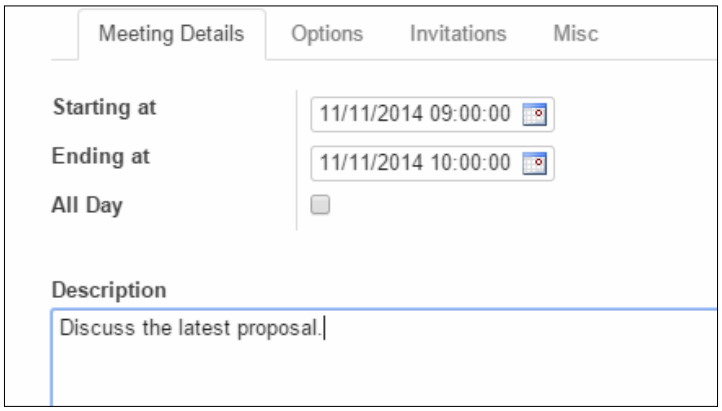
By default, you are the only person attending this meeting. When you are meeting with a client, customer, or vendor, it is largely up to you to add the attendee here in the list. For our purpose, we will add **Mike Smith** to the list of attendees. Odoo will automatically search in real time as you type out the name.

Odoo will then add the attendee to the attendees list. For internal communications, this can be used to make sure all of the necessary team members are notified of the meeting if they are also using the Odoo schedules.

Odoo will give you a warning if you add an attendee that does not have an email address. In this case, Odoo will still add the attendee, but naturally, any automated notifications will not be delivered to the attendee.

Specifying the meeting details

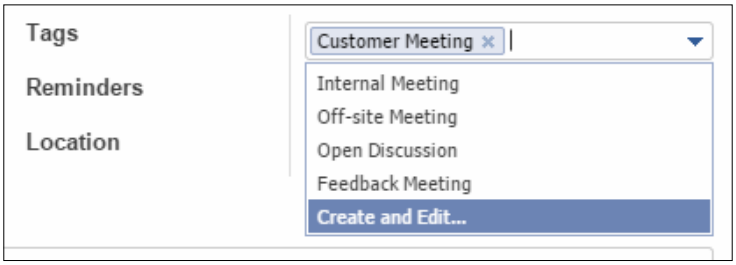
Odoo's meeting scheduler offers quite a few different options that assist you in customizing the meeting. One of the first things to notice is that, by default, Odoo schedules a meeting for the full day. If you wish to schedule for a specific time, uncheck the **All Day** option. After you have unchecked the option, the **Starting at** and **Ending at** fields will expand to allow you to specify the time.



One other important thing to notice is that even after you uncheck the **All Day** option, Odoo will leave the ending date as the next day. Therefore, at least with this version of Odoo, you will have to go back and adjust the end date to be the same as the start date. In this example, we have also added a simple description to show how you can specify details of the event.

Specifying tags for your meeting

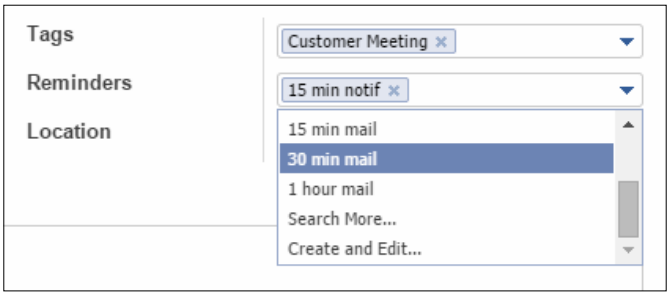
Odoo provides a set of default meeting tags that quickly tell you the overall scope of the meeting. You can specify multiple tags as well as create new tags to organize your meeting schedules.



Setting up reminders for your meeting

Oftentimes, you might like to have a reminder or notification a little while before your meeting. Setting reminders can possibly help prevent you from missing an important meeting. Odoo offers two kinds of basic reminders: notifications and email reminders.

Notifications will prompt you visually on screen in the top-right corner of your window at a specified time before the meeting. Email reminders will send you an e-mail.

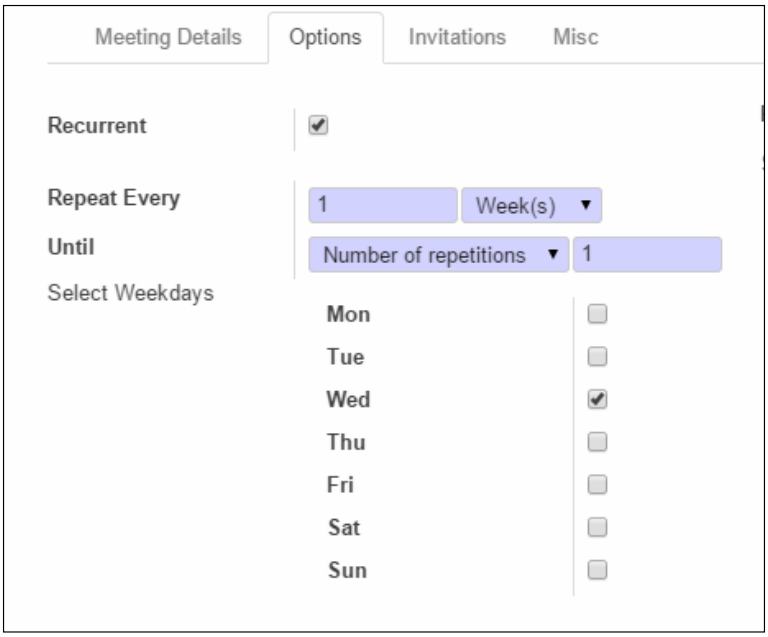


In addition to tags and reminders, you also have the option to specify the location of the meeting. This location is a simple text field and is just some extra information you can use to keep your team members informed.

Specifying additional meeting options

Under the options page, Odoo allows you to specify several additional options for meetings. One of the most powerful features is the ability to configure recurring meetings. When you select the **Recurrent** option, additional options will become available in which you can select the interval.

Depending on the interval you select, the form will refresh with the appropriate options for that interval. In the following screenshot, we have selected a weekly interval. Odoo then allows us to select which day(s) of the week the meeting will repeat.



In addition to selecting the specific days, you can also specify how long before the recurring meeting will end by using the **Until** option. The preceding example demonstrates how you can specify a meeting to end based on the number of repetitions. If you choose, you can select an end date to stop the recurring meeting.

Summary

In this chapter, we started by discussing the role of a CRM system in a modern-day business. We installed the CRM application, created salespeople, and then proceeded to develop a system to manage the sales process. In our example, we walked an opportunity through the various stages in the sales process. Finally, we saw how to modify stages in the sales cycle and turn the opportunity directly into a quotation.

In the next chapter, we will turn our attention to install the purchasing application to set up suppliers, create purchase orders, and receive goods into our warehouse.

4
Purchasing with Odoo

In this chapter, we start getting into what could be considered the core functionality of most ERP systems. We will begin by setting up a supplier and then purchasing raw material components. After the products arrive, we then receive the products in the inventory and pay the invoice to complete the purchasing cycle.

The topics we will cover in this chapter include:

- Examining a typical purchasing process for a business
- Setting up your suppliers and warehouse locations
- Entering a quote and turning it into a purchase order
- Receiving products from your suppliers
- Paying invoices

Understanding the overall purchasing process

Let's begin with a 30,000 foot view of the purchasing process. Putting together a purchasing system requires several steps, and initially, it can be confusing for people new to ERP systems. However, when you break the steps down and look at them individually, the process becomes much easier to understand.

Setting up a supplier

When you set up a supplier, you are determining the individuals or companies that are providing you with products. Sometimes suppliers are also referred to as vendors. In Odoo, it is perfectly possible to create a product and sell it without implementing a purchasing system. However, to begin using your system for purchasing, you will need to configure the suppliers.

The steps you take for setting up a supplier are much the same as setting up a customer. In fact, now is as good a time as any to tell you that Odoo maintains core customer, employee, and supplier records all in the same model (or table) named `res.partner`. Odoo distinguishes between customers, suppliers, and those who are both with the **Is a Customer** and **Is a Supplier** checkboxes.

Setting up warehouse locations

Once you have decided to start using Odoo to purchase your products, you will need to set up locations to receive them. In a simple operation, you might only have one location, but other companies might have literally hundreds of warehouse locations. In Odoo, each location can maintain its own address, and it is possible to create nested sublocations for better management and the reporting of inventory.

Generating quotations and purchase orders

To acquire the raw product, you will need to create **Request for Quotations** (**RFQ**) and/or purchase orders to send to your suppliers. In purchasing, these are the documents you create that tell the suppliers which products you want, the quantity in which you want them, and what you expect to pay for those products. Often this process is referred to as procurement. Depending on the industry and the specific location of the company, it is possible that there can be a variety of methods to manage quotations and approvals when purchasing products.

Receiving the product

In a simple purchasing workflow, once your purchase order has been received by the supplier, you will be waiting for them to fulfill the order. At some point, you will receive the product. Depending on your industry, this could be the same day or it could even stretch up to months. When the delivery is complete, you will receive the products, and they will move into the location you select.

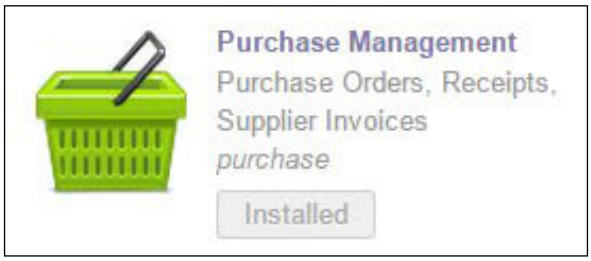
Settling the invoice

Once you have received the product, it is just a matter of time before you must pay for it. Invoicing can happen at the time you order the product, before the product is shipped to you, or after you have received the product. Regardless of when you get an invoice, you can be sure that if you are receiving products, you will eventually be invoiced for them.

When an invoice is received, it is essential to compare it to the purchase order for accuracy. Any discrepancies between the purchase order and invoice must be resolved before the invoice is paid. Essentially, this is your way of ensuring that you are only paying for the products you have authorized for purchase. Finally, it is a good practice to match the receiving or delivery order to the purchase order and invoice as well. This *three-way match* ensures that you got exactly what you ordered and that the invoice reflects exactly what you are required to pay.

Installing the purchasing application

Odoo is a modular set of applications in which you only install the applications you need. Therefore, we must install the **Purchase Management** application to continue. By this point, you should be familiar with the process of installing a new application into Odoo. The following is a screenshot of the **Purchase Management** application in the **Apps** list:



When you install the purchasing application, you will get two new menus:

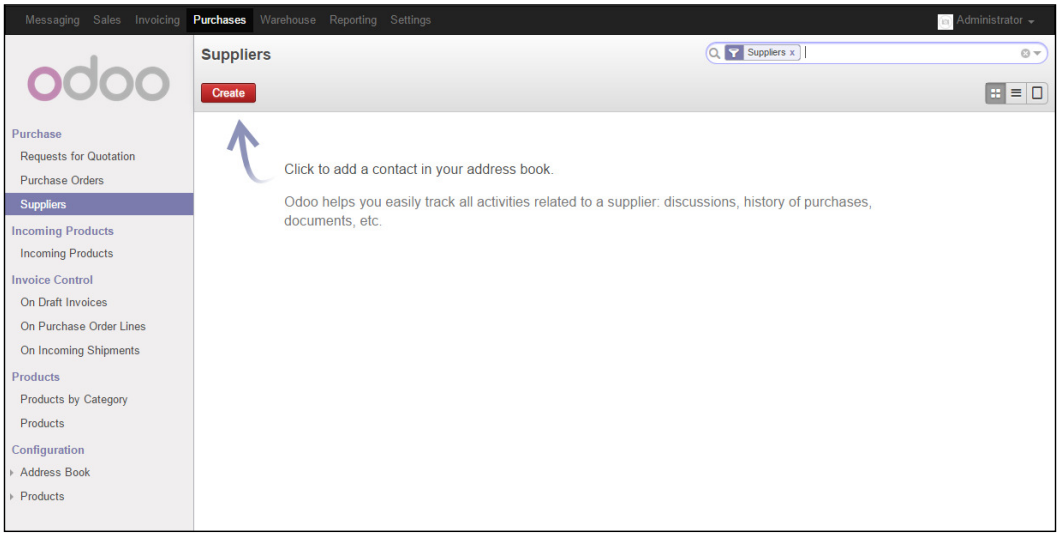
- Purchases
- Warehouse

It is possible that these menus might already exist or that purchasing might already be installed if you have installed another application such as e-commerce that requires Purchase Management as a dependency.

The **Purchases** menu is where you can create quotations and purchase orders for the products you purchase from your suppliers. In the **Warehouse** menu, you can manage physical inventories. If you take a few moments to look through the menus, you will notice you can access some of the same features from both menus. For example, you can get to the **Incoming Shipments** view from either menu.

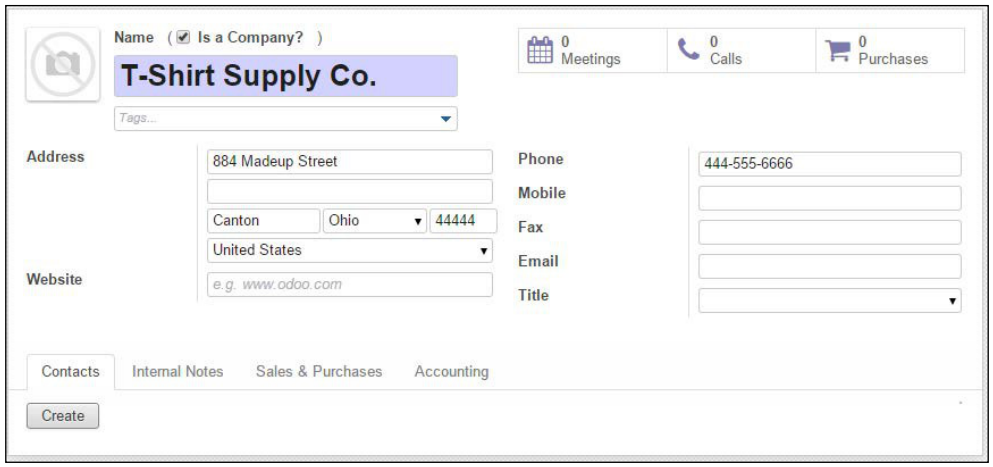
Setting up your first supplier

To begin setting up your first supplier, you will select **Invoicing | Suppliers** and click on **Create**.



This is the **Suppliers** listing, but as it is empty, you will see instructions on how you can add a new supplier. Odoo also lists a few of the features that you can expect from supplier management such as tracking discussions, a history of purchases, and documents associated with a supplier.

After clicking on **Create**, Odoo will bring up the supplier form for you to fill out.



This form is very much like the customer form because it is based on the same basic structure. In fact, it is perfectly acceptable for a customer to also be a supplier. When you create a new supplier record, a supplier checkbox is automatically marked for you under the **Sales & Purchases** page on the form. Sometimes this can get a little confusing for people new to Odoo. This chapter will start to make the relationships between companies, contacts, customers, and suppliers in Odoo clearer.

Designating supplier companies versus individuals

Much like when you set up a customer, the **Is a Company** checkbox at the very top of the form is where you inform Odoo about the relationship you have with this supplier. Typically, you will be purchasing products from a company. When this box is checked, the **Contacts** tab appears in the section at the bottom of the **Suppliers** form. This allows you to specify contacts for the supplier. If the **Is a Company** checkbox is not checked, then you are specifying that this supplier is an individual, and you will not see a tab for adding contacts.

For our example, we will check the **Is a Company** checkbox.

Suppliers require accounting configuration such as customer records. By default, Odoo will supply an accounts payable and accounts receivable account under the **Accounting** tab. It is important to verify these accounts when you are entering a supplier into a production system.

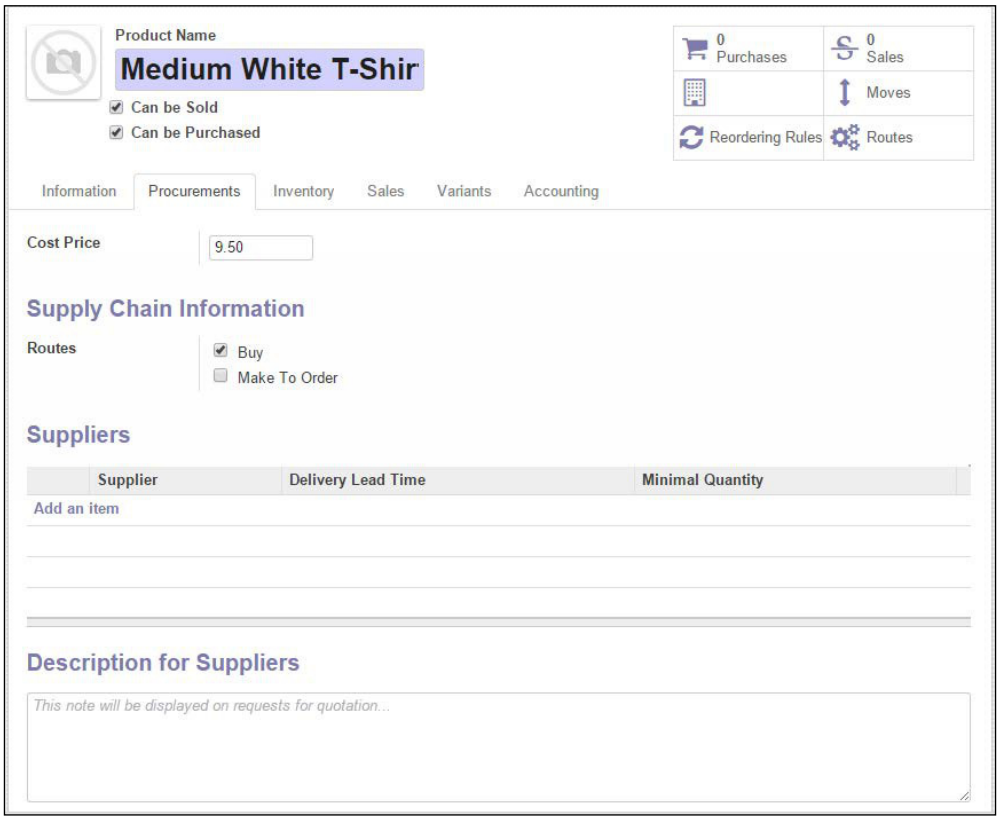
Once you've filled in the supplier's name, address, and other contact information, as well as the required accounting information, click on **Save** at the top of the form.

Configuring your product for procurement

When we set up our first product, we were only concerned with selling the product to a customer. We essentially named the product and set the price at which we wished to sell it. To purchase the product from our supplier, we must provide a little more information. To do this, we will edit the product and change the information under the **Procurement** tab.

Go to **Purchases** | **Product**, then double-click on **White T-Shirt** to bring up the product form. Then click on **Edit** to enter the edit mode.

The following is a screenshot of the procurement section of the product form:



At the top of the form, check **Can be Purchased** so that the purchasing system knows that it has to include this product in the list of products when you make a purchase order.

Once you are in the edit mode, click on the **Procurements** tab.

Supply chain information

Now in Odoo 8, you have far more options to manage your purchasing supply chain using routes. Fortunately, by default, Odoo sets up two of the most common routes. These routes are **Buy** and **Make to Order**. For purchasing, we must check the **Buy** checkbox so that Odoo can properly route the products we purchase from our supplier to our internal warehouse location.

Using buy routes

When you configure a buy route, you can purchase products in one of two ways. One of the ways to purchase this product would be to create a purchase order and add the product to the purchase order manually. This is the typical manual purchasing system where a purchase agent uses, perhaps, other events outside Odoo or examining reports in Odoo to create purchase orders.

In addition to creating manual purchase orders, you can also create reordering rules that would automatically create draft purchase orders when the stock of the product dips below a set minimum. This method works well on products that are ordered frequently and frees up your purchasing managers from having to manually create purchase orders for some or even most of your inventory.

Using make to order

When you configure a make to order route, you are telling Odoo that you wish for draft purchase orders to be created when a sales order includes that specific product regardless of the stock you have on hand. For example, even if you had 2,000 units of a product in stock and a customer orders 10 of that product, Odoo will create a draft purchase order for 10 units if you have the **Make To Order** route checked.

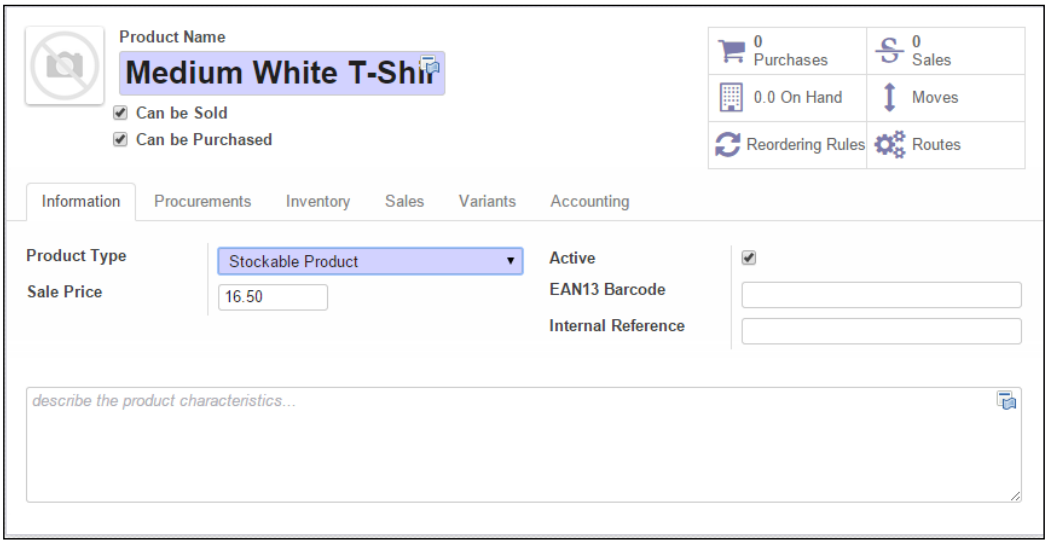
Often, a business would use the **Make To Order** option when they do not need to keep stock on a product and instead will either manufacture or purchase the product for reselling once a sales order is confirmed. It is certainly possible to use a combination of **Buy** and **Make to Order** with reordering limits to set up a system in which you always keep a minimum quantity in stock; however, a draft purchase order is created for sales orders that include that product. Remember, draft orders can always be cancelled; so depending on the processes in your purchasing department, it may be desirable for them to get make to order purchase drafts even if they wish to maintain their own minimum and maximum limits within Odoo.

Setting the cost price of the product

Most often you will wish to assign a cost to the product. This will be the cost that will appear on your purchase quotations, though it can be overwritten at any time to reflect a supplier's new pricing. If your supplier happens to give you a one-time discount, you will want to reflect that change on the actual purchase order, rather than here in the base product record. For our example, we have set the cost price of the shirt to $9.50.

Purchasing information

In addition to the changes under the **Procurement** tab, there are also a few changes we need to make under the **Information** page on the product form.



Product type

When you configure purchasing, you will want to pay special attention to product type. For this example, we have chosen **Stockable Product** because we wish to manage the inventory of the product and perhaps sell it directly out to the customer. Alternatively, you can choose a product type of consumable. This would be a good choice for products you don't wish to manage in inventory and just plan to purchase and use, such as office supplies or coffee filters for the breakroom.

Setting records to active

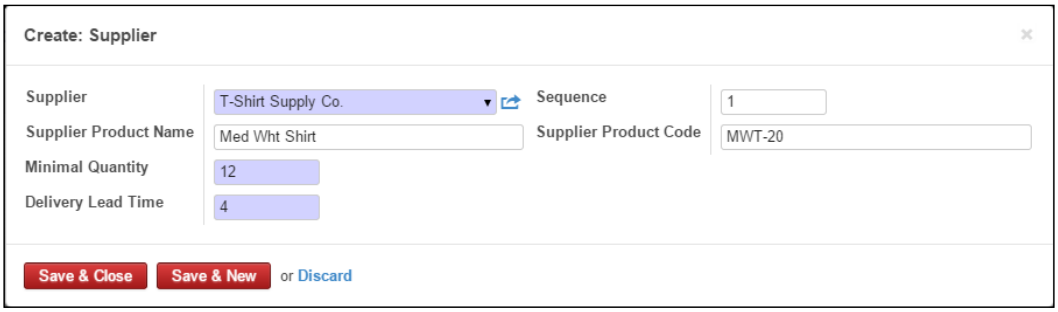
Like most records in Odoo, you can set a product to **Inactive** so that it will no longer be available when creating new sales orders or purchase orders. You can do this from the **Information** tab on the product page.

Once you have any transactions associated with a product, you will not be allowed to delete that product from the system. Instead, set active to false so that the product will no longer appear in the active lists. To view these inactive records, you can use the advanced search feature to create a filter to show records where the active flag is false.

Assigning suppliers to the product

At the bottom of the **Procurement** tab is the option to add suppliers. It is very common that a company might have multiple suppliers that offer the same product.

Click on **Add an Item** in the suppliers grid to add the supplier to the product:



Establishing the supplier

You have the choice in the pop-down list to search for suppliers, as well as to create and edit a new supplier on the fly. To the far right of the dropdown, you can use the small icon to edit the current supplier. In the dropdown, we have selected **T-Shirt Supply Co**. as the company to provide our blank medium white t-shirts.

Designating supplier product name and product code

Because a supplier might use different product codes or product names than your company does to describe a given product, here you have the option to specify how the supplier identifies the product. This information will appear on the purchase quotations and purchase orders you create to make sure you get the right product from the supplier.

Setting minimal quantity

Suppliers will often have a minimum order quantity for a product. Sometimes, suppliers might actually sell you a lower quantity but the cost per unit is dramatically higher. Setting a minimal quantity in this form allows you to prevent those problems by forcing purchase quantities to be at least the minimal quantity value. For our example, we will set the minimal quantity to **12**.

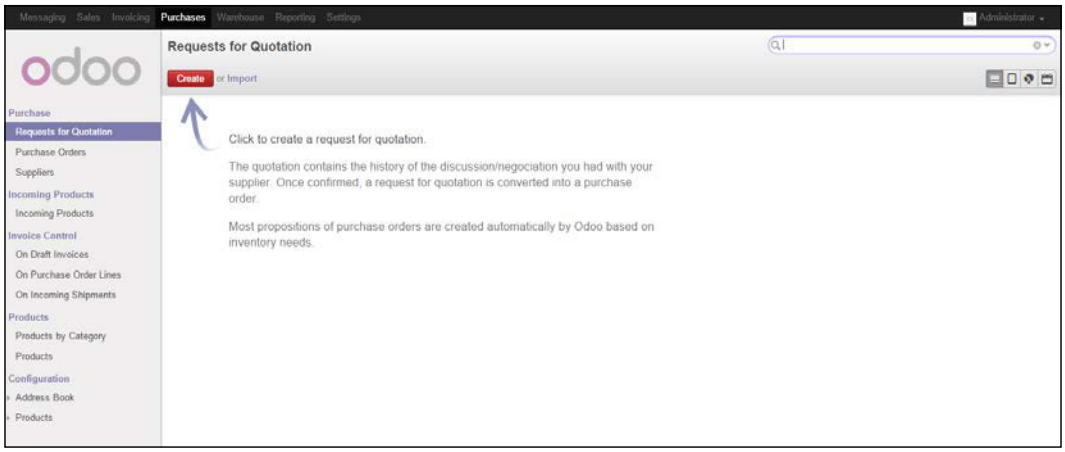
Calculating delivery time

Depending on the supplier, a product might take less or more time to obtain. Often, this can make a difference when you are putting together a time-sensitive purchase quotation. A product might be cheaper, but if the delay is too long and will put the delivery time for the order in jeopardy, you might need to buy the product at a higher price from another supplier who can deliver the product faster. Setting the delivery time in days for the supplier to deliver the product provides your purchasing agents with the information they require to make decisions based on price and availability. For our example, we have set the delivery time to **4** days.

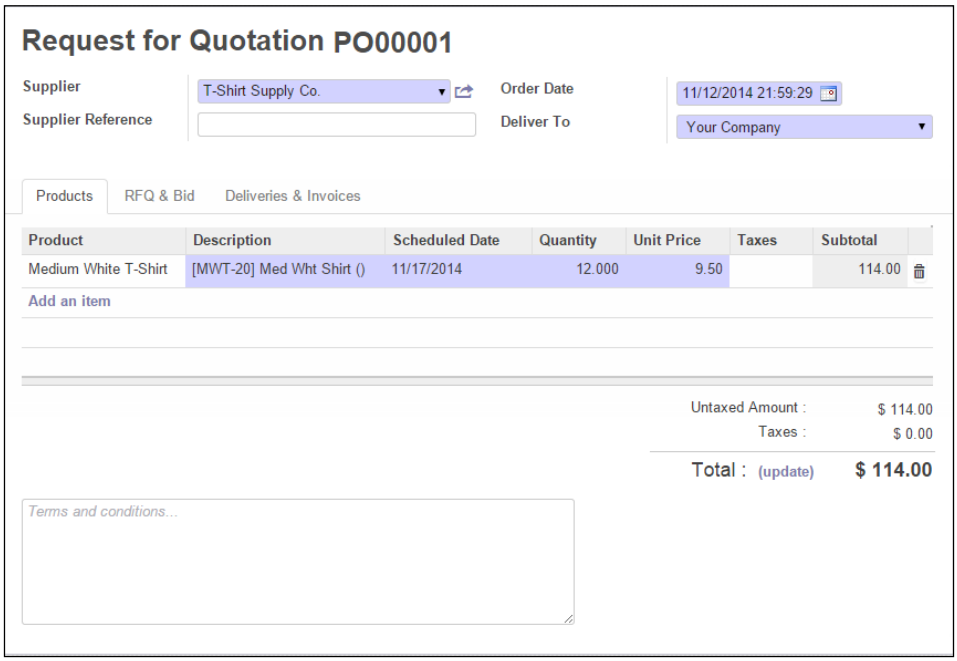
Creating your first purchase quotation

Now that we have our supplier entered and the product associated with the supplier, we are ready to create our first request for quotation to purchase. This is typically the document you will create when requesting pricing from a supplier (sometimes called a vendor) prior to actually ordering the product. For our example, we are going to create a request for the quotation for one dozen Medium White T-Shirts.

Go to **Purchases** | **Requests for Quotation** and click on **Create** to make a new RFQ.



After you click on **Create**, the RFQ will appear for you to enter the required information.



When you first create the request for quotation, the order date will be automatically populated with the current date. You can then select the supplier you wish for the RFQ as well as include an optional supplier reference and source document. An example of a source document would be a sales order number that triggered the purchase order process.

Adding products to your request for quotation

After you click on **Add an Item**, you can select the product from the drop-down list on the far left. The description will automatically be filled in. The scheduled date will be determined based on the delivery delay from the supplier. We also find the minimum order quantity from the supplier has been pulled to the RFQ. Finally, the unit cost is populated from the unit price on the **Procurements** tab of the product.

Printing RFQs and updating the status

For now, we will skip Incoming Shipments & Invoices and go right to printing our RFQ. By default, Odoo will print to a PDF file. This file can easily be attached to e-mails. Once you have configured an e-mail server, you can configure Odoo to automatically send the purchase order by e-mail.

The status is then updated to show that the RFQ has been sent.

Promoting the status to RFQ sent

At this point, the RFQ would be considered in the hands of the supplier. The supplier could agree to it as is, or perhaps, the pricing or other attributes of the purchase order will change. In this stage of the transaction, the RFQ can be edited as needed. You can add additional items or remove line items that you do not need.

In the Odoo 8 default workflow, you must now confirm that you have received the bid back from the supplier.

Click on the **Bid Received** button to let Odoo know that the bid has been received and the purchase order can now move on to the next step in the workflow. Also, in this stage, you have the option to resend the RFQ, reprint the RFQ, set it back to draft, or cancel the draft purchase order altogether.

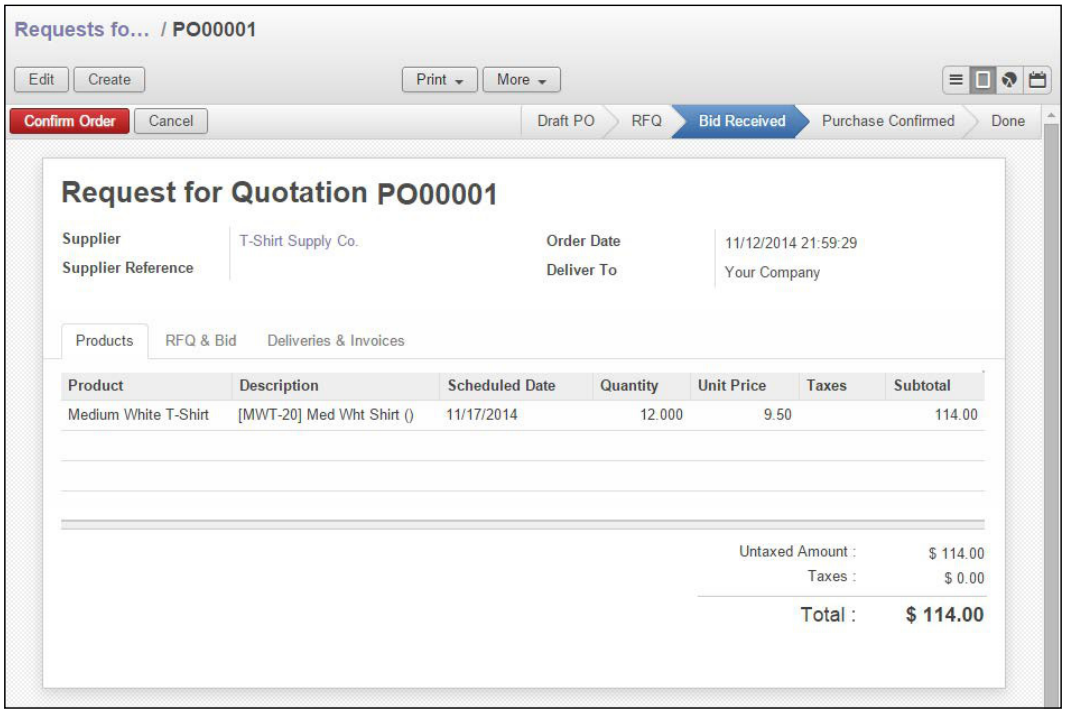
After the bid has been received, you will now see the status updated on the right to **Bid Received** and you will see the **Confirm Order** button in the top-left corner along with the option to cancel the quotation.

Notice that in this state the **Edit** button is still available and you can make changes to the quotation as required before you confirm the order.

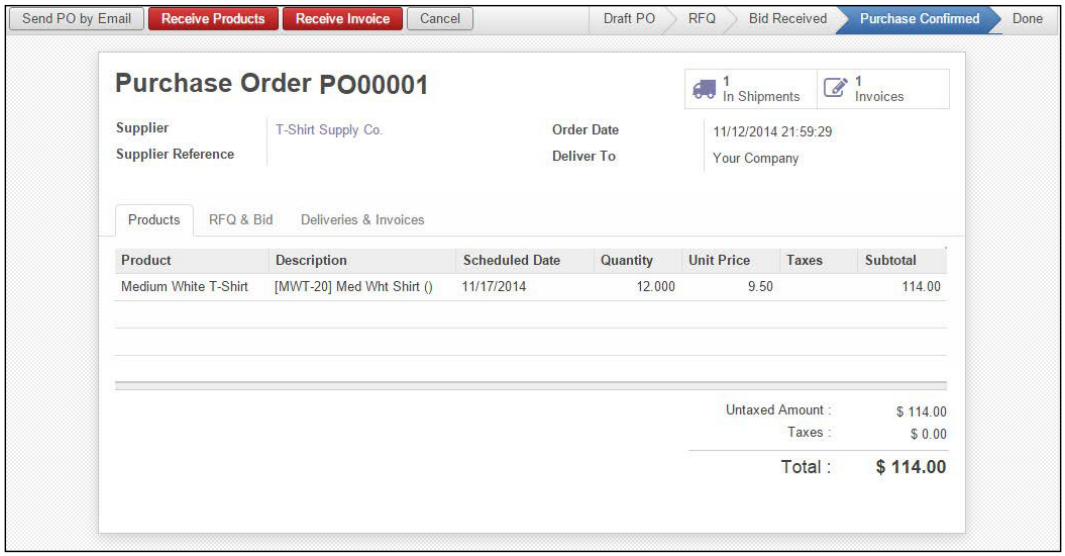
Confirming a purchase order

Once you have a final quotation, you are ready to confirm the purchase order. It is very important to understand that once you have confirmed the quotation, it becomes a purchase order and it can no longer be modified. Once you are sure that you wish to finalize the quotation, click on the **Confirm Order** button. Any modifications that need to be made at this stage would require you to duplicate and cancel the original order. This is necessary so that Odoo can maintain an audit trail.

If you happen to receive an error message reading **No Expense Account** when you attempt to confirm the order, check your settings for your chart of accounts. You must have an expense account designated for the products contained on the PO.



Once you have confirmed the order, the form will refresh to show the new status of the purchase order. At this point, you are waiting for the supplier to deliver the products and send you an invoice. The status is updated to **Purchase Order** and is now just one step from the **Done** condition.

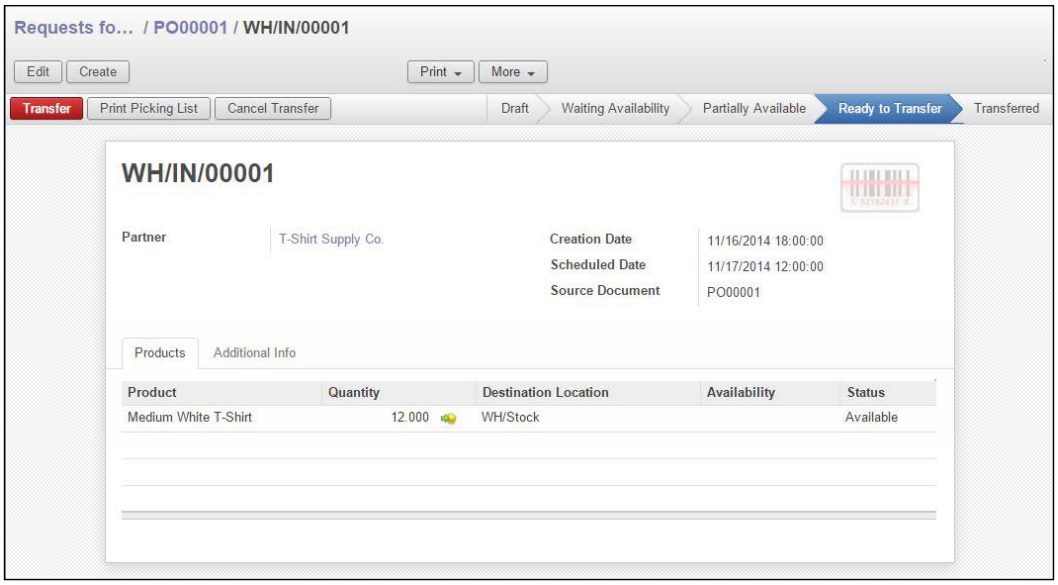


After clicking on **Confirm**, you will notice in the upper right corner that we can see there is one incoming shipment and one invoice to go along with it. Each of these is an active button that you can click on to see the corresponding shipments or invoices associated with this purchase order.

Receiving products

If everything goes as planned, the products we have ordered will be arriving within four days. Once the products have arrived, we must receive our products into the inventory.

Click on **Receive Products** to bring up the **Receiving** form.



Getting ready to receive

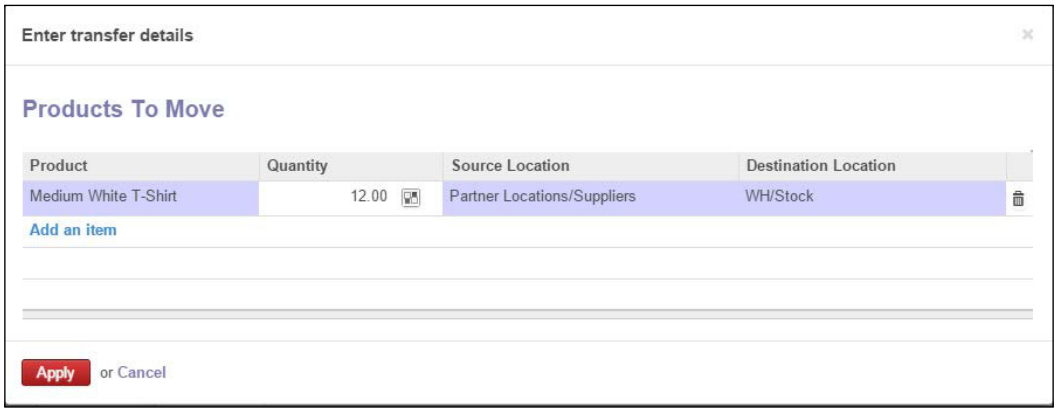
At this point, we have not actually received the product yet. This is just showing us the details about the product that we are ready to receive. The **WH/IN/00001** transaction name is sequentially assigned for each transaction.

Be aware that it is possible that the transaction name **WH/IN/000001** might be different in your installation as Odoo has changed the sequences that are defined in a default installation from time to time. These names can be user-configured by going to **Settings** | **Sequences** and **Identifiers** | **Sequences**. You could even change the default prefix from **PO** to whatever you desire, as long as it does not conflict with the prefix of another application.

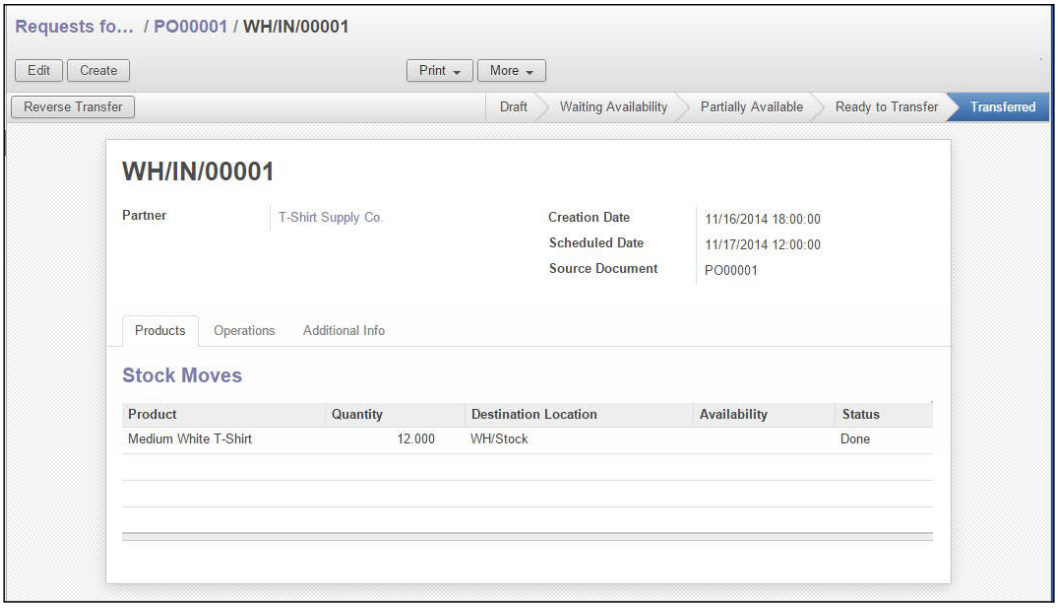
The **WH** initials in the transaction name are short for warehouse and **IN** is for incoming goods. When we are receiving products into the inventory, we are creating an inventory transaction. You can see the associated purchase order under the **Source Document** field on the right side of the form. We can also see the actual time the order was received compared to the scheduled time of the order. In this case, we can see we received the order in plenty of time.

Receiving our goods

When you click on the **Transfer** button near the top of the form, you will get a final screen that pulls the default quantities from the purchase order.



Once you click on **Apply**, the status on the product line item is set to **Done**; the product is now in the inventory. Since all of the products in this purchase order have been received, the purchase order status at the top right is set to **Transferred**. Finally, you will notice the **Reverse Transfer** button that is available for instances in which you need to manage product returns.

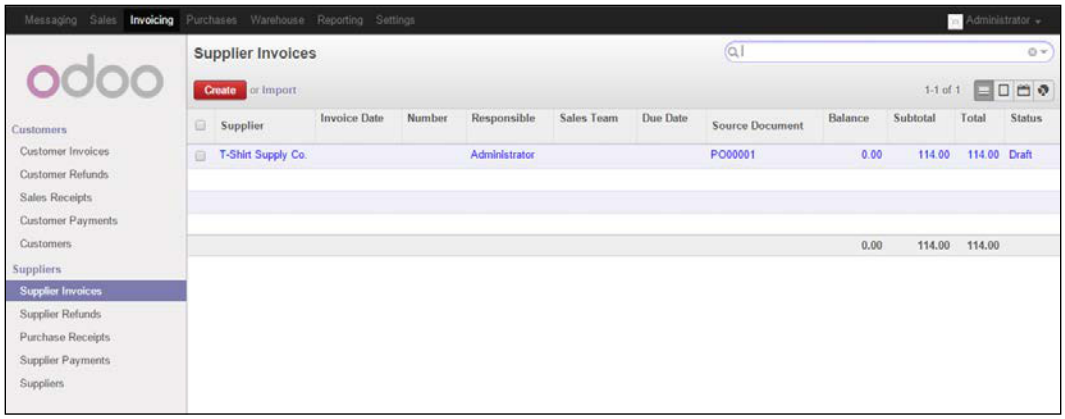


If you would like to verify that your goods have been received into the inventory, look up **Medium White T-Shirt** under **Products** and click on the **Inventory** tab. You should notice its quantity on hand increased by 12 units. Odoo automatically adjusts stock levels as products are received into your company's inventory. Likewise, stock levels are decremented if products are returned to their supplier.

Paying supplier invoices

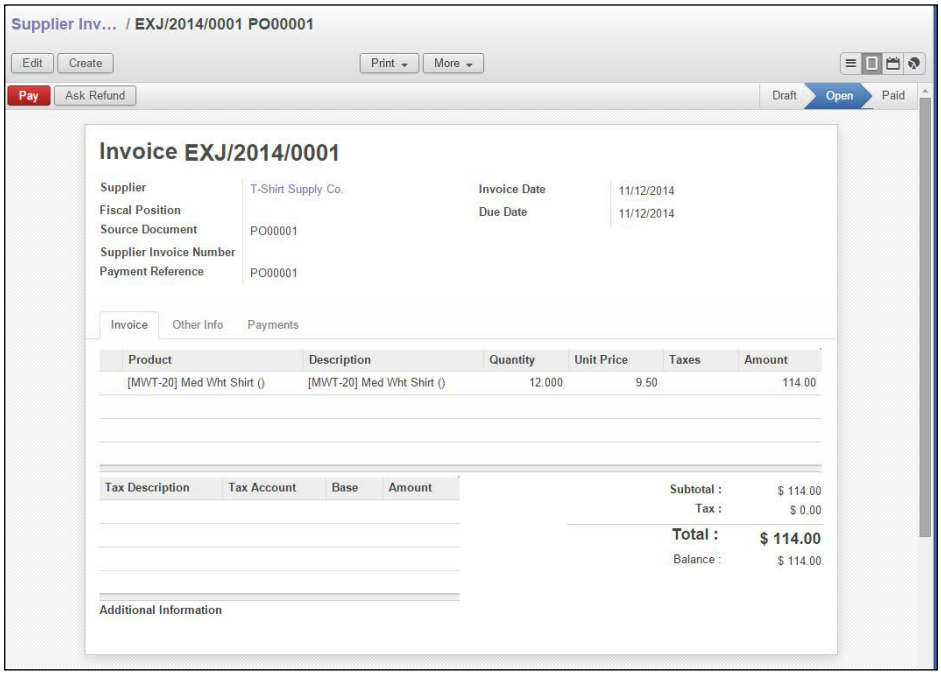
Once you have received your product, sooner or later you should receive an invoice. It is, of course, possible to receive an invoice before you receive products. Each business will have to decide the exact workflow for when they pay invoices and under what conditions.

Once you confirm a purchase order, Odoo will create a draft invoice. You can view this invoice in **Supplier Invoices** under the **Invoicing** menu:



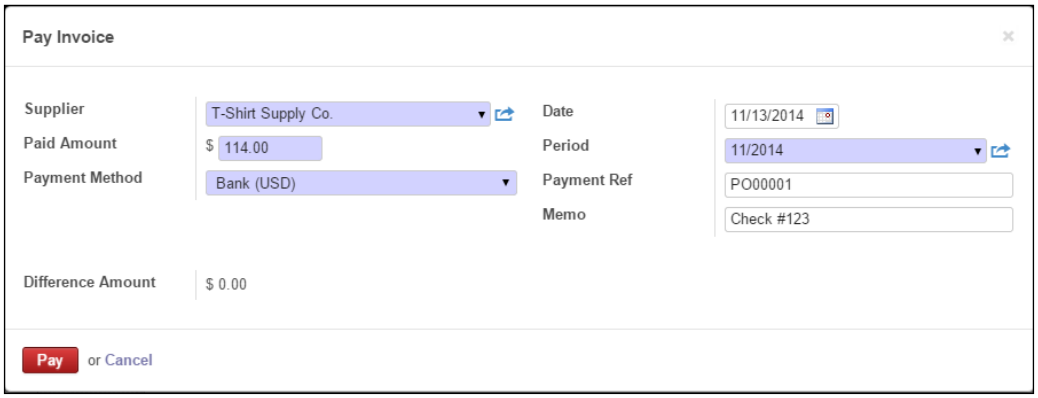
Here you can see the draft invoice for the t-shirts we received. We have the products. Let's go ahead and pay for them.

Click on the line item to bring up the supplier's invoice and then validate it. Validating is an important step that will create accounting entries for both the supplier's accounts payable and your products' expense accounts.



Now that we have validated the invoice, our remaining options are to pay the invoice or ask for a refund. For our example, we will pay the invoice.

Click on **Pay**:

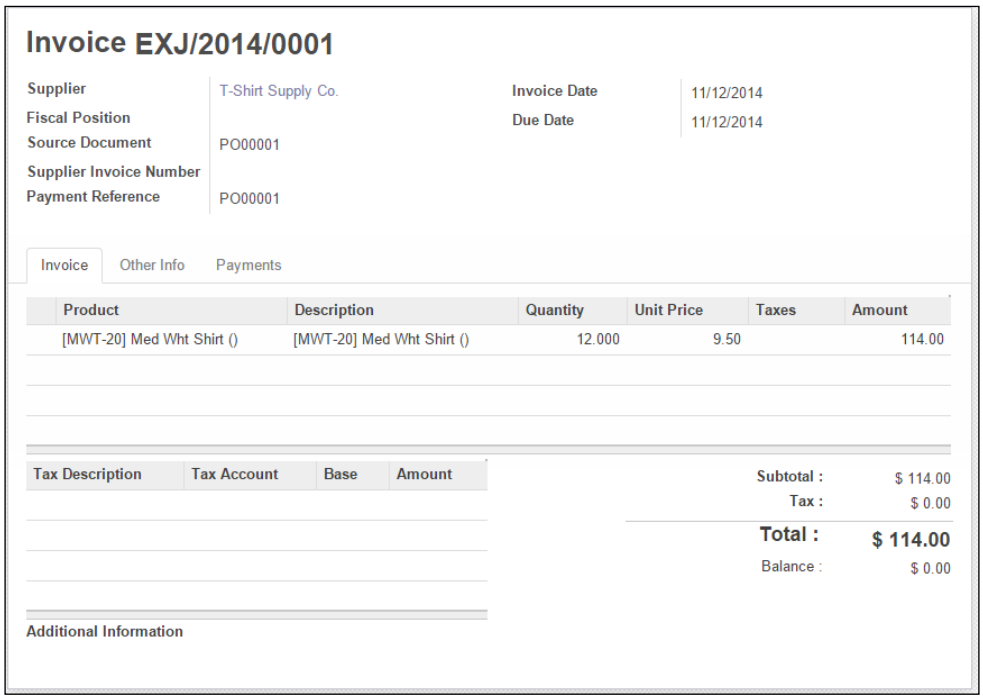


Most of the information will automatically be filled out. The **Payment Ref** field is your tie back to the original purchase order for the product. Also, you can use the **Memo** field to specify the check number you use to pay your supplier.

When implementing a purchase order system, it is critical to train users thoroughly on how transactions are tied together. While many forms allow you to click on a link to view a related record, fields such as **Payment Ref** store the data just as text. Train and encourage users to quickly use copy and paste rather than re-entering data into search fields.

Odoo will allow you to configure multiple payment methods. For now, choose **Bank** and click on **Pay** to complete the transaction.

You have now completed the entire purchase cycle from purchasing, to receiving, to finally paying for the product.



In the preceding screenshot, you can see the final paid invoice for our purchased products. At the bottom right of the form, it shows that we have a balance of zero.

Summary

In this chapter, we installed the purchasing application and set up a supplier to purchase products. Next, we successfully purchased products and received those products into the inventory. After our products were received into the inventory, we proceeded to pay the invoice to complete the payment cycle.

In the next chapter, we will take the raw materials we have just received into the inventory and use them to manufacture and deliver a finished product. We will create manufacturing orders to define the steps of the production process and allocate the required resources. Coordinating all of your resources, including machinery and manpower, can be a daunting and time-consuming task, but we are learning how Odoo makes this significantly more manageable.

5
Making Goods with Manufacturing Resource Planning

In this chapter, we will cover how you can use Odoo to manage the process of manufacturing products. Once you have received the required raw products into your inventory, you can begin manufacturing the end product. Part of the functionality of an ERP system is to assist you in scheduling these orders based on available resources. One of the resources is, of course, the raw product. Other resources could include available labor or the availability of a particular machine. Essentially, the goal is to schedule the manufacturing order at a time when all the resources are available and produce the product for an on-time delivery.

In this chapter, we will cover the following topics:

- Setting up the manufacturing process
- Defining our bill of materials
- Manufacturing our final product
- Analyzing the inventory report

Creating manufacturing orders

Manufacturing orders define the product you wish to build, the resources required, and when you wish to produce the product. In addition, they can contain information about work orders and routings that are related to that manufacturing order.

Producing the product

When it is time to actually produce the product, you then inform Odoo of each of the products produced and your manufacturing order changes to the Complete status. In a typical workflow, your raw materials are moved out of the inventory and your finished product is added into your inventory.

Delivering the order

After a product has been produced and has been put into the inventory, it can be packaged and delivered to the customer. Depending on the specific manufacturing environment, a product might not even sit in a physical inventory location at all and instead, it might be shipped almost immediately to the customer. Meanwhile, in another industry, you might have a product that is produced and then sits in a warehouse for months before delivery. Of course, it is always possible something gets produced and gets left in dead stock. In this case, you would never have a delivery order and instead use a process to determine how to manage that dead inventory.

Defining the workflow for your business

Much like configuring the CRM application, oftentimes the most complex part of setting up a purchasing and manufacturing system is not the ERP software itself. Instead, the real challenge is to understand the business requirements and how the current processes can best be implemented. If you have never set up a purchasing and manufacturing system before, it is highly recommended that you supplement your knowledge with additional source material on the subject. Refer to *Appendix*, *Locating Additional Odoo Resources*, for references to additional resources on ERP and manufacturing.

A real world example – producing a custom printed T-shirt

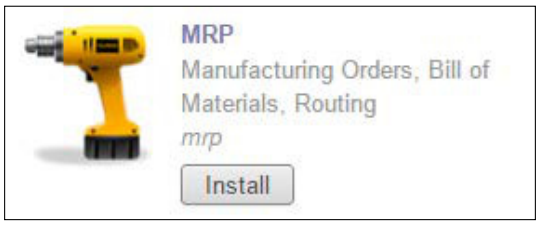
In Odoo, you manufacture products by creating manufacturing orders. For our example, we will be printing T-shirts that have a custom designed logo. The basic manufacturing process itself involves using a screen to apply ink to each of the T-shirts. For now, we don't need to know all the details of this process to begin using Odoo to help schedule and track the manufacturing of the product.

The basic steps in the process are simple:

1. Define a bill of materials that determines what items are needed to produce the final product.
2. Use a manufacturing order to print a design on the blank T-shirts.
3. Deliver the printed T-shirts to a customer.

Installing manufacturing resource planning

We must now install the **manufacturing resource planning** (**MRP**) application so that we can begin configuring our T-shirt production. By now, you should begin to understand the modular nature of Odoo. Install the MRP application just like you did with the other Odoo applications, go to **Settings** | **Apps**.



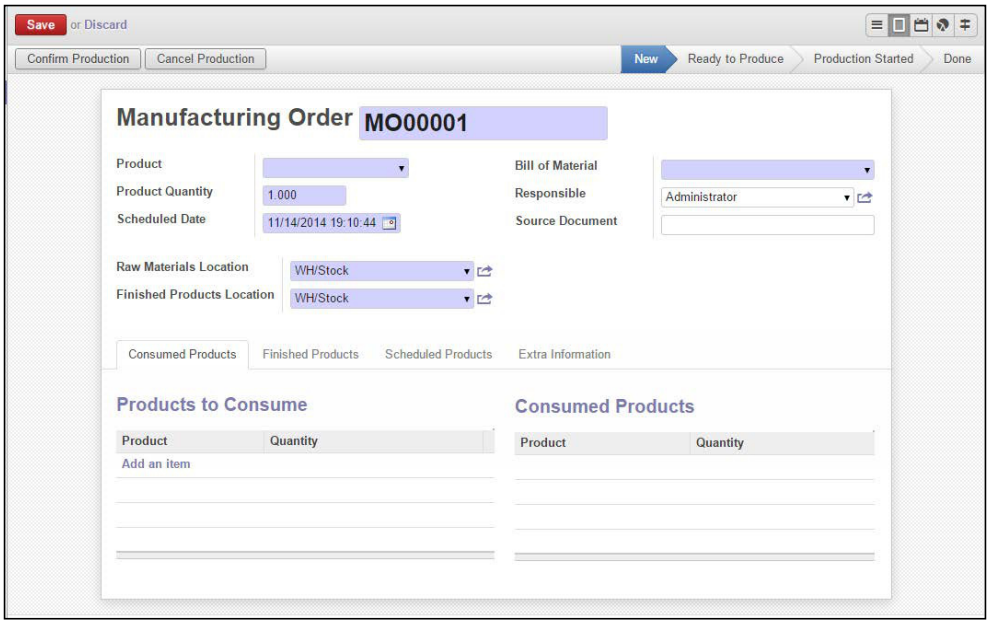
Clicking on the **Install** button installs the MRP application.

Creating your first manufacturing order

The flexibility of Odoo provides a variety of approaches you can take while setting up your system. Manufacturing can also become a complex topic and is one of the more challenging aspects of setting up any ERP system. For our first manufacturing order, we will ignore many advanced options.

Keep it simple at first. There are many options and it will take time to understand them all. If you are new to manufacturing systems, it will take you longer to implement Odoo, and you should consider hiring professional consultants to assist you.

To create your first manufacturing order, go to the **Manufacturing** menu, choose **Manufacturing Orders**, and then click on **Create**.



This is the manufacturing order as it appears just after you have hit **Create**. The `MO` prefix in the sequential order number that will be assigned stands for, you guessed it, **Manufacturing Order**. We will use this form to define our manufacturing order to print our custom designed T-shirts.

Take a minute to look through the various tabs and get an idea of the information that is collected for a manufacturing order. Don't worry if you don't understand all the options yet. We will begin with a simple product and look at some of the most important aspects of creating a manufacturing order. Later, we will explore some of the more complex manufacturing scenarios.

What product are we going to manufacture?

The only product we have entered into Odoo so far is the medium white T-shirt that is blank. Nothing is printed on the T-shirt when it is received from the supplier. Now, we want to create a manufacturing order that will produce a new product in which we print a design of the customer's choice on the T-shirt.

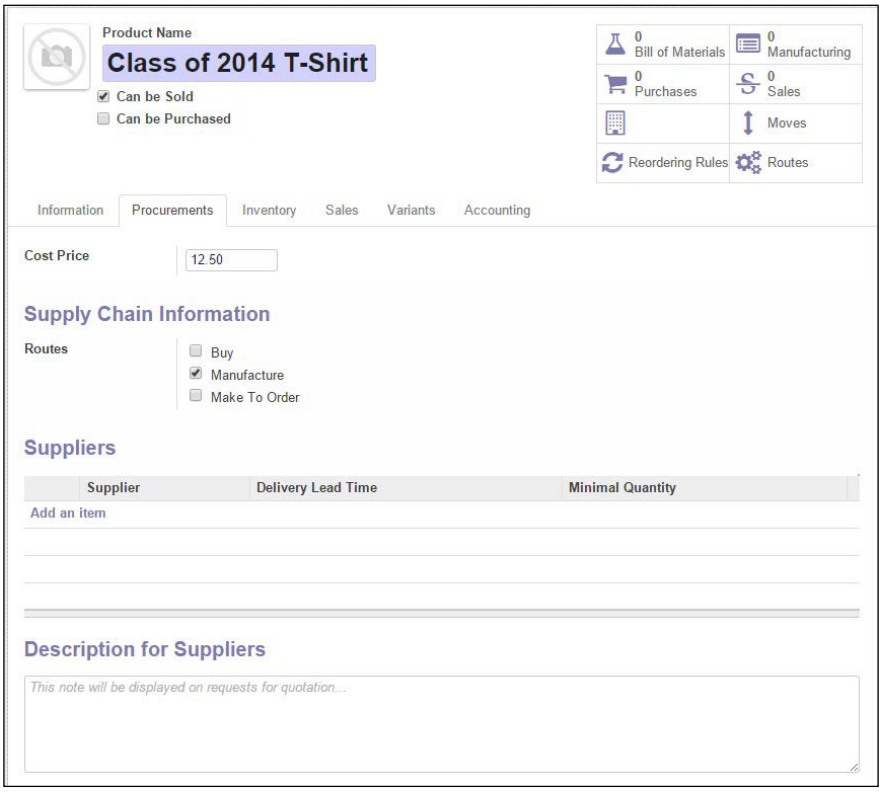
For our operations, we can still use the medium white T-shirt. But now instead of selling the blank T-shirt directly to our customer, it will be used as a raw material for our manufacturing order.

Let's first configure the final product that is to be created during the manufacturing process, that is, the complete T-shirt with the final design that will ship to the customer. For our example, it will be **Class of 2014 T-shirt**.

Odoo allows you the ability where it is appropriate to create a product on the fly. Let's create a product by clicking on the dropdown next to **Product** and choosing **Create and Edit...**.

Using the quick **Create and Edit...** option, you can add your finished products directly when creating a manufacturing order. In some workflows, where you might use a separate system for handling sales orders, this option can be a fast way to create the required finished products to push into the inventory.

Next, you will fill out the product form with the fields required for a finished product:



The product and procurement tabs should look familiar by now. In Odoo 8, we have routes that allow a lot of flexibility in defining complex workflows and supply management operations. Fortunately, the more common routes are already configured and we can check **Manufacture** to let Odoo manufacturing know that this product is part of the manufacturing workflow. Only products that have the supply method of **Manufacture** can be selected as a product on a manufacture order.

Notice at the top of the form that the **Can be Purchased** box is unchecked. This will keep this product from appearing in the product list on a purchase order. Since we cannot purchase this product directly from a supplier, we don't want it appearing in our product list when working within purchasing.

Building your bill of materials

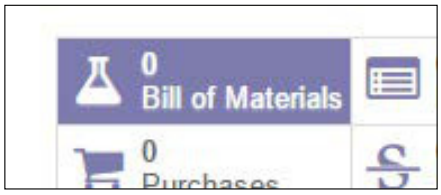
A **bill of materials**, or **BOM** as it is commonly called, is essentially a list of products that are required to produce another product. You can think of it as the list of ingredients for a recipe. Odoo needs to know what materials are required for us to produce this **Class of 2014 T-shirt** product.

In complex products, a bill of materials can be nested. For example, it might take many products to make a subproduct and then several subproducts to make a final product.

Don't let nested BOMs intimidate you. Once you understand how a simple BOM is processed, you will more easily see how you can group parts together. Think about grouping more complex BOMs by assembly and work centers. This makes it easier to see your inventory in real time as BOMs can be processed at each stage of your operations, properly using up materials and creating finished subassemblies.

For our first bill of materials example, we will be keeping the bill of materials simple. We are just going to require the white T-shirt. The rest of the operation, that is, printing the actual T-shirt, will be incorporated into the manufacturing order. In other words, if there are enough white T-shirts, this manufacturing order can be processed, and we can produce the final product. For now, the inks and screens will not be managed in the manufacturing process. This is an example of starting simple and adding more complexity as we build up the system.

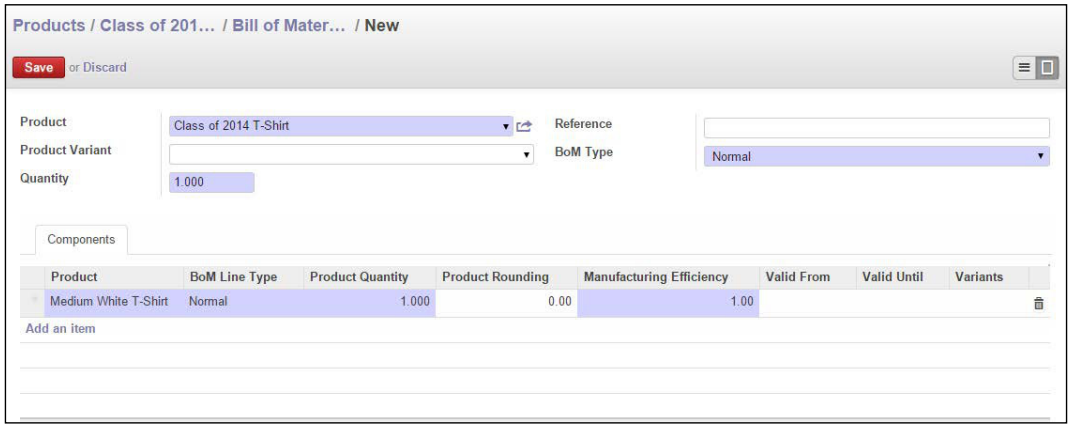
In Odoo 8, a smart button at the top right of the form shows you a count of the bill of materials attached to this product.



Clicking on this button will bring up the bill of materials listing for that product.

Naturally, this is a blank list, as we have not yet defined any bill of materials for this product. Notice that in the top-right corner is the product filter that is restricting this list view to only display the **Bill of Materials** that is for the **Class of 2014 T-shirt**.

Clicking on **Create** will now bring up a blank **Bill of Materials** form with the **Class of 2014 T-shirt** automatically prepopulated as the finished product to build.



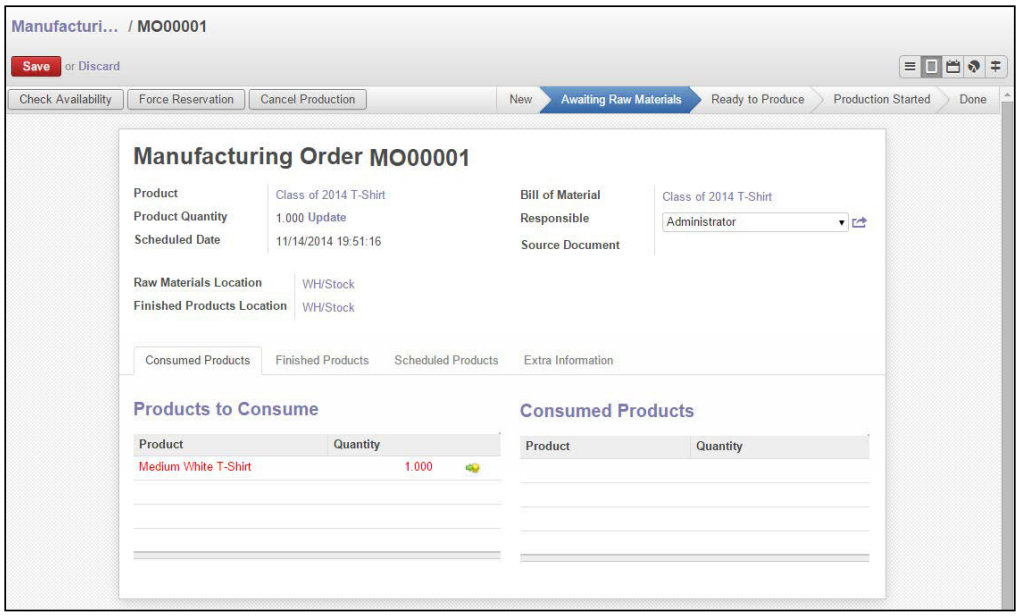
Many of the fields will be automatically filled out as Odoo knows we are creating a bill of materials for our **Class of 2014 T-Shirt** product. In this example, we have added **Medium White T-Shirt** to the bill of materials. Both **Product Quantity** and **Manufacturing Efficiency** are set to **1**. **Manufacturing Efficiency**, explained later in this chapter, is a percentage; therefore, an efficiency of one indicates 100 percent efficiency. When we manufacture one **Class of 2014 T-Shirt**, we will require one medium white T-shirt. Many times, if not most of the time, a bill of materials will contain multiple items. Regardless of the number of items in the bill of materials, the way it is processed is exactly the same.

It is possible that your manufacturing order or bill of materials screen might look slightly different than the ones you see here. One reason is that, depending on the applications that are installed and what options are selected, the forms might have some different content. Another common reason is that Odoo is currently getting frequent updates that can change the appearance of a given form.

Confirming production

Once you click on **Confirm Production**, you are ready to manufacture the product. Odoo will provide reasonable defaults that you can override as required. When production is confirmed, that does not mean that production has actually taken place. Confirming production has only informed the system that production is ready to proceed. You can tell we are ready to begin manufacturing because the **Produce** button is available.

Here is what our **Class of 2014 T-Shirt Manufacturing Order** looks like now:



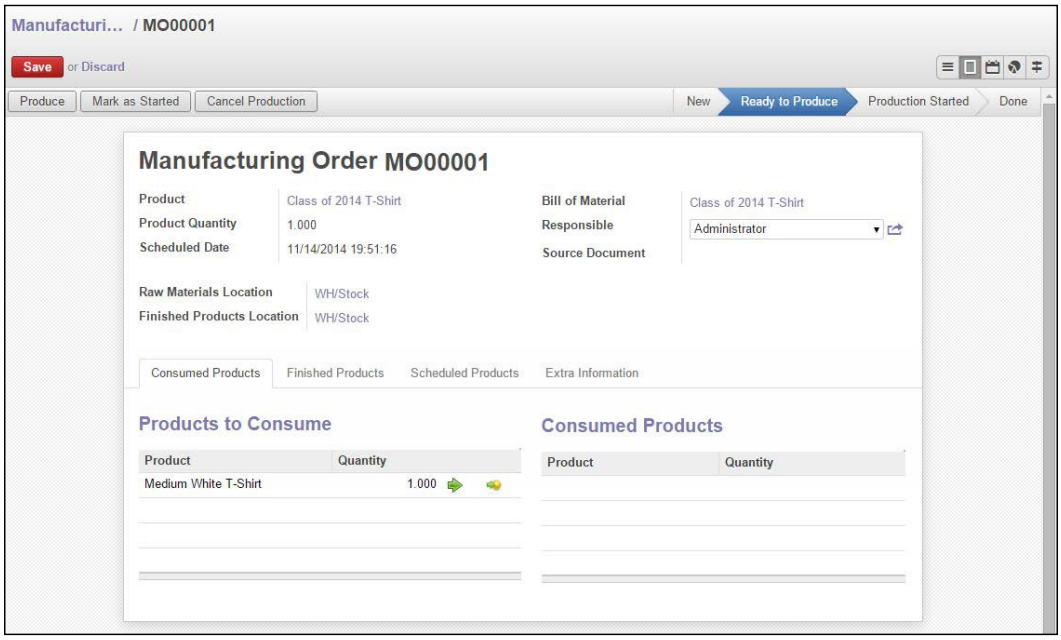
This is the manufacturing form showing the products waiting to be consumed to produce the order. In this case, it is our **Medium White T-Shirt**. You will also notice that this item is in red, and at the top of the form, you can see **Awaiting Raw Materials** selected as the current status. This informs us that we must check the availability of our raw goods before we can begin manufacturing this product.

Checking availability

Odoo manufacturing links into inventory automatically and will use available stock to complete the order. As we have already purchased Medium White T-Shirts in the previous chapter, clicking on the **Check Availability** button will remove the red highlight on **Medium White T-Shirt**, as well as move the state of the manufacturing order to **Ready to Produce**.

Be aware that at this stage, if you don't have the quantity available, Odoo will stay in the **Awaiting Raw Materials** stage until the product is acquired and put it into the inventory. Each time you click on **Check Availability**, Odoo will look into the inventory to see if we have the necessary products so we are ready to produce. Alternatively, you can click on **Force Reservation** to indicate to Odoo manufacturing that you in fact are ready to produce this product even if inventory within the system does not meet the necessary requirements. Note that doing this will give you negative inventory quantities in your warehouse.

After the raw product has been acquired and we are ready to produce our final product, the form will be updated and the state changed.



Here, we can see that we are in the **Ready to Produce** stage and that at the bottom we have a small green arrow next to our quantity in the **Products to Consume** section. This little green arrow is a shortcut to tell Odoo to go ahead and mark this product as consumed as part of the operation. With this mechanism, you can use the manufacturing order as a checklist so that a worker can go down and mark off each product as they use it for the manufacturing operation. Alternatively, you can click on the **Produce** button.

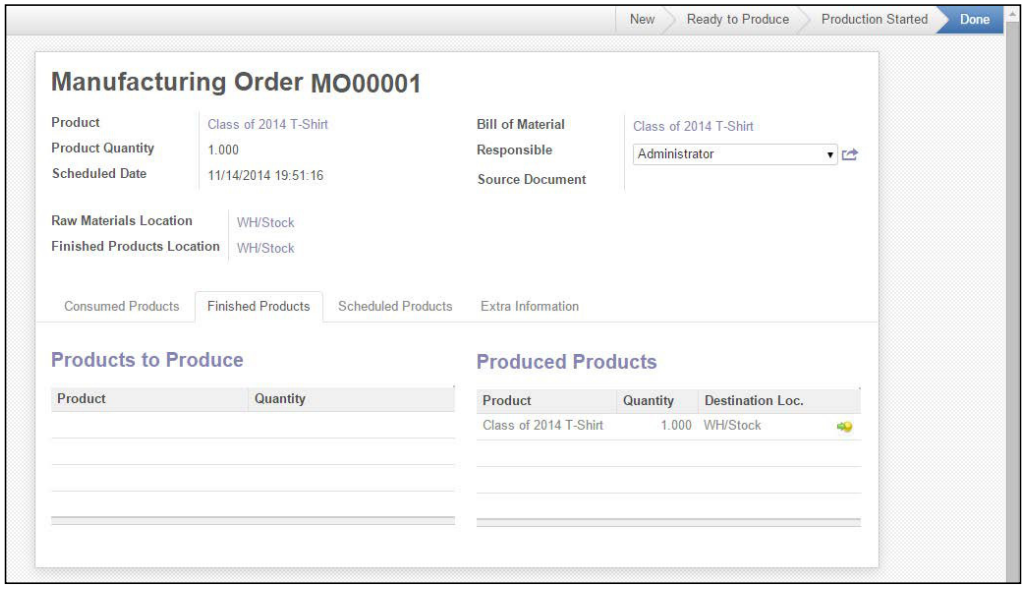
Producing the product

After you click on the **Produce** button, you will be prompted to confirm that the product has been produced:

The mode option allows you to choose whether you want to consume the raw materials and produce the final product or simply consume the raw materials. This latter option might be used in long production cycles where you need to show the raw materials gone from inventory, but you want another step to actually produce the final product. For this example, we will **Consume & Produce** the final product.

Notice that you do have the option to add additional items on-the-fly or adjust the quantity that has been consumed as part of the operation.

Click on the **Confirm** button to produce the product.



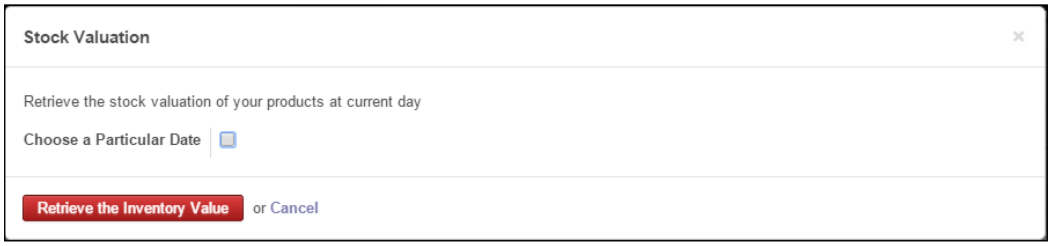
The product has then been produced and is now available in the inventory for sale. Notice that by navigating to **Manufacturing Order** | **Finished Products** | **Produced Products**, we can see the **Class of 2014 T-shirt** and the destination/location where it is in the warehouse.

Congratulations, you have just used Odoo to manufacture your first product!

Analyzing stock valuation

In our example, we have taken a raw material and increased its value by producing a finished product. One of the easiest ways to see the effect of our manufacturing order is to look at the stock valuation report, which can be found by navigating to **Reporting** | **Warehouse** | **Stock Valuation**.

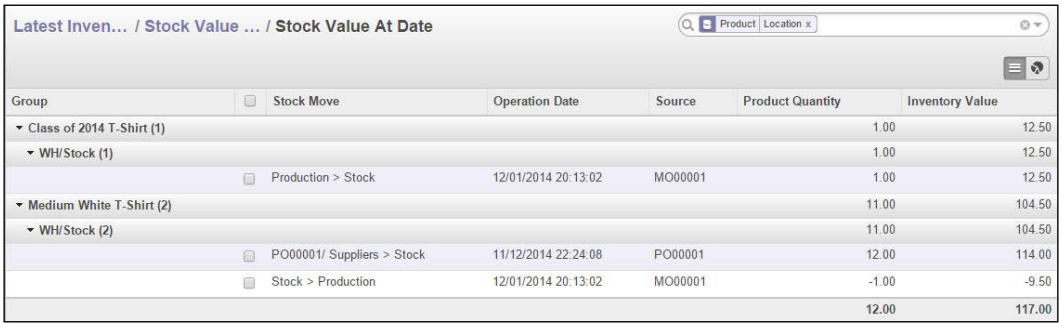
When you select this option, Odoo provides you with a screen that gives you the option to see what the stock was valued at on a specific date. For now, we will just look at the current valuation.



Click on **Retrieve the Inventory Value** to bring up the Stock Valuation view.

Here you will see that we now have one **Class of 2014 T-Shirt** and 11 medium white T-shirts. The inventory is accurately reflecting the purchases made by us, as well as the products consumed and produced by our manufacturing order.

With this view, everything is collapsed and as a result, many of the columns are empty. For example in this view, you don't see anything under **Stock Move** or **Operation Date** because the data is rolled up. You can use the small triangles on the far left of the grid to drill down into the data and see more detail on how the stock value is derived. Here is the same data but expanded so you can see the detail:



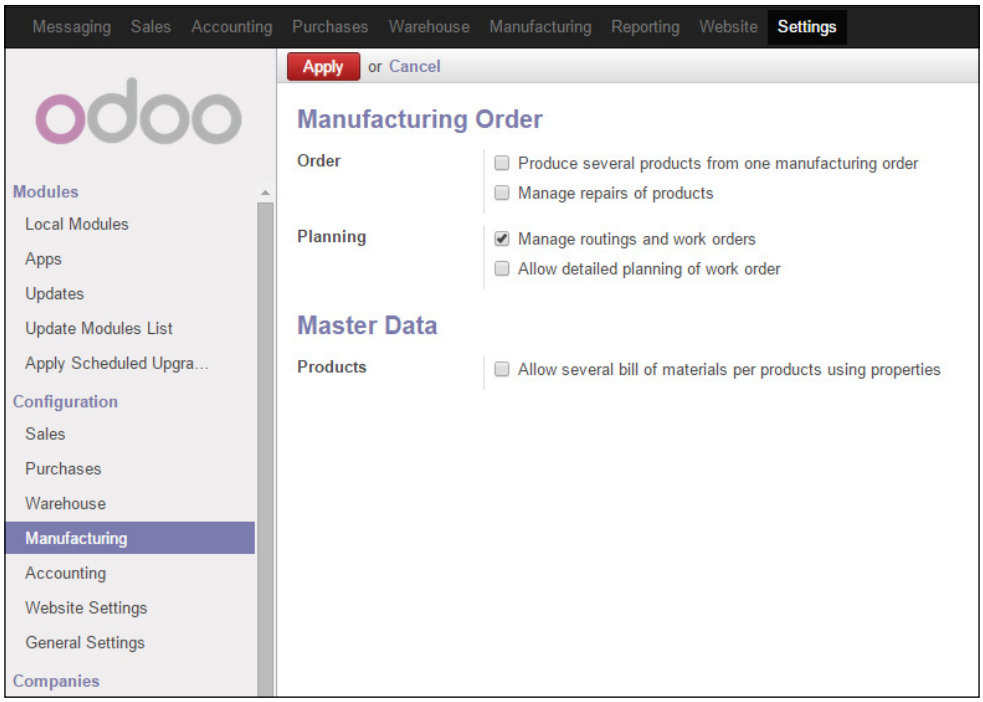
Group	Stock Move	Operation Date	Source	Product Quantity	Inventory Value
Class of 2014 T-Shirt (1)				1.00	12.50
WH/Stock (1)				1.00	12.50
	Production > Stock	12/01/2014 20:13:02	MO00001	1.00	12.50
Medium White T-Shirt (2)				11.00	104.50
WH/Stock (2)				11.00	104.50
	PO00001/ Suppliers > Stock	11/12/2014 22:24:08	PO00001	12.00	114.00
	Stock > Production	12/01/2014 20:13:02	MO00001	-1.00	-9.50
				12.00	117.00

In a more detailed listing, you will see how you can get a great deal of information on the operations by looking at the stock move column. Here, we can see exactly where the product came from, where it went, and how it affects the product quantity for that location.

Managing routings and work orders

This first manufacturing order was very simple and our bill of materials only contained one product. In many companies, the manufacturing operations are more complex. For example, in some instances, depending on the attributes of the product, the manufacturing could involve different work centers or alternative steps to produce the final product. By default, Odoo's manufacturing application takes a more simplified approach. Going into the settings of the manufacturing application allows you to specify additional options.

Simply go into the **Settings** menu and select **Manufacturing** under the **Configuration** section on the left. Here, under **Planning**, you can check **Manage routings and work orders**. Once this option is checked, you will have the ability to manage more complex manufacturing processes inside Odoo.



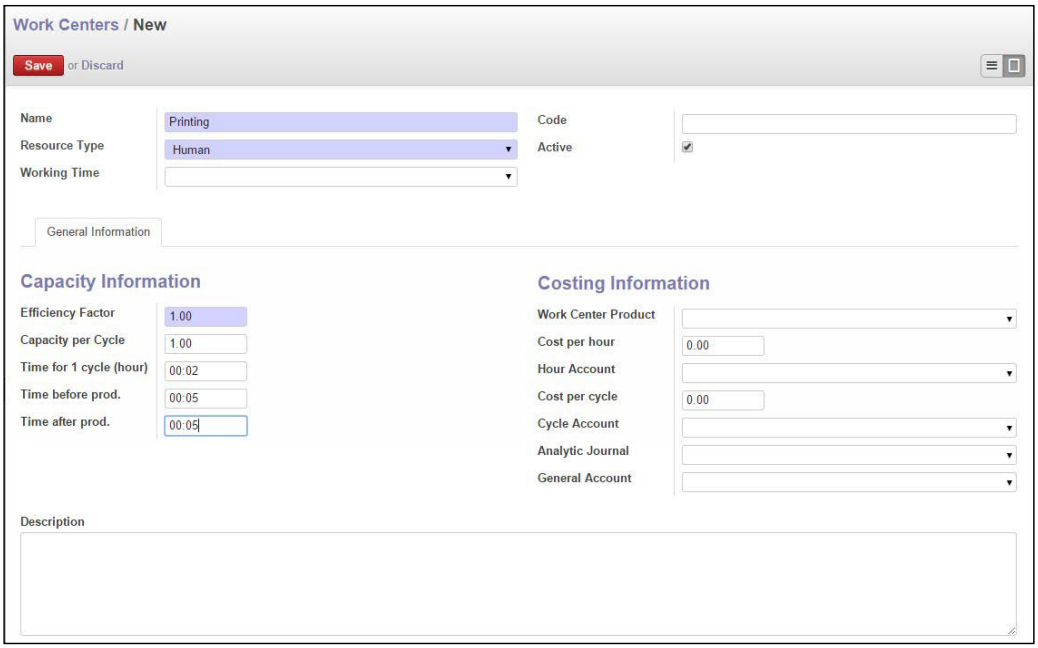
After you apply the changes, the menus will refresh, and new options will be added to the manufacturing application.

Sometimes, when adding a new functionality to Odoo, such as applications or modifying settings, it can be helpful to do a *Shift* + Refresh on your browser to make sure Odoo is refreshed with the latest options.

Creating a work center

In our previous simplified manufacturing order, we specified the raw product required in a bill of materials and then turned that into a finished product. Now, we will expand this example to specify the human labor that goes into printing our Class of 2014 T-Shirt. In Odoo, we define the parameters in a work center.

For the purpose of our example, we will create a work center `Printing` that is responsible for taking the blank T-shirt and applying the design to create the final product. We begin by going to the manufacturing application and, under the configuration menu, choosing the **Work Center** option. Then, we click on **Create** to set up a new work center record:



In our example, we have named the work center `Printing`. In a full implementation, it would be common to have different work centers based around the work performed.

Defining a resource type

When setting up a work center, you are required to specify **Resource Type**. This setting can either be **Human** or **Material**. As you might expect, a human resource will primarily depend on human interaction in performing the work while a material resource would typically indicate a nearly automatic machine that, once configured, will perform the work unattended.

Setting capacity information

When defining a work center, it is possible to define **Capacity Information** that will allow you to estimate the cost and time required to produce your products. In our example, we are going to configure this work center so that we can estimate the time required to produce a T-shirt. Let's look at each of the capacity values.

Efficiency Factor

Efficiency Factor is a metric on how efficient this work center is at completing tasks. Often, the efficiency factor is most valuable in allowing you to tweak your work center's capacity without modifying many of the other variables. If, for example, you have an efficiency factor of 2.00 (or 200 percent) then the work center will complete twice as many tasks. For our example, we are leaving the efficiency factor as the default of 1.00 or 100 percent. Some consider it lazy work center design to modify efficiency values rather than more accurately setting other capacity settings.

Capacity per Cycle

The **Capacity per Cycle** option allows you to determine how many tasks the work center can do in parallel. For example, if you had a work center that could be configured with three workers and all three workers can complete a cycle at the same time, you could set the capacity per cycle to three. When a manufacturing order is then routed to the work center, the work center can complete three tasks at the same time. For our example, we will assume one worker and therefore, one capacity per cycle.

Time for 1 cycle (hour)

This option specifies how much time in hours it takes to complete one cycle. In our example, we are producing T-shirts. Therefore, this value indicates how long it takes to produce one T-shirt. In this example, we have specified that each T-shirt will take 2 minutes to produce by this work center.

Time before and after production

Many work center operations will have the time required for setup and tear down times outside of the time consumed by actually producing the product. This is certainly true for our example. It takes time for someone to prepare a printing press with ink before the first T-shirt can be printed. For our example, we have estimated 5 minutes of setup time. Likewise, when we are done producing the last product in our work order, it takes time to clean up and prepare for the next job. In this example, we have estimated 5 minutes of time at the end of production for clean-up operations.

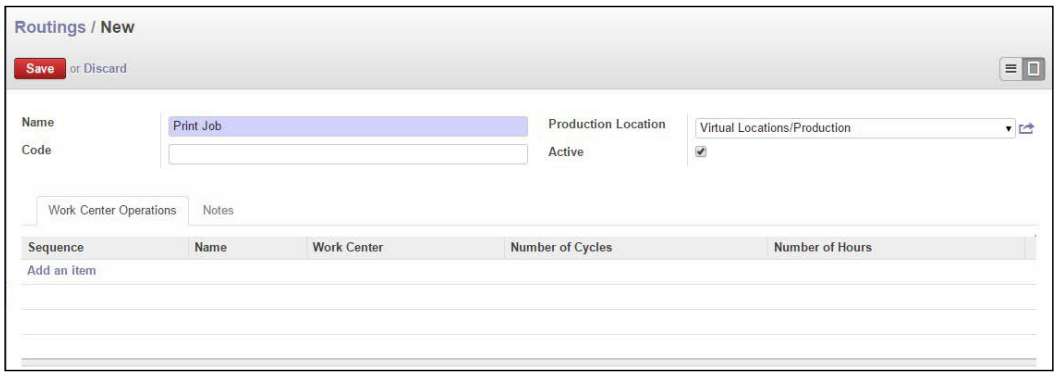
Costing information

In the costing information section, you can also specify a product that is produced by a work center. In some manufacturing operations, a work center will always produce the exact same assembly or subassembly. For our example, we want our work center to be flexible, and it might print any number of finished products, so we are leaving the **Work Center Product** field blank.

Creating routing orders

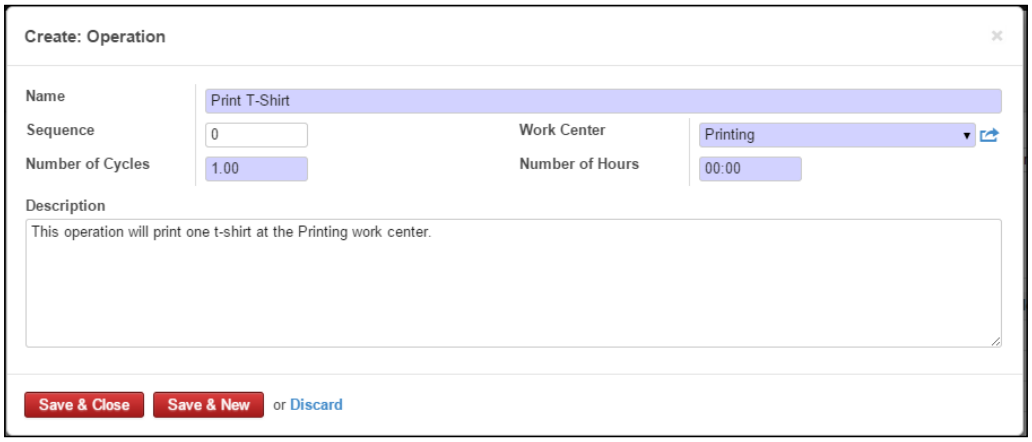
After defining a work center, you need to define a way to specify under which conditions you should use the work center. This is accomplished by defining routings. For our example, we are going to keep it simple and use routing to send our manufacture order to the printing work center for the finished product to be produced. In a real world example, the job might use routings to go through many work center operations before the final product is produced.

To create a routing order, go to the Manufacturing application and choose **Routings** under the **Product** submenu. Click on **Create** to bring up the new routing form:



In our example, we have named the routing `Print Job` and specified the **Virtual Location/Production** location. This vertical location is used to provide a location in which the product is actually produced. Because the product is not actually stocked or physically counted during production, the location is considered a virtual location within Odoo.

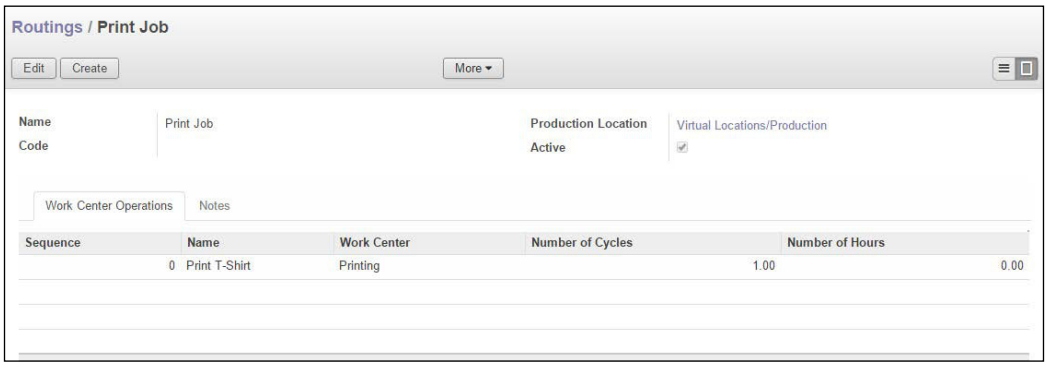
Next, we will define our work center operation by clicking on **Add an Item** and bringing up the operation form.



When defining our operation, we can name it whatever we wish, but in this case, I picked **Print T-Shirt**. This indicates this operation is more specific than the simple **Print Job** we are assigning to the routing order.

For complex routings, you can specify the sequence of the operations. For example, we could have a **Design** operation and a **Build Screen** operation before the **Print Job** operation. Then, we could specify a **Quality Assurance** operation and a **Packing** operation after the print job. You would handle all of these exactly the same way you set up the printing work center and created the required operations to produce the product. By starting simple and adding additional operations and complexity over time, you can often get up and running much more quickly than trying to track every little task right from the beginning.

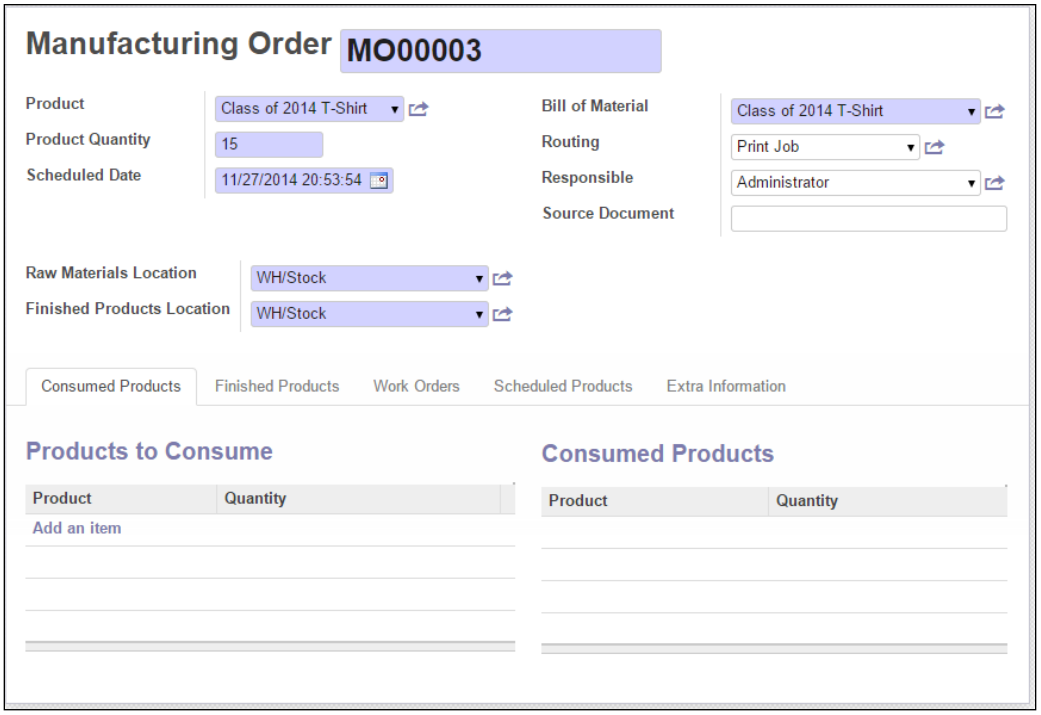
Once you have set up your operation, your routing should resemble the following form:



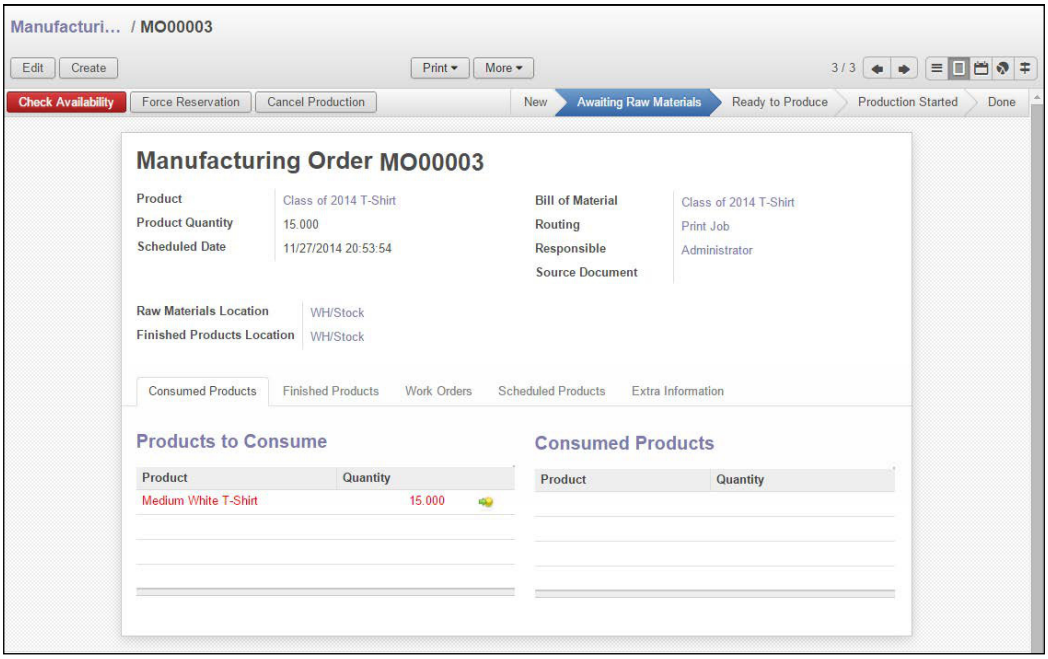
Here, we can see the finished order. One thing worth pointing out is that the number of hours specified in this routing is 0. Routings are very flexible and don't necessarily have to tie directly to a work center. In our example, we are letting the work center calculate the hours provided based on the quantity of the shirts we are producing. Alternatively, you can specify the number of hours directly in the routing.

Creating a manufacturing order with routing and a work center

Now that we have defined our work center and our routing operation, we can create a manufacturing order that will utilize our new production steps. In this example, we are going to produce 15 Class of 2014 T-Shirts.



When we select the product, Odoo will now automatically assign the associated bill of the materials for the product. You will notice in the manufacturing order we have selected **Print Job** for the routing of this order. This is the key field that will send this job to the printing work center to be produced. Clicking on **Confirm Production** will load in the products that will need to be consumed, as well as the work orders that are required to produce the product.



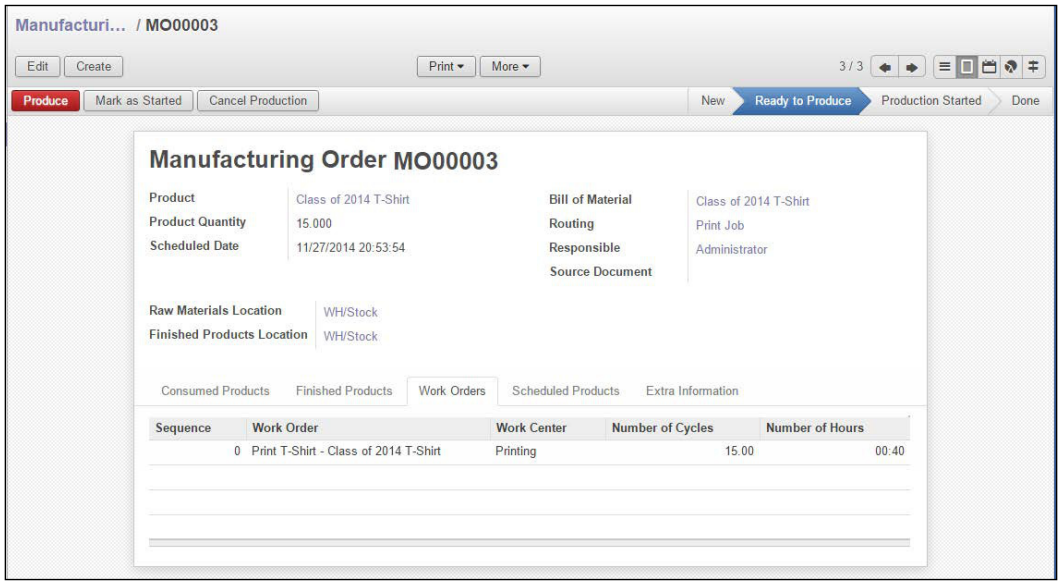
Once again, you will see that we are awaiting availability. The main difference is that now you will see the routing in the top-right corner is set to **Print Job**. This will route the manufacturing order to the Printing work center we created.

Now, when you click on **Check Availability**, unless you have purchased additional Medium White T-Shirts outside of the exercises in this book, you will not be able to continue on to production.

Odoo does not give you a lot of feedback here. When you click on **Check Availability**, Odoo will simply leave the status at **Awaiting Raw Materials**. There is no warning message or another indicator displayed.

You can now either go in and use your skills from *Chapter 4*, *Purchasing with Odoo*, to create an order for additional medium white T-shirts, or you can alternatively click on the **Force Reservation** to tell Odoo you still wish to process this order despite the inventory showing a lack of available raw materials. For our purposes, we are going to assume that we have additional T-shirts available already and use this opportunity to try the **Force Reservation** option.

Click on **Force Reservation** to get the order ready for production.



As you can see on the far right, it is estimated that it will take 40 minutes (00:40) to produce these 15 Class of 2014 T-Shirts.

How did we arrive at that number? It is a result of the capacity information we specified in the printing work center earlier in the chapter:

*Capacity Information: 5 minutes setup + (2 minutes * 15 shirts) + 5 minutes tear down time = 40 minutes*.

Producing the manufacturing order

Now you can click on **Produce** to send the manufacturing order to the work center and produce the 15 T-shirts. You will get a confirmation screen to confirm that you wish to create all 15:

Just like before, you can tell Odoo that you are only consuming at this stage or you can confirm and produce. Clicking on **Confirm** processes the manufacturing order. After production, the state will go to **Done** and you will find the 15 T-shirts in your inventory ready for shipping.

Summary

In this chapter, we installed the MRP application to begin setting up our manufacturing process. A bill of materials was created to define what products would be consumed when our product was manufactured. Finally, we manufactured our final product and looked at the inventory analysis report to verify our results.

In the next chapter, we will take a closer look at accounting and other reporting options. Setting up your chart of accounts is an important step that we'll cover, as well as reviewing journal entries, creating invoices, and receiving payments. We will also be defining sales taxes and managing fiscal periods. Yes, there is a lot more to cover!

6
Configuring Accounting Finance

One of the nice things about Odoo is that you can get up and running fairly quickly without having to spend a lot of time setting up complicated accounting and finance options. Odoo does a pretty fair job of creating a basic chart of account structures as a point to get started and to get familiar with Odoo. When setting up a production system for your company. However, you will want to take time to properly define your accounting requirements.

In this chapter, you will learn how to configure accounting in Odoo. This includes:

- Installing the Accounting and Finance application
- Examining the chart of accounts
- Learning how the other applications create transactions in accounting
- Adding new custom accounts
- Configuring fiscal years and periods
- A quick overview of the available accounting reports
- Closing a period
- Creating journal entries

Defining the chart of accounts for your business

The backbone of an accounting system setup is the chart of accounts. Wikipedia defines a chart of accounts as follows:

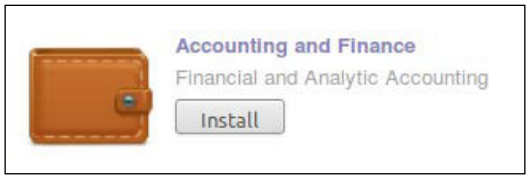
> *"A chart of accounts (COA) is a created list of the accounts used by a business entity to define each class of items for which money or the equivalent is spent or received. It is used to organize the finances of the entity and to segregate expenditures, revenue, assets and liabilities in order to give interested parties a better understanding of the financial health of the entity."*

It is very likely that if you are setting up Odoo for an existing business, you will be asked to configure the chart of accounts in Odoo to match the account structure that the business is already using. Even if you are not tied to any existing chart of accounts, it is inevitable that you will need to have a firm understanding of how the accounting functionality in Odoo works if you are going to have a successful implementation.

If you are completely unfamiliar with accounting, then this chapter might prove somewhat challenging. It is important to get familiar with accounting basics if you want to succeed in implementing any ERP system.

Installing the Accounting and Finance application

Odoo configures a basic accounting structure when you install base applications such as Sales and Purchasing. To access all of the accounting configuration options, you must install the **Accounting and Finance** application. If this application is not already installed in your configuration, go to **settings** and click on **Apps** to pull up the available applications. Find **Accounting and Finance** and click on **Install** to install the application.

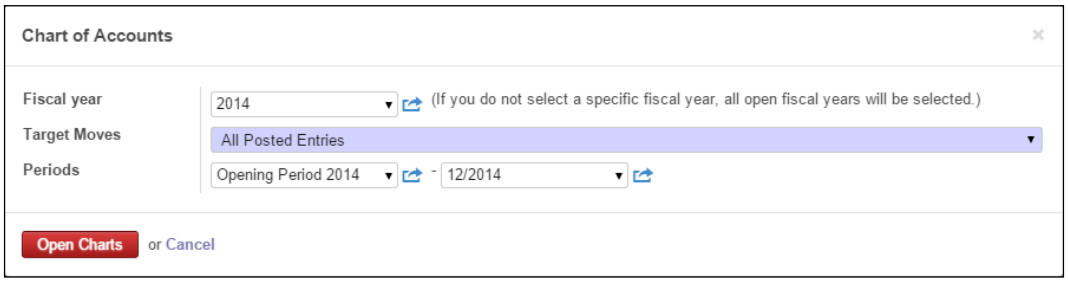


After you have installed the **Accounting and Finance** application, your menu structure at the top of Odoo will change. Before installing the application, you likely had an **Invoicing** menu that contained the necessary options for the Sales and Purchasing applications. Once the **Accounting and Finance** application is installed, the **Invoicing** menu will be replaced with an **Accounting** menu and will be populated with several more options.

Viewing the current chart of accounts

We will begin by learning how to view the current chart of accounts in Odoo:

1. Go to the **Accounting** menu and choose **Chart of Accounts** under the **Charts** submenu. You will be presented with a screen that lets you select the year and fiscal period for which you wish to review the Chart of Accounts:



   Odoo will change, by default, the fiscal year to the current year, and the periods will also change, by default, to periods of the current month in the fiscal year.

2. Click on **Open Charts** to view the chart of accounts for the specified time frame:

Code	Name	Debit	Credit	Balance	Company Currency	Internal Type
1	Assets	0.00	0.00	0.00	USD	View
2	Liabilities and Equity	0.00	114.00	-114.00	USD	View
20	Liabilities	0.00	114.00	-114.00	USD	View
200	Current Liabilities	0.00	114.00	-114.00	USD	View
2000	Payable	0.00	114.00	-114.00	USD	View
200010	Account Payable	0.00	114.00	-114.00	USD	Payable
240	Other Current Liabilities	0.00	0.00	0.00	USD	View
30	Equity	0.00	0.00	0.00	USD	View
40	Income	0.00	0.00	0.00	USD	View
60	Expenses	114.00	0.00	114.00	USD	View
70	Other Income	0.00	0.00	0.00	USD	View

In the previous screenshot, we see the currently configured chart of accounts in a hierarchical tree structure. The liabilities accounts have been opened up to demonstrate how Odoo nests accounts inside each other.

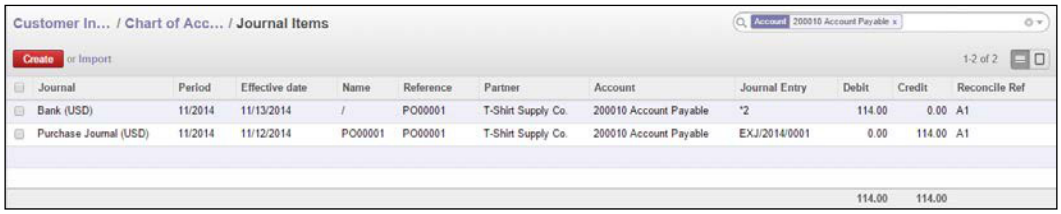
- 2 — **Liabilities**
- 20 — **Current Liabilities**
- 2000 — **Payable**
- 200010 — **Account Payable**

The ability to nest accounts inside one another allows reports to *roll up* totals, so that you can analyze the financial status of the company at any level. For example, you can look at the total of all liabilities or only look at the liabilities you currently have in accounts payable.

How were the transactions created in Account Payable?

Looking at the chart of accounts, we can see that we have transactions in the Account Payable liability account. Account Payable liability typically includes a total of the current invoices that you have open from your suppliers. When you purchase goods and you receive an invoice, Account Payable will increase by the amount of the invoice. When you pay the invoice, the Account Payable account will decrease by the amount you pay on the invoice.

To see the transactions that created the $114.00 in Account Payable, double-click on the 200010 account:



When we open the account, we see all the transactions that were involved. In the first column, we see the Journals from which the transaction came. **The Purchase Journal (USD)** and the **Bank (USD)** entries specify **PO00001** as the reference number for the transaction. This lets you tie back this payment to the original purchase order. Near the far right of the first line item, you will see the debit amount of **$114.00**. This was the entry wherein your bank account was debited the amount of the purchase, and removing the money from your account.

In the second line, the **Account Payable** account was *credited* $114.00 to reduce the liability that you owed for the product. With both these entries, you are accounting for the invoiced purchase order PO00001.

Viewing the other journal items

In the top-right corner in the Odoo search box, we can see that the view is limited to the **Account Payable** account. If we click on the small closed box on the account payable filter in the search view, we can see all the journal items.

Journal	Period	Effective date	Name	Reference	Partner	Account	Journal Entry	Debit	Credit	Reconcile Ref
Bank (USD)	11/2014	11/13/2014	/	PO00001	T-Shirt Supply Co.	200010 Account Payable	*2	114.00	0.00	A1
Bank (USD)	11/2014	11/13/2014	Check #123	PO00001	T-Shirt Supply Co.	100002 Bank	*2	0.00	114.00	
Purchase Journal (USD)	11/2014	11/12/2014	PO00001	PO00001	T-Shirt Supply Co.	200010 Account Payable	EXJ/2014/0001	0.00	114.00	A1
Purchase Journal (USD)	11/2014	11/12/2014	[MWT-20] Med Wht Shirt ()	PO00001	T-Shirt Supply Co.	690000 Miscellaneous Expense	EXJ/2014/0001	114.00	0.00	
								228.00	228.00	

If you look carefully at the new list of journal items, you will see there are two additional transactions.

One of these transactions is a **$114.00** debit to the **690000 Miscellaneous Expense** account. When the purchase order was invoiced, Odoo credited $114.00 to Account Payable to reflect that the company owes $114.00 to the supplier in the company books. At the same time, Odoo created the $114.00 debit to the 690000 Miscellaneous Expense account. This is known as **double-entry accounting**. The result is that we can look at 690000 to see the total of our purchases.

When we paid the invoice, Odoo created the $114.00 debit to **Accounts Payable** to account for the fact that the company no longer has $114.00 in accounts payable liability. At the same time, Odoo credited the account **100002 Bank** for $114.00 to account for the money leaving that account.

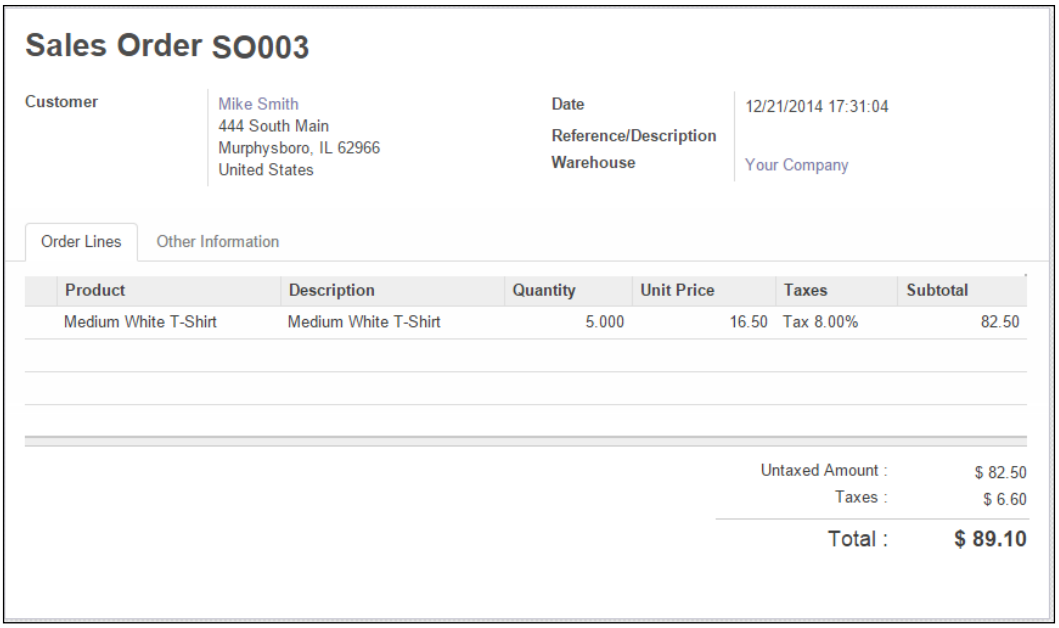
If this is still a little confusing don't worry. We are now going to follow through a set of transactions from the Accounts Receivable side, so that you can better understand how Odoo handles accounting transactions.

Following transactions through the sales and accounts receivable process

In the previous example, we were looking at the chart of accounts and determining what transactions created the entries. Next, we will sell an item to a customer and see exactly how that transaction affects the accounting entries in the journal.

Let's begin by creating a new sales order.

Go to **Sales** and click on **Sales Order** to bring up the sales order listing. Click on **Create** to create a new sales order.



If you have followed along with our examples, then you will already have the customer and product entered to create the samples sales order. Otherwise, you will need to add a customer and a product if you wish to follow along on your computer. In this example, we have created a sales order for 5 medium white t-shirts. Make sure you **Confirm** your quotation to create the sales order.

Odoo will automatically number the sales orders and other documents. In the preceding example, there have already been two sales order numbers used by the Odoo system. Therefore, depending on what you have already done with your current system, you might not have the same sales order number for your sample sales order.