



vTiger 6 Developer Guide



by

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Chief Shikari

www.vtigress.com

vTigress is a service brand of myEnterprise BizAutomations Pvt Ltd

Remembering those I lost,
Grateful for those I have,
Looking forward to whatever unfolds tomorrow

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Vtigress is a service brand of myEnterprise, for Vtiger related products and services.

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Revision History

Sep 1, 2011 L: STP : Started outline and concept

Oct 20, 2011 L: STP : Chapter 2

Aug 1, 2015 L: STP : Integrated scattered efforts

Sep 15, 2015 T: AM : Publication

Genesis

Ever since the interest in Vtiger developed in me, the search for development literature available was a daily thirst and hunger.

The pain that an early Vtiger enthusiast undergoes, to devise keywords to locate the tiny pearls of wisdom hidden online, was felt by me, perhaps in some measure, due to my limited abilities and knowledge.

The inspiration and build of this effort is based on the efforts of A Prasad, one of the respected and long standing members of the Vtiger team.

His publication, <http://ftp.psu.ac.th/pub/vtiger/vtiger5.x-developer-manual.pdf>, provided a lot of insight into the then architecture of Vtiger 5. This is what gave me the idea that Vtiger could do much more than be a CRM.

It could be developed as a framework for building bespoke Enterprise systems, as another enthusiast pointed out, to graduate into a BPM, Business Process Management system.

Vtiger 6 has made a lot of paradigm shifts from the earlier versions. I had wanted to expand on Prasad's efforts to bridge the gaps that I had faced, but the imperatives of attending to various life's situations, did not provide me with the luxury of a quicker contribution.

This initial effort is dedicated to the Vtiger community, and I humbly request one and all to comment and contribute to this exercise.

In a spirit of constructive contribution, for some time, myEnterprise intends to improve on the base code as a separate fork. This is to not interfere with or disturb any of Vtiger's development imperatives and priorities, which may not initially match up with ours. I am expecting that the Vtiger team shall allow this, as the developments in the code base could be freely absorbed into Vtiger at any point in time. Some of the proposed developments are listed in the Appendices. At no time do we wish to usurp Vtiger's eminent position, and our fork is intended to be only a guide post, not a venture.

We hope that our understanding of Vtiger, and our ability to make it dance on a pin head, will obtain us the necessary wherewithal to continue and sustain the same.

Foreword

<< TO REQUEST SRINIVAS KANUMURU (VTIGER COO) OR HIS SUGGESTED PERSON
TO WRITE THE FOREWORD>>

My Words

CRM systems today are a 23 billion dollar business segment worldwide, expected to grow to 36 billion by 2017, and is among the faster growing segments in IT today. The big 4 and Salesforce.com account for about 50% market share, and smaller and niche players the rest of the pie.

<http://www.forbes.com/sites/louiscolumbus/2015/05/22/gartner-crm-market-share-update-47-of-all-crm-systems-are-saas-based-salesforce-accelerates-lead/>

The 50% of the CRM spend pie is fought out amongst 300+ players. The spend goes largely into subscriptions for online version or to the vendors, partners, and independent developers who leverage the 'Open Source' into a modified freemium model. A survey of the possible breakdown of spend is tabulated here and extra statistics provided in Appendices.

CRM Spend Breakdown table

Internal IT

External Consultants

Extension Products

The Jackals

About 300 plus offerings are listed as CRM solutions.

<http://www.capterra.com/customer-relationship-management-software/>

They all exhibit the required characteristics of a CRM, our analysis is towards, which application affords the best extensibility, as that is where the future lies with lower investment for the smaller shop, who is closer to the end user and is responsible for the end customer satisfaction/delight.

Vtiger differentiates itself in different ways. It brings a lot of value to the entire supply chain. Well supported, active community, low TCO, proven adoption by large companies are some of the virtues.

This effort in documenting Vtiger's potential, is aimed at providing support to the vTiger Community in extending the vTiger infrastructure to better serve the users of the CRM system and integrate it with the rest of their business information technology components. What is collected here, is based largely on the very valuable input and knowledge sharing on the vTiger forums and the community. This is only a compilation of the snippets of knowledge which are scattered all over and sometimes hard to find for even the best of search squirrels.

The user community of business applications are never alike. Even in like business domains such as healthcare, retail, logistics or manufacturing, each individual business has their own

unique set of methods to plan for, receive the requirements, and execute the customer demands in a way that is most beneficial to all parties to the interaction.

To explain the intricacies and complexities involved in routine business is not covered in this book. Examples of such cases are covered to provide the basis for a solution using the vTiger software framework.

Overview of this guide

Who it is for

CRM Analysts, developers and small business owners

What newbies need

Prerequisites for using this guide is a good working knowledge of OOP & PHP, mySQL, Javascript and CSS. jQuery, jQuery UI, Smarty and Bootstrap can be learned along the way, using online resources.

However this book does not provide any tutorials on these.

What is covered

Installation, Configuration, Integrations, Customisation and Migrations are the five key areas that a Vtiger Developer / CRM Business Analyst must deal with most of the time.

Vtiger works on various platforms, depending on the end use of the application. In production mode, it will typically run on large servers for On-Premise installations, virtual servers on a farm like Rackspace, AWS, etc.

Development can be carried out on laptops running Windows, Ubuntu or MacOS offline as well.

This book is divided into six parts and a detailed reference information in Appendices.

1.0 Exploring vTiger:

This section brings forward the available information on the foundations of how the software exists in the present form and what the general community feelings are- adulatory, anticipatory and apprehensive about vTiger.

2.0 Explaining vTiger:

This section deals with how the present functionality has been realised, the gaps, the good, the bad and the ugly.

3.0 Exploiting vTiger:

There are many ready ways in which you could make use of the present versions in ways that you never felt realisable. Useful examples and demonstration make it possible for developers to provide the business community with solutions that are realisable with business application understanding and less programming knowledge.

4.0 Expanding vTiger

Occasions need programming effort to realise those aspects which have not been envisaged in the present available deployment situations. This section shows how software development efforts can be maximised by developing within the available framework of vTiger and benefit from the by product of added re-usability of the development effort.

5.0 Extending vTiger

Some business situations will demand that certain business expressions, which cannot be realised within the available framework of business platform resources of vTiger will be needed.

6.0 Extras about vTiger

Secret sauce about what has happened so far, how to better plug in, and loads of information about accessing information about this very popular and successful open source software.

Comments

There are three underlying sentiments in the book.

The first deals with the core framework of vTiger and simple examples of how it can be leveraged for business use without resorting to programming.

The second discusses the available resources in the vTiger software system that are openly available for exploitation in customising the system for a particular business use case. In fact even lending itself as a framework for developing into a bespoke ERP system with the needed tools and analytical components. We have seen how HR, Manufacturing and other enterprise management systems can be built by extending the Viger framework.

The third, is part philosophical, but takes proactive steps to encourage developers to use the current system, in an attempt to contribute further rationalisation of the system as it exists, correct the deficiencies. and provide a true platform to fit the complexities of business use cases onto a software platform, easy enough to define by the actual users, so that expensive friction costs between the business and information technology provider are reduced to next to nothing. This can be realised only when the barrier of communication of business requirements into SRS documents can be met by information technology without exposing the complexities of software engineering.

In this larger effort, input has been taken from community publication and suggestions. Much has to be attributed to the unselfish and whole hearted involvement of the entire Open Source effort, which seeks to demolish the bastions of power who hold costs of management far higher than what they should be for the rest of us.

As an open source effort, vTiger has its share of champions and detractors. This book is meant to address both segments, with a view to elicit comments from them, to make the necessary corrections.

My email, stprasad@stprasad.com is always open for the community comments. Brickbats are welcome, bouquets are received with humility.

I humbly thank my team, family and all the Vtiger community and not the least the Vtiger team.

S.T.Prasad
Hyderabad, India
Late 2011 / Sep 2015

0.0 Evolution of CRM and vTiger

0.1 CRM systems

My search on Google for “who invented crm” yielded <http://www.crmswitch.com/crm-industry/crm-industry-history> as the top non advertised result. It is a good synopsis of the evolution of this segment in enterprise IT.

To add to the excellent article above, sales being the lifeblood of all commerce, it requires the benefit of enterprise wide data to best function in the competitive rat race.

<http://blogs.law.harvard.edu/doc/2008/12/01/will-the-real-history-of-crm-please-stand-up/comment-page-1>
<http://www.exforsys.com/tutorials/crm/the-history-of-crm.html>
<http://www.forbes.com/sites/markfidelman/2012/10/03/the-end-of-crm-as-we-know-it>
<http://www.targetmarketingmag.com/article/who-coined-term-crm-28097>

were the next displayed on the first page of results.

0.1.1 What is CRM?

The heart of any business are its customers, clients, patrons, users, whatever name you choose to term the association. Paeans have been written about the care and regard that any business enterprise should accord them, even in a monopoly situation. Gone are the arrogance of conduct. In the recent era of increasing competition and awareness, businesses have undergone a sea change in the outlook towards their demand base of clients, to achieve better communication, responsive service and a proactive outlook in the provider-consumer relationship.

vTiger is one such system that builds upon the traditional practices of relationship management. It focuses on customers, but in the contemporary world, these have equal relevance in all aspects of business relationships.

This text is about making that extension into all domains of business relationships and employing the good work done so far in vTiger and in deploying those very same practices into the rest of the business interactions. If a customer can interact via a Portal, why cannot a Vendor, a Regulator, a Prospect, an Employee and so on. The intent of this effort is not only technical but also philosophical in bringing better standards and helping the SOHO, SME businesses obtain the best of breed solutions at better TCO. That said, read on....

https://en.wikipedia.org/wiki/Customer_relationship_management

0.1.2 How does CRM help business

Make a presentation of around 30 slides with information from all major CRM sites, Salesforce, MS Dynamics, Gartner report etc

Make this as a blog article of 3 parts with 10 slides per article

Write as much info needed to speak about each slide separately as Notes per slide

0.2 CRM Business Processes

Identified here are the must have process components that must persist in any organisation that is keen to benefit from a process oriented sales organisation.

0.2.1 Sales Force Automation

- Contact & Account Management
- Opportunity & Pipeline Mgmt.
- Task / Activity Management
- Desktop Integration
- Product & Price List Management
- Quote & Order Management
- Customer Contract Management

0.2.2 Marketing Automation

- Email Marketing
- Campaign Management
- Lead Management
- Marketing ROI Analytics

0.2.3 Customer Support

- Case Management
- Customer Support Portal
- Knowledge Base
- Call Center Features

0.2.4 Reporting & Analytics

- Reporting
- Dashboards
- Forecasting

0.2.5 Mobile & Social

- Mobile User Support
- Social Collaboration Features
- Social Network Integration

0.2.6 Platform

- Customization
- Workflow Capability
- User, Role, and Access Mgmt.
- Internationalization
- Document & Content Mgmt.
- Performance & Reliability
- Output Document Generation

0.2.7 Integration

- Data Import & Export Tools
- Integration APIs
- Breadth of Partner Applications

0.3 CRM Software Applications Market

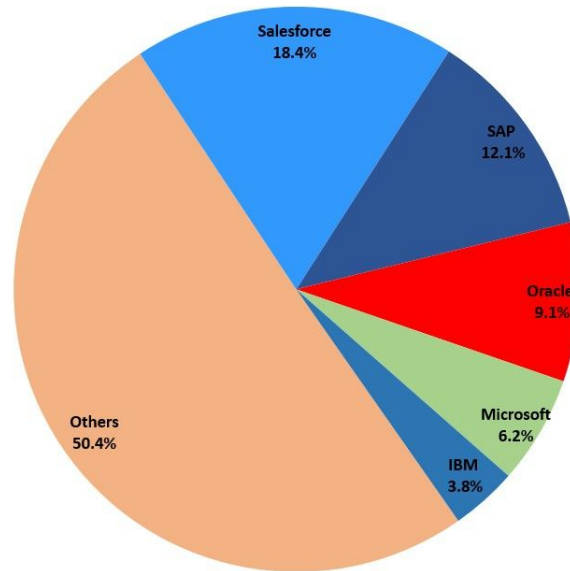
Table 1

CRM Software Spending by Vendor, Total Software Revenue Worldwide, 2013 (Millions of Dollars)

Company	2013 Revenue	2013 Market Share (%)	2012 Revenue	2012-2013 Growth (%)
salesforce.com	3,290.3	16.1	2,525.6	30.3
SAP	2,621.5	12.8	2,327.1	12.7
Oracle	2,096.5	10.2	2,015.2	4.0
Microsoft	1,392.4	6.8	1,134.0	22.8
IBM	792.1	3.9	649.1	22.0
Others	10,283.5	50.2	9,351.2	9.9
Total	20,476.3	100.0	18,002.2	13.7

Source: Gartner (May 2014)

Worldwide CRM Software Spending By Vendor, 2014
Market Size: \$23.1B, 13.3% Growth over 2013



0.3.2 Compare CRM Systems

At last count there seemed to be more than 300 systems claiming the label of CRM
http://www.softwareadvice.com/crm/?more=true&layout=var_b0 [Early August, 2015]

We review those by 2014 market share and by category of deployment
 SAP, Oracle / Siebel, MS Dynamics and IBM have CRM as a part of their Enterprise systems.
 Salesforce, is the fastest growing product, with the new paradigm of SaaS. Others who are prominent and cited are about 25, which includes Vtiger. One analyst has suggested that Vtiger as a product and its allied services could be a 100 million USD market share.

0.3.3 The case for Vtiger

Vtiger has evolved well and has a great framework using popular open source components like adodb, Smarty, jQuery and Bootstrap. Its new MVC design make it very easy to extend it and customise it. It has built in support for i18n. (i nternationalisatio n). We looked at most of the top cited CRM offerings from a developer perspective and this is what we found.

Most of the offerings have their limitations in user extendibility. Some are restrictively licensed and that puts paid to an independent developers interest.

Vtiger, while still low in adoption, it offers the best platform for extending other business functions.

[More commentary for this]

0.4 vTiger and its origins

0.4.1 The seminal fork

SugarCRM was among the initial efforts at providing CRM focused solutions. Vtiger version 1.0 was launched on December 31, 2004 as a fork of the SugarCRM project. Over the 11 years, it has gradually evolved to shed much of the Sugar legacy and with the release of version 6, currently 6.1, it has differentiated itself sufficiently in the marketplace for SME CRMs, with a cloud and a open source offering (some features available in cloud are not released in open source yet).

<http://www.crmsearch.com/vtiger.php>

Sugar did not like the action taken by Advantnet, who later spun off Vtiger while porting the functionality into a Java based application, that is another leading CRM, Zoho.

https://discussions.vtiger.com/index.php?p=/discussion/11/important-appeal-to-the-open-source-community#Item_51 This makes an interesting read.

SuiteCRM is another fork of Sugar, Version 6.5 in 2013

With the advent of smartphones, there are many Apps on Android and iOs with neat features like Business Card Readers etc. Look for Vtiger in the AppStore on your smartphone.

YetiForce, <https://yetiforce.com/en>, coreBOS, are also fork's of Vtiger

0.4.2 The development of vTiger

The initial days

This can be defined as up to version 4.2. Significant effort went into code stabilisation, introduction of differentiating features from SugarCRM, and gaining acceptability.

Adoption phase

Version 4.2 to 5.4. During this period usage of Vtiger grew manifold and much of the early efforts had stabilised. This phase saw the community acceptability and appreciative response of Vtiger's efforts in delivering on their promise.

Vtiger monetised their efforts into a for-pay model of On Demand, and a delayed response open source model licensed under VPL (modified MPL, read Appendices for Open Source license comparisons).

Current phase

6.0 and beyond. A good redesign, most of the community are still to adopt the new system. This opinion is derived from the relatively lower download statistics of Vtiger 6 vs Vtiger 5. Most stable installations are still on 5.x, awaiting delivery of the ecosystem for migration and features.

Expected phase

Improve the framework, make it easier to develop

0.5 Developer resources

A few online resources are worth subscribing / referring to

trac.vtiger.com

Access and submit tickets, access for svn

forge.vtiger.com

Register projects

discussions.vtiger.com

Community forum

lists.vtigercrm.com/cgi-bin/mailman/listinfo/vtigercrm-developers

Developer mailing list

community.vtiger.com/help

Developer resources posted by Vtiger team

phpcrossref.com/xref/vtiger/_crossref is an excellent mapping of functions and classes used in Vtiger 6.0.0

<https://blogs.vtiger.com> , the official blog, has many articles on improving business productivity and other tips on effective deployment and best CRM practices.

Frequently used developer tools

Any Good PHP IDE or Script Editor

Zend Studio

Netbeans IDE

Dreamweaver

Notepad Plus

Editplus

vi on *nix

File Comparators

WinMerge/WinDiff

diff on *nix

Uploading

WinSCP/Putty

FileZilla

wget/scp on *nix

Debugging

FireBug

Xdebug

Vtiger debugging tools

Others

jsFiddle

BootPly

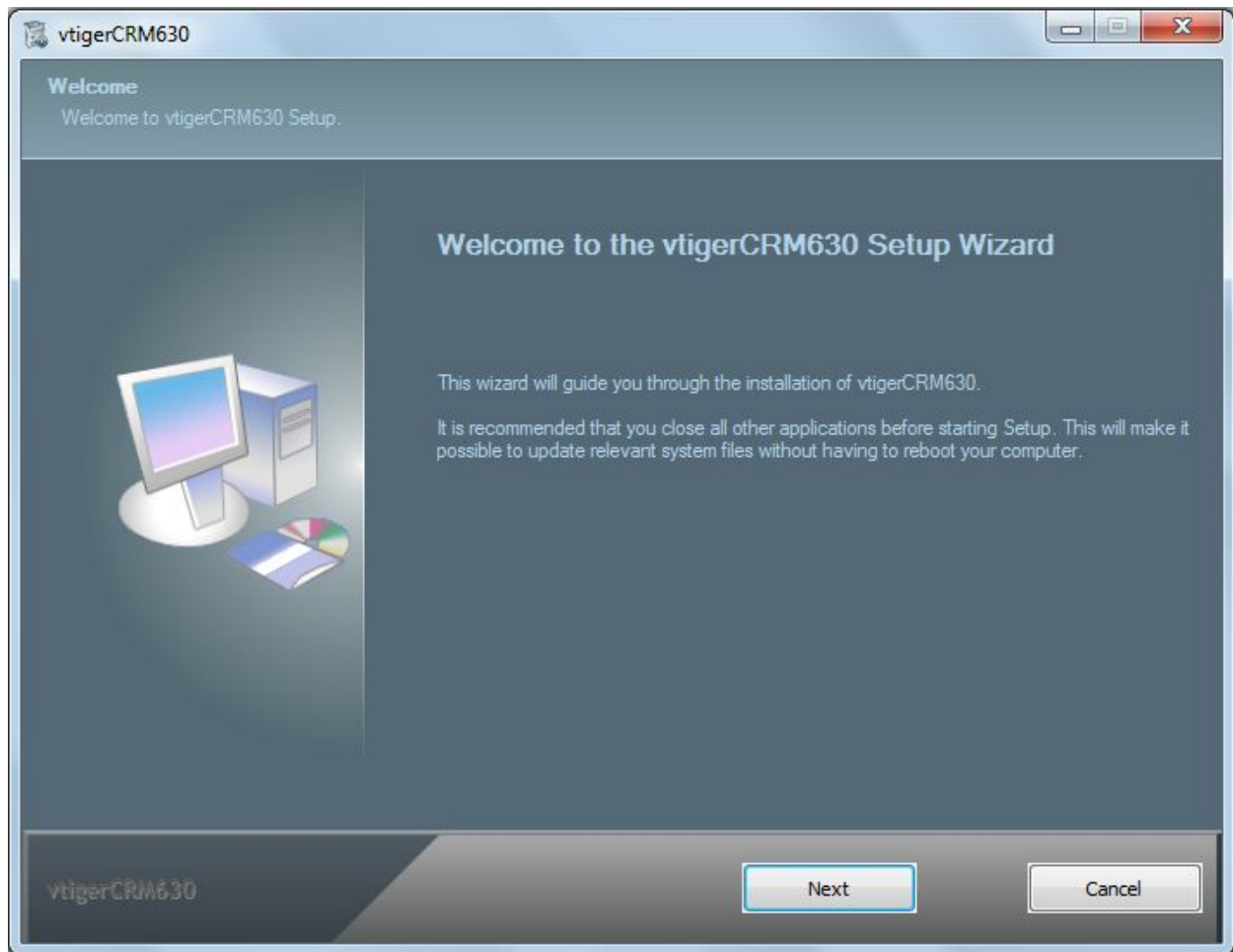
0.6 Installing Vtiger

Vtiger 6.3 is available for download from sourceforge and the Vtiger web site. The SaaS version is available with a free trial. There are some features in the SaaS version which are not present in the Open Source release.

0.6.1 Windows Installer

<http://sourceforge.net/projects/vtigercrm/files/vtiger%20CRM%206.3.0/Core%20Product/vtigerCRM630.exe/>

The install process is a two part process. The first part is a standard windows installer which creates a AMP island within **C:\Program Files (x86)\vtigerCRM630** . It uses IIS / MWS and to provide the apache http service.



Click next and follow the instructions on each screen. The annotated screens are available in the appendices.

At the end it opens the default browser on your system with the following URL

<http://localhost:8888/index.php?module=Install&view=Index>

and you should see the following page which starts the second part of the Install process, the CRM Web Install.

The CRM Web Install process is common to the source code installs described in next sections.

This is also described in detail in the Appendices

Check the folder in C:\Program Files (x86)\vtigerCRM630
and notice that the following folders have been created.

The Vtiger CRM files are in

C:\Program Files (x86)\vtigerCRM630\apache\htdocs\vtigerCRM

mysql

php

vtiger_tmp

bin

apache

Image

Uninstall.exe

0.6.2 Installing from *nix BIN

This is now deimplemented as of version 5.4

0.6.3 Installing open source code on *nix

<http://sourceforge.net/projects/vtigercrm/files/vtiger%20CRM%206.3.0/Core%20Product/vtigercrm6.3.0.tar.gz>

Extract the tar into any directory under the web root (usually /var/www/html or /public/html).

Follow the web install steps as described above.

0.6.4 Installing open source code on Windows XAMPP/WAMP

<http://sourceforge.net/projects/vtigercrm/files/vtiger%20CRM%206.3.0/Core%20Product/vtigercrm6.3.0.tar.gz>

Extract the tar into any directory under the web root (usually c:/xampp/htdocs)

Execute localhost:<optional port>/newcrmfolder

You should see a similar screen to the one shown above

0.6.5 Typical installation issues

Permissions

yet to complete

Post Install security checks for production servers

yet to complete

0.6.6 Migration

Porting over an earlier instance of Vtiger to the current version is called migration. This is dealt in more detail in a separate section.

1.0 Exploring vTiger

peipeorra book explain

This section brings forward the available information on the foundations of how the software exists in the present form and what the general community feelings are- adulatory, anticipatory and apprehensive about vTiger

vTiger CRM is presently in a stable release of 6.3.0 though there must be many instances where people have not upgraded from their earlier installs. 6.3.0 is available as of date for the developer community and offers certain improved and additional features over version 5.

The community has accepted Version 6 with great enthusiasm, with over 31 thousand downloads to date of version 6.3.0, Germany being the lead country with over 12% share, followed closely by US and India. These three countries seem to be among the top three downloading locations.

There are Vtiger users from all over the world, large industrialised nations to island paradises, as is evidenced from the sourceforge.net download statistics and our own hit monitor on our blog.vtigress.com, which shows hits from 142 countries since we installed it in June 2013.



[<http://www2.clustrmaps.com/counter/maps.php?user=7c810bf60>]

Vtiger 6.2 saw close to a 100,000 downloads, 6.1 saw 104,697 and 6.0 saw two hundred thousands of them.

Vtiger 5.4 was downloaded 385,383 times since its launch, 5.1 being 429,055. Russia was among the heavier downloaders earlier, however the interest seems to have waned or they are not interested in upgrading. [*statistics source sourceforge.net, c August, 2015*]

Inter version differences are captured in the appendices to this publication, and are not gone into detail here.

vTiger 6 requires Apache, PHP 5.5 and mySQL. It installs a lot of third party components and support libraries to achieve the functionality.

Refer to the Vtiger User Manual and Administration guide for more details on how to use Vtiger and configure the basic settings. Written and maintained by Dr Frank Piepiorra since version 4.0, it remains the best guide to deploying Vtiger as a CRM tool.

This book is available for a very small cost of a little less than 10.00 USD. It is a purchase worth many times over.

Students/Participants of the Vtiger Developer Course from myEnterprise, receive a licensed copy of the book under special arrangement with the Author and Publisher.

Vtiger 6 key features

CRM Functionality

Covered in its own section

REST API

Vtiger CRM 5.4.0 Web Services (REST API) Reference and Examples by Joe Bordes is an excellent guide to using Vtiger Web Services.

Security in Vtiger

Vtiger has good security practices and developers should never try and compromise on following the guidelines. No direct class to php code, no exposed files and directories, leaving paths for people to break in.

i18N

Internationalisation is well supported in Vtiger and in 6.3, it has made it possible to build language packs and publish them.

Third Party Extensions

Many developers and ISVs have created extensions to Vtiger that add to the functionality. Some are available on the Vtiger Market place, and some off the market place directly from Vendors site.

CRM Functionality

User

The CRM user functionality in Vtiger can be categorised into

- Salesforce Automation
- Marketing Automation
- Inventory Management
- Support Automation
- Project Management
- Activity Management
- Tools
- Analytics

Salesforce Automation

Leads: a prospect who may be interested in your product/service.

Opportunities: Represents a potential sale, with an expected close date, and anticipated revenue.

Contacts: A person conducting business with your company, acting individually or representing an Organization.

Organizations: An Organization is a Company/Institution. An Organization record is created for existing customers or prospective customers who are actively evaluating your products/services.

Quote: vtiger CRM makes it easy for Sales persons to create quotes and send them to the prospects.

Invoices: Like Quotes, Invoices can be generated from within vtiger CRM and exported to PDF files before sending to clients.

Marketing Automation

Webforms to capture leads from your Website

Campaign Management

Inventory Management

Products

Services

Vendors

PriceBooks

Quotes

Sales Order and Purchase Order

Invoice

Support Automation

Service Contracts

FAQ

Tickets

Project Management

Projects

Project Tasks

Project Milestones

Activity Management

Calendar with Events/Tasks

Email

SMS Notification

Call Management

Tools

Our Sites

Recycle Bin

Analytics

Reports with graphical rendering

Dashboards

Administrative

Administrative user functionality is categorised into

- User, Role, Profile and Sharing Management
- User Activity audit
- Studio for Module management
 - Layout Editor
 - Picklist Editor
 - Menu Editor
 - Module Manager
- Template definitions
- CRM Master Settings
- Importing Modules
 - Extension Store
 - Custom Built Module

Profiles, Roles and Users in vtiger	How to create Profiles, Roles and Users in vtiger?	https://wiki.vtiger.com/index.php/Users	Draw an organization chart with correct roles and responsibilities and map users to them
		1. https://wiki.vtiger.com/vtiger6/index.php/Roles 2. https://wiki.vtiger.com/vtiger6/index.php/Profiles	How to create Roles and profiles in vtiger?
		https://wiki.vtiger.com/index.php/Users_And_Access_Management	How to give field level access to a profile, role and user?
Emails in vtiger	Email configuration in vtiger - Outgoing and Incoming	https://wiki.vtiger.com/vtiger6/index.php/Outgoing_Server	How to configure outgoing email server in vtiger?
		https://wiki.vtiger.com/vtiger6/index.php/Mail_Manager	How to configure incoming email in vtiger?
			How to receive emails directly in your CRM?
		https://wiki.vtiger.com/vtiger6/index.php/Creating_Autoresponders	How to configure auto-responders in vtiger?
Reports and Analytics	Custom reports	https://wiki.vtiger.com/vtiger6/index.php/Reports	How to create custom reports in vtiger?
	Report Scheduling	https://wiki.vtiger.com/index.php/Unified_cron_job_user_interface	How to schedule a report using cron?
	Dashboard widgets based on reports	https://wiki.vtiger.com/index.php/Home_Module	How to create a dashboard widget based on a report?

Vtiger migration	Migration from old vtiger version	https://www.smackcoders.com/blog/how-to-upgrade-your-vtiger-5-4-to-version-6-0-step-by-step.html	How does migration from old vtiger version work?
			What exactly happens during a migration?
			Migration of customization

Development Environment	Windows Localhost XAMPP/WAMP	https://wiki.vtiger.com/index.php/System_Requirements	List out the minimum requirements of vtiger to run smoothly
	Windows Installer	http://sourceforge.net/projects/vtigercrm/files/vtiger%20CRM%206.3.0/Core%20Product/vtigerCRM630.exe/	
	*nix Package Installer	https://wiki.vtiger.com/index.php/Installation_with_BIN	
	Ubuntu / Linux Laptop		
	Ubuntu cloud server		
	Using Tortoise SVN to sync development to staging	<ol style="list-style-type: none"> http://tortoisesvn.net/docs/nightly/TortoiseSVN_en/tsvn-quick-start.html http://tortoisesvn.net/docs/release/TortoiseSVN_en/tsvn-dug.html 	Create SVN login and upload code there
	Development practices	<ol style="list-style-type: none"> http://www.catb.org/esr/writings/taoup/html/ch19s02.html 	Make KB of best practices in development of open source code

		2. https://www.lullabot.com/articles/best-practices-in-open-source-development	
Code architecture	How is the code structured into classes and objects?	https://wiki.vtiger.com/index.php/Vtiger_6_Developer_Guide	How is a class instantiated? How is an object created? How to write a new class file and use it within vtiger? How a parent class is extended? How is a function called and overwritten?
	What is the naming convention followed and how should it be respected?	1. https://www.drupal.org/node/715160 2. https://www.drupal.org/coding-standards	How js file ,tpl and php files are called
		http://www.w3schools.com/php/php_ajax_php.asp	How is ajax called?
	Folder structures and file locations	https://wiki.vtiger.com/index.php/Vtiger_6_Developer_Guide	Introduction & Overview of Vtiger CRM File Location and DB Architecture
Database architecture	How are the tables distributed over the application?	https://wiki.vtiger.com/index.php/DataBaseSchema	How many tables are there? How to detect an erroneous installation? Which are the significant system tables?

The key components of vTiger as an application system are listed in the DEPENDENCIES.txt, which gets copied into the root, upon every install.

Application code organisation

In Vtiger 630, all MVC is object oriented. The Vtiger_Base class is the general root class to construct any entity or extension behaviour. The fallback logic implemented in the Loader, looks for the class definition php in the module area, and if not found falls back on the Vtiger definition.

The core class which drives entity functionality is CRMEntity

Database Organisation

The following are the standard database tables established for a base installation. vTiger has the following.

The core database contains 564 tables on basic setup.

The tables can be classified as under

- Core vtiger configuration
- Vtiger feature support
- Module support tables
- Other tables

Comparison of vtiger610 and vtiger540 databases

32 Tables dropped

46 Tables created

106 Tables altered

The categorised details of all the tables and their category and modules used are available in the appendices

2.0 Explaining vTiger

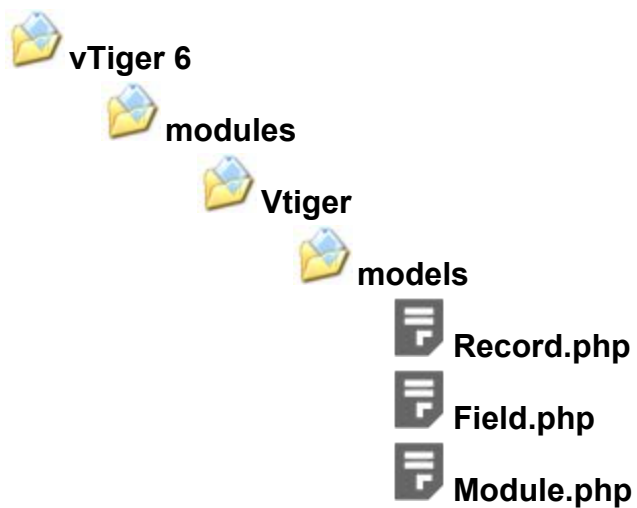
detailed one - directory structure, mvc, files, infrastructure 0 theoretical type

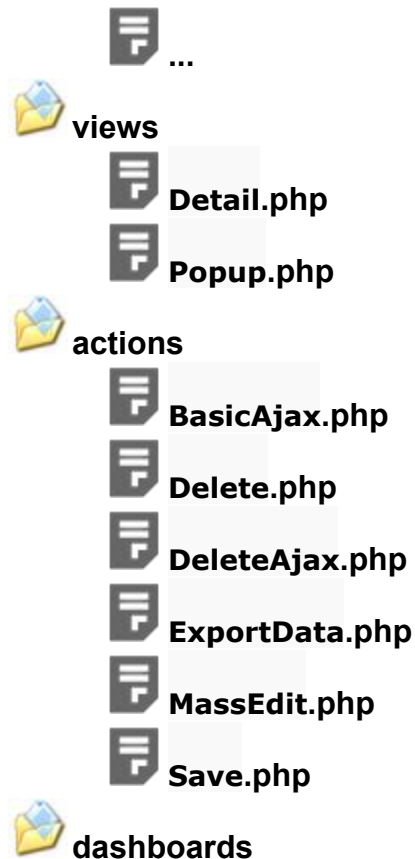
/* Started By Parag */

Directory Structure of vTiger 6



Module Structure





/* Ended By Parag */

This chapter is to explain the way vtiger works, in as much as the modules defined in the system operate. This chapter deals with how the present functionality has been realised, the gaps, the good, the bad and the ugly.

In the earlier chapter, you would have obtained an idea of how the code and database of vtiger are organised. Dont worry if it has not sunk in yet, you can always go back and refer to it.

Changes to be aware of, what's different and what's new

Code

WebUI object

The entire user interface now revolved around the WebUI object that is instantiated by index.php for each http request. Using the request parameters, an appropriate handler is instantiated dynamically by the WebUI method (**process**), and the request handled as per the behaviour defined for the module being invoked.

New MVC

Responsive UI

Bootstrap

Vtiger 6 uses Twitter Bootstrap framework as the basis for a responsive UX. **Twitter Bootstrap** is a CSS framework that helps in designing web applications. It is one of the easiest CSS frameworks to use in the Industry today. It assumes you have no designing knowledge and all you want to do is write some HTML as per the **Bootstrap** specifications.

Smarty 3

Looking closely at how **vtiger** works

Web endpoint

index.php is the traffic policeman for vTiger's web interface. All links in the system refer to index.php with a post or a get call that is interpreted by index.php in the context of the security of access and other validations. Until Vtiger 5.4, index.php was a script that grew from day one, with lots of patchwork code and was not oopsified. In 6.x, it is a very clean and small script, which instances the WebUI object and operates the url. If any script is directly accessed, the user is directed to the login page.

Take a look at a few of the urls formed that are used to call index.php in the root of the installation.

<http://50.57.53.218/vtigercrm/index.php?action=ListView&module=Leads&parenttab=Sales>

http://50.57.53.218/vtigercrm/index.php?module=Dashboard&action=index&display_view=MATRIX&type=accountindustry&time=1319093882034

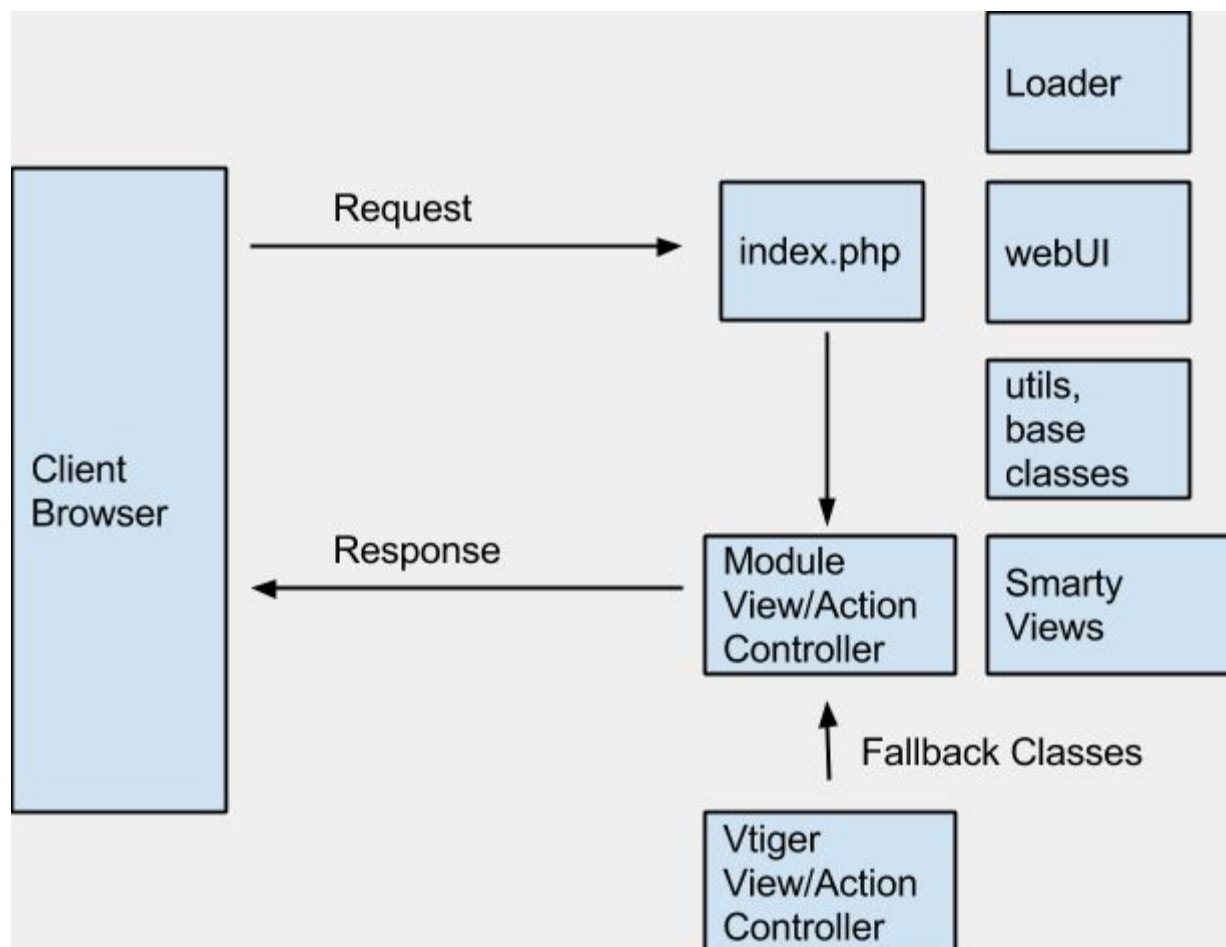
for a typical call in the dashboard module

The next call is taken from the Leads Module, when the Convert Lead Action is chosen.

http://50.57.53.218/vtigercrm/index.php?module=Documents&action=EditView&return_module=Leads&return_action=DetailView&return_id=40&parent_id=40

Control flow overview

Here is a highly simplified visual representation of the basic control flow that is involved in serving the response to the request from the application UI



The relevant code set starts with `index.php`, which instance the `WebUI` object. This object, uses the request variables which identify the module, action and other parameters. All the basic support code is in the folder **includes**, and javascript support scripts in **resources**.

We show the structure of the `includes` folder which declares all the key meta objects in the CRM system.

includes:

Loader.php

exceptions:

AppException.php

http:

Request.php

Response.php

Session.php

main:

```

        WebUI.php
runtime:
    BaseModel.php
    Cache.php
    Controller.php
    EntryPoint.php
    Globals.php
    JavaScript.php
    LanguageHandler.php
    Theme.php
    Viewer.php
cache
    Connector.php
    Connectors.php

```

As can be seen, index.php is a small neat script, the includes the WebUI class file, instances it and executes the process method

index.php

```

include_once 'includes/main/WebUI.php';
$webUI = new Vtiger_WebUI();
$webUI->process(new Vtiger_Request($_REQUEST, $_REQUEST));

```

The module handler is dynamically setup by the WebUI object, and invoked to process the request.

The WebUI process method workflow is described in the webUI process pseudo code table

includes/main/WebUI.php

```

require_once 'include/utils/utils.php';
require_once 'include/utils/CommonUtils.php'; // line can be omitted w/o any harm
require_once 'includes/Loader.php';
vimport ('includes.runtime.EntryPoint');

class Vtiger_WebUI extends Vtiger_EntryPoint {
    * Function to check if the User has logged in
    * Function to get the instance of the logged in User
    * Function to check if the User has permission for the handler
    * Function to handle any view preprocessing, skipped for Ajax calls
    * Function to handle any view postprocessing, skipped for Ajax calls
    * Function to check if Vtiger CRM has been installed
    * Function to process user request, called in index.php

    function process (Vtiger_Request $request) {

```

```

    }
}

```

The vimport function is declared in the Loader.php script.

The include/utils/utils.php, and include/utils/CommonUtils.php cross reference each other presently, along with many other included scripts from the legacy include folder. We are informed via the script, include/deprecated.txt, that the entire include folder functionality will be migrated over to the new model under includes.

Loader.php

```

global $LOADER_FILE_DIR;
$LOADER_FILE_DIR = dirname(__FILE__);
class Vtiger_Loader {
// Defines Autoload
}
function vimport($qualifiedName) {
}
function vimport_try($qualifiedName) {
}
function vimport_path($qualifiedName) {
}

Function to auto load the required class files matching the directory pattern
modules/xyz/types/Abc.php for class xyz_Abc_Type
spl_autoload_register('Vtiger_Loader::autoLoad');

```

Loader.php provides the all important autoload method, which is set using the spl_autoload_register PHP function. So, with this set, any new Vtiger_Object, will get loaded from its defined class scripts using a specific nomenclature modules/xyz/types/Abc.php for class xyz_Abc_Type

so a php statement

```
$newobject = new MyModule_Abc_Type ;
```

will cause the script, modules/MyModule/types/Abc.php, to be automatically included before object is created. Type can now be only Action or View for now, as these are the two extendable controller types managing views and actions

The Type and types correlation is shown below.

Type	types
Action	actions

View	views
------	-------

WebUI Process Pseudocode

```

Vtiger_Session::init();
// CSRF check except for RESET PASSWORD
// set globals $currentUser, $default_language;
// Setup module language strings
// Setup Vtiger language strings

$view = $request->get('view');
$action = $request->get('action');
$response = false;

try {
    // if crm not installed redirect
    header('Location:index.php?module=Install&view=Index');
    // Handle some defaults and controller settings
    // setup the handler class dynamically using Loader
    $handlerClass = Vtiger_Loader::getComponentClassName($componentType, $componentName,
$qualifiedModuleName);
    $handler = new $handlerClass();
    if ($handler) {
        vglobal('currentModule', $module);
        $this->triggerPreProcess($handler, $request);
        $response = $handler->process($request);
        $this->triggerPostProcess($handler, $request);
    } else {
        throw new AppException(vtranslate('LBL_HANDLER_NOT_FOUND'));
    }
} catch(Exception $e) {
    if ($view) {
        // Log for development.
        error_log($e->getTraceAsString(), E_NOTICE);
        $viewer = new Vtiger_Viewer();
        $viewer->assign('MESSAGE', $e->getMessage());
        $viewer->view('OperationNotPermitted.tpl', 'Vtiger');
    } else {
        $response = new Vtiger_Response();
        $response->setEmitType(Vtiger_Response::$EMIT_JSON);
        $response->setError($e->getMessage());
    }
}
if ($response) {
    $response->emit();
}

```

The data in config.inc.php is used for most default settings, tabdata.php and parent_tabdata.php are used to set up the menu and menu action links. Smarty_setup.php and PEAR.php are included by index.php to provide the database and UI components. The used config files are config.php which merely includes config.inc.php, which contains all the key globals used by vtiger.log4php.properties is read in to set the the logging properties for the 5 defined logging scenarios. Refer to the separate chapter on debugging to know more. vtigerversion.php is used to store the script version value, which is compared with the dbversion

value by index.php to proceed.

config.performance.php is used while logging and database logging

config.template.php is used as the startup template to generate config.inc.php.

config.db.php and connection.php are used in migration and install, and are vestigial files from the install process. Ideally they should have been deleted or renamed by the install.php script.

htaccess.txt and robots.txt are Linux access control files for web behaviour

Directory structure

Overall

The Vtiger CRM root consists of files and folders. A breakdown of the various files into the following categories has been made for easier understanding of the code

- Entry Point scripts
- Configuration
- Support
- Access Control
- Notices

More details are available in the appendices

Entry Point scripts

- index.php, web access
- vtigercron.php, external cron trigger entry point
- vtigerservice.php, SOAP entry point
- webservice.php, WebServices entry point

Configuration

- tabdata.php
- parent_tabdata.php
- vtigerversion.php
- config.php
- config.inc.php
- config.performance.php
- config.csrf-secret.php
- config.db.php
- config.template.php
- log4php.properties
- connection.php

Support

- forgotPassword.php
- SendSupportNotification.php
- phpversionfail.php
- shorturl.php
- PEAR.php

Access Control

- favicon.ico
- htaccess.txt
- robots.txt

Notices

- Release_Notes.html
- copyright.html
- Copyright.txt
- LICENSE.txt
- README.txt
- SPL-1.1.2.txt

A breakdown of the various folders into the following categories has been made for easier understanding of the code

- Libraries
- Core Model
- User Instance Specific
- User Instance Runtime Data Area
- All sources and external packages
- Miscellaneous

Libraries

This contains all the third party utilities used in the foundation code of the Vtiger system

- kcfinder
- libraries
- include, expected to be deprecated soon

Core Model

The classes and methods that describe the core CRM Entity and support for extending the model

- vtlb
- data
- includes
- resources

The **resources** folder contains

- **fonts**, referred in the layouts/vlayout/skins/<theme name>/style.css
- *styles.css*, loaded by Header.tpl
- Following scripts are loaded by JSResources.tpl, the the order shown
 - *jquery.additions.js*
 - *app.js*
 - *helper.js*
 - *Connector.js*
 - *ProgressIndicator.js*

User Instance Specific

- cron
- layouts
- languages
- modules
- soap: contains the soap support scripts for Customer Portal, and other plugins. If Vtiger SOAP API is to be used, new script must be placed here

User Instance Runtime Data Area

- user_privileges
- logs
- backup
- storage
- cache
- test

All sources and external packages

- packages
- pkg

Miscellaneous

- license
- schema
- migrate

Modules

CRM Entities

<u>Accounts</u>	<u>Assets</u>	<u>Campaigns</u>	<u>Contacts</u>
<u>Documents</u>	<u>Faq</u>	<u>HelpDesk</u>	<u>Invoice</u>

Leads	Potentials	Products	PriceBooks
Project	ProjectMilestone	ProjectTask	PurchaseOrder
Quotes	SalesOrder	ServiceContracts	Services
Vendors			

CRM Non-Entity Modules

Calendar	Inventory	PBXManager	SMSNotifier
Reports	Home	Emails	ModComments
Activities	Events		

Module Configuration Modules

CustomView	Export	Import	Webforms
com_vtiger_workflow	WSAPP		

CRM Configuration Modules

Administration	CustomerPortal	EmailTemplates	ExtensionStore
Google	Install	MailManager	Migration
Mobile	ModTracker	PickList	Portal
RecycleBin	Rss	Settings	Users
Utilities	Vtiger		

How are CRM meta entities/elements handled

About CRM metaentities

Modules, Blocks, Fields, Relations, Filters, Widgets etc are the Vtiger CRM meta entities or building blocks or elements of the system.

vtLib is the framework for all these objects.

About vtLib

vtLib is the basis for much of Vtiger's core model of the CRM and Meta Entities of the CRM. Reading the names of the class script names, gives an general idea of the meta entities. Vtiger is designed to be extendible and has a means to publish modules either on the Marketplace (since 6.0) and also thru the Import Module feature in Module Manager.

vtLib folder contains 4 folders, and two files

ModuleDir [template files for a new module]

6.0.0

languages

en_us

ModuleName.php

ModuleName.php

thirdparty

network

parser

dUnzip2.inc.php

dZip.inc.php

tools

console.php, command line interface to a few vtlib features

Vtiger [contains all Vtiger core classes for meta entities]

README-UsingModuleDir.txt

vtlib-Copyright.txt

vtLib console

usage php -f vtlib/tools/creator.php from crm root

Output

```
Welcome to Vtiger CRM Creator.
This tool will enable you to get started with developing extensions with
ease.
Have a good time. Press CTRL+C to "quit".
Choose the options below:
1. Create New Module.
```

2. Create New Layout.
3. Create New Language Pack.
4. Create Test Language Pack.
5. Import Module.
6. Update Module.
7. Remove Module.
Enter your choice:

Scripts and folders in vtLib/Vtiger

Access.php
Block.php
Cron.php
Deprecated.php
Event.php
Field.php
FieldBasic.php
Filter.php
Functions.php
Language.php
LanguageExport.php
LanguageImport.php
LayoutExport.php
LayoutImport.php
Link.php
LinkData.php
Mailer.php
Menu.php
Module.php
ModuleBasic.php
Package.php
PackageExport.php
PackageImport.php
PackageUpdate.php
Profile.php
ThemeExport.php
ThemeImport.php
Unzip.php
Utils.php
Version.php
Webservice.php
Zip.php

Utils
PDF

Net
Feed

Modules

vtiger_tab and vtiger_tab_info are the two tables that hold all modules defined in the system. For CRM Entity modules, there are other tables also that hold the requisite persistence.

Fields

vtiger_field

vtiger_field_seq

Field	Type	Null	Key	Default	Extra
tabid	int(19)	NO	MUL	NULL	auto_increment
fieldid	int(19)	NO	PRI	NULL	
columnname	varchar(30)	NO		NULL	
tablename	varchar(50)	NO		NULL	
generatedtype	int(19)	NO		0	
uitype	varchar(30)	NO		NULL	
fieldname	varchar(50)	NO	MUL	NULL	
fieldlabel	varchar(50)	NO		NULL	
readonly	int(1)	NO		NULL	
presence	int(19)	NO		1	
defaultvalue	text	YES		NULL	
maxlength	int(19)	YES		NULL	
sequence	int(19)	YES		NULL	
block	int(19)	YES	MUL	NULL	
displaytype	int(19)	YES	MUL	NULL	
typeofdata	varchar(100)	YES		NULL	
quickcreate	int(10)	NO		1	
quickcreatesequence	int(19)	YES		NULL	
info_type	varchar(20)	YES		NULL	
masseditable	int(10)	NO		1	
helpinfo	text	YES		NULL	
summaryfield	int(10)	NO		0	

tabid	module to which the field is associated (vtiger_tab)
fieldid	id for the field, use adb->getUniqueld("vtiger_field")
columnname	Name of the table name where values are stored
tablename	Name of the table for this field

generatedtype	
uitype	Refer UI Type information below
fieldname	Name to identify this field, used in special cases like (vtiger_<fieldname> is taken as the picklist value table)
fieldlabel	Label to display on the UI (for most modules this is the key for module string in the file: modules/module/language/en_us.lang.php)
readonly	1 – allow edit, 0 – disallow edit (could be handled by uitype)
presence	1 show
selected	1 show
maxlength	Length associated with this field element
sequence	Order of field placement inside the block
block	blockid to which this field is associated
displaytype	1 – show field inside block, 0 – hide field inside block
typeofdata	Refer TypeOfData information below
quickcreate	0 – show field in quickcreate view, 1 – hide field in quickcreate view
quickcreatesequence	Order of field placement inside quickcreate view
info_type	BAS – basic information, ADV – advanced information
masseditable	
helpinfo	
summaryfield	

Built in UI Types

Boolean	BooleanFieldSearchView	Currency
---------	------------------------	----------

CurrencyList	Date	DateFieldSearchView
DateTime	DocumentsFileUpload	DocumentsFolder
Email	FieldSearchView	FileLocationType
Image	ImageDetailView	MultiOwner
MultiPicklist	MultiSelectFieldSearchView	Number
Owner	OwnerFieldSearchView	Password
Percentage	Phone	PhoneDetailView
PickListFieldSearchView	Picklist	ProductTax
Recurrence	RecurrenceDetailView	Reference
Reminder	ReminderDetailView	Salutation
SalutationDetailView	String	StringDetailView
Text	Theme	Time
TimeFieldSearchView	Url	UserRole

Related fields and related modules

vtiger_fieldmodulerl

Views

Filters

vtiger_customview

Widgets

Sidebar

Action links

Workflows

Field Formulas

Implemented as a save always workflow custom function

Dashboard Widgets

Reports

Cron

Webforms

Web Services

Mobile Connectors

Debugging/Optimization

Database

log4php

Smarty

dbdiff

anywhereindb

mysqltuner

Vtiger Addons

Outlook Plugin

Customer Portal

Thunderbird Plugin

Exchange Connector

View Construction and Smarty Hierarchy

Smarty Object

Bootstrap

Ajax

Extending the Javascript (Client side)

3.0 Exploiting vTiger

understanding and less programming knowledge.

forums answers can be chosen and advanced concepts of chapter 1

There are many ready ways in which you could make use of the present versions in ways that you never felt realisable. Useful examples and demonstration make it possible for developers to provide the business community with solutions that are realisable with business application understanding and less programming knowledge.

Vtiger marketplace	Understand vtiger marketplace	1. https://marketplace.vtiger.com/app/listings 2. https://www.vtiger.com/add-ons/	How to browse vtiger marketplace and download free/paid plugins
Plugins	Outlook	https://wiki.vtiger.com/index.php/Outlook_Plugin	vtiger+outlook plugin
	Thunderbird	https://wiki.vtiger.com/vtiger6/index.php/Thunderbird_Plugin	vtiger+thunderbird plugin and sync mails
	PDF Maker	https://wiki.vtiger.com/vtiger6/index.php/PDF_Maker	vtiger+pdf maker and change inventory module layouts
Integrations	vtiger+Asterisk	https://www.vtiger.com/crm-integrations-extensions/	Asterisk
	vtiger+Joomla		Integrating Joomla with Vtiger
	vtiger+SMS		SMS
	vtiger+Google Contacts/Calendar/Maps		Google Contacts/Calendar/Maps
Webseervices	Introduction to web services	http://www.w3schools.com/webservices/ws_intro.asp	
	SOAP	http://www.w3schools.com/webservices/ws_soap_intro.asp	

	REST	https://en.wikipedia.org/wiki/Representational_state_transfer	
Webforms	Writing a webform	https://wiki.vtiger.com/vtiger6/index.php/Webforms	What is a web form?
		https://www.drupal.org/node/2030697	How to write a custom webform and make it populate a custom module?
	Securing a webform	https://www.drupal.org/node/1254710	How to add captcha to a webform for security reasons?
Customer Portal	Customer portal installation	https://wiki.vtiger.com/index.php/Customer_Portal	How is customer portal installed?
	Customer portal configuration	https://wiki.vtiger.com/vtiger6/index.php/Customer_Portal	How to configure customer portal with the right settings?
	Customer portal modules - standard		How to enable/disable customer portal modules?
	Customer portal modules - custom		How to make a custom module enabled in customer portal?
Workflows	Default workflows	https://wiki.vtiger.com/vtiger6/index.php/Workflows	What are default system workflows?
	Custom workflows	https://discussions.vtiger.com/index.php?p=discussion/31587/invoke-custom-function-from-workflow-task/p1	How to write a custom workflow?
	Custom function in a workflow		How to call a custom function in a work flow?
	Known issues in workflows		

Vtiger Mobile	The Mobile Interface and App	https://www.vtiger.com/mobile/	
		https://www.youtube.com/watch?v=Hb-0IMumfcA	
		http://gixworks.github.io/vtiger-mobile-client-ios/	
		https://wiki.vtiger.com/index.php/Mobile_API	
		http://vtiger-crm.2324883.n4.nabble.com/Mobile-API-td1714.html	
		http://comments.gmane.org/gmane.comp.web.vtigercrm.devel/5952	

4.0 Extending vTiger

vtlib and advanced features of chapter 2 - practicals of chapter 2

Occasions need programming effort to realise those aspects which have not been envisaged in the present available deployment situations. This section shows how software development efforts can be maximised by developing within the available framework of vTiger and benefit from the by product of added re-usability of the development effort.

Defining a new UI, defining a new workflow situation, defining a new view, defining a new theme, defining a new module action are the activities, wherein the developer get to expand on the framework already provided. By working with the framework in a structured manner, the incremental effort is reached out to all those in the vTiger community.

Lets discuss the above six situations very likely and often encountered situations in vTiger usage, are detailed, and in doing so any developer will be able to utilize and expand the existing infrastructure of vTiger

Defining a new UI

- Color
- File attachment

Defining a new workflow situation

Defining a new view

Defining a new theme

Defining a new module action

Adding a third party component

Defining a new plug in component

Defining a new dashboard chart

Using other database engines

- MSSQL
- Postgresql
- Oracle
- Sqlite

Making vTiger multicompany

White labelling vtiger	How to change logo, color, remove vtiger and replace by other company name, configure homepage?	https://discussions.vtiger.com/index.php?p=/discussion/178518/customer-portal-steel-having-a-problem-vtiger-6-3#Item_1	Do KB like this

Extending Vtiger	Creating an installable extension	http://community.vtiger.com/help/vtigercrm/developers/develop-extensions-for-vtiger.html	What goes into making an installable? How to make manifest file?
	Developing custom extensions		What things are to be taken care of while building a custom extension?
	Entity Module		How to write an entity module?
	Language Packs		How to write a language pack for vtiger? What are the existing language packs for new languages?
Simple Module Behaviour	Overview of modules in vtiger	https://wiki.vtiger.com/vtiger6/index.php/Modules	What are the differences between entity modules, extension modules, others?
	Anatomy of a module		How many tables does a module

			create? How many other tables does it update?
	What are the different views of a module?		How does an edit view, create view, detail view work in a module?
	How to enable or disable a module?	discussions.vtiger.com	What are the accessibility errors you get when you try to access a related disabled module?
	How to add filters in modules?	https://wiki.vtiger.com/vtiger6/index.php/Creating_Custom_Filters	In the respective VMs created, create meaningful filters which will give relevant and useful information to the end customer (eliminate assigned to, created time and similar fields)
	How do you Import and export records in modules	https://wiki.vtiger.com/index.php/Export_Import_Enhancements	Make a KB of which modules allow import and export of records

			(Open source Vs Ondemand)
UI-types Overview	How many types of UI are present currently within vtiger6.3?		List of affected tables with UI information
Creating New Module with different UI-Types	How to create a new module with openly available code?		Check source forge.net and other places to arrive at open code available to create a module
Customizing module layouts	PDF libraries usage	http://www.web-development-blog.com/archives/create-pdf-documents-online-with-tcpdf/	Overview of TCPDF/Fpdf for creating custom PDFs
		https://wiki.vtiger.com/vtiger6/index.php/Print_Templates	How to print forms from within vtiger?
Custom modules - advanced topics	Module extensions		How to create an extension to a module?
	Naming conventions		What are the naming conventions ?
	Script locations		What are the script location

			conventions ?
	New UI type		How to create a new UI?
	Importing and exporting custom modules		How to enable a module for Importing and exporting records?
			How to export to a csv and excel and dual csv?
	One-many relationship between modules		One-many relationship between modules
	Events		Creating after-save and before-save event
	Custom functions		Invoke custom function after save
	Exposing a Module in customer portal		Exposing a Module in customer portal
	Exposing the custom module to Web Services		Exposing the custom module to Web Services
	Adding Links in the right panel		Adding Links in the right panel

Debugging	Debugging basics	https://wiki.vtiger.com/index.php/DebugTechniques	What is debugging in vtiger6.3?
		http://www.ibm.com/developerworks/library/os-debug/	What is php debugging and how to do it?
		https://www.drupal.org/node/158043	White screen of death
		http://getfirebug.com/whatisfirebug	Using Firebug like browser based tools
	Debugging tools	https://vtigress.wordpress.com/2013/05/31/releasing-vtdebug-6-0-for-vtiger-6-0/	vtDebug

Custom UI Types

To create a Custom UI Type in Vtiger610 is quite easy, this is what is needed to be done

1. Name the new UI, for this example we name it Youtube
2. Choose the ui_type identifier, must not conflict with existing UI Types. Choose a number that is distinct enough, like 1024 or higher.
3. Create the database entry
4. The action script, say Youtube.php in ./modules/Vtiger/uitypes
5. Create the Smarty templates in layouts/vlayout/modules/Vtiger/uitypes
 - a. The Create/Edit view template, Youtube.tpl to handle the UX for creating/editing values
 - b. If needed, a DetailView template, YoutubeDetailView.tpl

In this example we require the Detail View template to play the Youtube video

6. Add the data base entry
 INSERT INTO vtiger_ws_fieldtype (fieldtypeid,uitype,fieldtype) VALUES
 (<nextseqnumber>,"1024","youtube")

Scripts

Youtube.tpl

```
{strip}
{assign var="FIELD_INFO"
value=Zend_Json::encode($FIELD_MODEL->getFieldInfo())}
{assign var="SPECIAL_VALIDATOR" value=$FIELD_MODEL->getValidator()}
{assign var="FIELD_NAME" value=$FIELD_MODEL->get('name')}
```

```

<input id="{ $MODULE }_editView_fieldName_{ $FIELD_NAME }" type="text"
class="input-large" data-validation-engine="validate[{if
$FIELD_MODEL->isMandatory() eq true}
required,{/if}funcCall[Vtiger_Base_Validator_Js.invokeValidation]]]"
name="{ $FIELD_NAME }"
value="{ $FIELD_MODEL->get('fieldvalue')}" data-fieldinfo="{ $FIELD_INFO }" {if
!empty($SPECIAL_VALIDATOR)}data-validator={Zend_Json::encode($SPECIAL_VALIDATO
R)}{/if} />
{/strip}

```

YoutubeDetailView.tpl

```

{assign var="FIELD_INFO"
value=Zend_Json::encode($FIELD_MODEL->getFieldInfo())}
{assign var="SPECIAL_VALIDATOR" value=$FIELD_MODEL->getValidator()}
{assign var="FIELD_NAME" value=$FIELD_MODEL->get('name')}
{assign var="FIELD_VALUE" value=$FIELD_MODEL->get('fieldvalue')}
Click here to change Video URL
<iframe src="{ $FIELD_VALUE|replace:'watch?v=':'embed/'}" frameborder="0"
allowfullscreen></iframe>

```

Youtube.php

```

<?php
class Vtiger_Youtube_UIType extends Vtiger_Base_UIType {
    /**
     * Function to get the Display Value, for the current field type with
given DB Insert Value
     * @param <Object> $value
     * @return <Object>
     */
    public function getDisplayValue($value) {
        return nl2br($value);
    }

    /**
     * Function to get the Template name for the current UI Type Object
     * @return <String> - Template Name
     */
    public function getTemplateName() {
        return 'uitypes/Youtube.tpl';
    }

    /**
     * Function to get the Detail View Template name for the
     * current UI Type object
     * @return <String> - Template Name

```

```
    */  
    public function getDetailViewTemplateName() {  
        return 'uitypes/YoutubeDetailView.tpl';  
    }  
}
```

Custom Webforms

Porting extension from Vtiger 540

Example of Currency Exchange Rate Updater

5.0 Expanding vTiger

Some business situations will demand that certain business expressions, which cannot be realised within the available framework of business platform resources of vTiger will be needed.

Integration with other applications

- CMS

 - Joomla

 - Drupal

- Shopping Carts

 - osCommerce

- Accounting Applications

 - Quickbooks

- Reporting Tools

 - Jasper Reports

 - Pentaho

Mobile API

Webservices API

SOAP Interface

6.0 Extras about vTiger

Secret sauce about what has happened so far, how to better plug in, and loads of information about accessing information about this very popular and successful open source software.

Creating an instance of Vtiger CRM quickly on *nix

Creating an instance of Vtiger CRM quickly on XAMPP/WAMPP

Developers of Vtiger CRM routinely need to make fresh clean instances. Installing from the original base again and again is quite time consuming and boring to say the least. Here is a means where you could create them from a base crm, one that has been installed clean, and has the clean database.

The crm scripts must be under the webfolder path named vtiger610base and the database for this crm must also be called vtiger610base. Copy the code snippet as a windows batch file and place it anywhere, and call it any name, for example **makeVtigercrm.bat**

The script assumes that your XAMPP web path is C:\xampp\htdocs. If you have a different path, change that in the batch file before using it

Execute it on the command line like so

```
C:\xampp> makeVtigercrm mynewcrm
```

Expected console output would be

```
# makeVtigercrm.bat mt_dziner5
:: XAMPP batch script to create a new
:: vtiger working copy with database
:: Assumes that a clean fresh instance
:: exists as vtiger610base in htdocs
:: with the database also named vtiger610base
17:09:03.24 Started
9940 File(s) copied
17:09:27.50 Copied scripts
17:09:27.52 Copying database
17:09:58.71 Database setup complete
Use localhost/mt_dziner5 in any browser to commence usage of vTiger sCRM 6.1.0
```

Your new crm instance is ready to execute in your browser

Code Snippet

```

@echo off
echo :: XAMPP batch script to create a new >con
echo :: vtiger working copy with database >con
echo :: Assumes that a clean fresh instance >con
echo :: exists as vtiger610base in htdocs >con
echo :: with the database also named vtiger610base >con
echo %TIME% Started >con
if -%1==-- echo Required argument (crmname) not provided & exit /b
xcopy C:\xampp\htdocs\vtiger610base\* C:\xampp\htdocs\%1 /Eiqy >con
echo %TIME% Copied scripts >con
cd C:\xampp\htdocs\%1
perl -p -i.bak -e "s/vtiger610base/%1/g" config.inc.php && del config.inc.php.bak
echo %TIME% Copying database >con
C:\xampp\mysql\bin\mysql -uroot -h127.0.0.1 -e"drop database if exists %1;create
database %1"
C:\xampp\mysql\bin\mysqldump -uroot -h127.0.0.1 vtiger610base |
C:\xampp\mysql\bin\mysql -uroot -h127.0.0.1 %1
cd C:\xampp
echo %TIME% Database setup complete >con
echo Use localhost/%1 in any browser to commence usage of vTiger sCRM 6.1.0 >con

```

Multitenancy deployments

Vtiger 6 can be made multitenanted in an *NIX environment. vTigress has sucessfully created the multi tenanted instance using two servers, cloud database and cloud files from RackSpace.

The same can be done for Vtiger 6.x by analysing to

- Identify the core static scripts that can be symlinked
- Identify the unique configuration data either as script, or ay other file
- Identify the database connection
- Identify the user data storage characteristics and locations

vtDZiner for Vtiger 6

Features List

InForm DZIng

A WYSIWYG mode of module designing and configuring at all levels

Create Custom Modules, Relations, Views, Widgets, Sidebar elements and Module Dashboards

Each Feature in detail

Roadmap for left out features

IDE for module dzing with drag and drop actions

7.0 Extensions for vTiger

[

Most of the community looks forwards to vTiger extensions that are published on the marketplace. Some are free, some are paid for, This section discusses the services that you can offer for money using the vTiger Marketplace and certain points that you should consider while publishing your extension packages. Most of what is covered is general Marketing 101, Sales 101 and Business Communications 101. Client experience is one time, and the best use the client's (brief) eyeball capture makes the difference between a footfall or a passover

]

This compilation is from <https://marketplace.vtiger.com> as of August 7th, 2015

General

Extension Name	Description	Price
Related & Listview Edits	Powerful Extension enabling you to quickly and efficiently edit fields from within any Related or List view.	\$299
PopUp Reminder Tool	Manage reminders in Vtiger just like you can in Outlook.	\$400
Price Markup	Mark up your prices on Products/Services directly on the Quote/Invoice/Order! The markup can be applied individually on the line item as well as on the entire Quote/Invoice/Order!	\$299
Custom Forms/Views/Layouts	An extension allowing to create unique screen layouts for each type of record, eg Repair Ticket" versus "Install Ticket". Both records can have different set of fields!"	\$299
Automated Clipboard(Copy/Paste)	The Automated Clipboard Extensions allows you to copy data form multiple fields into clipboard within one click! Configurable clipboard templates available!	\$149

Multi User Assignment	Assign any record to multiple users without ever manually creating a group and assigning the users to it first. Our tool will allow you to select multiple users directly on the record and assign them within a click.	\$249
Commission Manager	Calculate commissions for your sales teams or affiliates each time they create a Sales Order or Invoice. Trac everything in your CRM and forget of complex Excel reports	\$199
Count All The Things	Add counts in detail view to the related lists, so you can see how many items are there before clicking on them.	\$25
WYSIWYG Spreadsheet Exporter	Export any filter custom or standard to a spreadsheet with the same columns.	\$49
MailBadge	Mail Badge module will notify Users unread mail count in Header Nav bar. User should have configured Mail Manager in order to show the Unread mail count. For those who didn't configure Mail Manager, it will show exclamation Icon. When Module Installed or	\$19
vtDataGen VI	vtDataGen – Ultimate tool for data generation within vtiger 6.2 modules. Generate realistic test data for most Vtiger CRM modules. Uses randomisation and sources some information from a supplied source data set. CAUTION : DO NOT USE IN PRODUCTION CRM	\$54
Duplicate Check & Preventer	Prevent any potential duplicates record by checking in real time the information against Vtiger database.	\$99
Charts Widget	Transform any chart report in widget that can be displayed in the dashboard of the following modules: Home, Leads, Organizations, Contacts, Opportunities and Tickets	\$99
OpenKvK.nl Koppeling	Door de vTiger CRM OpenKvK koppeling haalt u zo de bedrijfsgegevens uit de gegevensbank van de Kamer van Koophandel door middel van OpenKvK.nl. Voer een deel van de naam in,	\$129

	selecteer de gevonden organisatie en de adresgegevens worden ingeladen.	
Convert Sales Order to Purchase Order	This extension tool allow you to create multiple Purchase Orders from Sales Order DetailView. For each Vendor separate purchase order is created.	\$15
Local Weather & Local Time	As you open a contact, etc, you can see the local weather and time for the contact based on zipcode field. This is a great tool if you are a sales person and looking for conversation topics	\$99
Related Module Updates	Lookup field value from one module & Update field value of another module.	\$99
NuloQR	Version: 1.0 QuoteRoller(http://www.quoteroller.com/) provides an easy tool to create proposal or quotes online. Quote Roller lets you create sales documents, employ dynamic quoting, get electronic signatures, and automate the workflow.	\$149
Convert Sales Order to Projects (or Tickets)	This module which will allow you to easily convert a Sales Order into a Project or multiple tickets.	\$99
Volume Scale Prices	Assign for each product a price scale according to the buying quantity and load this price automatically into the price field of Quotes, Invoices & Sales Order	\$99
ForexRates Synchronizer	Synchronizes the conversion rates of all defined currencies with the base currency in the CRM. Connectors provided for common public and paid exchange rate data providers. Custom connectors configurable in extension.	\$99.99
DragNDrop	Drag N Drop module helps you to create new Documents just by dropping the files into the VtigerCRM widget. Drag and Drop Doc module will definitely save a lot of time for the users. User can also drop multiple Documents in the Drag N Drop Widget	\$99
Duplicate your Filter	You want to simple duplicate your filter? This module give this feature to you.	\$5

Click to Add an Asset	The Click to Add an Asset To a Ticket" extension for Vtiger allows you to easily link in assets when working on a ticket and see the assets in the ticket related list."	\$99
Dropbox Sync for VtigerCRM	Dropbox Sync for VtigerCRM Module helps you to upload your Documents to Dropbox as well as Download/share files to VtigerCRM Documents. Admin Users have Option to create widget (CloudSync) in VtigerCRM Modules where Document module is related. Non Admin	\$69
Edit All Filter	This extension allows you to edit vtiger predefined All Filters of Modules Listview	\$5
Email Contacts	Once you purchase and install this add-on, you can easily build your workflow conditions and filters to help you do targeted emails to clients that purchased specific products.	\$199
Profit Calculator	An Extension designed to immediately show possible profits on the Quote, Invoice & Sales Order	\$299
Masked Field Input	An Extension allowing to automatically format Phone Numbers, Product Keys, Serial Numbers as you type.	\$199
Related & List View Advanced Preview	vTiger Related & List view Tooltip Preview Extension allows you to quickly see additional information on the Listview or any Related List.	\$199
Lead Company Lookup	Lookup existing Organizations via Lead Company field and avoid duplicates & misspellings.	\$49
Product And Service Lookup	vTiger Product & Service Lookup was designed to ease the creation of Quotes, Invoices, Sales & Purchase Orders.	\$149
Popup Alerts	vTiger Popup Alert is designed to quickly and easy inform another vTiger User/Group of an important note related to the record.	\$99
Drag & Drop Docs	Save time attaching documents to vtiger records by using Boru's Drag and Drop Docs Module.	\$199

Field Auto Fill	vTiger Field Autofill is designed to eliminate repetitive data entry when creating related records.	\$199
Dynamic Blocks	Dynamic Blocks extensions for vTiger allows you to control(Show/Hide) blocks on any record based on the selected picklist value.	\$99
Google Address Lookup	Google Address Lookup extension will simplify the process of adding the address with accuracy of Google Maps. Instant “As you Type” results increases efficiency, data accuracy & productivity.	\$149
Global Search	Powerful Search extension designed to find & display the records in the way that make sense.	\$99
Account Based Pricebooks	Assign a default Pricebook to each account. The assigned pricebook will become the default pricebook for all future quotes, sales order and invoices generated for that account	\$99
Convert to Purchase Order	Convert Quotes, Invoices & Sales Orders to Purchase Orders by selecting Products, Vendors & Quantity to Convert.	\$299
Calendar Popup/Preview	Calendar Popup/Preview for vTiger allows you to quickly view, edit, create & link records to Event from the Daily, Weekly, Monthly Calendar view	\$199
Colorizer	Module to lead the attention of your employee to real important records and values. Colorize and format your List-, Detail- and EditView Hide blocks based on a Condition in EditView to request only the required values.	\$79
Keyboard Junkie	Keyboard shortcuts to let you navigate around vtiger at lightning speed	\$4.99
DOCX Creator	DOCX Crator module is an add on for VTigerCRM 6 and enables you to generate MS Word documents (docx format) directly from VTigerCRM, without the need to install any additional components.	\$129
Module Creator	Module Creator module is an add on for VTigerCRM 6 and allows you to build your own	\$149

	modules and make relations between modules inside the vTigerCRM.	
Automatic Discounts Module	The module allows you to set a default discounts for each client. This discount will be automatically loaded each time you are creating a Quote, SalesOrder or Invoice. The discount can be assigned at product/service category	\$99
Automatic Backup Module	Save your data and database into another FTP server, Amazon S3 Storage or just keep a copy in the disk. You can keep as many backups as you like and do them as often as you want. The module will automatically delete the old ones.	\$149
Unlimited Terms & Conditions	VGS Multiple terms and conditions' extension allows you to define and use unlimited Terms and Conditions templates for Invoices, Sales Orders, Purchase Orders and Quote modules.	\$69
Labels 4 You	Labels4You extension gives admin users the flexibility to customize field labels according business requirements.,free Duplicate Check & Merge,Duplicate Check & Merge was designed to find & merge any existing duplicate records as well as prevent any potential duplicates."	\$499
GeoTools	GeoTools from Libertus Solutions allows you to search, filter and sort your data using geographic parameters and view on a map in real-time.	\$199.99
PDF Maker	PDF Maker extension enables you to create templates for Invoice, Quotes, Sales Order and Purchase Order modules. As a result, you can use customized documents for your business operations.	free
Extension Store	Get more from Vtiger. Install extensions with 1 click from the Store.free	

Language Packs

Traditional Chinese 台灣繁體 for v6.2	Traditional Chinese for Vtiger 6.2 (zh-tw)	free
Mexican Spanish for Vtiger 6.1 and 6.2	Change Log 08/05/2015 Changed "En Progres" to "En Progreso" in Project Task Module status picklist 02/04/2015 Changed "Mantenida" to "Realizada" in Calendar module 19-03-2015 Calendar related minor error fixed 17-03-2015 Minor errors fixed mexican Spanis	free

Mexican Spanish Language Pack for Vtiger 6.1

Change Log 08/05/2015 Changed "En Progres" to "En Progreso" in Project Task Module
status picklist 02/04/2015 Changed "Mantenida" to "Realizada" in Calendar module 19-03-2015
Calendar related minor error fixed 17-03-2015 Minor errors fixed Mexican Spanis
free
PT Brasil

Brazilian Portuguese Language Pack

free

DE Deutsch

improved German language files for v6.2.0

free

Deutsch

improved German language files for v6.1.0

free

Pack de langue français

Pack de langue français pour vtiger 6.1 et 6.x Pack de langue offert

free

Slovak Language Pack

Slovenčina pre vtiger CRM Open Source od IT-Solutions4You s.r.o.

free

Czech language pack

Čeština pro Vtiger CRM od Panky.CZ.

\$10

Greek language pack by OFB

Greek Language Pack for vTiger 6.1 by Iosif Kanakaris for OFB

free

Ελληνική Μετάφραση - Greek Translation

Ελληνική Μετάφραση του Vtiger

free

Deutsches Sprachpaket für vTigerCRM 6.x - German Languagefiles

LETZTES UPDATE: 02.01.2014

\$25

Italian translation for Vtiger 6.1

Italian translation language pack for vtiger CRM 6.x

free

V6.1 対応 Japanese (日本語) ランゲージパック

日本語ランゲージパック Ver6.1対応 Japanese language pack for 6.x

free

Nederlandse vertaling (Dutch Translation nl_nl)

Dutch translation, language pack for vtiger CRM 6.1.

\$40

Chinese 简体中文语言包

简体中文语言包 Simplified Chinese language pack for 6.x

free

Appendices

Features Wishlist for 7.0.0

All libraries as on date with periodic updates

adodb

Smarty

jQuery & downline

Bootstrap

Reduce all misnomers in system terminology

filter is called view, change to Filter/filter

Make all features database driven rather than script driven

Open all uitypes

Allow extension of base module classes via a custom class extension which if defined, invokes all parents from module and vtiger

Integrate data/* into modules/Vtiger/*

Remove all dead code

config.php or config.inc.php ?

Improve the rationale for includes

move kcfinder into libraries, requires some ckeditor config changes as well ugly but have to put up with it

Modify

libraries/jquery/ckeditor/config.js

```
config.filebrowserBrowseUrl = 'kcfinder/browse.php?type=images';
```

to

```
config.filebrowserBrowseUrl = 'libraries/kcfinder/browse.php?type=images';
```

and

```
config.filebrowserUploadUrl = 'kcfinder/upload.php?type=images';
```

to

```
config.filebrowserUploadUrl = 'libraries/kcfinder/upload.php?type=images';
```

Organise the include folder into includes and

Should go to libraries

Zend

simplehtmldom

recaptcha

includes/Vtiger/

QueryGenerator

ListView

fields

events

database, moved to ./includes/runtime

Webservices

utils

move loose php files into includes/Vtiger/utils from include

InventoryPDFController.php

RelatedListView.php

PopulateComboValues.php

logging.php

FormValidationUtil.php

deprecated.txt

CustomFieldUtil.php

ChartUtils.php

ComboStrings.php

ComboUtil.php

InventoryHandler.php

include folder is then dead and can be deprecated

DetailViewUtils

```
require_once('include/database/PearDatabase.php');
```

```
require_once('include/ComboUtil.php'); //new
```

```
require_once('include/utils/CommonUtils.php'); //new
```

```
require_once('vtlib/Vtiger/Language.php');
```

```
require_once('modules/PickList/PickListUtils.php');
```

EditViewUtils

```
require_once('include/database/PearDatabase.php');
```

```

require_once('include/ComboUtil.php'); //new
require_once('include/Utils/CommonUtils.php'); //new
require_once 'modules/PickList/DependentPickListUtils.php';

```

```

function getConvertSoToInvoice($focus,$so_focus,$soid)
function getAssociatedProducts($module,$focus,$seid="")
function split_validationdataArray($validationData)

```

ListViewUtils

```

require_once('include/database/PearDatabase.php');
require_once('include/ComboUtil.php'); //new
require_once('include/Utils/CommonUtils.php'); //new
require_once('user_privileges/default_module_view.php'); //new
require_once('include/Utils/UserInfoUtil.php');
require_once('include/Zend/Json.php');

```

```

function getListQuery($module, $where = "") {
function setSessionVar($lv_array, $noofrows, $max_ent, $module = "", $related = "") {
function getRelatedTableHeaderNavigation($navigation_array, $url_qry, $module,
$related_module, $recordid) {
function getEntityId($module, $entityName) {
function decode_html($str) {
function popup_decode_html($str) {
function textlength_check($field_val) {
function getFirstModule($module, $fieldname) {
function VT_getSimpleNavigationValues($start, $size, $total) {
function getRecordRangeMessage($listResult, $limitStartRecord, $totalRows = "") {
function listQueryNonAdminChange($query, $module, $scope = "") {
function html_strlen($str) {
function html_substr($str, $start, $length = NULL) {
function counterValue() {
function getUsersPasswordInfo(){

```

InventoryUtils.php

```

function updateStk($product_id,$qty,$mode,$ext_prod_arr,$module)
function sendPrdStckMail($product_id,$supd_qty,$prod_name,$qtyinstk,$qty,$module)
function getPrdQtyInStck($product_id)
function getPrdReOrderLevel($product_id)
function getTaxId($type)
function getTaxPercentage($type)
function getProductTaxPercentage($type,$productid,$default="")
function addInventoryHistory($module, $id, $relatedname, $total, $history_fldval)

```

```

function getAllTaxes($available='all', $sh="", $mode="", $id=")
function getTaxDetailsForProduct($productid, $available='all')
function deleteInventoryProductDetails($focus)
function updateInventoryProductRel($entity) {
function saveInventoryProductDetails(&$focus, $module, $update_prod_stock='false',
$updateDemand=")
function getInventoryTaxType($module, $id)
function getInventoryCurrencyInfo($module, $id)
function getInventoryProductTaxValue($id, $productid, $taxname)
function getInventorySHTaxPercent($id, $taxname)
function getAllCurrencies($available='available') {
function getPriceDetailsForProduct($productid, $unit_price, $available='available',
$itemtype='Products')
function getProductBaseCurrency($productid, $module='Products') {
function getBaseConversionRateForProduct($productid, $mode='edit', $module='Products') {
function getPricesForProducts($currencyid, $product_ids, $module='Products') {
function getPriceBookCurrency($pricebook_id) {
function deductProductsFromStock($recordId) {
function addProductsToStock($recordId) {
function getImportBatchLimit() {
function createRecords($obj) {
function isRecordExistInDB($fieldData, $moduleMeta, $user) {
function importRecord($obj, $inventoryFieldData, $lineItemDetails) {
function getImportStatusCount($obj) {
function undoLastImport($obj, $user) {
function getInventoryFieldsForExport($tableName) {
function getCurrencyId($fieldValue) {
function getLineItemFields(){

```

GraphUtils.php

```

function calculate_font_name($locale)
function color_generator($count = 1, $start = '33CCFF', $step = '221133')
function get_tickspacing($max = 10)

```

ExportUtils.php

```

function getPermittedBlocks($module, $disp_view)
function getPermittedFieldsQuery($module, $disp_view)
function getFieldsListFromQuery($query)

```

Vision document for version 6

Here is an official publication from Vtiger about their plan for the landmark release of version 6.

<https://www.scribd.com/doc/52017963/vtiger-CRM-60-Architecture>

Our comments and observations to be added to this

Timelog of changes

Source <http://sourceforge.net/projects/vtigercrm/?source=navbar>

Announced	Released	Version	Summary
	08-09-2004	vtiger CRM 1.0	Fork release
	10-09-2004	vtiger CRM 2.0	
27-09-2004	29-09-2004	vtiger CRM 2.1	
11-10-2004	13-12-2004	vtiger CRM 3	a) Integrated MessageBoard b) Enhanced Installer with migration support from 2.1 to 3.0 c) New theme nature d) Send Mail feature ie. all the registered users (who have their email configured) can be sent mails e) Enhanced Outlook Plugin support
	20-12-2004	vtiger CRM 3.2	a) Custom Field Support b) Security Support c) Migration from 3.0 to 3.2 Patch release a) Duration minutes in calls not getting saved when a new call is created is fixed. b) On deleting any entity, the Leads List View page getting displayed is fixed. c) Internationalisation support for Custom Fields provided. d) Internationalization support for Pick List Value Customization provided. e) Quick create form is getting displayed now. f) Empty Line Space appearing between the heading and List view table in module Lead and MessageBoard is fixed g) Proper Message display is done when a user with no delete privileges tries to delete the entity.
08-03-2005	29-04-2005	vtigerCRM 4.2.4	1. Customer Support module to handle trouble tickets, Frequently Asked Questions and Support Statistics 2. Products module to add company wide products related information at a centralized location

			3. Email Templates 4. Sending Mass Email to contacts 5. 1093669 - Delete attachments 6. Add/Sync Email attachments from Microsoft(R) Outlook(R) to vtiger CRM 7. Add/Sync tasks from Microsoft(R) Outlook(R) to vtiger CRM
13-03-2007	13-11-2008	vtiger CRM 5.0.4 LS	
06-07-2009	24-09-2009	vtiger CRM 5.1.0	
20-05-2010	16-11-2010	vtiger CRM 5.2.0	
	02-06-2011	vtiger CRM 5.2.1	
26-10-2011	11-11-2011	vtiger CRM 5.3.0	Scheduling support for Workflows Update Fields task type for Workflows Approval Process Better Outlook Plugin Better Webmails module Global search configuration (Fields selection) Setting default values for fields Grouping of conditions in Custom Views (similar to Reports) Grouping of conditions in Advanced search of List View (similar to Reports) Auto-merge option for Import (which lets user to update existing record with new field values when duplicate records are found) Dependent picklists User time zone configuration Calendar rewrite Custom charts for Reports Read-only configurable option for fields at profile level List of Modified Field Values in Workflow Email Template
30-03-2012	19-04-2012	vtiger CRM 5.4.0	
23-07-2013	10-01-2014	vtiger CRM 6.0.0	New UI, new code paradigm, partial 5.4 features
27-08-2014	15-10-2014	vtiger CRM 6.1.0	some 5.4 features available

	23-01-2015	vtiger CRM 6.2.0	All 5.4 features available with some extra
	04-06-2015	vtiger CRM 6.3.0	Major bug fix release, over 200 bugs fixed
	??-??-2015	Vtiger CRM 6.4.0	
	??-??-2016	Vtiger 7.0	

ER Diagrams

The schema is available at

http://vtiger.com/products/crm/docs/510/vtigerCRM_DataModel_5.2.1.pdf

Database Organisation

The following are the standard database tables established for a base installation along with their significance and usage in the system.

- Core Tables : Contain the base and custom values for all system objects
- Function Tables : These tables support some of the functionality of the CRM
- System Module Tables : Individual system modules have their tables containing config details etc
- Entity Module Tables : These tables are created for each entity and hold the entity values

Core Tables

vtiger_entityname	Core : Entities
vtiger_field vtiger_field_seq	Core : Fields
vtiger_language vtiger_language_seq	Core : Languages
vtiger_tab	Core : Modules
vtiger_tab_info	Core : Modules : Version Control
vtiger_parenttab vtiger_parenttabrel	Core : Module Menu

vtiger_blocks vtiger_blocks_seq	Core : Module Model
vtiger_settings_blocks vtiger_settings_blocks_seq vtiger_settings_field vtiger_settings_field_seq	Core : Settings

vtiger_crmentity vtiger_crmentity_seq vtiger_crmentityrel	Core : Root Table
vtiger_seactivityrel vtiger_seactivityrel_seq vtiger_seattachmentsrel	Core : Root Table Relations
vtiger_senotesrel vtiger_seproductsrel vtiger_seticketsrel	Core : Root Table Relations
vtiger_relatedlists vtiger_relatedlists_rb vtiger_relatedlists_seq vtiger_relcriteria vtiger_relcriteria_grouping	Core : Module Relations

vtiger_activity vtiger_activity_reminder vtiger_activity_reminder_popup vtiger_activity_view vtiger_activity_view_seq vtiger_activitycf vtiger_activityproductrel vtiger_activitytype vtiger_activitytype_seq	System : Calendar
vtiger_invitees	System : Calendar
vtiger_reminder_interval vtiger_reminder_interval_seq	System : Calendar
vtiger_sharedcalendar	System : Calendar

vtiger_taskpriority vtiger_taskpriority_seq vtiger_taskstatus vtiger_taskstatus_seq	System : Calendar : Tasks
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vtiger_duration_minutes vtiger_duration_minutes_seq vtiger_durationhrs vtiger_durationmins	Asterisk Support
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vtiger_links vtiger_links_seq	System : Action Links
vtiger_announcement	System : Announcement
vtiger_asterisk vtiger_asteriskextensions vtiger_asteriskincomingcalls vtiger_asteriskincomingevents	System : Asterisk
vtiger_pbxmanager	System : Asterisk
vtiger_attachments vtiger_attachmentsfolder vtiger_attachmentsfolder_seq	System : Attachments
vtiger_audit_trial	System : Audit Trail
vtiger_modentity_num vtiger_modentity_num_seq	System : Auto Num On Save

vtiger_modcomments vtiger_modcommentscf	System : Comments
vtiger_currencies vtiger_currencies_seq vtiger_currency	System : Currencies

vtiger_currency_info vtiger_currency_info_seq	
vtiger_customaction	System : Custom View
vtiger_defaultcv	System : Custom View
vtiger_customview vtiger_customview_seq vtiger_cvadvfilter vtiger_cvcolumlist vtiger_cvstdfilter	System : Custom Views for Modules
vtiger_customerportal_fields vtiger_customerportal_prefs vtiger_customerportal_tabs	System : Customer Portal
vtiger_dam_recordchanges	System : Daily Activity
vtiger_email_access vtiger_email_track vtiger_emaildetails vtiger_emailtemplates vtiger_emailtemplates_seq	System : Emails
vtiger_mail_accounts	System : EMail
vtiger_eventhandler_module vtiger_eventhandler_module_seq vtiger_eventhandlers vtiger_eventhandlers_seq vtiger_eventstatus vtiger_eventstatus_seq	System : Events
vtiger_home_layout vtiger_homedashbd vtiger_homedefault vtiger_homemodule vtiger_homemoduleflds vtiger_homerss vtiger_homestuff vtiger_homestuff_seq	System : Home
vtiger_notebook_contents	System : Home : Notebook

vtiger_import_maps	System : Import
vtiger_wordtemplates	System : Mail Merge
vtiger_mailscanner vtiger_mailscanner_actions vtiger_mailscanner_folders vtiger_mailscanner_ids vtiger_mailscanner_ruleactions vtiger_mailscanner_rules	System : Mail Scanner
vtiger_systems vtiger_systems_seq	System : Mail Server
vtiger_mobile_alerts	System : Mobile
vtiger_inventory_tandc vtiger_inventory_tandc_seq vtiger_inventorynotification vtiger_inventorynotification_seq vtiger_inventoryproductrel vtiger_inventoryshippingrel vtiger_inventorysubproductrel vtiger_inventorytaxinfo vtiger_inventorytaxinfo_seq	System: Inventory

vtiger_payment_duration vtiger_payment_duration_seq	System : Module Data Entry : Payment Duration picklist
vtiger_carrier vtiger_carrier_seq	System : Module Data Entry : Support
vtiger_date_format vtiger_date_format_seq	System : Module Data Entry : Support
vtiger_expectedresponse vtiger_expectedresponse_seq	System : Module Data Entry : Support
vtiger_glacct vtiger_glacct_seq	System : Module Data Entry : Support
vtiger_industry vtiger_industry_seq	System : Module Data Entry : Support

vtiger_lead_view vtiger_lead_view_seq	System : Module Data Entry : Support
vtiger_manufacturer vtiger_manufacturer_seq	System : Module Data Entry : Support
vtiger_priority	System : Module Data Entry : Support
vtiger_progress vtiger_progress_seq	System : Module Data Entry : Support
vtiger_rating vtiger_rating_seq	System : Module Data Entry : Support
vtiger_salutationtype vtiger_salutationtype_seq	System : Module Data Entry : Support
vtiger_shippingtaxinfo vtiger_shippingtaxinfo_seq	System : Module Data Entry : Support
vtiger_status vtiger_status_seq	System : Module Data Entry : Support
vtiger_taxclass vtiger_taxclass_seq	System : Module Data Entry : Support
vtiger_usageunit vtiger_usageunit_seq	System : Module Data Entry : Support
vtiger_moduleowners	System : Module Management

vtiger_notes vtiger_notescf	Module: Documents
vtiger_notificationscheduler vtiger_notificationscheduler_seq	System : Notifications
vtiger_org_share_action2tab vtiger_org_share_action_mapping vtiger_organizationdetails	System : Permissions
vtiger_visibility	System : Permissions

vtiger_visibility_seq	
vtiger_picklist vtiger_picklist_seq vtiger_picklistvalues_seq	System : Picklists
vtiger_portal vtiger_portalinfo	System : Portal
vtiger_recurring_frequency vtiger_recurring_frequency_seq vtiger_recurringevents vtiger_recurringtype vtiger_recurringtype_seq	System : Recurring Events
vtiger_report vtiger_reportdatefilter vtiger_reportfilters vtiger_reportfolder vtiger_reportmodules vtiger_reportsharing vtiger_reportsortcol vtiger_reportsummary	System : Reports
vtiger_rss	System : RSS
vtiger_datashare_grp2grp vtiger_datashare_grp2role vtiger_datashare_grp2rs vtiger_datashare_module_rel vtiger_datashare_relatedmodule_permission vtiger_datashare_relatedmodules vtiger_datashare_relatedmodules_seq vtiger_datashare_role2group vtiger_datashare_role2role vtiger_datashare_role2rs vtiger_datashare_rs2grp vtiger_datashare_rs2role vtiger_datashare_rs2rs	System : Sharing Access
vtiger_smsnotifier vtiger_smsnotifier_servers vtiger_smsnotifier_status	System : SMS Notifiers

vtiger_smsnotifiercf	
vtiger_selectcolumn vtiger_selectquery vtiger_selectquery_seq	System : Standard Queries
vtiger_freetagged_objects vtiger_freetags vtiger_freetags_seq	System : Tags
vtiger_tmp_read_group_rel_sharing_per vtiger_tmp_read_group_sharing_per vtiger_tmp_read_user_rel_sharing_per vtiger_tmp_read_user_sharing_per vtiger_tmp_write_group_rel_sharing_per vtiger_tmp_write_group_sharing_per vtiger_tmp_write_user_rel_sharing_per vtiger_tmp_write_user_sharing_per	System : Temporary work tables
vtiger_tracker vtiger_tracking_unit vtiger_tracking_unit_seq	System : Tracker

vtiger_def_org_field vtiger_def_org_share vtiger_def_org_share_seq	System : Users
vtiger_user2mergefields vtiger_user2role vtiger_user_module_preferences vtiger_users vtiger_users2group vtiger_users_last_import vtiger_users_seq	System : Users
vtiger_group2grouprel vtiger_group2role vtiger_group2rs vtiger_groups	System : Users : Groups

vtiger_actionmapping	System : Users : Permissions
vtiger_profile vtiger_profile2field vtiger_profile2globalpermissions vtiger_profile2standardpermissions vtiger_profile2tab vtiger_profile2utility vtiger_profile_seq	System : Users : Profiles
vtiger_role vtiger_role2picklist vtiger_role2profile vtiger_role_seq	System : Users : Roles
vtiger_loginhistory	Core : Users

vtiger_version vtiger_version_seq	System : Version Control
vtiger_soapservice	System : Webservices
vtiger_ws_entity vtiger_ws_entity_fieldtype vtiger_ws_entity_fieldtype_seq vtiger_ws_entity_name vtiger_ws_entity_referencetype vtiger_ws_entity_seq vtiger_ws_entity_tables vtiger_ws_fieldtype vtiger_ws_operation vtiger_ws_operation_parameters vtiger_ws_operation_seq vtiger_ws_referencetype vtiger_ws_userauthtoken	System : Webservices
com_vtiger_workflow_activatedonce com_vtiger_workflows com_vtiger_workflows_seq com_vtiger_workflowtask_queue com_vtiger_workflowtasks	System : Workflow

com_vtiger_workflowtasks_entitymethod com_vtiger_workflowtasks_entitymethod_seq com_vtiger_workflowtasks_seq com_vtiger_workflowtemplates	
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vtiger_account vtiger_accountbillads vtiger_accountrating vtiger_accountscf vtiger_accountshipads vtiger_accounttype vtiger_accounttype_seq	Entity : Accounts
vtiger_assets vtiger_assetscf vtiger_assetstatus vtiger_assetstatus_seq	Entity : Assets
vtiger_campaign vtiger_campaignaccountrel vtiger_campaigncontrol vtiger_campaignleadrel vtiger_campaignrelstatus vtiger_campaignrelstatus_seq vtiger_campaignscf vtiger_campaignstatus vtiger_campaignstatus_seq vtiger_campaigntype vtiger_campaigntype_seq	Entity : Campaigns
vtiger_cntactivityrel	Entity : Contacts
vtiger_contactaddress vtiger_contactdetails vtiger_contactscf vtiger_contactsubdetails vtiger_contpotentialrel	Entity : Contacts

vtiger_customerdetails	Entity : Contacts
vtiger_faq vtiger_faqqcategories vtiger_faqqcategories_seq vtiger_faqcomments vtiger_faqstatus vtiger_faqstatus_seq	Entity : FAQ
vtiger_troubletickets vtiger_ticketcategories vtiger_ticketcategories_seq vtiger_ticketcf vtiger_ticketcomments vtiger_ticketpriorities vtiger_ticketpriorities_seq vtiger_ticketseverities vtiger_ticketseverities_seq vtiger_ticketstatus vtiger_ticketstatus_seq	Entity : Helpdesk
vtiger_invoice vtiger_invoice_recurring_info vtiger_invoicebillads vtiger_invoicecf vtiger_invoiceshipads vtiger_invoicestatus vtiger_invoicestatus_seq vtiger_invoicestatushistory	Entity : Invoice
vtiger_leadaddress vtiger_leaddetails vtiger_leadscf vtiger_leadsource vtiger_leadsource_seq vtiger_leadstage vtiger_leadstatus vtiger_leadstatus_seq vtiger_leadsubdetails	Entity : Leads
vtiger_convertleadmapping	Entity : Potentials
vtiger_potential	Entity : Potentials

vtiger_potentialscf vtiger_potstagehistory	
vtiger_pricebook vtiger_pricebookcf vtiger_pricebookproductrel	Entity : Pricebooks
vtiger_productcategory vtiger_productcategory_seq vtiger_productcf vtiger_productcurrencyrel vtiger_products vtiger_producttaxrel	Entity : Products
vtiger_projecttask vtiger_projecttaskcf vtiger_projecttaskpriority vtiger_projecttaskpriority_seq vtiger_projecttaskprogress vtiger_projecttaskprogress_seq vtiger_projecttasktype vtiger_projecttasktype_seq	Entity : Project Tasks
vtiger_project vtiger_projectcf vtiger_projectmilestone vtiger_projectmilestonecf vtiger_projectmilestonetype vtiger_projectmilestonetype_seq vtiger_projectpriority vtiger_projectpriority_seq vtiger_projectstatus vtiger_projectstatus_seq vtiger_projecttype vtiger_projecttype_seq	Entity : Projects
vtiger_purchaseorder vtiger_purchaseordercf vtiger_pobillads vtiger_poshipads vtiger_postatus vtiger_postatus_seq vtiger_postatushistory	Entity : Purchase Order

vtiger_quotes vtiger_quotesbillads vtiger_quotescf vtiger_quotesshipads vtiger_quotestage vtiger_quotestage_seq vtiger_quotestagehistory	Entity : Quotes
vtiger_sales_stage vtiger_sales_stage_seq vtiger_salesmanactivityrel vtiger_salesmanattachmentsrel vtiger_salesmanticketrel vtiger_salesorder vtiger_salesordercf	Entity : Sales Order
vtiger_sobillads vtiger_soshipads vtiger_sostatus vtiger_sostatus_seq vtiger_sostatushistory	Entity : Sales Order
vtiger_contract_priority vtiger_contract_priority_seq vtiger_contract_status vtiger_contract_status_seq vtiger_contract_type vtiger_contract_type_seq	Entity : Service Contracts
vtiger_servicecontracts vtiger_servicecontractscf	Entity : Service Contracts
vtiger_service vtiger_service_usageunit vtiger_service_usageunit_seq vtiger_servicecategory vtiger_servicecategory_seq vtiger_servicecf	Entity : Services
vtiger_vendor vtiger_vendorcf vtiger_vendorcontactrel	Entity : Vendors
vtiger_opportunity_type	Entity: Potentials

vtiger_opportunity_type_seq vtiger_opportunitystage	
--	--

New Tables

com_vtiger_workflow_tasktypes	com_vtiger_workflow_tasktypes_seq	vtiger_calendar_default_activitytypes	vtiger_calendar_default_activitytypes_seq
vtiger_calendar_user_activitytypes	vtiger_calendar_user_activitytypes_seq	vtiger_calendarsharedtype	vtiger_calendarsharedtype_seq
vtiger_callduration	vtiger_callduration_seq	vtiger_crmsetup	vtiger_dayoftheweek
vtiger_dayoftheweek_seq	vtiger_default_record_view	vtiger_default_record_view_seq	vtiger_defaultactivitytype
vtiger_defaultactivitytype_seq	vtiger_defaulteventstatus	vtiger_defaulteventstatus_seq	vtiger_extnstore_users
vtiger_faqlcf	vtiger_feedback	vtiger_hour_format	vtiger_hour_format_seq
vtiger_inventoryproductrel_seq	vtiger_modtracker_relations	vtiger_module_dashboard_widgets	vtiger_no_of_currency_decimals
vtiger_no_of_currency_decimals_seq	vtiger_othereventduration	vtiger_othereventduration_seq	vtiger_pbxmanager_gateway
vtiger_pbxmanager_phonelookup	vtiger_pbxmanagercfcf	vtiger_projecttaskstatus	vtiger_projecttaskstatus_seq
vtiger_reporttype	vtiger_rowheight	vtiger_rowheight_seq	vtiger_scheduledreports
vtiger_shareduserinfo	vtiger_shorturls	vtiger_sqltimelog	vtiger_start_hour
vtiger_start_hour_seq	vtiger_userscf		

Altered Tables

com_vtiger_workflows	com_vtiger_workflowtask_queue	vtiger_account	vtiger_accounttype
vtiger_activitytype	vtiger_assets	vtiger_assetstatus	vtiger_campaign
vtiger_campaignstatus	vtiger_campaigntype	vtiger_carrier	vtiger_contactdetails

vtiger_contract_priority	vtiger_contract_status	vtiger_contract_type	vtiger_crmentity
vtiger_cron_task	vtiger_currency_info	vtiger_cvadvfilter	vtiger_def_org_share
vtiger_eventstatus	vtiger_expectedresponse	vtiger_faqqcategories	vtiger_faqqstatus
vtiger_field	vtiger_glacct	vtiger_group2role	vtiger_group2rs
vtiger_homestuff	vtiger_industry	vtiger_inventoryproductrel	vtiger_invoice
vtiger_invoice_recurring_info	vtiger_invoicestatus	vtiger_leaddetails	vtiger_leadsource
vtiger_leadstatus	vtiger_links	vtiger_loginhistory	vtiger_mail_accounts
vtiger_mailmanager_mailattachments	vtiger_mailscanner	vtiger_mailscanner_folders	vtiger_mailscanner_ids
vtiger_mailscanner_rules	vtiger_manufacturer	vtiger_modcomments	vtiger_modtracker_basic
vtiger_modtracker_detail	vtiger_opportunity_type	vtiger_org_share_action2tab	vtiger_organizationdetails
vtiger_parenttabrel	vtiger_pbxmanager	vtiger_portal	vtiger_poststatus
vtiger_potential	vtiger_pricebookproductrel	vtiger_productcategory	vtiger_productcurrencyrel
vtiger_products	vtiger_profile	vtiger_progress	vtiger_projectmilestonetype
vtiger_projectpriority	vtiger_projectstatus	vtiger_projecttask	vtiger_projecttaskpriority
vtiger_projecttaskprogress	vtiger_projecttasktype	vtiger_projecttype	vtiger_purchaseorder
vtiger_quotes	vtiger_quotestage	vtiger_rating	vtiger_recurringevents
vtiger_relcriteria	vtiger_reportgroupbycolumn	vtiger_reportsortcol	vtiger_role
vtiger_role2picklist	vtiger_sales_stage	vtiger_salesorder	vtiger_salutationtype
vtiger_service	vtiger_service_usageunit	vtiger_servicecategory	vtiger_settings_field
vtiger_sostatus	vtiger_tab	vtiger_tab_info	vtiger_taskpriority

vtiger_taskstatus	vtiger_ticketcategories	vtiger_ticketcf	vtiger_ticketpriorities
vtiger_ticketseverities	vtiger_ticketstatus	vtiger_tracking_unit	vtiger_troubletickets
vtiger_usageunit	vtiger_user_module_preferences	vtiger_users	vtiger_users2group
vtiger_webforms	vtiger_webforms_field		

Codebase Organisation

Config.inc.php

```
// Adjust error_reporting favourable to deployment.
// more than 8MB memory needed for graphics
// memory limit default value = 64M
// show or hide calendar, world clock, calculator, chat and CKEditor
// Do NOT remove the quotes if you set these to false!
// url for customer portal (Example: http://vtiger.com/portal)
// helpdesk support email id and support name
// (Example: 'support@vtiger.com' and 'vtiger support')
/* database configuration
    db_server
    db_port
    db_hostname
    db_username
    db_password
    db_name
*/
// TODO: test if port is empty
// TODO: set db_hostname depending on db_type
// log_sql default value = false
// persistent default value = true
// autofree default value = false
// debug default value = 0
// seqname_format default value = '%s_seq'
// portability default value = 0
// ssl default value = false
// site_URL = (Example: http://vtiger.com/crm)
// root directory path
// cache direcorey path
// tmp_dir default value prepended by cache_dir = images/
// import_dir default value prepended by cache_dir = import/
// upload_dir default value prepended by cache_dir = upload/
// maximum file size for uploaded files in bytes also used when uploading import
files
// upload_maxsize default value = 3000000
```

```

// flag to allow export functionality
// 'all' to allow anyone to use exports
// 'admin' to only allow admins to export
// 'none' to block exports completely
// allow_exports default value = all
// files with one of these extensions will have '.txt' appended to their filename on
upload
// upload_badext default value = php, php3, php4, php5, pl, cgi, py, asp, cfm, js,
vbs, html, htm
// full path to include directory including the trailing slash
// includeDirectory default value = $root_directory..'include/
// list_max_entries_per_page default value = 20
// limitpage_navigation default value = 5
// history_max_viewed default value = 5
// default_module default value = Home
// default_action default value = index
// set default theme
// default_theme default value = blue
// show or hide time to compose each page
// calculate_response_time default value = true
// default text that is placed initially in the login form for user name
// no default_user_name default value
// default text that is placed initially in the login form for password
// no default_password default value
// create user with default username and password
// create_default_user default value = false
// default_user_is_admin default value = false
// if your MySQL/PHP configuration does not support persistent connections set
disable_persistent_connections to true to avoid a large performance slowdown
// disable_persistent_connections default value = false
// Master currency name
// default charset
// default charset default value = 'UTF-8' or 'ISO-8859-1'
// default language
// default_language default value = en_us
// add the language pack name to every translation string in the display.
// translation_string_prefix default value = false
// Option to cache tabs permissions for speed.
// Option to hide empty home blocks if no entries.
// Disable Stat Tracking of vtiger CRM instance
// Generating Unique Application Key
// trim descriptions, titles in listviews to this value
// Maximum time limit for PHP script execution (in seconds)
// Set the default timezone as per your preference
/** If timezone is configured, try to set it */

```

All third party projects/tools are located in libraries folder with the exception of kcfinder (in crm root). It is advisable to follow this convention

adodb

antlr

bootstrap

csrf-magic
freetag
fullcalendar
google-api-php-client
guidersjs
html5shim
htmlpurifier
HTTP_Session
jquery
log4php
log4php.debug
magpierss
nusoap
Oauth
PHPExcel
PHPMarkdown
Smarty
tcpdf

Within jquery
autosize
boxslider
chosen
ckeditor
colorpicker
dangrossman-bootstrap-daterangepicker
datepicker
defunkt-jquery-pjax
gridster
handsontable
jqplot
jquery-ui
jquery.datepick.package-4.1.0
malihu-custom-scrollbar
multiplefileupload
pnotify
posabsolute-jQuery-Validation-Engine
rochal-jQuery-slimScroll
select2
timepicker

jquery.fitvids.js
jquery.easing.1.3.js

```

jqueryRating.js
jquery.placeholder.js
jstorage.min.js
jquery_windowmsg.js
jquery.virtualpages.js
jquery.tagcloud.js
jquery.spin.min.js
jquery.sparkline.min.js
jquery.printf.min.js
jquery.min.js
jquery.jqote2.min.js
jquery.jeditable.min.js
jquery.hoverIntent.minified.js
jquery.form.js
jquery.cycle.min.js
jquery.class.min.js
jquery.blockUI.js
jquery.ba-outside-events.min.js
jquery.ajaxq.js
jquery.additions.js

```

Functions in CommonUtils.php

```

function is_admin($user) {
function parse_calendardate($local_format) {
function from_html($string, $encode = true) {
function fck_from_html($string) {
function popup_from_html($string, $encode = true) {
function fetchCurrency($id) {
function getCurrencyName($currencyid, $show_symbol = true) {
function getTabid($module) {
function getFieldid($tabid, $fieldname, $onlyactive = true) {
function getTabOwnedBy($module) {
function getSalesEntityType($scrmid) {
function getAccountName($account_id) {
function getProductName($product_id) {
function getPotentialName($potential_id) {
function getContactName($contact_id) {
function getFullNameFromQResult($result, $row_count, $module) {
function getFullNameFromArray($module, $fieldValues) {
function getCampaignName($campaign_id) {
function getVendorName($vendor_id) {
function getQuoteName($quote_id) {

```

```

function getPriceBookName($pricebookid) {
function getSoName($so_id) {
function getGroupName($groupid) {
function getUsername($userid) {
function getUserFullName($userid) {
function getParentName($parent_id) {
function getValidDisplayDate($cur_date_val) {
function getNewDisplayDate() {
function getCurrencySymbolandCRate($id) {
function getTermsandConditions() {
function br2nl($str) {
function getBlockId($tabid, $label) {
function getParentTabFromModule($module) {
function getParentTab() {
function setObjectValuesFromRequest($focus) {
function create_tab_data_file() {
function create_parenttab_data_file() {
function getEntityName($module, $ids_list, $compute=true) {
function decideFilePath() {
function validateImageFile($file_details) {
function getTemplateDetails($templateid) {
function getMergedDescription($description, $id, $parent_type) {
function getSingleFieldValue($tablename, $fieldname, $idname, $id) {
function get_announcements() {
function getrecurringObjValue() {
function getTranslatedString($str, $module = 'Vtiger') {
function getTranslatedCurrencyString($str) {
function getTicketComments($ticketid) {
function makeRandomPassword() {
function getCvIdOfAll($module) {
function getTagCloudView($id = "") {
function SaveTagCloudView($id = "") {
function ChangeTypeOfData_Filter($table_name, $column_name, $type_of_data) {
function clear_smarty_cache($path = null) {
function get_smarty_compiled_file($template_file, $path = null) {
function perform_post_migration_activities() {
function getPickListValues($tablename, $roleid) {
function checkFileAccessForInclusion($filepath) {
function checkFileAccessForDeletion($filepath) {
function checkFileAccess($filepath) {
function isFileAccessible($filepath) {
function getActivityType($id) {
function getOwnerName($id) {

```

```

function getOwnerNameList($idList) {
function getSettingsBlockId($label) {
function getEntityField($module) {
function getEntityFieldNames($module) {
function getEntityFieldNameDisplay($module, $fieldsName, $fieldValues) {
function vt_suppressHTMLTags($string) {
function getSqlForNameInDisplayFormat($input, $module, $glue = ' ') {
function getModuleSequenceNumber($module, $recordId) {
function getInvoiceStatus($invoicId) {
function decimalFormat($value){
function updateRecordLabel($module,$recordId){
function get_group_options() {

```

Functions in utils.php

```

function return_name(&$row, $first_column, $last_column)
function get_user_array($add_blank=true, $status="Active",
    $assigned_user="", $private="", $module=false)
function get_group_array($add_blank=true, $status="Active",
    $assigned_user="", $private="", $module = false)
function return_app_list_strings_language($language)
function return_app_currency_strings_language($language)
function return_application_language($language)
function return_module_language($language, $module)
function return_specified_module_language($language, $module)
function get_themes()
function set_default_config(&$defaults)
function to_html($string, $encode=true)
function getTabname($tabid)
function getTabModuleName($tabid)
function getColumnFields($module)
function getUserEmail($userid)
function getUserId_OI($username)
function getActionid($action)
function getActionname($actionid)
function getRecordOwnerId($record)
function insertProfile2field($profileid)
function insert_def_org_field()
function updateProductQty($product_id, $upd_qty)
function addToProductStock($productId,$qty)
function addToProductDemand($productId,$qty)
function deductFromProductStock($productId,$qty)
function deductFromProductDemand($productId,$qty)

```

```

function getProductQtyInStock($product_id)
function getProductQtyInDemand($product_id)
function getTableNameForField($module,$fieldname)
function getParentRecordOwner($tabid,$parModId,$record_id)
function getPotentialsRelatedAccounts($record_id)
function getEmailsRelatedAccounts($record_id)
function getEmailsRelatedLeads($record_id)
function getHelpDeskRelatedAccounts($record_id)
function getQuotesRelatedAccounts($record_id)
function getQuotesRelatedPotentials($record_id)
function getSalesOrderRelatedAccounts($record_id)
function getSalesOrderRelatedPotentials($record_id)
function getSalesOrderRelatedQuotes($record_id)
function getInvoiceRelatedAccounts($record_id)
function getInvoiceRelatedSalesOrder($record_id)
function utf8RawUrlDecode ($source)
function html_to_utf8 ($data)
function _html_to_utf8 ($data)
function _questionify($v)
function generateQuestionMarks($items_list)
function is_uitype($uitype, $reqtype)
function escape_single_quotes($value)
function formatForSqlLike($str, $flag=0,$is_field=false)
function getAccessPickListValues($module)
function get_config_status()
function getMigrationCharsetFlag()
function get_on_clause($field_list,$uitype_arr,$module)
function transferCurrency($old_cur, $new_cur)
function transferUserCurrency($old_cur, $new_cur)
function transferProductCurrency($old_cur, $new_cur)
function transferPriceBookCurrency($old_cur, $new_cur)
function getCallerInfo($number)
function get_use_asterisk($id)
function addToCallHistory($userExtension, $callfrom, $callto, $status, $adb, $useCallerInfo)
function getRelationTables($module,$secmodule)
function DeleteEntity($module,$return_module,$focus,$record,$return_id)
function relateEntities($focus, $sourceModule, $sourceRecordId, $destinationModule,
$destinationRecordIds)
function installVtlibModule($packagename, $packagepath, $customized=false)
function updateVtlibModule($module, $packagepath)
function columnExists($columnName, $tableName)
function com_vtGetModules($adb)
function isRecordExists($recordId)

```

```

function getValidDBInsertDateValue($value)
function getValidDBInsertDateTimeValue($value)
function _phpset_memorylimit_MB($newvalue)
function sanitizeUploadFileName($fileName, $badFileExtensions)
function getTabInfo($tabId)
function getBlockName($blockid)
function validateAlphaNumericInput($string)
function validateServerName($string)
function validateEmailId($string)
function dateDiffAsString($d1, $d2)
function getMinimumCronFrequency()
function getEmailRelatedModules()
function getCurrencyDecimalPlaces()
function getInventoryModules()
function initUpdateVtlibModule($module, $packagepath)
function getActivityRelatedContacts($activityId)
function isLeadConverted($leadId)
function getSelectedRecords($input,$module,$idstring,$excludedRecords)
function getSelectAllQuery($input,$module)
function getCampaignAccountIds($id)
function getCampaignContactIds($id)
function getCampaignLeadIds($id)
function dateDiff($d1, $d2)
function getExportRecordIds($moduleName, $viewid, $input)
function getCombinations($array, $tempString = "")
function getCompanyDetails()
function lower_array(&$string)

```

```

included in utils.php
require_once('include/database/PearDatabase.php');
require_once('include/ComboUtil.php'); //new
require_once('include/utils/ListViewUtils.php');
require_once('include/utils/EditViewUtils.php');
require_once('include/utils/CommonUtils.php');
require_once('include/utils/InventoryUtils.php');
require_once('include/utils/SearchUtils.php');
require_once('include/FormValidationUtil.php');
require_once('include/events/SqlResultIterator.inc');
require_once('include/fields/DateTimeField.php');
require_once('include/fields/CurrencyField.php');
require_once('data/CRMEntity.php');
require_once 'vtlib/Vtiger/Language.php';
require_once("include/ListView/ListViewSession.php");

```



```
require_once 'vtlib/Vtiger/Functions.php';  
require_once 'vtlib/Vtiger/Deprecated.php';  
require_once 'includes/runtime/Cache.php';  
require_once 'modules/Vtiger/helpers/Util.php';
```

Plugging In

The resources identified in Chapter 0 are key to being part of the Vtiger Community. In addition, if you are not a seasoned digiterati, kindly keep the following in mind

Fools rush in where angels fear to tread

and

Fortune favours the brave

That said, the following practices could help one become a part of the community that all of us hope will break new ground in Enterprise Information Management and Analysis

1. Respect the community before you expect respect for your contributions
2. Look for earlier comments on your problem by searching trac and resources
3. Respect other people's contributions and always acknowledge them when you use it, even for inspiration
- 4.

Bibliography and References

Here we will list all external references used in basing this book

1. http://en.wikipedia.org/wiki/Vtiger_CRM
2. <http://en.wikipedia.org/wiki/SugarCRM>
3. <http://en.wikipedia.org/wiki/SuiteCRM>
4. http://en.wikipedia.org/wiki/Comparison_of_CRM_systems
5. <http://community.vtiger.com/help/>
6. <http://community.vtiger.com/help/vtigercrm/developers/extensions/examples/hello-world-v1.html>
7. http://en.wikipedia.org/wiki/Bootstrap_%28front-end_framework%29
8. <http://www.tutorialrepublic.com/article/twitter-bootstrap-tutorial-for-beginners.php>

Glossary

Key Vtiger terms to help a first timer to Vtiger who may want to benefit from this guide

UI Type

Views

Modules

Entity Modules

Extension Modules

Webservices

Customer Portal

Install Process

When the source code is extracted into the new instance folder, and the CRM URL called in a browser, the Install process gets invoked automatically. During the process, it creates the new database,

Also the following modules are installed and additional language packs installed.

- Assets
- CustomerPortal
- ExtensionStore
- Google
- Import
- MailManager
- Mobile
- ModComments
- ModTracker
- PBXManager
- Project
- ProjectMilestone
- RecycleBin
- ServiceContracts
- SMSNotifier
- Webforms
- WSAPP

The following additional settings (**modules/Settings**) options are also part of the install process

- EmailTemplates
- ExtensionStore
- PBXManager
- SMSNotifier
- Webforms

The pholoc data for the crm root folder before install shows

Directories	713
Files	4703
Size	
Lines of Code (LOC)	985513
Comment Lines of Code (CLOC)	224405 (22.77%)
Non-Comment Lines of Code (NCLOC)	761108 (77.23%)
Logical Lines of Code (LLOC)	204302 (20.73%)

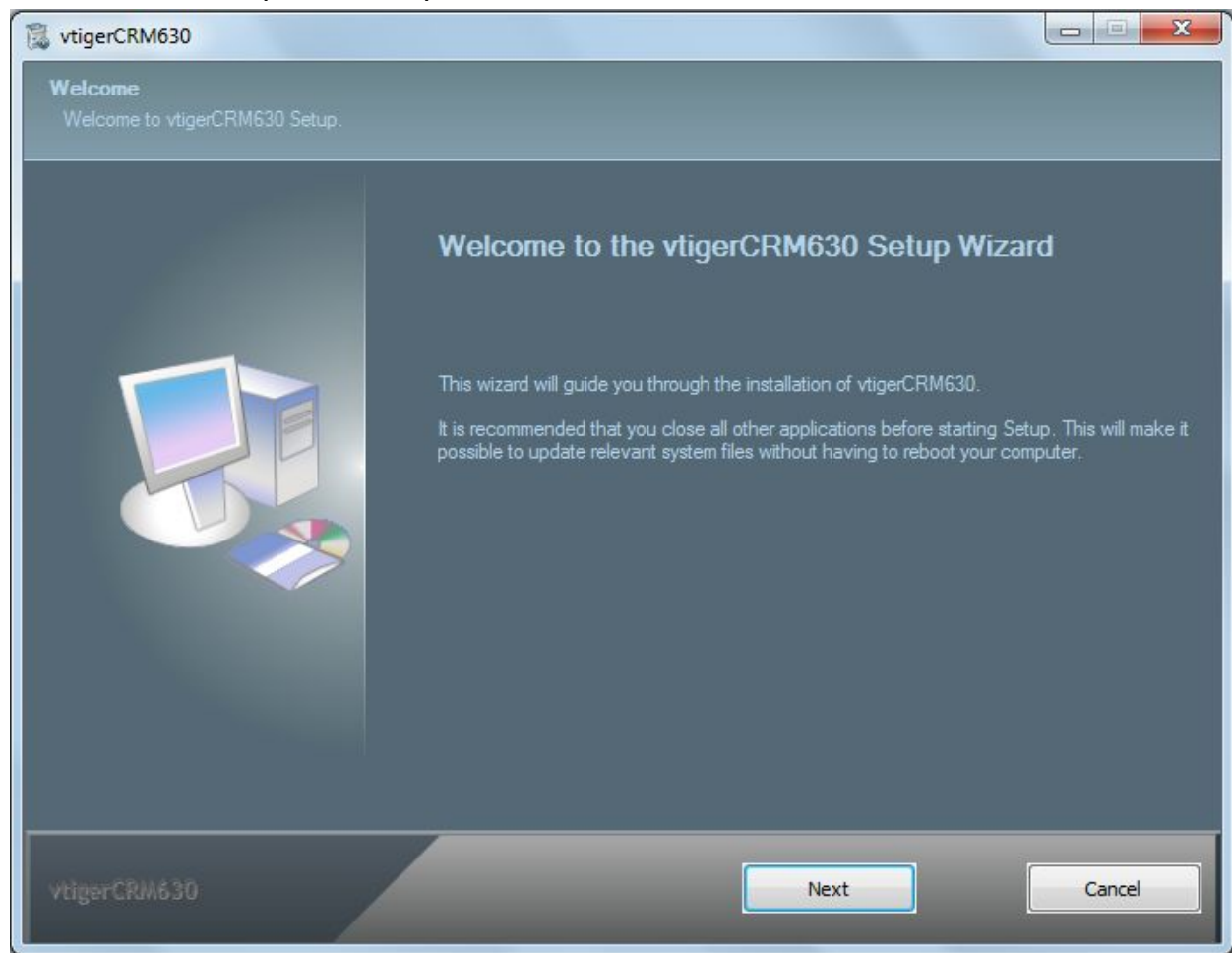
Classes	179323 (87.77%)
Average Class Length	34
Minimum Class Length	0
Maximum Class Length	4730
Average Method Length	4
Minimum Method Length	0
Maximum Method Length	974
Functions	13912 (6.81%)
Average Function Length	13
Not in classes or functions	11067 (5.42%)
Cyclomatic Complexity	
Average Complexity per LLOC	0.28
Average Complexity per Class	10.77
Minimum Class Complexity	1.00
Maximum Class Complexity	2279.00
Average Complexity per Method	2.37
Minimum Method Complexity	1.00
Maximum Method Complexity	347.00
Dependencies	
Global Accesses	6059
Global Constants	2666 (44.00%)
Global Variables	2335 (38.54%)
Super-Global Variables	1058 (17.46%)
Attribute Accesses	73723
Non-Static	71258 (96.66%)
Static	2465 (3.34%)
Method Calls	66922
Non-Static	54999 (82.18%)
Static	11923 (17.82%)
Structure	
Namespaces	1
Interfaces	19
Traits	0
Classes	5118
Abstract Classes	73 (1.43%)
Concrete Classes	5045 (98.57%)
Methods	36844
Scope	
Non-Static Methods	34983 (94.95%)
Static Methods	1861 (5.05%)
Visibility	
Public Methods	35135 (95.36%)
Non-Public Methods	1709 (4.64%)
Functions	998

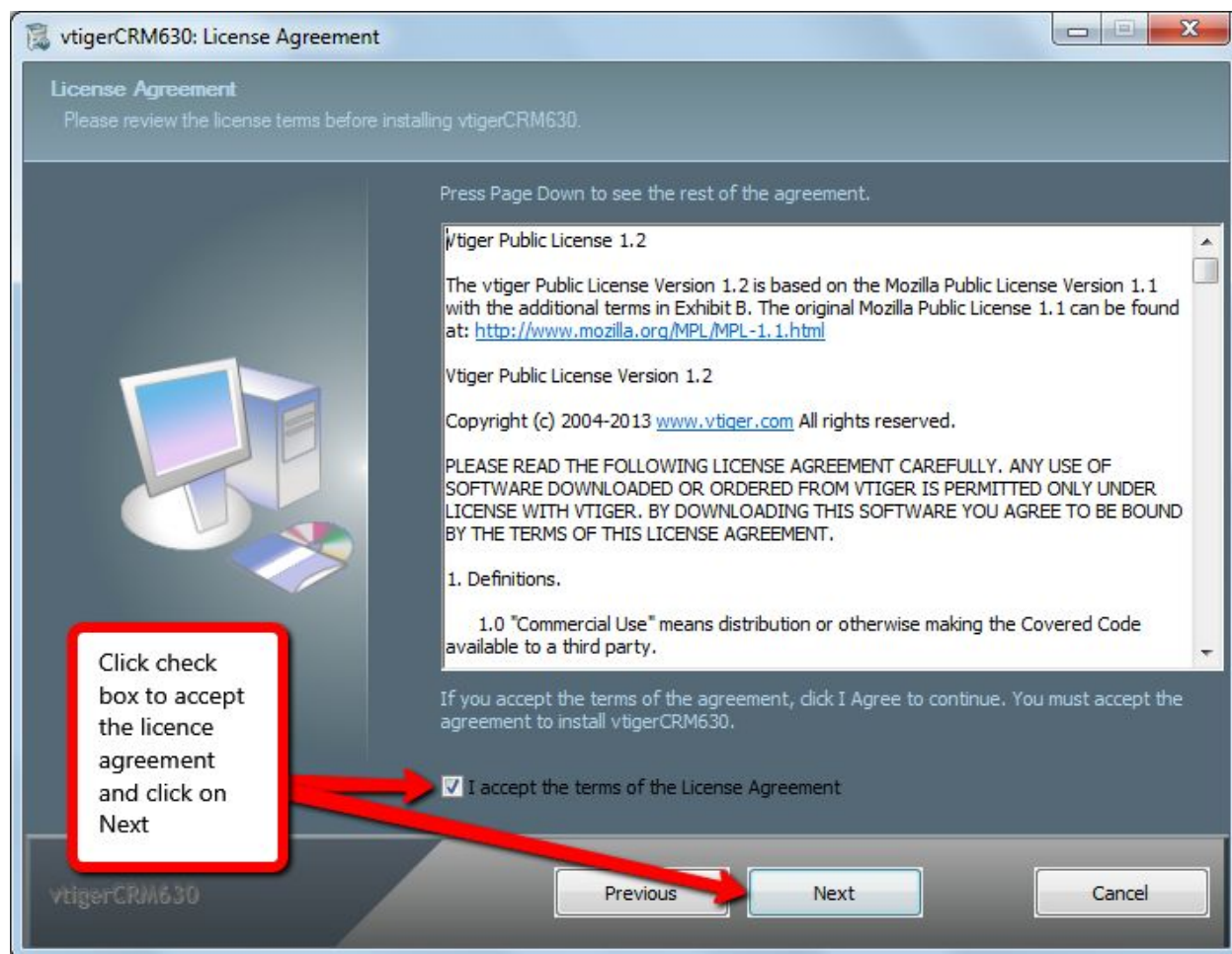
Named Functions	997 (99.90%)
Anonymous Functions	1 (0.10%)
Constants	2368
Global Constants	682 (28.80%)
Class Constants	1686 (71.20%)

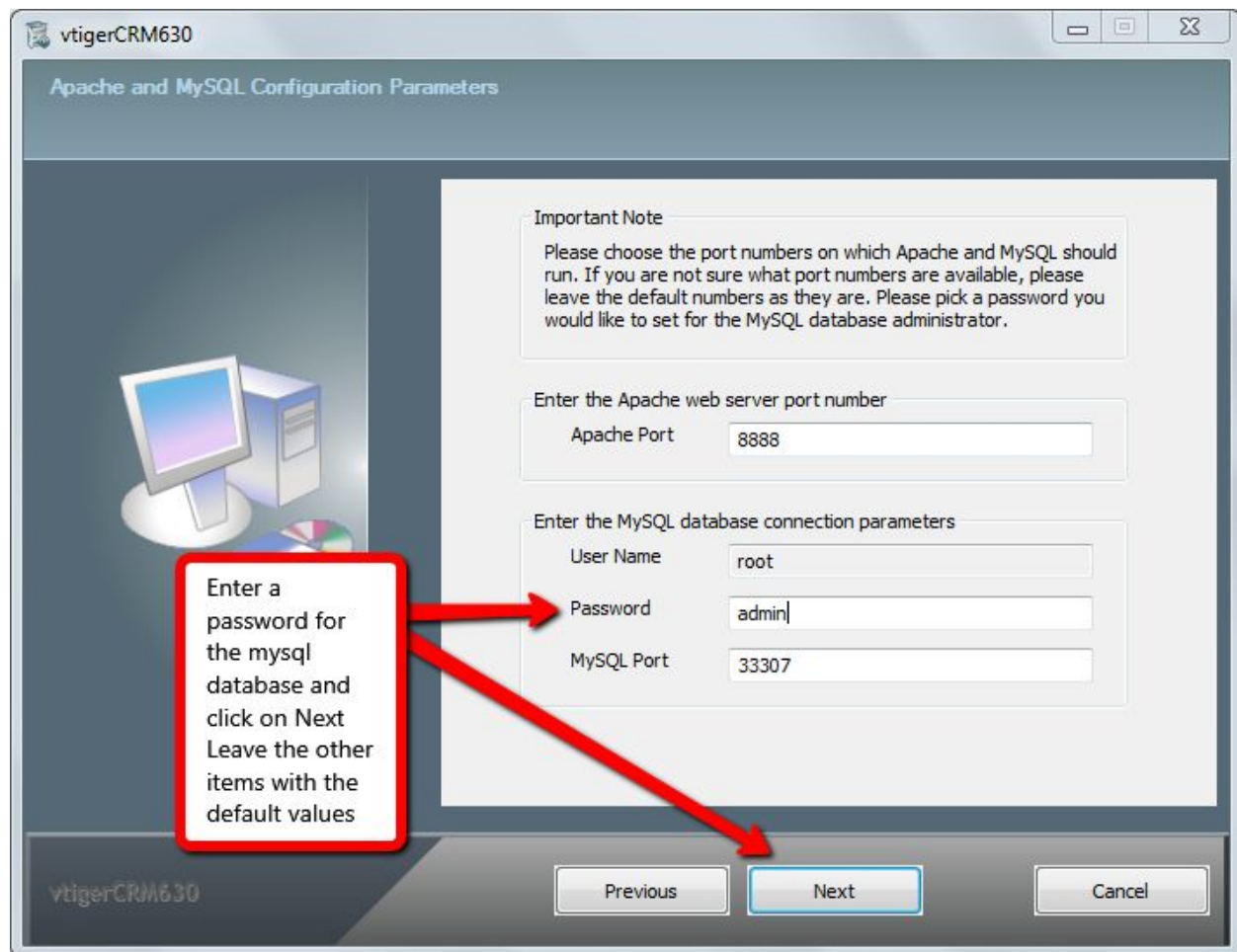
After installation the phploc statistics change

Directories	830
Files	5391
Size	
Lines of Code (LOC)	1051256
Comment Lines of Code (CLOC)	240365 (22.86%)
Non-Comment Lines of Code (NCLOC)	810891 (77.14%)
Logical Lines of Code (LLOC)	219470 (20.88%)
Classes	191296 (87.16%)
Average Class Length	34
Minimum Class Length	0
Maximum Class Length	4730
Average Method Length	4
Minimum Method Length	0
Maximum Method Length	974
Functions	15938 (7.26%)
Average Function Length	14
Not in classes or functions	12236 (5.58%)
Cyclomatic Complexity	
Average Complexity per LLOC	0.28
Average Complexity per Class	10.67
Minimum Class Complexity	1.00
Maximum Class Complexity	2279.00
Average Complexity per Method	2.39
Minimum Method Complexity	1.00
Maximum Method Complexity	347.00
Dependencies	
Global Accesses	6351
Global Constants	2692 (42.39%)
Global Variables	2523 (39.73%)
Super-Global Variables	1136 (17.89%)
Attribute Accesses	81438
Non-Static	78843 (96.81%)
Static	2595 (3.19%)
Method Calls	74213

Non-Static	60984 (82.17%)
Static	13229 (17.83%)
Structure	
Namespaces	1
Interfaces	20
Traits	0
Classes	5523
Abstract Classes	86 (1.56%)
Concrete Classes	5437 (98.44%)
Methods	38701
Scope	
Non-Static Methods	36608 (94.59%)
Static Methods	2093 (5.41%)
Visibility	
Public Methods	36843 (95.20%)
Non-Public Methods	1858 (4.80%)
Functions	1107
Named Functions	1106 (99.91%)
Anonymous Functions	1 (0.09%)
Constants	2428
Global Constants	692 (28.50%)
Class Constants	1736 (71.50%)

Windows Installer (AMP Island)





The screenshot shows the 'vtigerCRM Configuration Parameters' window, specifically the 'User and Currency Configuration Parameters' section. The window has a title bar with 'vtigerCRM630' and standard window controls. The main content area is divided into two sections: 'CRM Administrator User Settings' and 'Select the default Currency for vtigerCRM'. The first section contains three text input fields for 'User Name', 'Password', and 'Email', with values 'admin', 'admin', and 'stprasad@stprasad.com' respectively. The second section contains a dropdown menu for 'Currency Name' with 'Singapore, Dollars' selected. At the bottom right, there is a checkbox labeled 'Populate Database with Demo data'. A red-bordered box on the left contains instructions: 'Enter your values for Password and email and select a currency from the drop down' and 'Click checkbox to have some sample data'. Red arrows point from this box to the Password and Email fields, the Currency dropdown, and the checkbox. The bottom of the window features a dark grey bar with 'vtigerCRM630' on the left and 'Previous', 'Next', and 'Cancel' buttons on the right.

vtigerCRM630

vtigerCRM Configuration Parameters
User and Currency Configuration Parameters

CRM Administrator User Settings

User Name: admin

Password: admin

Email: stprasad@stprasad.com

Select the default Currency for vtigerCRM

Currency Name: Singapore, Dollars

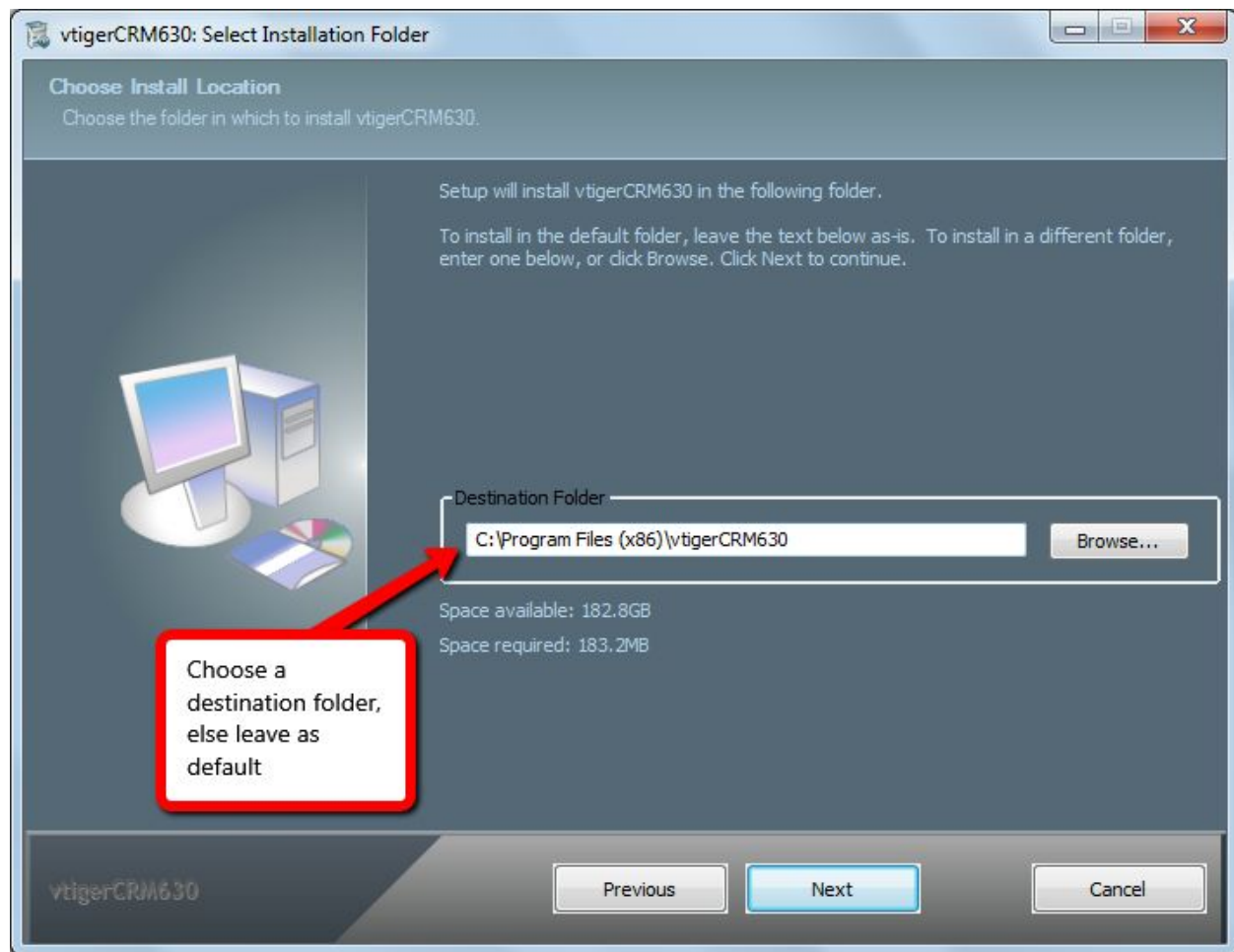
☐ Populate Database with Demo data

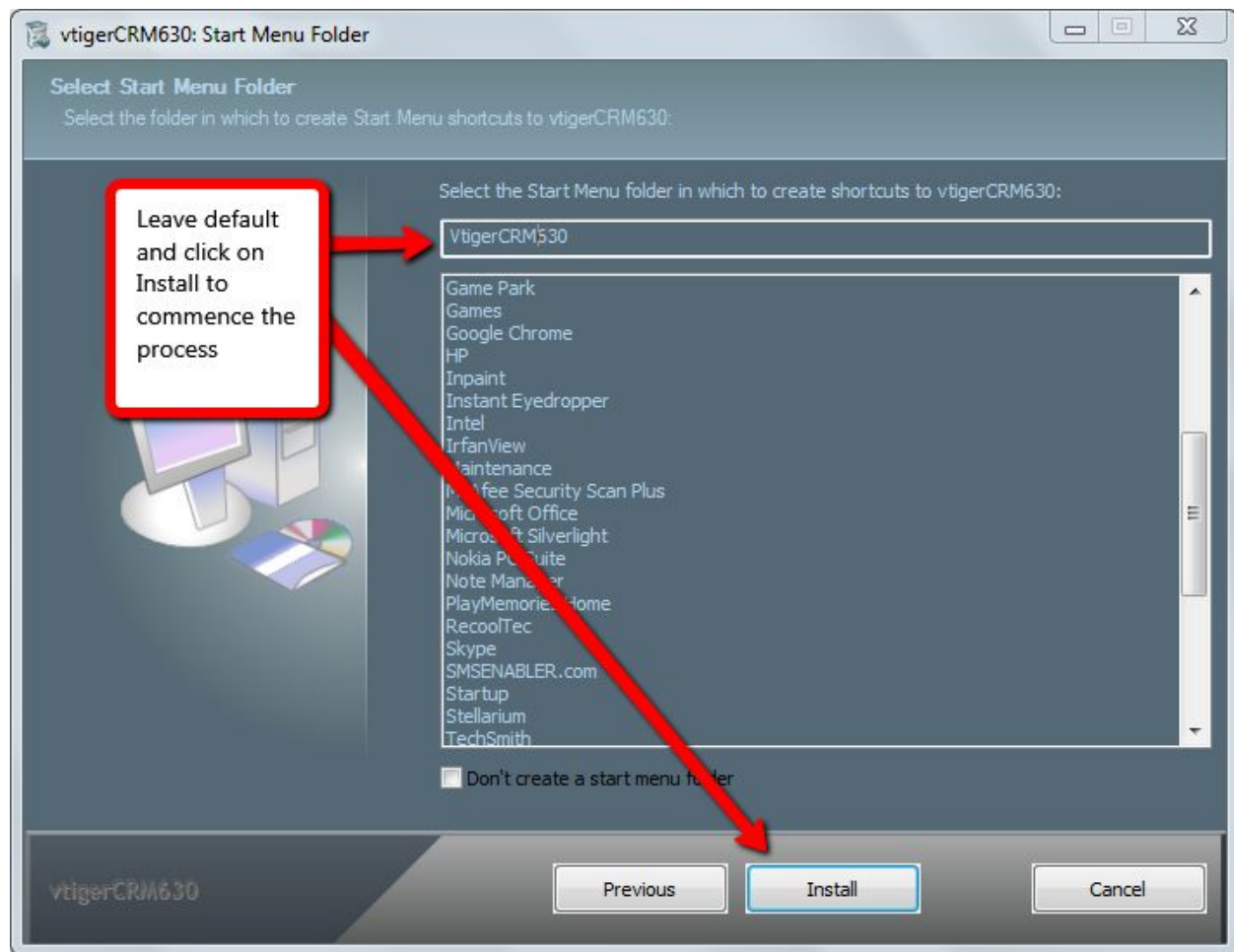
vtigerCRM630

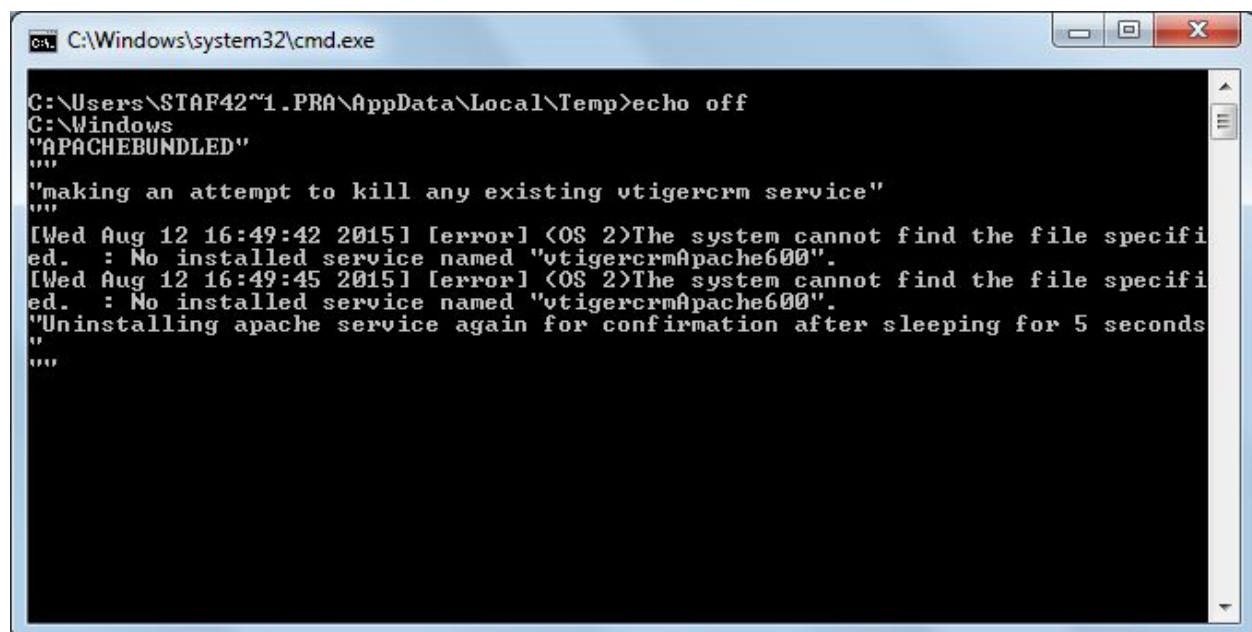
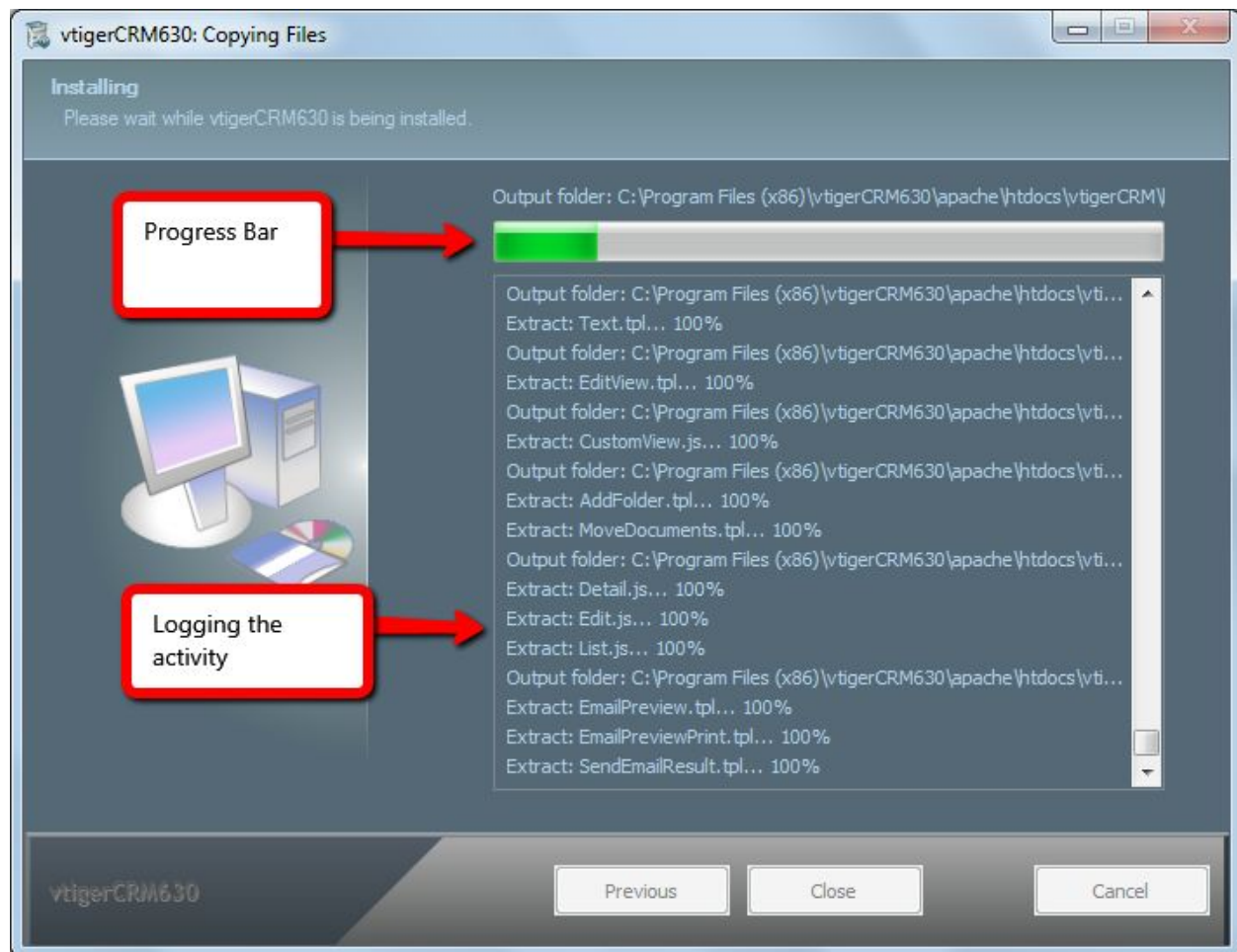
Previous Next Cancel

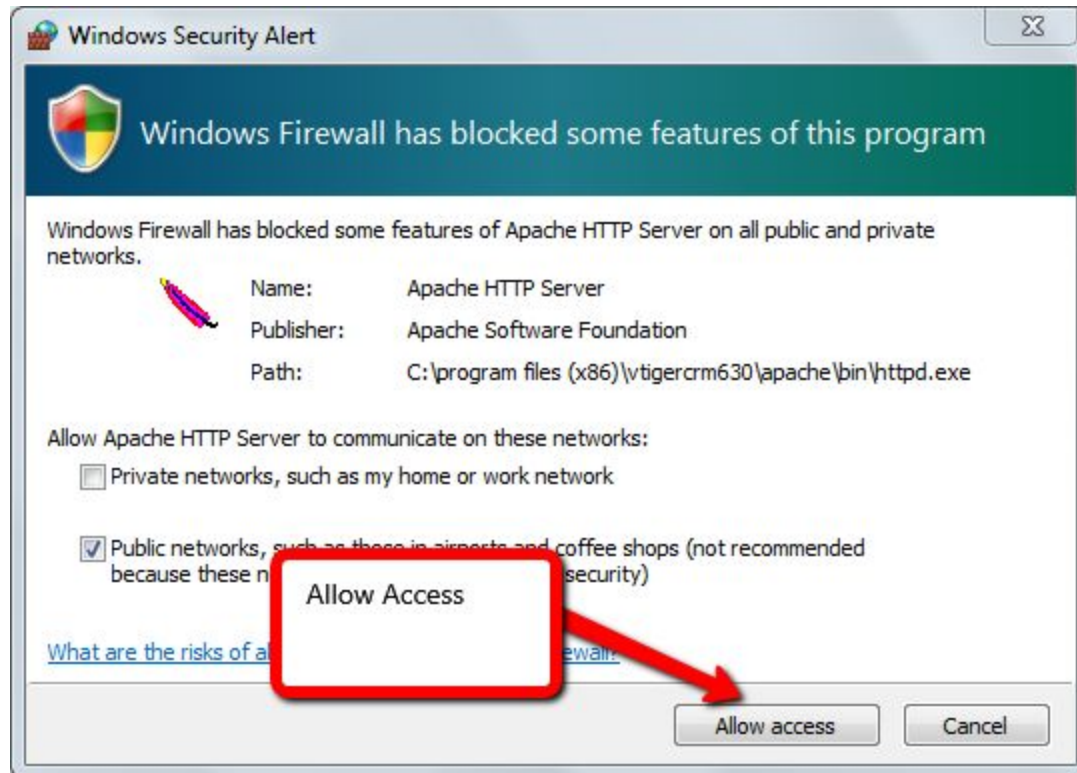
Enter your values for Password and email and select a currency from the drop down

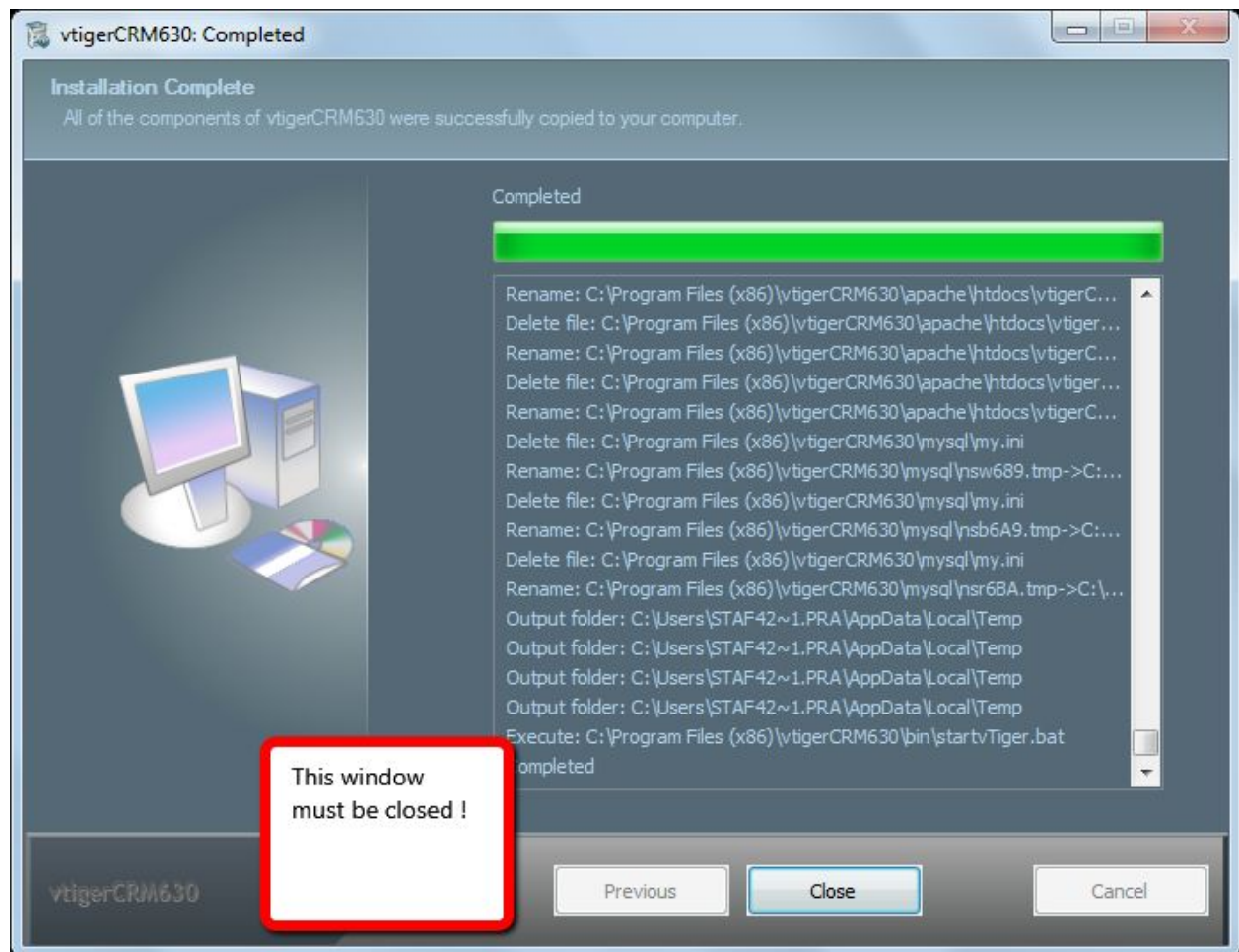
Click checkbox to have some sample data



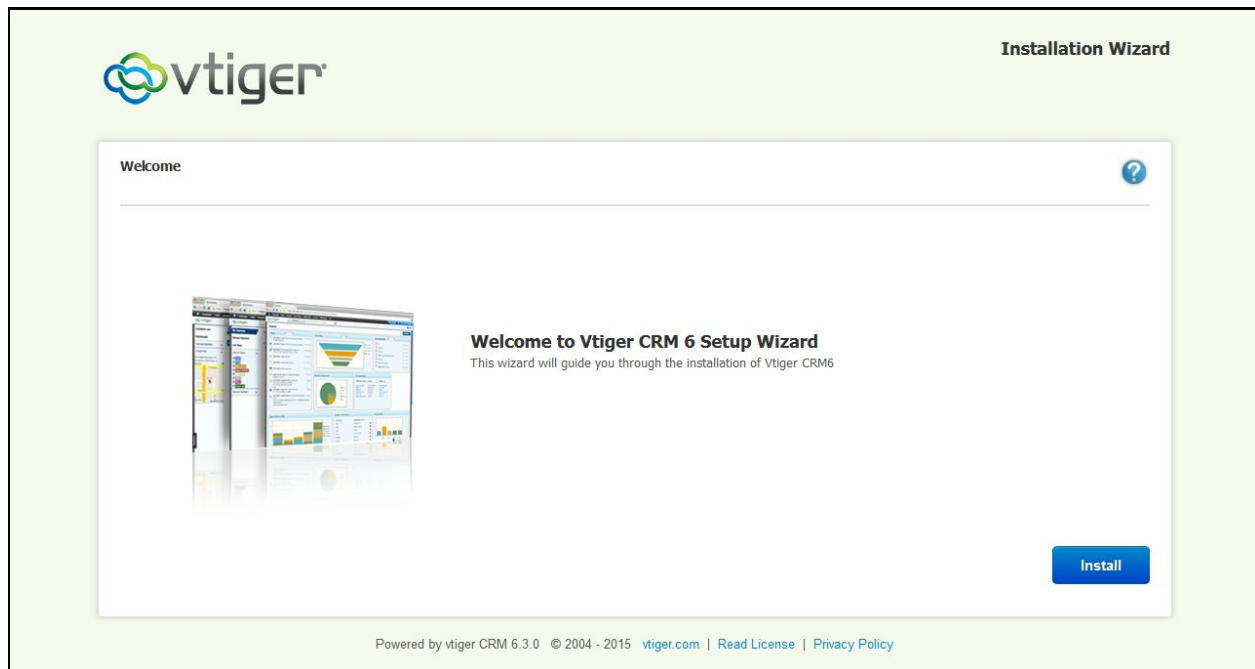




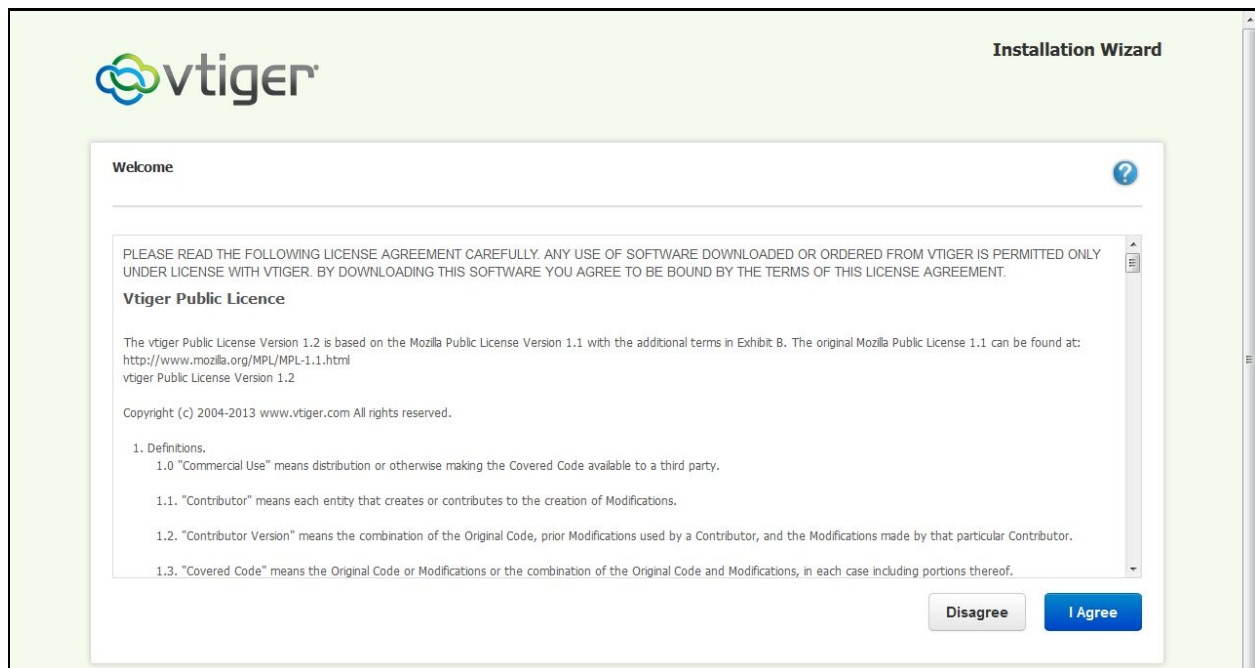





CRM Web Install



Now the second part of the actual CRM installation consists of the following screens



Installation Wizard

Installation prerequisites

?

Recheck

PHP Configuration	Required Value	Present Value
PHP Version	5.5.0	5.3.10
Imap Support	True	Yes
Zlib Support	True	Yes
mysql support	True	Yes
openssl support	True	Yes
cURL support	True	Yes
GD Library Support	True	Yes

BackNext

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System Configuration

?

Database Information

Database Type*MySQL

Host Name*localhost:33307

User Name*root

Password*****

Database Name*vtigercrm600

☒ Create new database

Root User Name*root

Root Password*****

System Information

Currency*India, Rupees (Rs)

Admin User Information

User Nameadmin

Password******

Retype Password******

First NameST

Last Name*Prasad

Email*stprasad@stprasad.com

Date format*mm-dd-yyyy

Time Zone*(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi

BackNext

Confirm Configuration Settings

Database Information

Database Type*	MySQL
Database Name*	vtigercrm600

System Information

URL*	http://localhost:8888/
Currency*	India, Rupees

Admin User Information

User Name	admin
Email*	stprasad@stprasad.com
Time Zone*	Asia/Kolkata
Date format*	mm-dd-yyyy

Back

Next

One last thing...

Please let us know your Industry *

We collect anonymous information (Country, OS) to help us improve our product and where it is being used helps us identify the areas to improve your experience with Vtiger. None of the data is ever shared with third parties.

Choose one...

Accounting

Advertising

Agriculture

Apparel & Accessories

Automotive

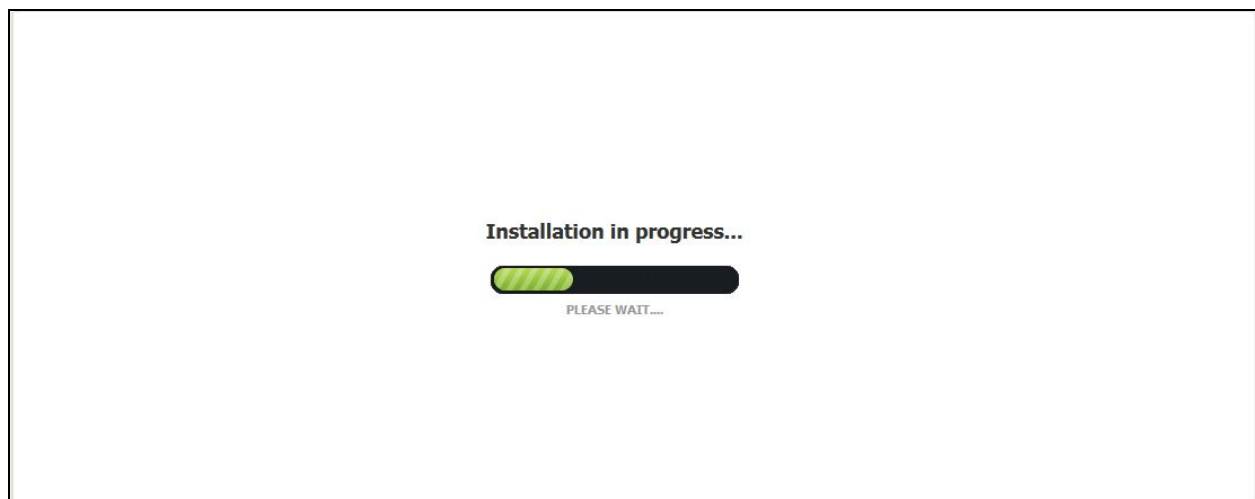
Banking & Financial Services


Biotechnology

Call Centers

about how CRM is used. We use this data to improve our product.

Next






Sales Automation

Capture Leads from your website, or import lists of them, then develop a process for qualifying and turning them into potential sales opportunities, and another for winning those potential opportunities. Additionally, track and segment your sales funnel, individual, and team, performance areas.


[View Modules](#)



Marketing

Send individual, targeted, or bulk emails to your contacts, leads, and customers, and see how they engage with each communication, with tools to analyze and improve campaign performance.


[View Modules](#)



Support

Create and track customer requests/tasks via tickets, and even allow your customers to create and monitor their own tickets and details through a professional customer portal.


[View Modules](#)



Invoicing & Inventory Management

Build a database of your products and services, maintain inventories, standard prices and prices books, and use these to create quotes, invoices, and sales orders.

[View Modules](#)



Project Management

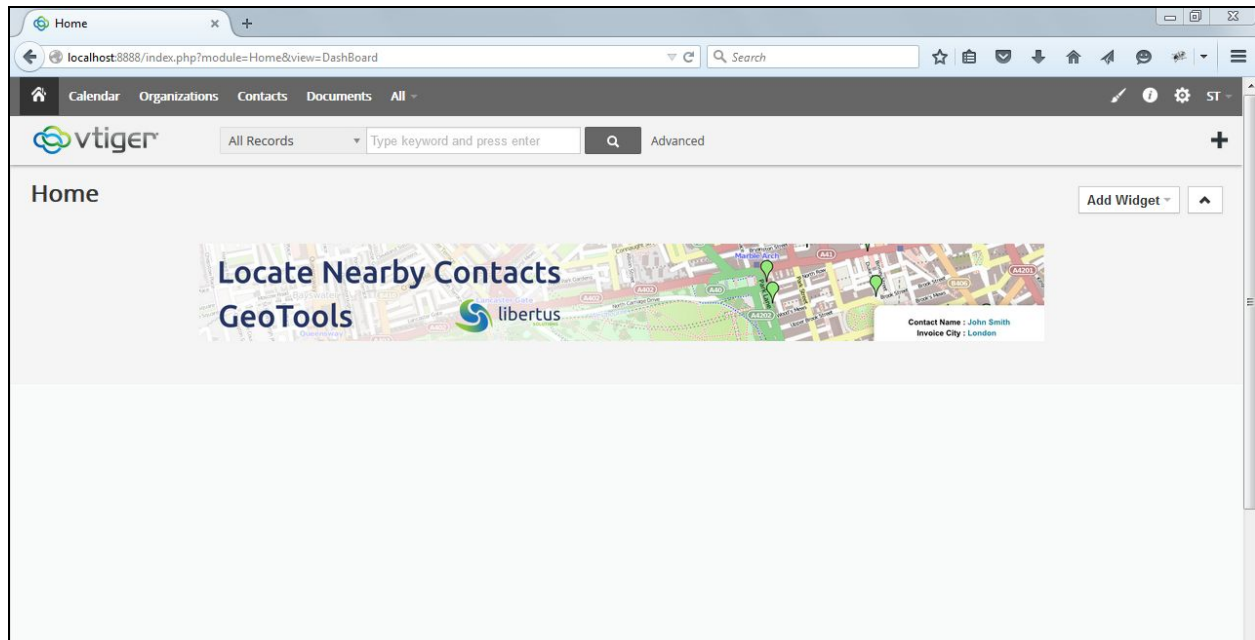
Build and manage customer-associated projects, with detailed tasks that can be assigned to CRM users and placed on their calendars.

[View Modules](#)

Choose CRM Component and click on next to proceed

Almost there!

Preferences (All fields below are required)



Congratulations, Vtiger CRM 630 is successfully installed.

Migration Process

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- 1.8. Creating Dashboards
- 1.9. Adding Dashboards
- 1.10. Security Management
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 - 22.5 How to remove main tabs
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 - 22.7 How to change tab ID
 - 22.8 How to edit/modify tab names
 - 22.9 How to add or remove Modules from tabs
 - 22.10 How to remove dashboard tab
 - 22.11 How to remove modules from the dashboard tab
 - 22.12 How to create a new module or tab in vtiger 5
- 23 Patching, Subversion
 - 23.1 How to use .diff patch
 - 23.2 How to use .diff patch on Windows
- 24 PDF Related
 - 24.1 How to reverse contact name on PDF layouts
 - 24.2 How to change the PDF layout for invoices and quotes
- 25 Quotes
 - 25.1 How to create a query to extract the products from a quote using the quote number
- 26 Smarty & Theming
 - 26.1 How to find the browser tab image
 - 26.2 How to determine what templates are being used
 - 26.3 How to remove a theme
 - 26.4 How to change default theme
 - 26.5 How to create a new Color theme for vtiger CRM 5
- 27 Tags
 - 27.1 How to make the tagclouds be organization level

27.2 How to have global Tag Clouds as well as user specific Tag Clouds

28 Troubleshooting

28.1 How to view 'vtigercrm.log' file WITHOUT having Apache root

28.2 How to handle disappearing views in leads, contacts, accounts, and potential

28.3 How to resolve very slow performance

28.4 How to resolve error "Module name is missing"

28.5 How to resolve "Runtime Error #7 - out of memory"

29 Trouble Tickets

29.1 How to Change Format of Trouble Ticket Basic Info

29.2 How to move 'Trouble Tickets' to the Account Information Tab

29.3 How to customize Trouble ticket email sending

29.4 How to modify the trouble ticket email templates

29.5 How to send a copy of the email to the person who opened the trouble ticket

29.6 How to turn off notification mails of new tickets

29.7 How to resolve problem of duplicate email going to the person who posted the trouble

ticket

30 Usability

30.1 How to disable the Alt-D hotkey in vtiger

31 User Related

31.1 How to remove "Delete" from custom views

31.2 How to set the user's home page

31.3 How to restrict users from adding new URL/Websites to this module

32 WebForms

32.1 Simple example for a secured form which adds a lead to the CRM

32.2 How to add/edit a button within the forms

32.3 How to resolve problem "Webforms shows blank page"

32.4 How to customize vtiger Web Forms

32.5 How to call custom fields in a webform

33 Field Formulas

33.1 How to add a Formula expression for a Custom Field

33.2 How to remove Formula expressions for a Custom Field

34 Related Links:

Tools used for Analysis

phploc
phpdcd
dbdiff

Interesting Stuff

(this itself provides the link url, and the replica of the landing page)

All links to important tables and data, stuff which is not worth to just add to the pages should be here. This is data is to be stored on a DMZ Server which public can access

Stuff will be

Example code scripts

Database comparisons

Script Diffs

Other stuff that will come up

<http://www.rdlit.com/why-vtiger-sucks.html>

<http://www.rdlit.com/why-vtiger-is-a-great-crm.html>