

Leveraging the Open Source Applications Ecosystem with IBM i

by *Enrico Zimuel*
Senior Software Engineer - Zend Technologies

Email: *enrico@zend.com*

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About me



- **Software Engineer since 1996**
 - C/C++, Java, Perl, PHP, Javascript, VBScript, etc.
- **Enjoying PHP since 1999**
- **PHP Engineer at Zend Technologies**
 - Senior Consultant (since 2008)
 - Zend Framework Core Team (from April 2011)
- **BSc honors in Computer Science and Economics**
- **PHP 5 Certified Engineer, ZF Certified Engineer**
- **More info about me: <http://www.zimuel.it>**

Agenda

- **Business and Open source**
- **PHP and the open source ecosystem**
- **PHP on IBM i**
- **Zend Server CE / Zend Server on IBM i**
- **Drupal use case:**
 - how to install Drupal on IBM i using Zend Server CE

Business and Open source

- **Main points of the Gartner's report:**
 - By 2013, a majority of Linux deployments will have **no real software total cost of ownership (TCO)**.
 - By 2012, software as a service (SaaS) will eclipse open source as the **preferred IT cost-cutting method**.
 - By 2012, more than **90%** of enterprises will use open source in direct or embedded forms,
 - By 2011, open source will dominate software infrastructure for **cloud-based providers**, according to another of the report's predictions.

- **More commercial open source**
 - Canonical, Acquia, Zend Technologies
- **More business model**
 - Red Hat, Alfresco, Pentaho, SugarCRM, MySQL, etc
- **More acquisitions**
 - Sun acquired MySQL for \$1 billion
- **More power in the user community**
 - Open source becomes more widespread in corporations
- **More mainstream**
 - Open source database adoption growing at 50 percent in 2008

- **What makes open source attractive?**
 - **Freedom from VENDOR lock-in**
 - **Lower costs**
 - **Flexibility**
- **Top 5 barriers to open source adoptions**
 - 1) Lack of internal technical skills
 - 2) Unfamiliarity with open source solutions
 - 3) Lack of formal commercial vendor support
 - 4) Legal concerns about licensing
 - 5) Does not conform to internal policies

PHP and Open source

What is PHP?

- **PHP ("PHP: Hypertext Preprocessor")** is an open source scripting language originally designed for web development
- Originally created by **Rasmus Lerdorf** in 1995
- **Zeev Suraski** and **Andi Gutmans**, rewrote the parser in 1997 (PHP 3)
- **Suraski** and **Gutmans** founded the Zend Technologies company in 1999
- PHP 5 is fully **Object Oriented**



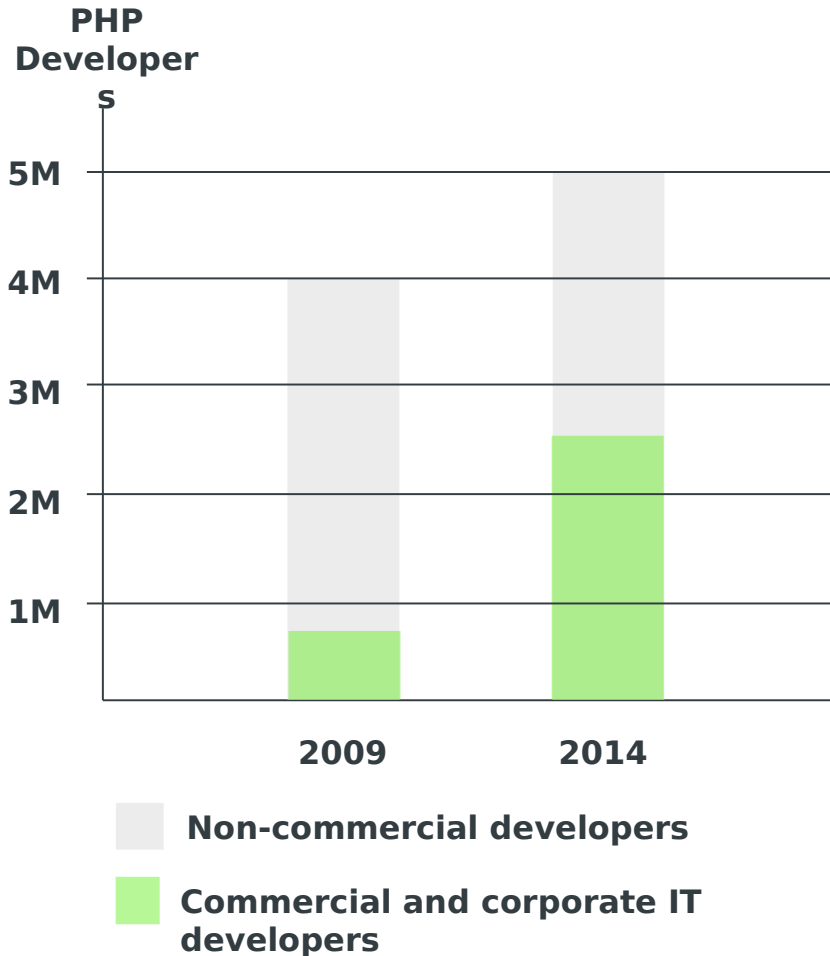
PHP: a global phenomenon

- 30% of the Internet runs on PHP

- 37% growth in PHP developers

- **Mass**
- **Impact**

Enterprise adoption of PHP



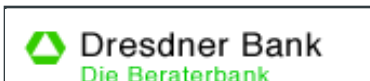
“Commercial and corporate IT developers will account for more than 2 million PHP community members—growing from 20% to 50% of the worldwide PHP developer population.”

Gartner Research Note: “PHP: Past, Present and Future”, Dec. 2nd, 2009

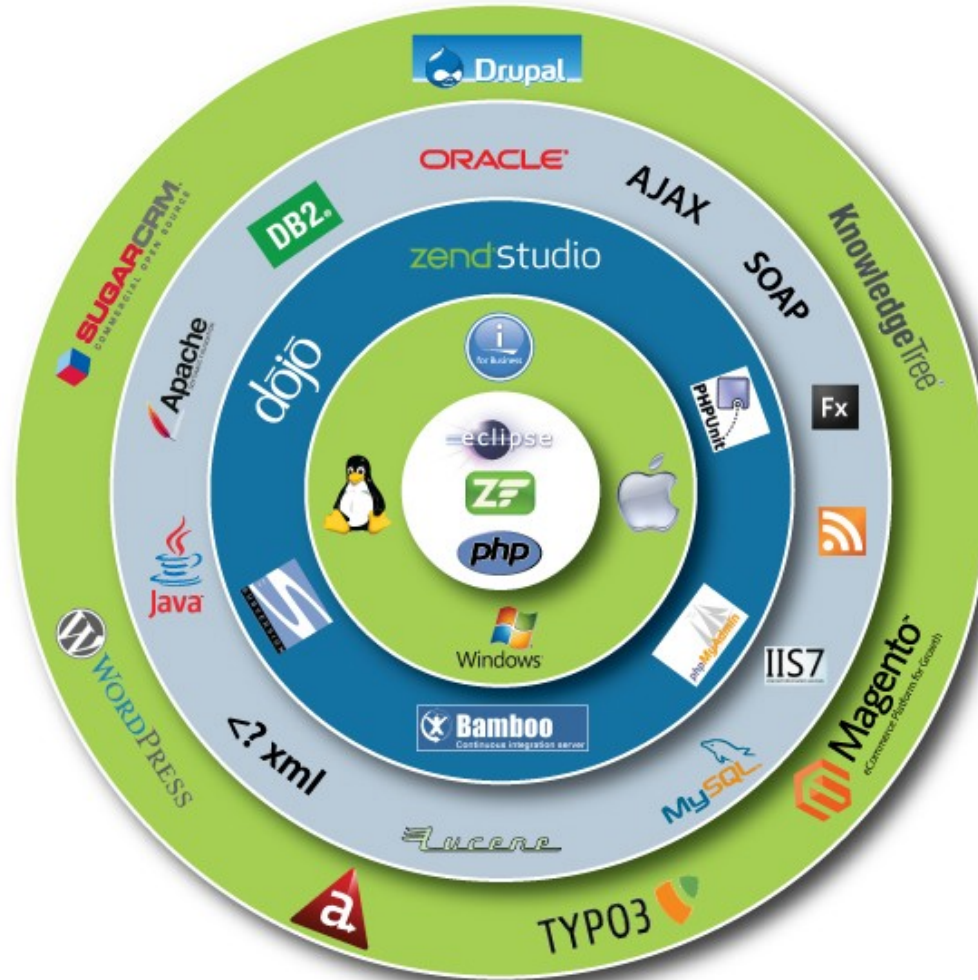
Enterprises use PHP



Deployed PHP sites and projects



PHP ecosystem



Business ready open source projects in PHP

- **Content Management Systems (CMS):**
 - Drupal, Joomla!, Wordpress, Wiki
- **Customer relationship management (CRM):**
 - SugarCRM, Vtiger, XRMS
- **E-Commerce:**
 - Magento, PrestaShop, OpenCart, ZenCart, osCommerce
- **Help desk, Project management, bug tracking:**
 - Mantis, ZenTrack, OneOrZero AIMS, eTicket
- **PHP Frameworks:**
 - Symfony, Zend Framework, CakePHP, CodeIgniter, etc

PHP on IBM i

Why PHP on IBM i?



Low Learning Curve

Rapid
Innovation



Easy Integration into
Heterogeneous Environments

Run an
Agile
Business



Robust, Multi-Platform,
High-Performance, Scalable,
Secure

Proven
Deployment



Vibrant Community

PHP on IBM i

Leverage Existing Infrastructure to Develop & Run Dynamic Web Applications Easily



- Powerful , Flexible, & Fastest Growing Web Development Language
- Native on i5/OS
- Backing & Support of IBM
- Controlled/Driven by PHP Community
- Easy to Use & Fast to Deploy
- Supports Heterogeneous Environments
- Powerful Integration Capabilities

Application Modernization

Use PHP to web-enable green screen applications, utilizing existing data & business logic without rewriting application

Access RPG Programs & Data as Web Services

Package programs and data as web services and make available to other web applications

Consolidate Data in DB2/400

Move PHP applications that are running on Windows or Linux that access data in DB2 to run in i5/OS to speed up or reduce complexity of the applications

Access DB2/400 Data via Browser

Easily access and interact with DB2/400 data using a standard web browser

New/Packaged Web Application on i5/OS

Create new applications with PHP on i5/OS or leverage thousands of existing Open Sources applications

Zend Server: how to run PHP on IBM i

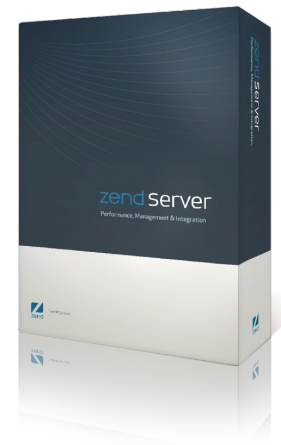
- **Zend Server is the IBM certified PHP server**
- **Contains the PHP engine to run PHP applications on a IBM i machine**
- **Enterprise features:**
 - Monitoring system
 - Code Tracing
 - Performance improvement
 - Job Queue
 - Support



The PHP Company

Zend Server for IBM i editions

- **Zend Server Community Edition (free)**
 - PHP Engine 2
 - Zend Optimizer+ (PHP opcode accelerator)
 - Zend Data Cache
 - i5 Toolkit
 - Java Bridge
 - initial year of free support
- **Zend Server (in addition to CE features):**
 - Event Monitor, Code Tracing
 - 5250 Bridge
 - Page Caching
 - Job Queue
 - Support (24x7x365)



IBM i supported systems

- **Zend Server runs on the following IBM i OS:**
 - V5R4
 - i6.1
 - i7.1
- **Zend Server CE** is preloaded with IBM i 5.4, 6.1 and 7.1 starting in April 2010. The first year of Silver support (Web-based) from Zend is provided for no additional charge. To receive support and product updates, customers must register on www.zend.com

Use case: How to build an intranet on IBM i using Drupal

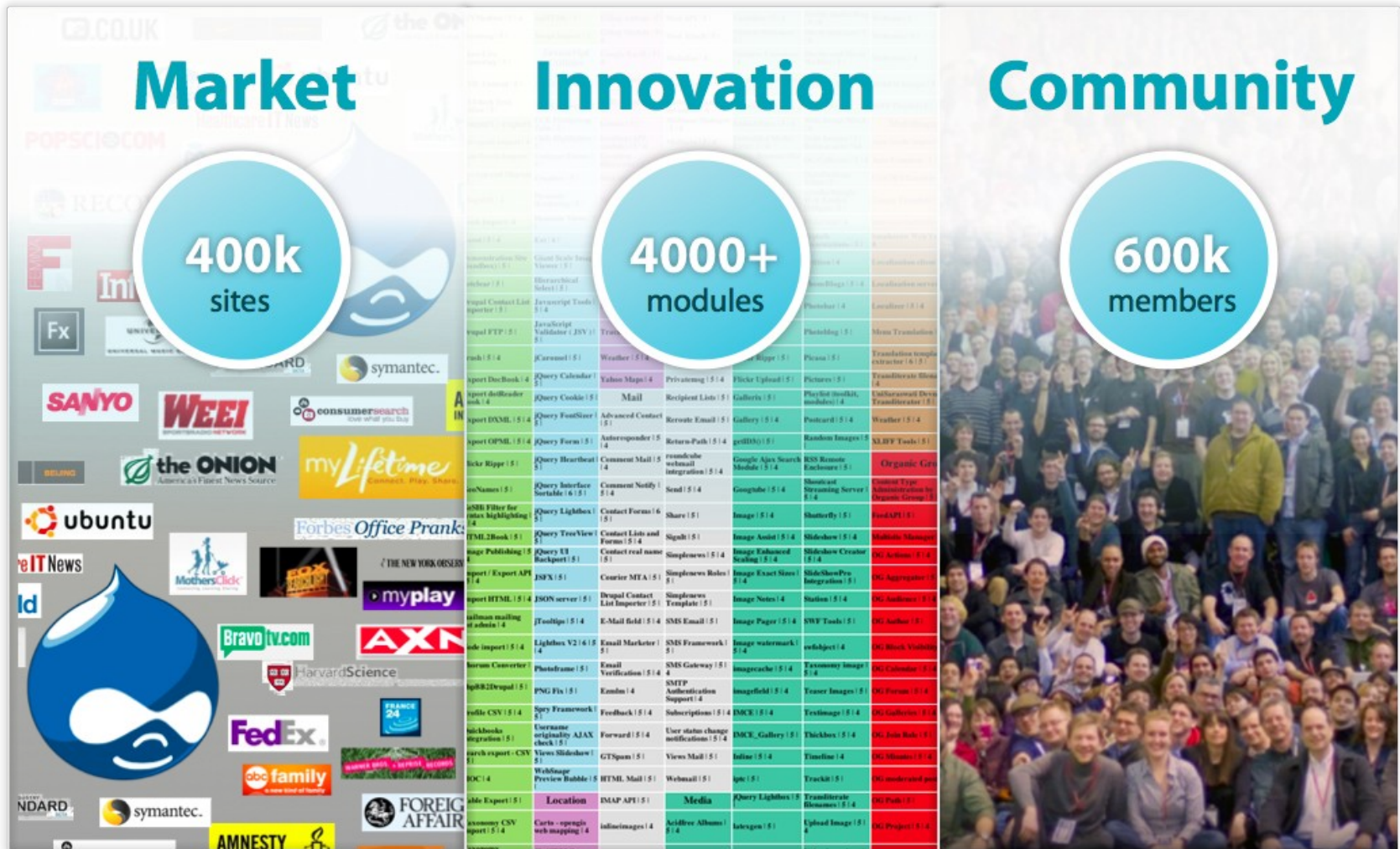


What is Drupal?

- **Drupal is a CMS written in PHP**
- **Open source project, GNU GPL license**
- **Professional CMS, built by Dries Buytaert, the founder of Acquia**
- **<http://drupal.org/>**



The numbers of Drupal



Drupal: main features

- **With Drupal you can build:**
 - Ecommerce
 - Blog
 - Editing with different users
 - Forum
 - Peer-to-peer networking
 - Newsletters
 - Podcasting
 - Images gallery
 - File uploads and downloads
 - etc

Built an intranet for your company using Drupal

- **Drupal** is a powerful CMS to build a company intranet
- Easy and rapid installation: **10 minutes!**
- Expand the features of **Drupal** using the thousands extensions available in the community
- Customize the functionalities of Drupal using the API and the i5 toolkit of Zend Server to integrate the CMS in your environment

Drupal installation

Requirements: MySQL

- **Why install MySQL on IBM i?**
 - **The majority of the open source applications in PHP use MySQL (for instance, Drupal)**
 - **It's free and it's a powerful DBMS**
 - **You can use the DB2 storage engine for MySQL**
 - **Data are written in DB2**
 - **The applications use the MySQL API**
- **MySQL is included in Zend Server for IBM i**

Drupal runs natively on DB2?

- **Theoretically speaking: YES!**
- **In practice, there is a proposal for a DB2 plugin in Drupal but is still in testing:**
 - <http://drupal.org/node/165788>
 - <http://sourceforge.net/projects/siren/>
- **In conclusion if you want to run Drupal using DB2 on IBM i you have to test it before!**

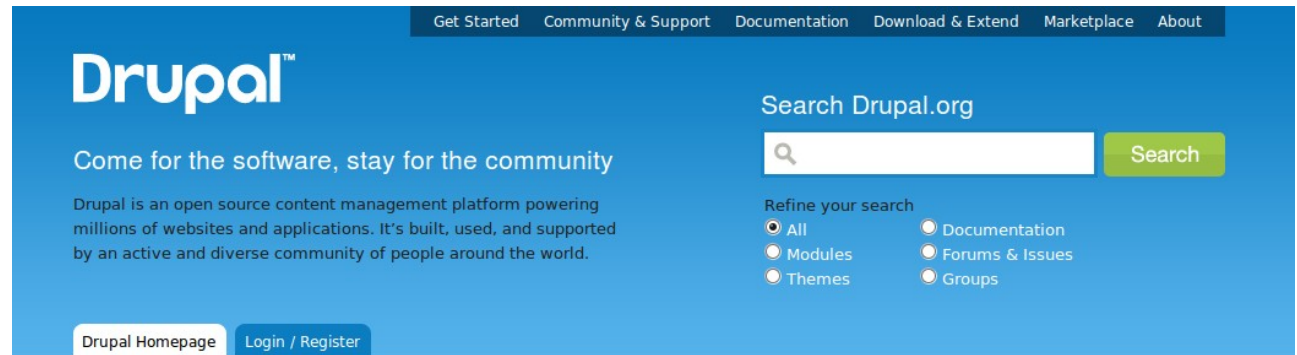
Drupal installation

- **Download Drupal**
- **Copy of the .tar file on IFS**
- **Untar**
- **Create the MYSQL database**
- **Configure the settings.php**
- **Run the installation script**
- **That's it!**



Drupal download

- Go to <http://drupal.org>
- Download the **.tar.gz** package



The screenshot shows the Drupal.org homepage. At the top, there is a navigation menu with links: Get Started, Community & Support, Documentation, Download & Extend, Marketplace, and About. The main heading is "Drupal™" with the tagline "Come for the software, stay for the community". Below this, it states "Drupal is an open source content management platform powering millions of websites and applications. It's built, used, and supported by an active and diverse community of people around the world." There is a search bar with the text "Search Drupal.org" and a "Search" button. Below the search bar, there are radio buttons to "Refine your search" with options: All (selected), Modules, Themes, Documentation, Forums & Issues, and Groups. At the bottom of the page, there are buttons for "Drupal Homepage" and "Login / Register".

Why Choose Drupal?

Use Drupal to build everything from personal blogs to enterprise applications. Thousands of add-on modules and designs let you build any site you can imagine.

Drupal is free, flexible, robust and constantly being improved by hundreds of thousands of passionate people from all over the world. Join us!

[Get Started with Drupal](#)

Sites Made with Drupal



The screenshot shows the Gospel Music Channel website, which is built with Drupal. The page features a header with the "Gospel Music Channel" logo and navigation links. The main content area includes a large banner for "CHRISTMAS WITH A CAPITAL C" and a list of upcoming events, such as "Christmas with a Capital C Tonight 9 PM ET". The website is visually appealing and well-organized.

Gospel Music Channel - watchgmctv.com

Drupal is used by some of the biggest sites

Develop with Drupal

9,810 Modules This week
1,116 Themes 2,472 Code commits
7,986 Developers 6,648 Issue comments

[Drupal Core](#)
[Security Info](#)
[Developer Docs](#)
[API Docs](#)



The banner features the Drupal logo and the text "GET STARTED" next to a large number "7", indicating the current version of Drupal.

Copy on IFS and untar

- Copy the .tar.gz on IFS (for instance, using FTP)
 - Suggest to copy in the folder:
/www/zendsvr/htdocs/
- Execute **QP2TERM** to open the PASE shell
- Run the command:
tar -xvf drupal-x.xx.tar.gz
- Where: x = extract, v = verbose, f = filename
- The **tar** command is a part of the LP requirements to install Zend Server

Copy of the settings.php

- Copy the file default.settings.php into settings.php:
 - **cp default.settings.php settings.php**
- Change the permission:
 - **chmod a+x settings.php**

Create the database in MySQL

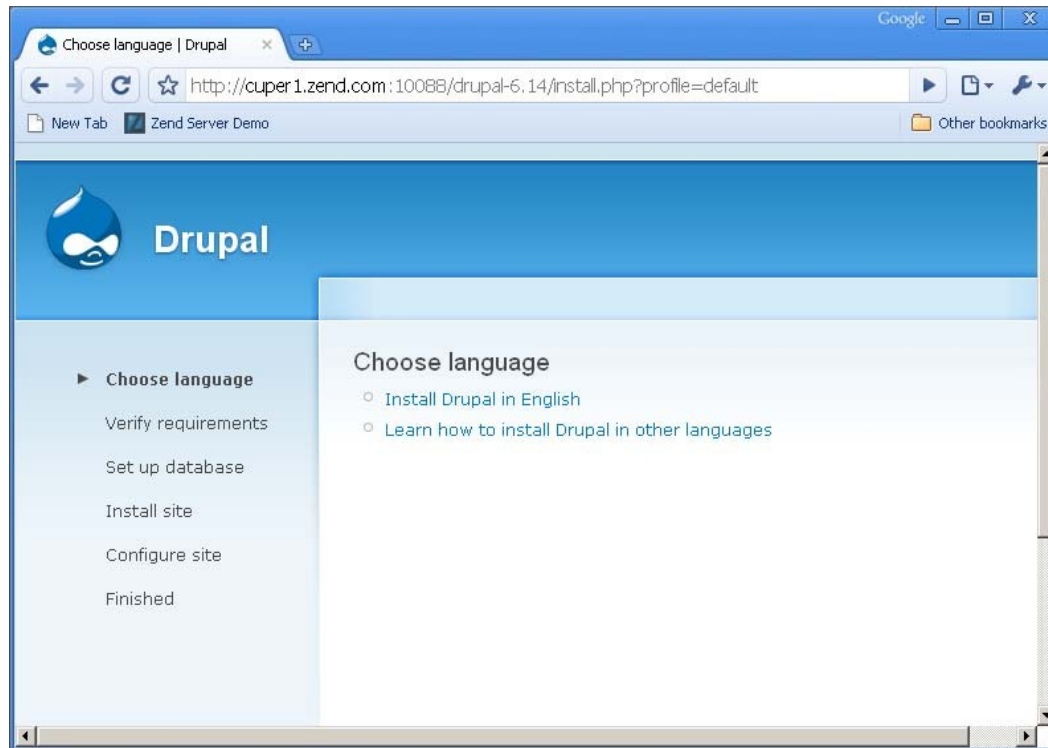
- From the shell PASE, go to the bin folder of MySQL:
 - **cd /usr/local/mysql/bin**
- Run the MySQL client
 - **mysql -u root**
- Create the database for drupal:
 - **create database drupal;**

Create the database in MySQL (2)

- Add a new MySQL user (for instance, drupalcon):
 - **create user 'drupalcon'@'localhost' identified by 'password';**
- Assign to the user all the grant for the database:
 - **grant all privileges on drupal.* to 'drupalcon'@'localhost';**
 - **flush privileges;**

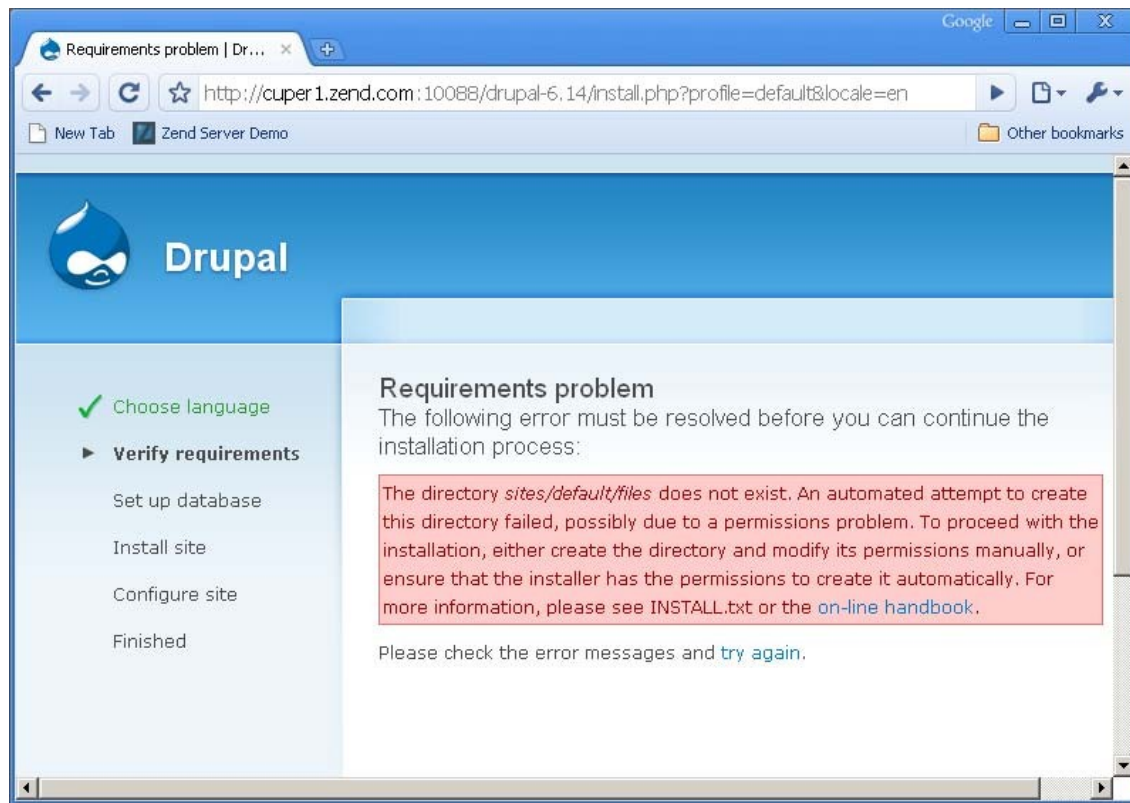
Drupal configuration

- Go to the web page: <http://server:10088/drupal-x.xx> where server is the IP address of your server and x.xx is the version of Drupal



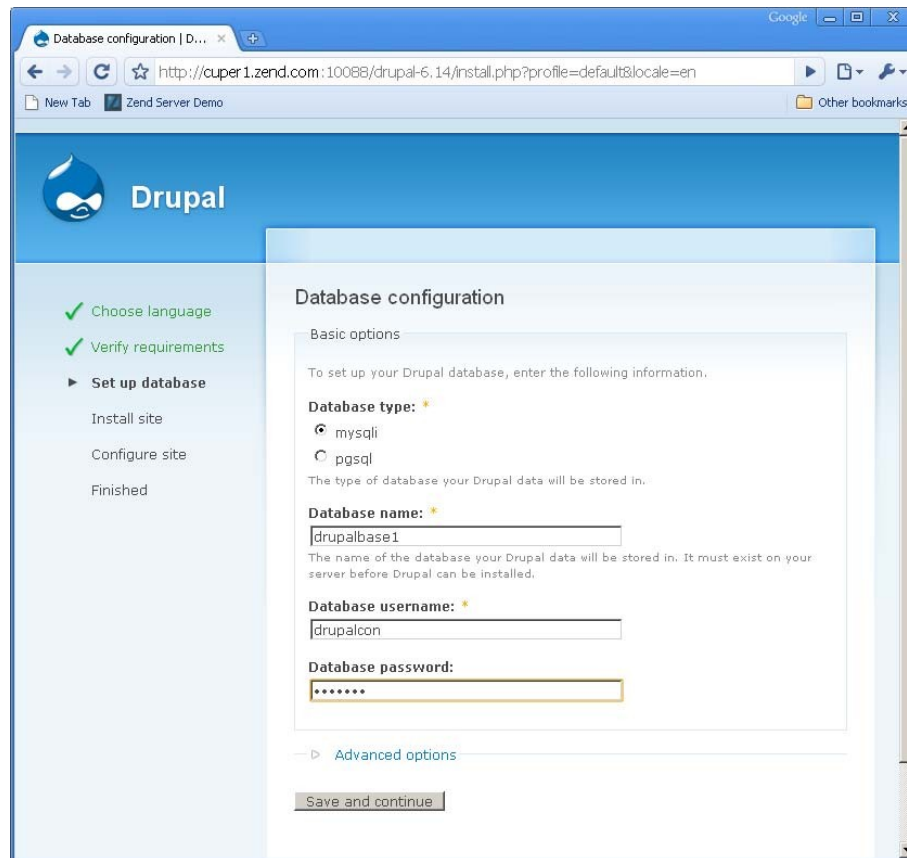
Change the permission in the root folder

- **CHGAUT OBJ('/www/zendsvr/htdocs/drupal-x.xx')
USER(QTMHHTTP) DTAAUT(*RWX) SUBTREE(*ALL)**



Configure the database access


- **Database name: drupal, Username: drupalcon**



Database configuration | D... x

http://cuper1.zend.com:10088/drupal-6.14/install.php?profile=default&locale=en

New Tab Zend Server Demo Other bookmarks

 **Drupal**

- ✓ Choose language
- ✓ Verify requirements
- ▶ **Set up database**
 - Install site
 - Configure site
 - Finished

Database configuration

Basic options

To set up your Drupal database, enter the following information.

Database type: *

- mysql
- postgresql

The type of database your Drupal data will be stored in.

Database name: *

drupalbase1

The name of the database your Drupal data will be stored in. It must exist on your server before Drupal can be installed.

Database username: *

drupalcon

Database password:

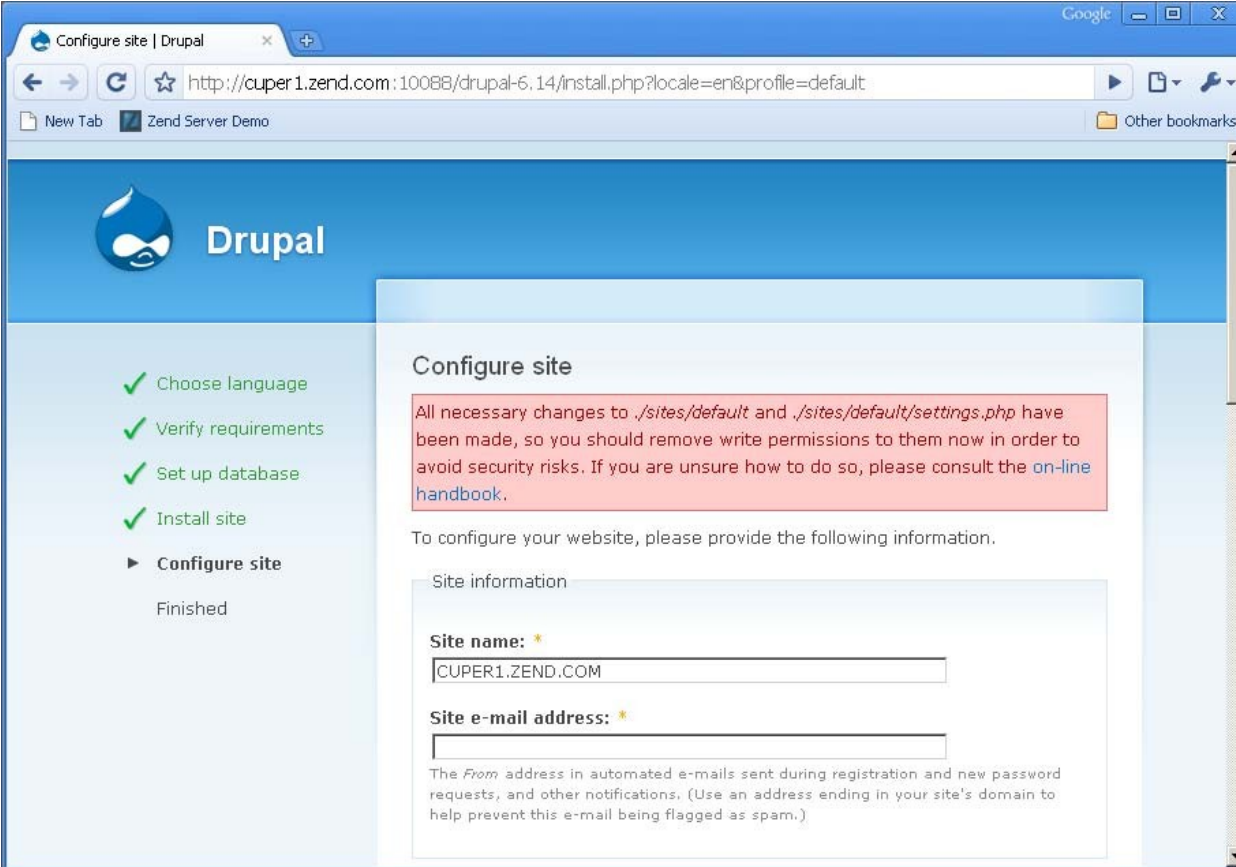
.....

▶ Advanced options

Save and continue

Name of the intranet site

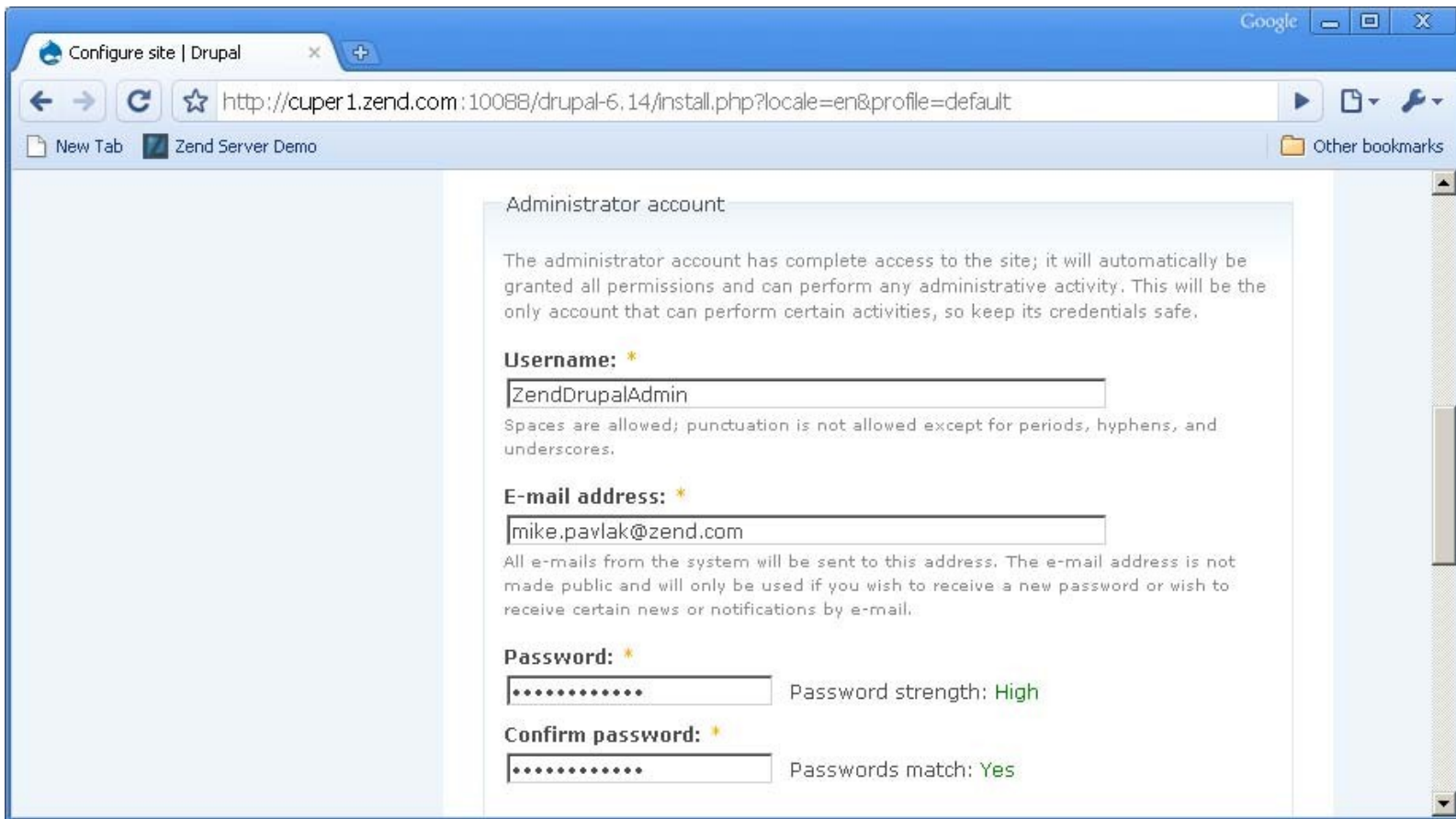
- Choose a name for your intranet web site



The screenshot shows a web browser window titled "Configure site | Drupal" with the URL `http://cuper1.zend.com:10088/drupal-6.14/install.php?locale=en&profile=default`. The page features the Drupal logo and a progress list on the left: "Choose language", "Verify requirements", "Set up database", "Install site", and "Configure site" (which is expanded to show "Finished"). The main content area is titled "Configure site" and contains a red warning box: "All necessary changes to `./sites/default` and `./sites/default/settings.php` have been made, so you should remove write permissions to them now in order to avoid security risks. If you are unsure how to do so, please consult the [on-line handbook](#)." Below this, it says "To configure your website, please provide the following information." and "Site information". There are two input fields: "Site name: *" with the value "CUPER1.ZEND.COM" and "Site e-mail address: *" which is empty. A note at the bottom explains the importance of the e-mail address for automated messages.

Configure the admin account

- Configure the admin account:



The screenshot shows a web browser window with the title "Configure site | Drupal". The address bar contains the URL: `http://cuper1.zend.com:10088/drupal-6.14/install.php?locale=en&profile=default`. The browser tabs include "New Tab" and "Zend Server Demo". The main content area is titled "Administrator account" and contains the following text: "The administrator account has complete access to the site; it will automatically be granted all permissions and can perform any administrative activity. This will be the only account that can perform certain activities, so keep its credentials safe."

Username: *

Spaces are allowed; punctuation is not allowed except for periods, hyphens, and underscores.

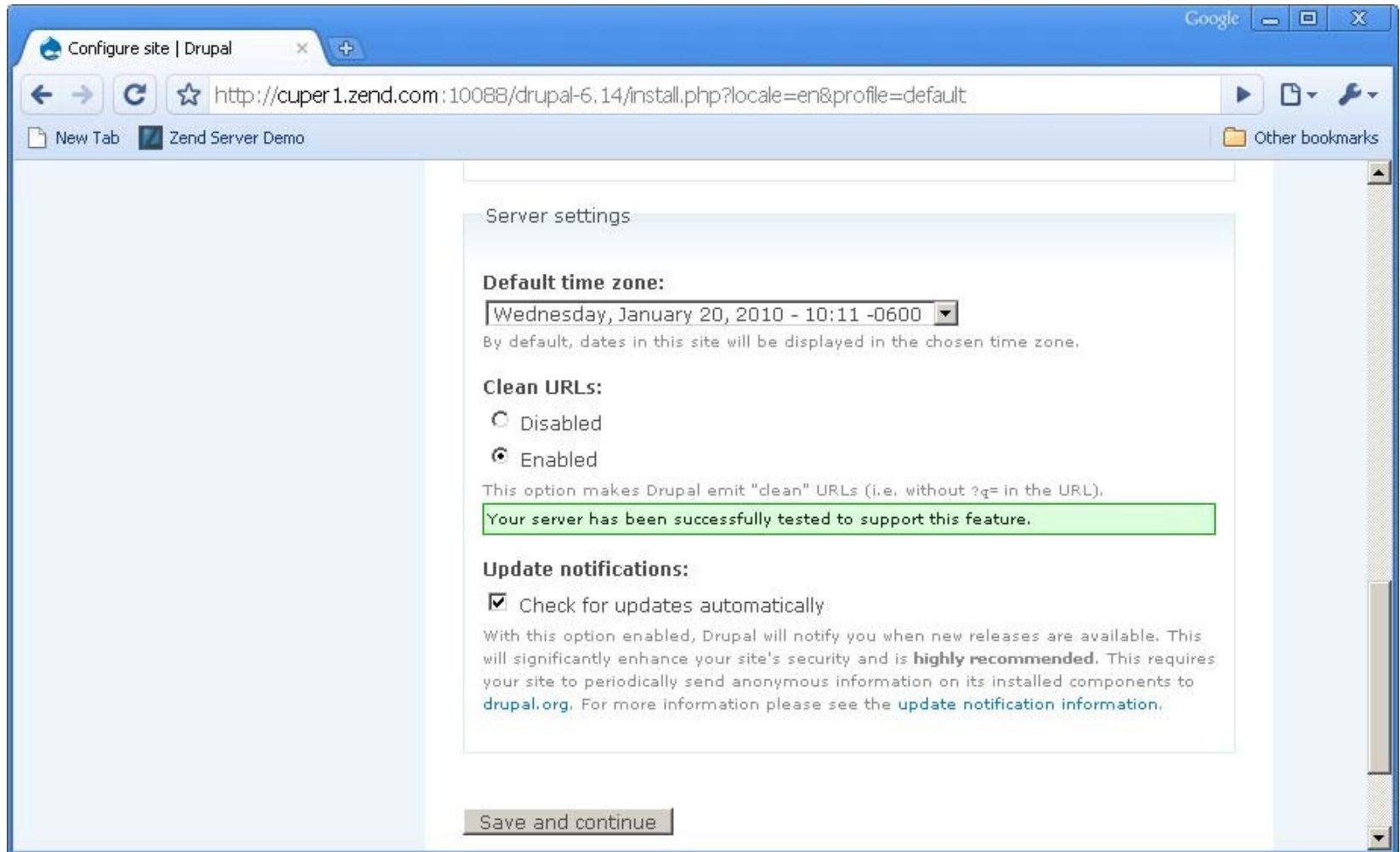
E-mail address: *

All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.

Password: *
 Password strength: **High**

Confirm password: *
 Passwords match: **Yes**

Configure the time zone and the update



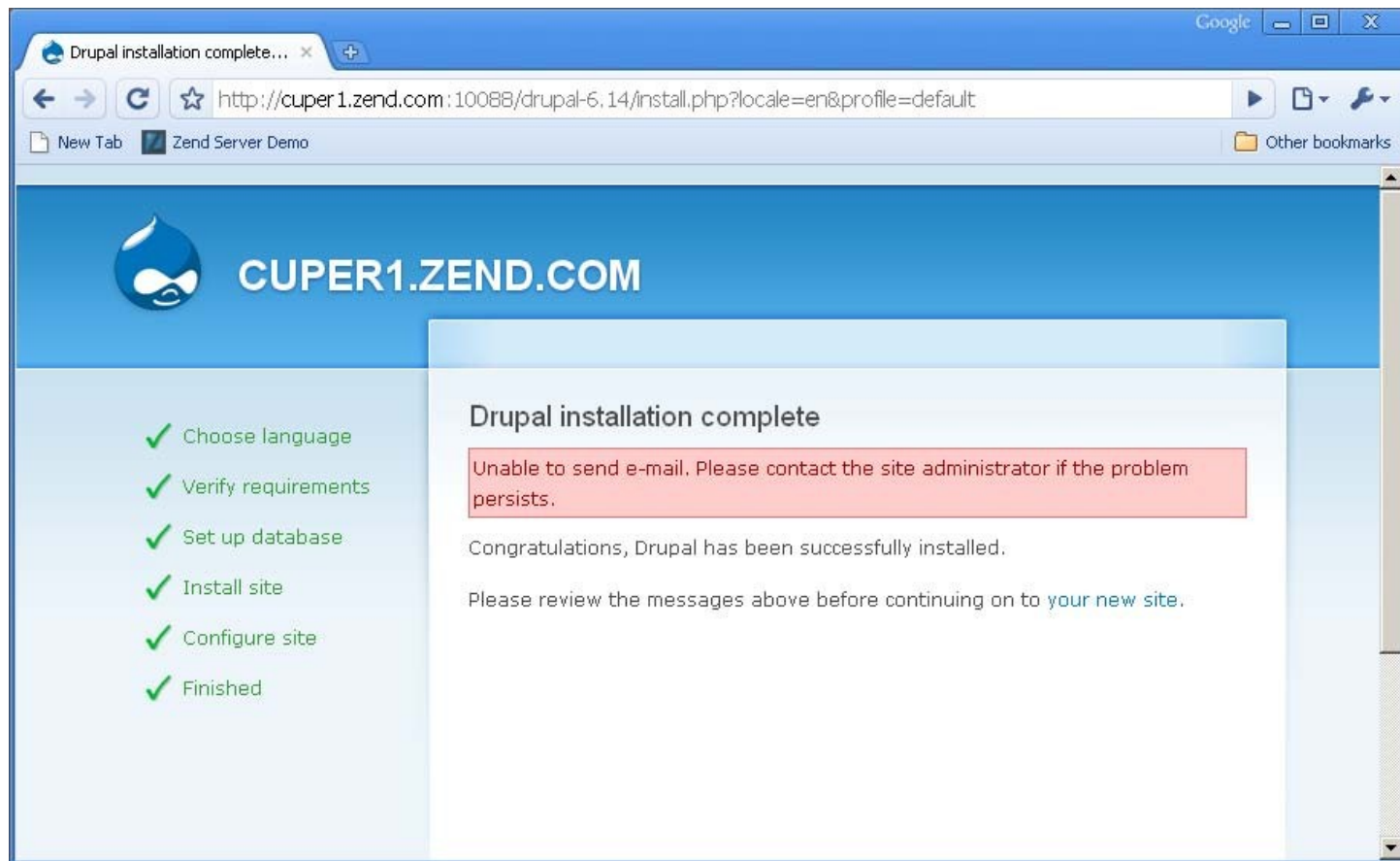
The screenshot shows a web browser window titled "Configure site | Drupal" with the URL `http://cuper1.zend.com:10088/drupal-6.14/install.php?locale=en&profile=default`. The browser's address bar and tabs are visible. The main content area displays the "Server settings" section, which includes:

- Default time zone:** A dropdown menu is set to "Wednesday, January 20, 2010 - 10:11 -0600". Below it, a note states: "By default, dates in this site will be displayed in the chosen time zone."
- Clean URLs:** Two radio buttons are present: "Disabled" (unselected) and "Enabled" (selected). Below them, a note says: "This option makes Drupal emit 'clean' URLs (i.e. without ?q= in the URL)." A green message box below this section reads: "Your server has been successfully tested to support this feature."
- Update notifications:** A checkbox labeled "Check for updates automatically" is checked. Below it, a note explains: "With this option enabled, Drupal will notify you when new releases are available. This will significantly enhance your site's security and is **highly recommended**. This requires your site to periodically send anonymous information on its installed components to [drupal.org](#). For more information please see the [update notification information](#)."

At the bottom of the configuration area, there is a "Save and continue" button.

End of the installation

- Check the message at the end of the installation



Resources

- **Business and open source:**
 - <http://www.opensourcestrategies.org/>
 - <http://www.futureopensource.net/>
 - **Business models for open source software**
 - **Il business open source: strategie, opportunità e minacce (italian)**
- **Open source projects in PHP:**
 - **Drupal**, <http://drupal.org/>
 - **Wordpress**, <http://wordpress.org/>
 - **Joomla!**, <http://www.joomla.org/>
 - **Magento e-commerce**, <http://www.magentocommerce.com/>
 - **SugarCRM**, <http://www.sugarcrm.com/crm/>

Resources (2)

- **PHP and IBM i:**
 - **Zend Server for IBM i**
 - **Zend and IBM i**
 - **PHP Toolkit for i5/OS**
 - **Developing PHP Applications for IBM Data Servers**
 - **Recommended PHP reading list**
 - **Modernize your IBM i applications**
 - **What's New with PHP on IBM i?**
 - **Mike Pavlak's Blog**
 - **Alan Seiden's Information Technology Blog**

Questions?



Thank you!

More info:

<http://www.zend.com>

<http://www.php.net>



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