



The PHP Company

# Bring your intranet to the IBM i With Drupal and Zend Server

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# PHP Sessions

Session 1-9:00

- PHP101

Session 2-10:30

- PHP Arrays for the RPG Programmer

11:45

- Lunch

Session 3-12:30

- PHP Function Junction

Session 4-1:45

- PHP Toolkit Functions

Session 5-3:00

- Build your Intranet on IBM i for Free

4:00

- Goodies!

## Audience

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- Manager looking for Intranet/place to put stuff
- Developers looking to leverage PHP
- Excess CPW
- Avoid buying more Intel servers
- Executive looking for new home base for apps

# Agenda

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- Zend Server
- MySQL on IBM i
- Review of Drupal
- Drupal Installation
- Drupal in action
- Implement cron (batch) scripts with Zend Server Job Queue
- Wrap-up

# Questions?

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- If you have a question you can
  - ▶ Type in the Chat panel

- Follow us!



▶ <http://bit.ly/cjueZg> (Zend Technologies or search for Zend)



▶ <http://twitter.com/zend>

# Resources

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- Recorded Webinars

- ▶ <http://www.zend.com/en/resources/webinars/i5-os>

- Zend Server for IBM i main page, link to downloads

- ▶ <http://www.zend.com/en/products/server/zend-server-ibm-i>

- Zend Server manual:

- ▶ PDF: <http://www.zend.com/topics/Zend-Server-5-for-IBMi-Reference-Manual.pdf>

- ▶ Online: [http://files.zend.com/help/Zend-Server-5/zend-server.htm#installation\\_guide.htm](http://files.zend.com/help/Zend-Server-5/zend-server.htm#installation_guide.htm)

# Drupal, Zend Server and IBM i

[www.zend.com](http://www.zend.com)

MySQL

# Why run MySQL when I have DB2?

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- Access to thousands of Open Source Apps
- Easy to use Database
- Open the door to new report options
  - ▶ Zend Server simultaneous connections to:
    - DB2
    - MySQL
    - Microsoft SQL Server
    - PHP Toolkit (RPG & COBOL programs & more)
- **DB2 Storage Engine**
  - ▶ Application thinks it's writing to MySQL
  - ▶ Data store resides in DB2
  - ▶ RPG applications can now access data!



# Where do I get it?

- Bundled in Zend Server for IBM i
  - ▶ Convenient installation
  - ▶ Use QSECOFR!
- Also available at MySQL website



Generally Available (GA) Releases | Development Releases

### MySQL Community Server 5.1.48

Select Platform:

IBM i/OS

IBM i5/OS (PowerPC, 32-bit), Compressed TAR Archive	5.1.48	108.3M	<a href="#">Download</a>
<small>(mysql-5.1.48-i5os-power-32bit.tar.gz)</small>			
IBM i5/OS (PowerPC), Compressed TAR Archive	5.1.48	111.2M	<a href="#">Download</a>
<small>(mysql-5.1.48-i5os-power-44bit.tar.gz)</small>			
IBM i5/OS (PowerPC, 32-bit), Save File (SAVF)	5.1.48	153.4M	<a href="#">Download</a>
<small>(mysql-5.1.48-i5os-power-32bit.savf)</small>			
IBM i5/OS (PowerPC), Save File (SAVF)	5.1.48	158.0M	<a href="#">Download</a>
<small>(mysql-5.1.48-i5os-power-44bit.savf)</small>			

# Drupal, Zend Server and IBM i

[www.zend.com](http://www.zend.com)

Drupal

# Drupal is popular



# Statistics

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- Nearly 1/3<sup>rd</sup> of the Internet is running PHP
- About 1% of all internet websites are running Drupal
- Drupal is second only to WordPress as a content management site ([backendbattles.com](http://backendbattles.com))

# History of Drupal (Dutch for water droplet)



- Dries Buytaert PHD dissertation starts Drupal by accident
- 1999: Developed a message board while studying LAN tech
- 2000: Received a lot of interest from folks
- 2001: Turned it loose as open source Drupal
- 2007: Forms Acquia
- 2008: Dries defends his dissertaion
- 2009: Acquia helps launch Whitehouse.gov
- Today: Current project lead



# Drupal itself

- **Current version “Core” 6.19**
  - ▶ Available at drupal.org
  - ▶ Loads of features like: blogs, forums, RSS, Generic content, etc.
  - ▶ Key enhancements: Simplified installer, Language support, Update status and more
- **Next version 7**
  - ▶ (no ETA, as of yet...)
  - ▶ Heavy focus on usability
  - ▶ Improving platform for developers
  - ▶ Some consider Drupal 7 another framework



# DrupalGardens

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- Runs on Drupal 7
- Hosted solution with three pricing tiers starting at free!
- No need to buy/run server
- Drupal in the cloud!
- Currently in beta
- Should be available around the same time as Drupal 7



# Drupal, Zend Server and IBM i

[www.zend.com](http://www.zend.com)

## Drupal Installation

# Drupal Installation Steps

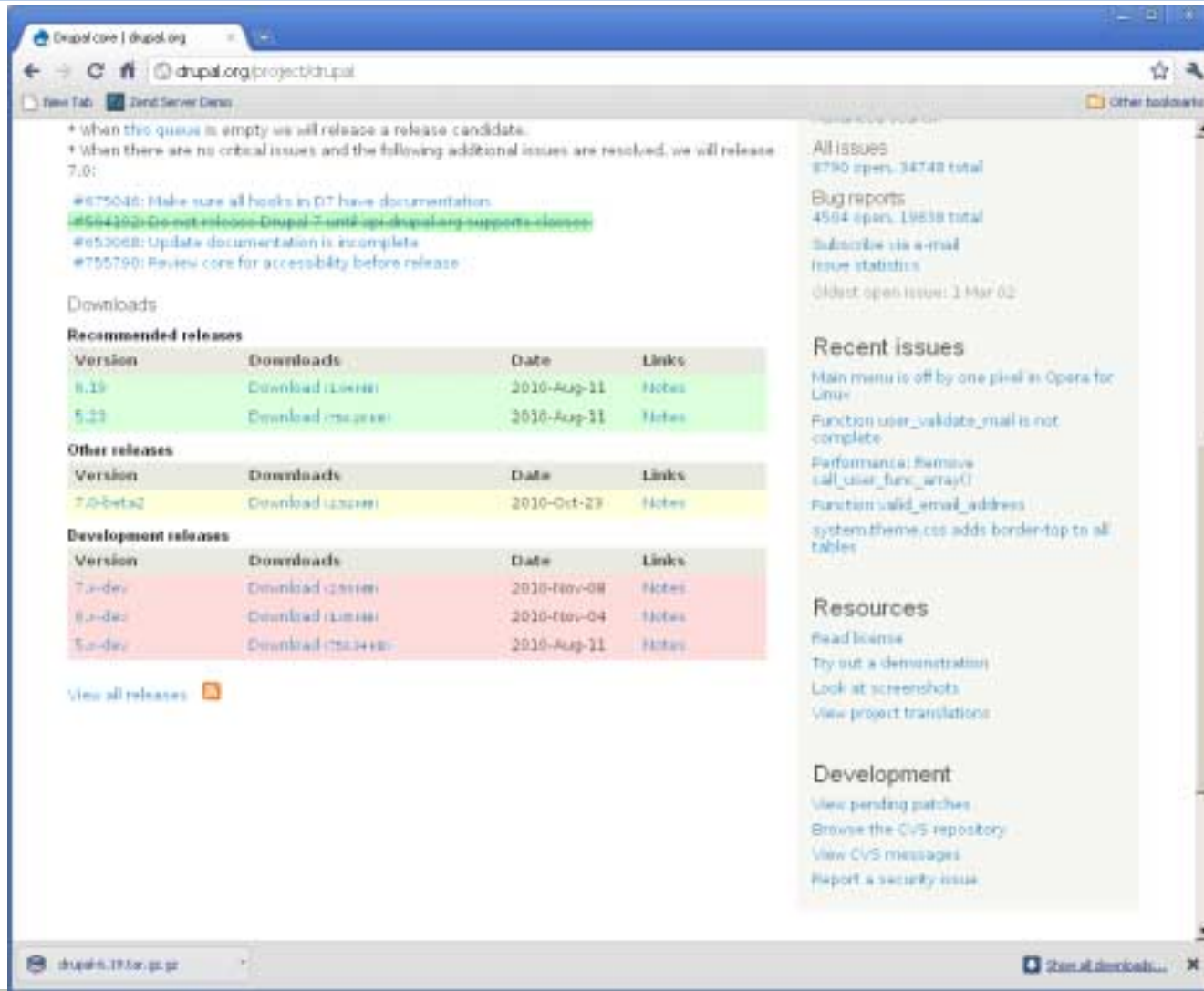
---

- Download drupal & unzip
- Move to the IFS
- Untar
- Create database
- Settings.php
- Run install script
- Have fun!

# Download Drupal - Login first

The screenshot shows the Drupal.org homepage. At the top, there's a navigation bar with links for Documentation, Download, Support, Forum, Contribute, and Contact. Below this is a search bar. The main content area features a large banner for 'DRUPAL CON CPH' (Drupal Copenhagen) with a date of August 23rd-27th. To the right of the banner is a section titled 'Download' with a list of latest releases: Drupal 6.17 and Drupal 5.22. Below the releases are links for Contributions, Modules, Themes, and Translations. In the bottom right corner, there is a 'User login' form with fields for 'Username: \*' and 'Password: \*', a 'Log in' button, and links for 'Create new account' and 'Request new password'. A red arrow points to the 'Username' field. On the left side, there is a news article titled 'Drupal 6.17 released' by Gábor Hojtsy, dated June 2, 2010, with a 'Download Drupal 6.17' button.

# Download Drupal 6...



The screenshot shows the Drupal.org project page. The main content area features a list of releases categorized into Recommended, Other, and Development releases. Each category includes a table with columns for Version, Downloads, Date, and Links. The 'Recommended releases' table highlights versions 6.19 and 5.23. The 'Other releases' table highlights version 7.0-beta2. The 'Development releases' table lists versions 7.x-dev, 6.x-dev, and 5.x-dev. A sidebar on the right contains sections for 'All issues', 'Bug reports', 'Recent issues', and 'Resources'. The browser's address bar shows 'drupal.org/project/drupal'.

When the queue is empty we will release a release candidate.  
When there are no critical issues and the following additional issues are resolved, we will release 7.0:

- #675046: Make sure all hooks in DT have documentation.
- #654392: Do not release Drupal 7 until [http://drupal.org/support/issues/654392](#)
- #653068: Update documentation is incomplete
- #705790: Review core for accessibility before release

Downloads

**Recommended releases**

Version	Downloads	Date	Links
6.19	<a href="#">Download (1.6M)</a>	2010-Aug-11	<a href="#">Notes</a>
5.23	<a href="#">Download (1.5M)</a>	2010-Aug-11	<a href="#">Notes</a>

**Other releases**

Version	Downloads	Date	Links
7.0-beta2	<a href="#">Download (2.2M)</a>	2010-Oct-23	<a href="#">Notes</a>

**Development releases**

Version	Downloads	Date	Links
7.x-dev	<a href="#">Download (2.8M)</a>	2010-Nov-08	<a href="#">Notes</a>
6.x-dev	<a href="#">Download (1.8M)</a>	2010-Nov-04	<a href="#">Notes</a>
5.x-dev	<a href="#">Download (752.4 KB)</a>	2010-Aug-11	<a href="#">Notes</a>

[View all releases](#)

**All issues**  
8790 open, 34748 total

**Bug reports**  
4504 open, 19838 total

Subscribe via e-mail  
Issue statistics  
Oldest open issue: 1 Mar 02

**Recent issues**

- Main menu is off by one pixel in Opera for Linux
- Function user\_validate\_mail is not complete
- Performance: Remove call\_user\_func\_array()
- Function valid\_email\_address
- system.theme.css adds border-top to all tables

**Resources**

- [Read license](#)
- [Try out a demonstration](#)
- [Look at screenshots](#)
- [View project translations](#)

**Development**

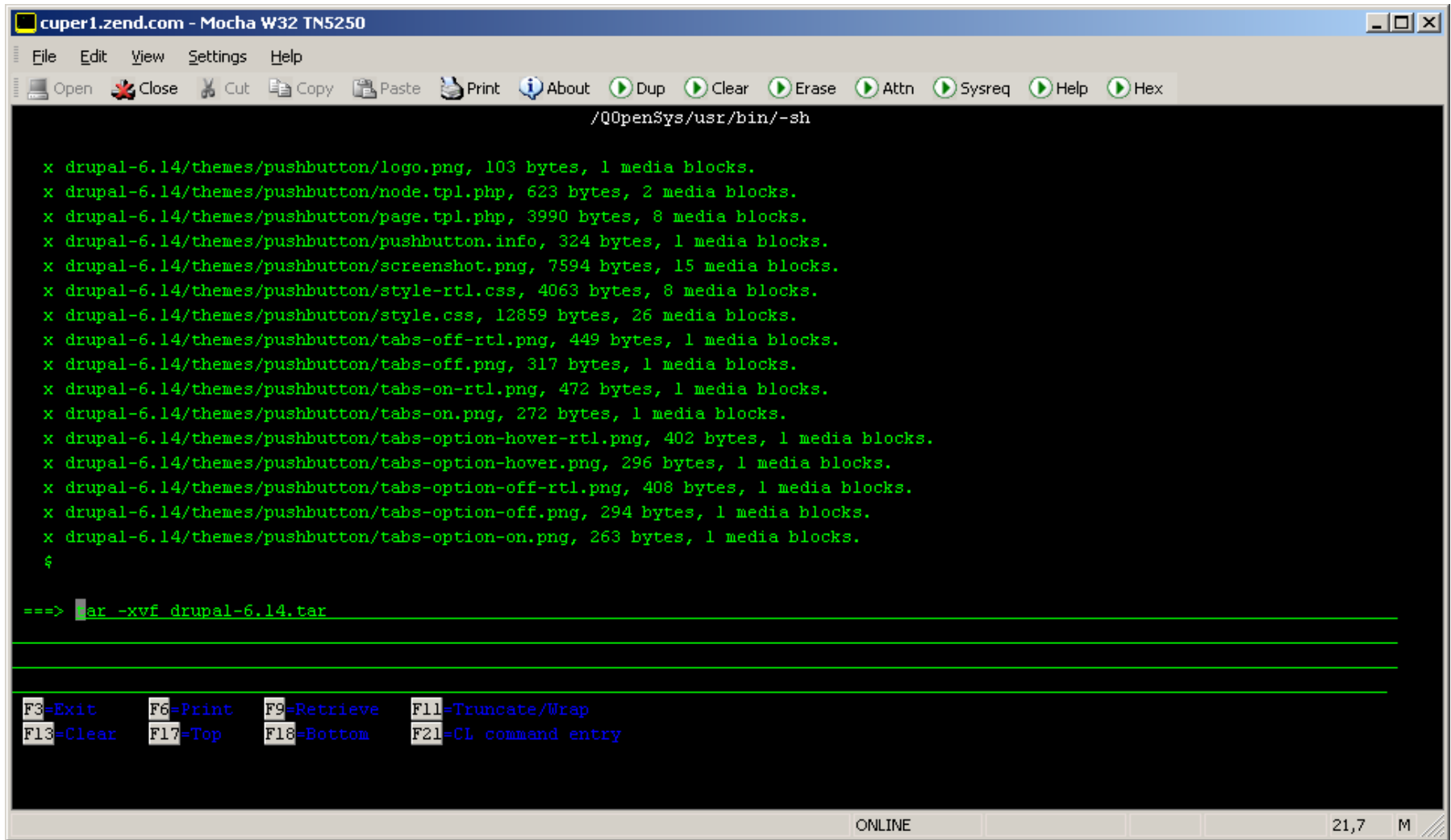
- [View pending patches](#)
- [Browse the CVS repository](#)
- [View CVS messages](#)
- [Report a security issue](#)

# Unpack the file

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- Unzip the file locally
- FTP file to the IFS of the IBM i
- Start QP2TERM to get PASE command shell
- Issue the standard TAR (Tape Archive) command
  - ▶ `tar -xvf drupal-6.14.tar`
- Command details: `-xvf` means...
  - ▶ `x` = Extract, `v` = verbose, `f` = Include file name in command
- Files are unpacked to a directory called `drupal-6.14`
- Tar command is part of LP's required for Zend Server!

# Unpack output...



```
cuper1.zend.com - Mocha W32 TN5250
File Edit View Settings Help
Open Close Cut Copy Paste Print About Dup Clear Erase Attn Sysreq Help Hex
/QOpenSys/usr/bin/-sh

x drupal-6.14/themes/pushbutton/logo.png, 103 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/node.tpl.php, 623 bytes, 2 media blocks.
x drupal-6.14/themes/pushbutton/page.tpl.php, 3990 bytes, 8 media blocks.
x drupal-6.14/themes/pushbutton/pushbutton.info, 324 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/screenshot.png, 7594 bytes, 15 media blocks.
x drupal-6.14/themes/pushbutton/style-rtl.css, 4063 bytes, 8 media blocks.
x drupal-6.14/themes/pushbutton/style.css, 12859 bytes, 26 media blocks.
x drupal-6.14/themes/pushbutton/tabs-off-rtl.png, 449 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-off.png, 317 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-on-rtl.png, 472 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-on.png, 272 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-option-hover-rtl.png, 402 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-option-hover.png, 296 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-option-off-rtl.png, 408 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-option-off.png, 294 bytes, 1 media blocks.
x drupal-6.14/themes/pushbutton/tabs-option-on.png, 263 bytes, 1 media blocks.
$

==> ar -xvf drupal-6.14.tar

F3=Exit    F6=Print  F9=Retrieve F11=Truncate/Wrap
F13=Clear  F17=Top   F18=Bottom F21=CL command entry

ONLINE 21,7 M
```

# Copy the settings file and change security

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- `cp default.settings.php settings.php`
- This makes a backup so you can restart if necessary
- Navigate to the default directory and change the security
- `chmod a+w settings.php`
- Remember where this file is as you will go back & reset

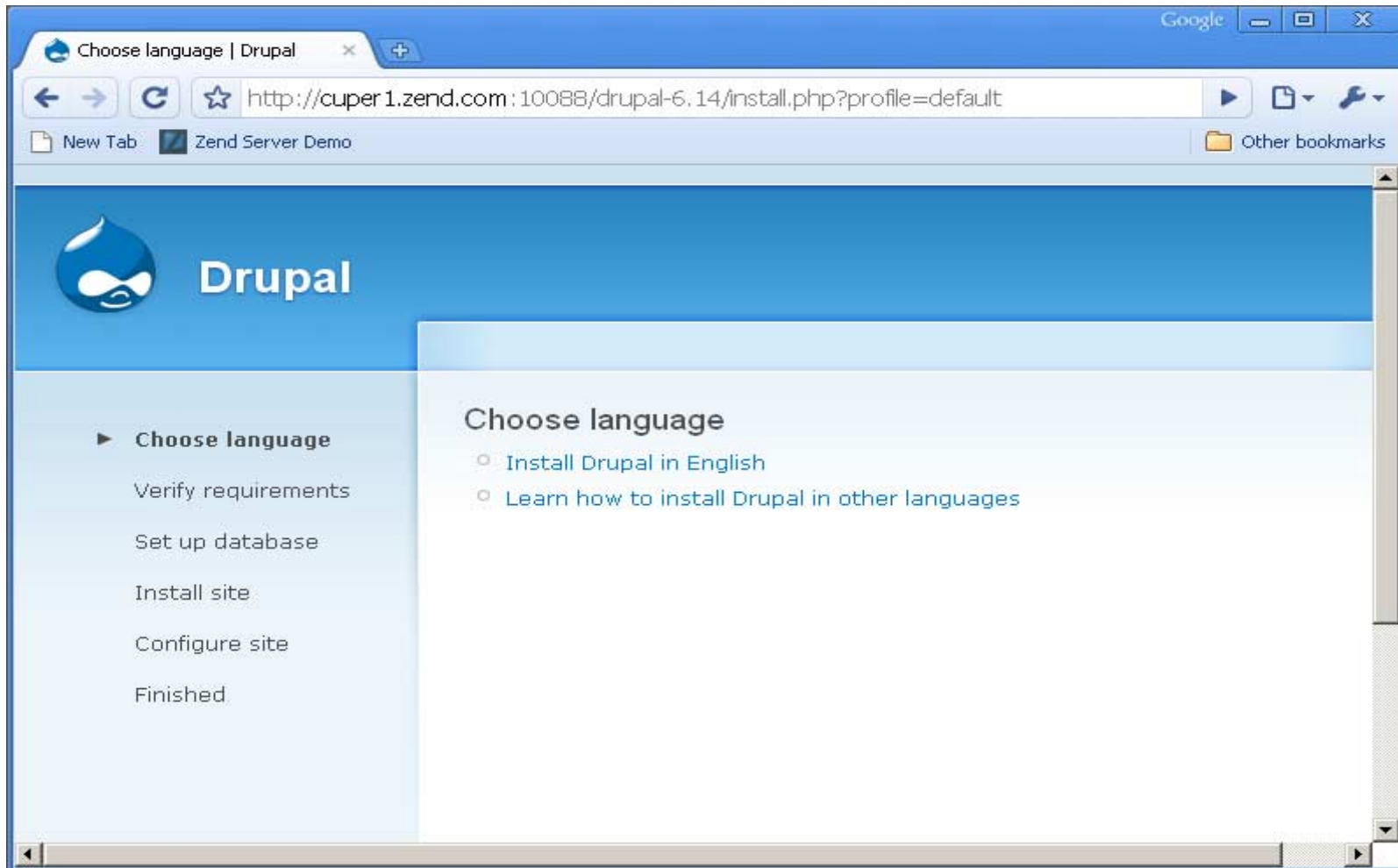
# Create database in MySQL

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- **Navigate to the MySQL binaries directory**
  - ▶ `cd /usr/local/mysql/bin`
- **Issue command to start MySQL command line**
  - ▶ `mysql -u root`
- **Create profile information for drupal (i.e. drupalcon)**
- **Create the database**
  - ▶ `create database drupalbase1;`
- **Give drupalcon authority to the database**
  - ▶ `grant select, insert, update, delete, create, drop, index, alter on drupalbase1.* to 'drupalcon'@'localhost';`
  - ▶ `flush privileges;`

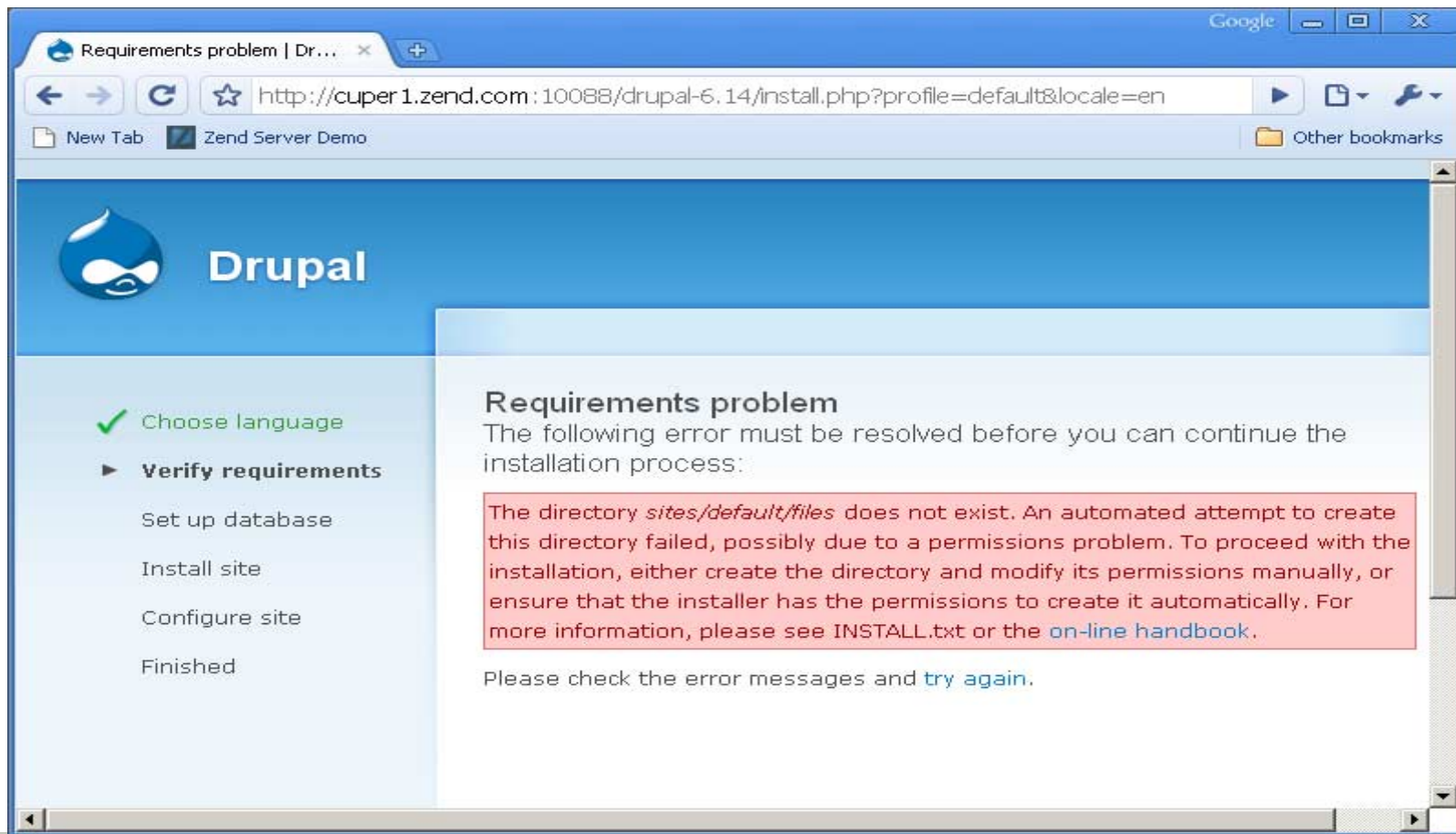
# Install Drupal

- <http://mysystemname:10088/drupal-6.14>

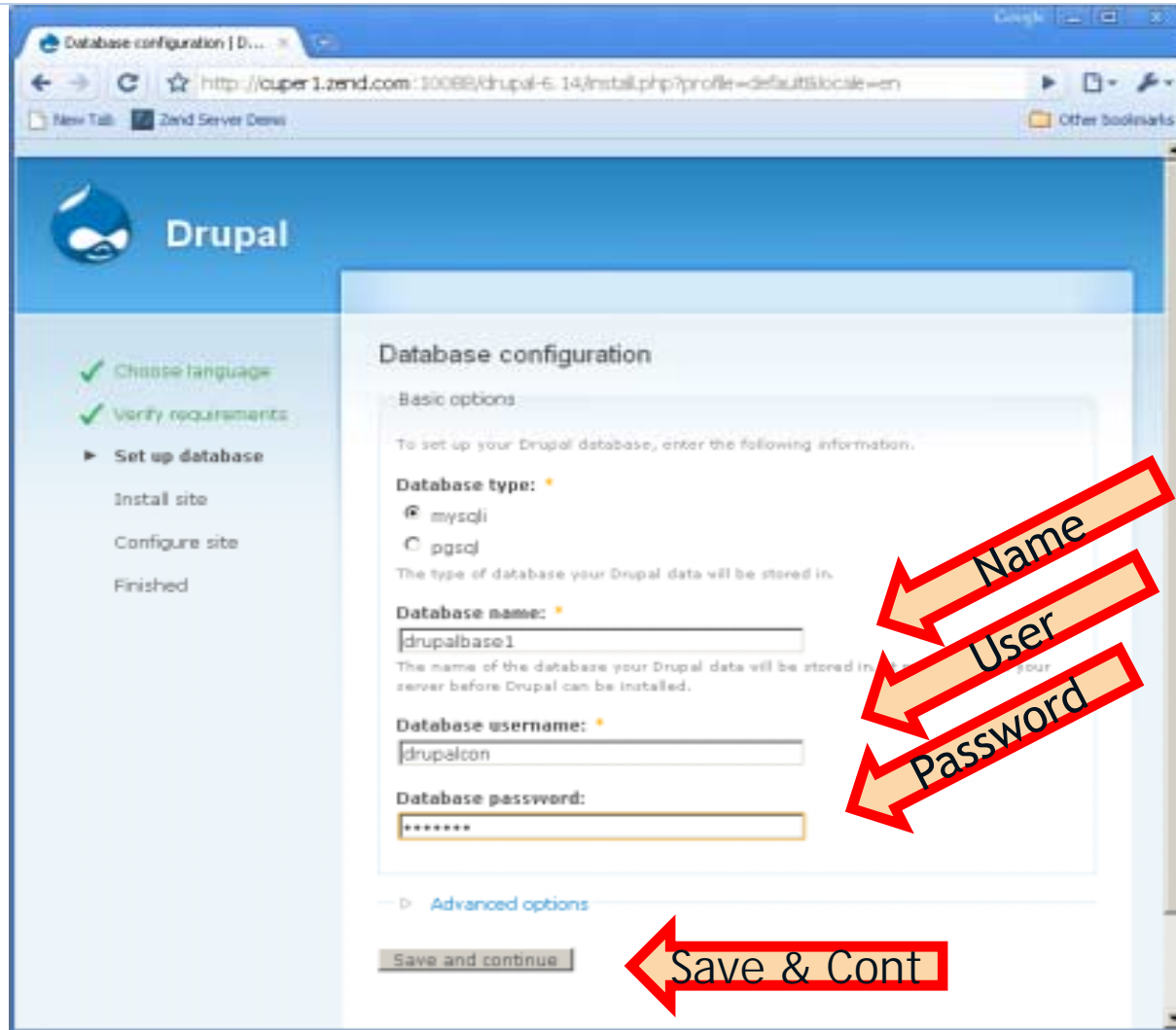


# Attempt to write to document root

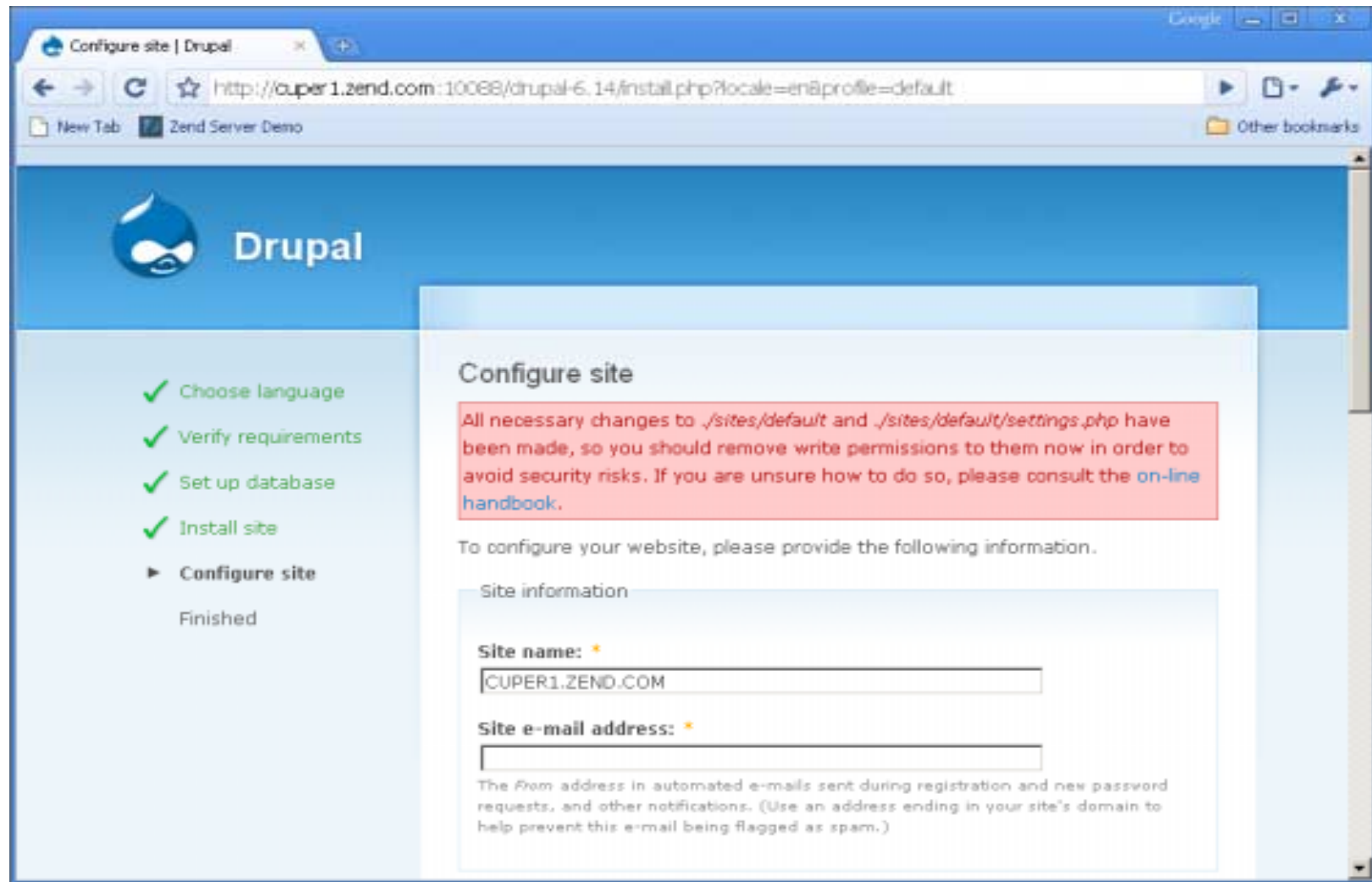
- CHGAUT OBJ('/www/zendsvr/htdocs/drupal-6.14')  
USER(QTMHHTTP) DTAAUT(\*RWX) SUBTREE(\*ALL)



# Setup database



# Configure



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 navigation menu on the left with the following items: "Choose language", "Verify requirements", "Set up database", "Install site", "Configure site" (highlighted with a right-pointing triangle), and "Finished".

The main content area is titled "Configure site" and contains a red warning box with the text: "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 the warning, it says "To configure your website, please provide the following information." and a "Site information" section with two input fields: "Site name: \*" containing "CUPER1.ZEND.COM" and "Site e-mail address: \*" which is empty. A note below the fields states: "The *From* address in automated e-mails sent during registration and new password requests, and other notifications. (Use an address ending in your site's domain to help prevent this e-mail being flagged as spam.)"

# Setup the admin account

Configure site | Drupal

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

New Tab Zend Server Demo Other bookmarks

### Administrator account

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.

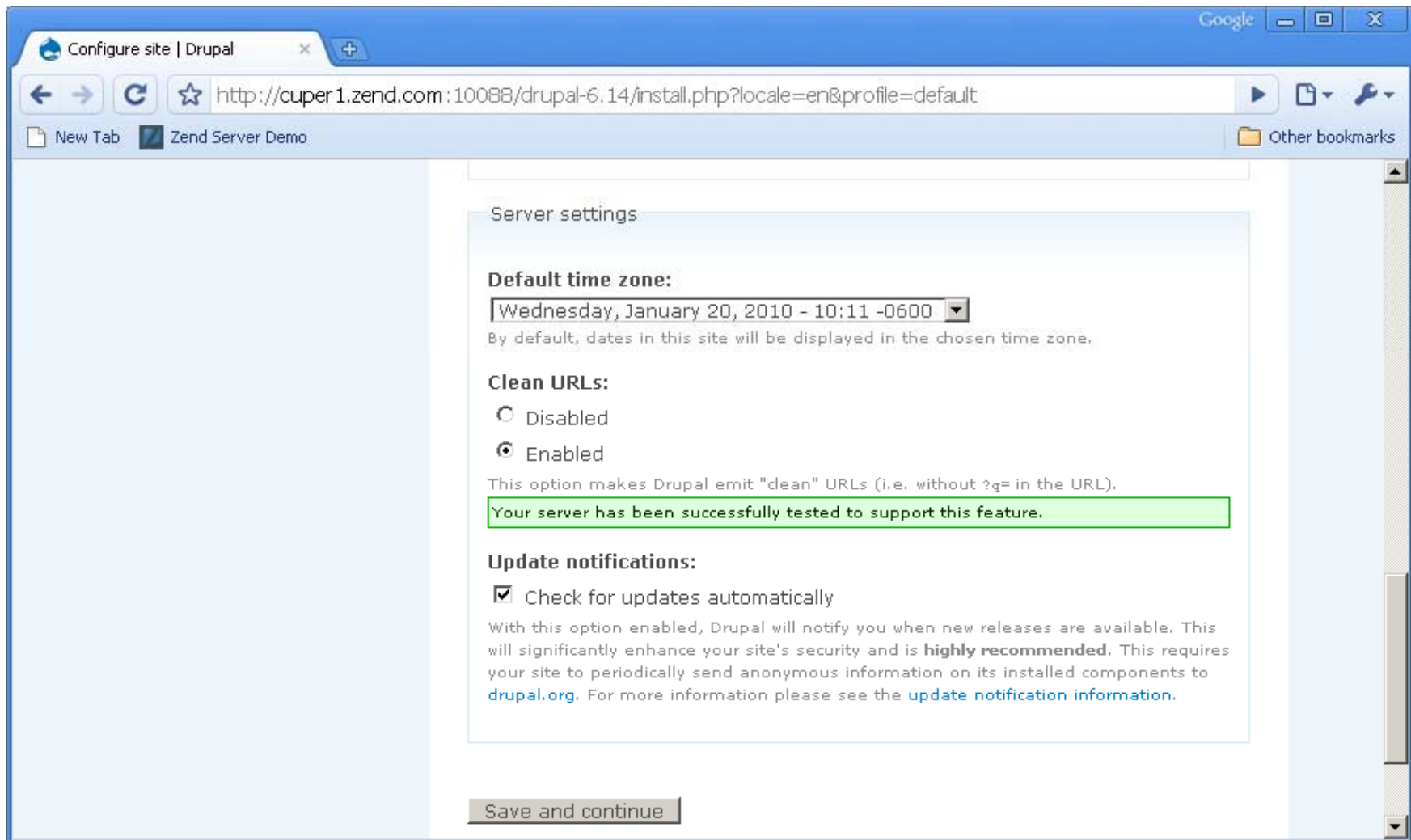
**Password: \***

 Password strength: **High**

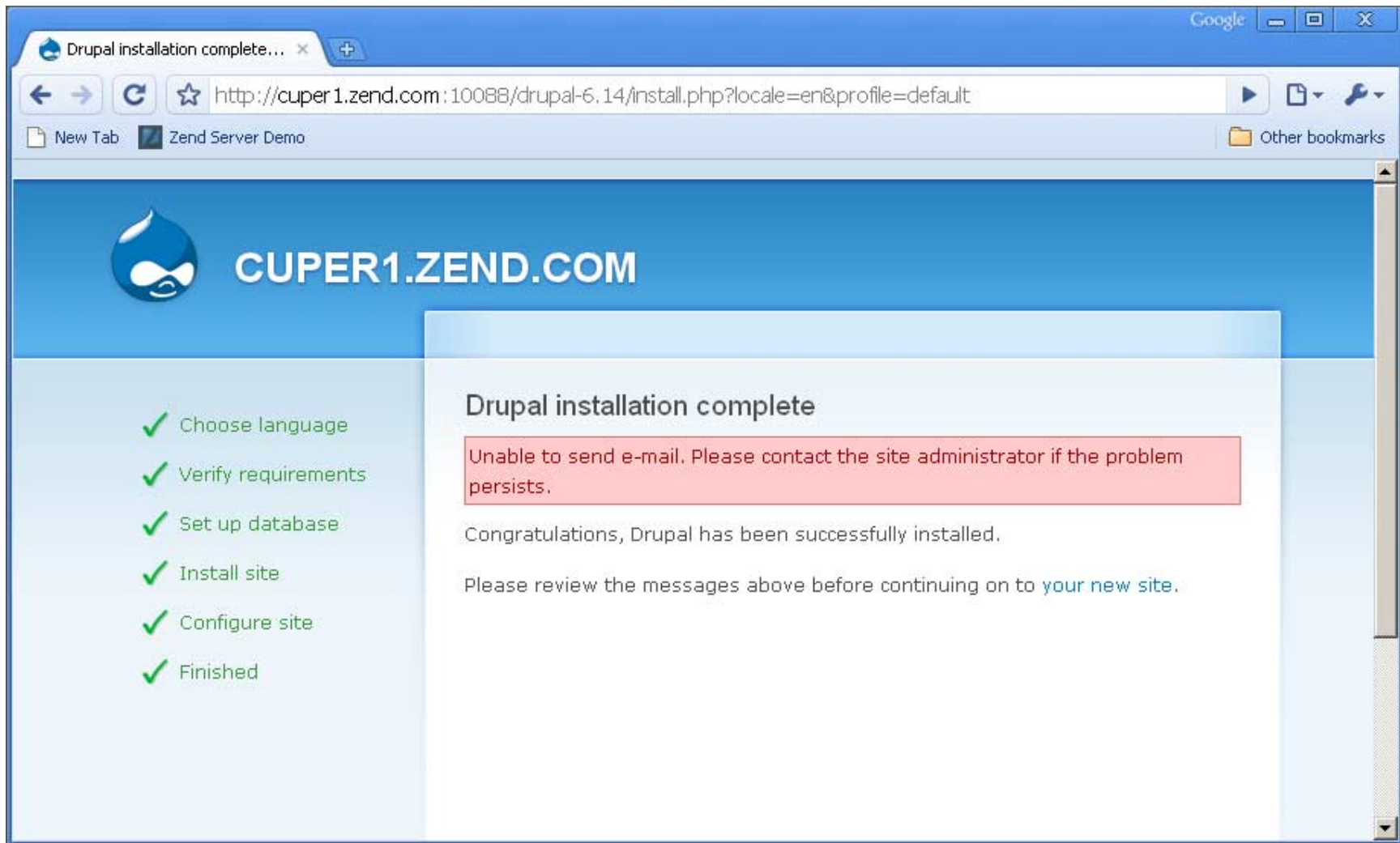
**Confirm password: \***

 Passwords match: **Yes**

# Set time zone & updates



# Once completed, see summary screen...



# Drupal, Zend Server and IBM i

[www.zend.com](http://www.zend.com)

## Drupal Tour

# Tour key features of Drupal

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- Module selection
- Theme selection
- Create page of content

# Drupal, Zend Server and IBM i

[www.zend.com](http://www.zend.com)

## Zend Server Job Queue and Cron

# Drupal updates via Cron job

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- **What is cron**
  - ▶ Unix term for scheduled job (sound familiar?)
- **Why periodically run the cron**
  - ▶ Search module updates the index
  - ▶ Aggregator module retrieval of feeds
  - ▶ Ping module notification of other sites
  - ▶ System module's routine maintenance like pruning of logs
- **Check Drupal documentation for all updates in cron**

# Drupal updates via Cron job

- How often do you run?
  - ▶ It depends
  - ▶ If content & activity is dynamic, run cron more often

## Set up cron

[View](#) [Revisions](#)

Last modified: April 22, 2010 - 16:25

Configuring **cron** is an extremely important task in your Drupal website setup. Search module's indexing of your website's content, aggregator module's retrieval of feeds, ping module's notification of other sites of updates, and system module's routine maintenance tasks, such as pruning of logs, all depend a properly configured cron job.

### What is a cron job?

Many Drupal modules have tasks that have to take place from time to time. Think of cron as the tolling of a bell, letting Drupal know that it should perform the appropriate tasks.

The actual "cron job" is a time-triggered action that is usually (and most efficiently) performed by your website's hosting server, but can also be configured by a remote service or even from your own desktop.

For your Drupal site, what actually happens is that the cron job triggers an invisible visit to the site's cron.php file (<http://www.example.com/cron.php>) which, in turn, executes tasks on behalf of installed modules.

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- ▶ [Configuring cron jobs](#)
- ▶ [Configuring cron jobs on DreamHost](#)
- ▶ [Configuring cron jobs on Media Temple Grid Servers \(gs\)](#)
- ▶ [Configuring cron jobs on Windows](#)

# Why would I schedule a job?

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- Many Open Source applications have updates
- Updates are smartly distributed via a PHP script call
- Let's look at Drupal
- Cron job - batch based update, needs no interactive
- Check Drupal documentation for all updates

# Drupal cron Documentation

The screenshot shows a web browser window displaying the Drupal documentation page for "Running cron manually". The browser's address bar shows the URL <http://drupal.org/node/158922>. The page features the Drupal logo and navigation links for Documentation, Download, Support, Forum, Contribute, and Contact. A search bar is also present. The main content area is titled "Running cron manually" and includes a breadcrumb trail: Home > Installation guide > Basic installation > After Installation > Set up cron. The page text explains how to run a cron job manually by visiting <http://example.com/cron.php> in a web browser. It also mentions a convenience link in the Status page: `/admin/logs/status/run-cron?destination=admin%2Flogs%2Fstatus`. A sidebar on the left contains an "Installation guide" with a tree view showing the current page's location. On the right, there are sections for "User login" with input fields for Username and Password, and "Contributor links" listing various community resources.

**Installation guide**

- System requirements
- Basic installation
  - Quick install for experts
  - Before you begin
  - Step 1: Download and uncompress Drupal
  - Step 2: Create the database
  - Step 3: settings.php
  - Step 4: Run the installation script
  - After Installation
    - Set up cron
      - Configuring cron jobs
      - Configuring cron jobs on DreamHost
      - Configuring cron jobs on Media Temple Grid Servers (gs)
      - Configuring cron jobs on Windows

## Running cron manually

Last modified: January 4, 2010 - 21:14 Drupal 5.x · Drupal 6.x

To run a cron job manually, simply visit your own site's url at <http://example.com/cron.php> with your web browser, and cron will run and complete in the background. You'll be left with a blank white page, which is normal. Use the browser's back button to return to the previous page and continue where you left off. It doesn't matter how long you wait while you're seeing the blank white page, and returning to the previous page at any time won't stop the cron process from running.

Core provides a convenience link for running cron manually too. Look at the Status page's link: `/admin/logs/status/run-cron?destination=admin%2Flogs%2Fstatus`. You can paste that into your own site's address bar any time you want to run a cron.

In addition, if you have the [update\\_status.module](#) installed, and you should since it's simply glorious, you'll be presented with a custom link on your `admin/logs/updates` page.

For Drupal 6.x, see in your site: *Administer > Reports > Status report > Cron maintenance tasks > Run cron manually*.

[Simple wget multisite cron, up](#) [Setting up cron on Hostmonster through the cPanel interface >](#)

» [Login](#) or [register](#) to post comments

### User login

Username: \*

  
Password: \*

- [Create new account](#)
- [Request new password](#)

### Contributor links

- Community initiatives
- Queues
  - My issues
  - 471 Pending bugs (D7)
  - 79 Critical issues (D7)
  - 1519 Patch queue (D7)
  - 404 Patches to review (D7)
  - Performance issues (D7)
  - Usability issues (D7)
  - Fields in Core issues

# Zend Server Job Scheduler

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- Can take a URL
- Also application and description
- Set a particular date/time
  - ▶ For a single event
  - ▶ For a recurring event
- **Very powerful schedule process.**

# Zend Server Job Scheduler

- To see job scheduler
  - ▶ Navigate to Zend Server admin interface
  - ▶ Rule Management → Recurring jobs



The screenshot displays the Zend Server Admin Interface. At the top, the 'zend server' logo is on the left, and 'Help | About | Logout' is on the right. Below the logo, there are four main navigation tabs: 'Monitor', 'Rule Management', 'Server Setup', and 'Administration'. Under 'Rule Management', there are sub-tabs for 'Monitoring', 'Caching', and 'Recurring Jobs'. A 'Filter' input field is present, followed by a 'New Recurring Job' button. Below this is a table with the following data:

<input type="checkbox"/>	ID	Job Name	URL	Last Run	Next Run	Actions
<input type="checkbox"/>	<a href="#">000003</a>	CRON Update	http://cuper1.zend.com:10088/drupal-6.14/cron.php	24-May 14:40	25-May 14:40	<a href="#">History</a>

# Job Details

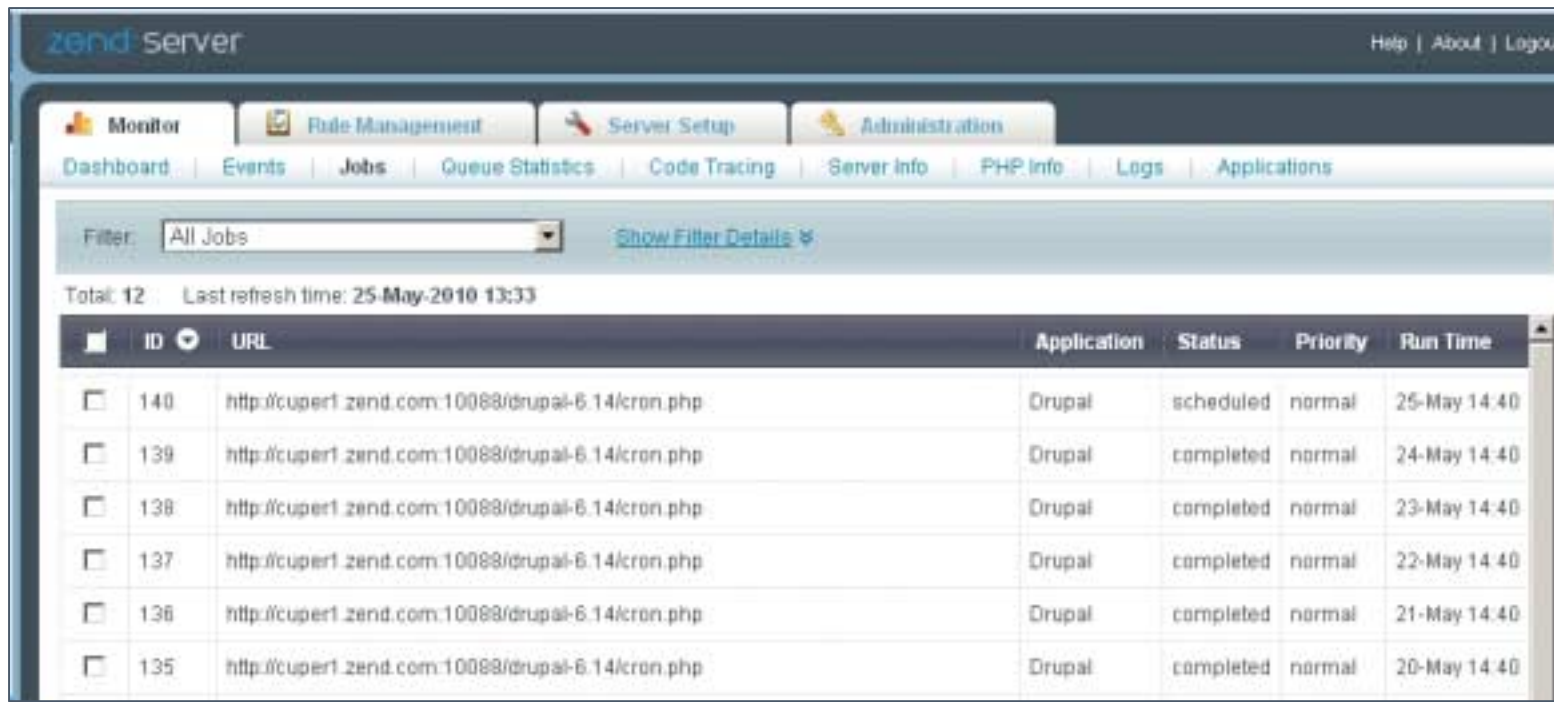
The screenshot displays the Zend Server web interface. At the top, the 'zend server' logo is visible. Below it, a navigation bar contains four tabs: 'Monitor', 'Rule Management', 'Server Setup', and 'Administration'. Under the 'Rule Management' tab, there are sub-tabs for 'Monitoring', 'Caching', and 'Recurring Jobs'. The main content area features two buttons: 'Update Rule' (highlighted in blue) and 'Cancel'. Below this is the 'Edit Scheduling Rule' section, which includes the following fields:

- URL:**
- Name:**
- Application:**

Below the 'Schedule' section, there is a dropdown menu for 'Execute Job:' with 'Daily...' selected, and a time field 'at' with '14:40' entered.

# How did the job do?

- Monitoring system will track batch jobs
- Can review output
- Navigate to Monitor → Jobs



The screenshot shows the Zend Server Monitor interface. At the top, there are navigation tabs for Monitor, Role Management, Server Setup, and Administration. Below these are sub-tabs for Dashboard, Events, Jobs, Queue Statistics, Code Tracing, Server Info, PHP Info, Logs, and Applications. The 'Jobs' tab is selected. A filter dropdown is set to 'All Jobs' with a 'Show Filter Details' link. Below the filter, it says 'Total: 12' and 'Last refresh time: 25-May-2010 13:33'. A table displays a list of jobs with columns for ID, URL, Application, Status, Priority, and Run Time.

ID	URL	Application	Status	Priority	Run Time
140	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	scheduled	normal	25-May 14:40
139	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	completed	normal	24-May 14:40
138	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	completed	normal	23-May 14:40
137	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	completed	normal	22-May 14:40
136	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	completed	normal	21-May 14:40
135	http://cuper1.zend.com:10088/drupal-6.14/cron.php	Drupal	completed	normal	20-May 14:40

# But wait, there's more!

---

- **Page caching**

- ▶ Not too exciting to most IBM i shops, unless...
- ▶ Very exciting when working with content management
- ▶ Built in to Zend Server
- ▶ Works a lot like caching on disk controllers.
- ▶ Save round trip to disk for static content and pages
- ▶ The less your content changes and the more your users access pages, the more you NEED page caching
- ▶ Cache one page or all

# Resources

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- **Drupal**

- ▶ <http://drupal.org/>

- Documentation, code, downloads, modules, etc...

- **Zend Server for IBM i main page, link to downloads**

- ▶ <http://www.zend.com/en/products/server/zend-server-ibm-i>

- **My blog: Article on Samples in Zend Server!**

- ▶ <http://mikepavlak.blogspot.com/>

# PHP Sessions

Session 1-9:00

- PHP101

Session 2-10:30

- PHP Arrays for the RPG Programmer

11:45

- Lunch

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- PHP Function Junction

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- PHP Toolkit Functions

Session 5-3:00

- Build your Intranet on IBM i for Free

4:00

- Goodies!

# Q&A

[www.zend.com](http://www.zend.com)

[mike.p@zend.com](mailto:mike.p@zend.com)