



The PHP Company

Zend Studio, Zend Server and IBM i

Mike Pavlak

Solution Consultant

Agenda

- Technical overview of Zend Server for IBM i
- Technical overview of Zend Studio
- File system setup
- Debug setup
- Code tracing
- Demo
- Q&A

Got education... www.common.org

- 10 sessions from Zend on PHP
- Many more by community members
 - ▶ Jeff Olen - Olen Business Consulting, Inc.
 - ▶ Erwin Early - IBM
 - ▶ Scott Klement - Klement Sausage and SystemiNetwork
 - ▶ Brian May - Garan, Inc.
 - ▶ Dan Hiebert - IBM



Favorites like... www.common.org

- 10 sessions from Zend on PHP
 - ▶ 560176 - Getting Started with PHP on IBM i
 - ▶ 560358 - PHP on IBM i: What's New - Zend Server CE
 - ▶ 560182 - Introduction to OO fundamentals
 - ▶ 560185 - PHP Advanced Debugging with Zend Server
 - ▶ 560179 - PHP Arrays for the RPG Programmer
 - ▶ 560178 - Function Junction
 - ▶ 560180 - PHP Toolkit Examples
 - ▶ 560186 - Business Value of PHP
 - ▶ 560177 - PHP 101
 - ▶ 560181 - PHP Web Services



Upcoming Webinars

- **April**
 - ▶ Zend Server 5 for IBM i - Installation, Setup and More
- **May**
 - ▶ Submitting PHP Scripts to Batch Using Zend Server 5 for IBM i
- **June**
 - ▶ Drupal with Zend Server 5 for IBM i

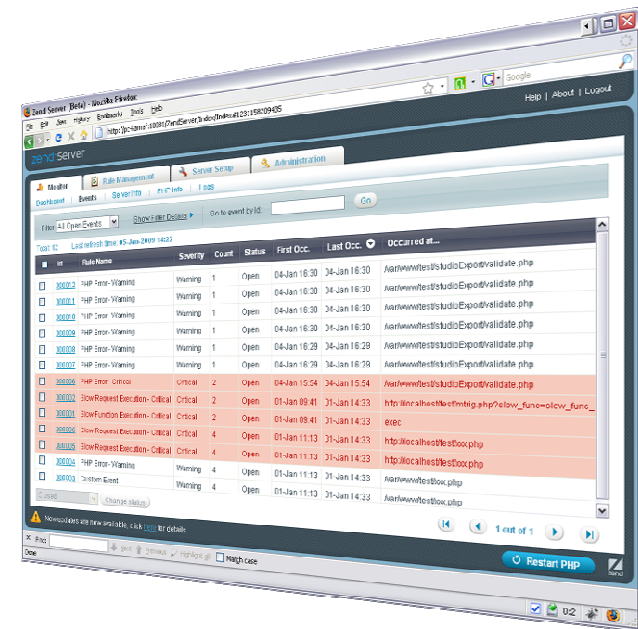
Zend Server 5 for IBM i

www.zend.com

Technical overview of Zend Server

What Is Zend Server?

- Production quality PHP stack
 - ▶ PHP, ZF, DB connectivity, debugging extension, and more
- Two Editions - Free “Community Edition” provided by IBM & Full commercial edition
 - ▶ Both are production ready
- Application monitoring and diagnostics (integrated with Zend Studio)
- Multi-level performance enhancement capabilities
- Software updates and security hot fixes
- Easy and quick installation
- Zend Framework Integration



Zend Server for IBM i

- Next generation of PHP stack for IBM i
- Best of both Zend Core and Zend Platform
- Single Licensed Program Installation
- Two products
 - ▶ Zend Server for IBM i Community Edition
 - Available at no charge per IBM partnership
 - ▶ Zend Server for IBM i
 - Subscription available from Zend
 - High value extra features
 - Higher Support SLAs

Why a new generation?

- **Based on feedback of key areas for Improvement**
- **Improved basic PHP Performance**
 - ▶ 30% to 600% depending on the application
- **New capabilities**
 - ▶ Code Tracing - Faster problem resolution
 - ▶ Job Queue - Performance and scalability
 - ▶ Page Caching - Performance and Scalability
 - ▶ Support for PHP 5.3
- **Easier installation, administration & maintenance**

Zend Server for IBM i

www.zend.com

Technical overview of Zend Studio

Zend Studio 7.1 for IBM i

Key Features

- ▶ Develop and maintain code faster
- ▶ Find and solve problems quickly
- ▶ Improve team collaboration
- ▶ Leverage the latest technologies
- **No charge for IBM i version and 1 year of updates**
 - ▶ Download and go
 - ▶ License the product

Develop & maintain code faster

- Remote Server Support (essential in IBM i environments)
- Phar integration
- Improved reliability and performance
 - ▶ More stable workspace and faster launch time
- PHP 5.3 support
- Rapid Application Development with ZF
- Zend Server Integration

Find and solve problems quickly

- Debugger
- Code Tracing integration
- Zend Server Integration

Zend Server 5 for IBM i

www.zend.com

File System Setup

Today's example is using SSH

- SSH is secure and powerful
- Very stable in Zend Studio when talking to IBM I
- If on i6.1 or i7.1

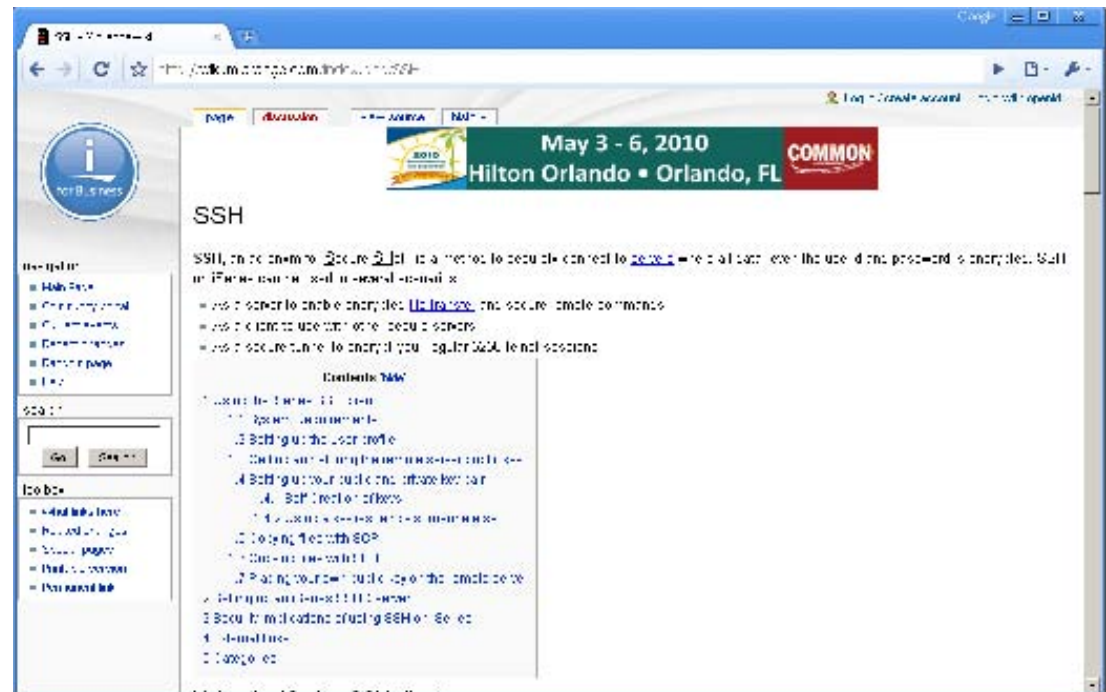
▶ STRTCPSVR

```
Selection or command  
==> STRTCPSVR SERVER(*SSHD)
```

- ▶ This will install and configure everything assuming pre-reqs are there!

SSH on V5R4

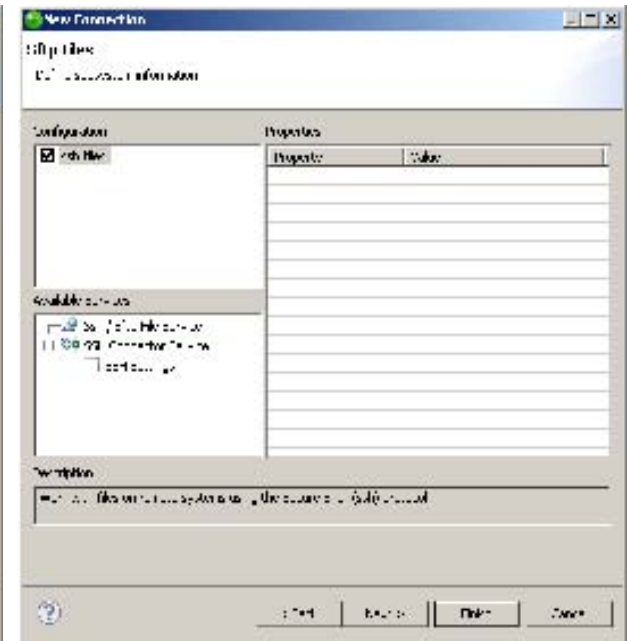
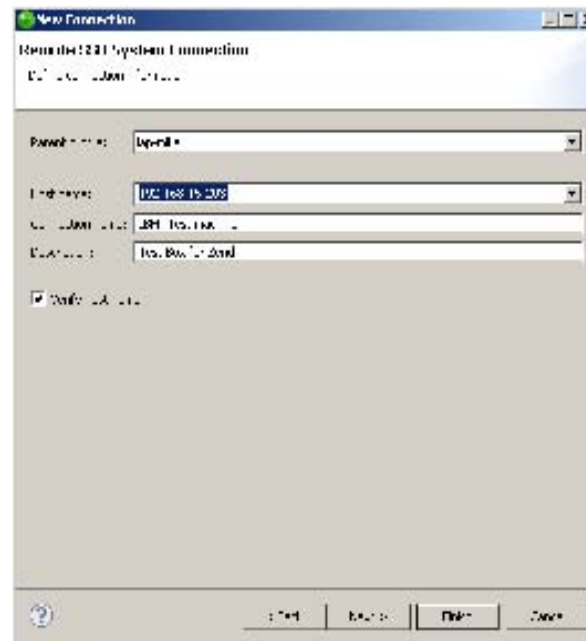
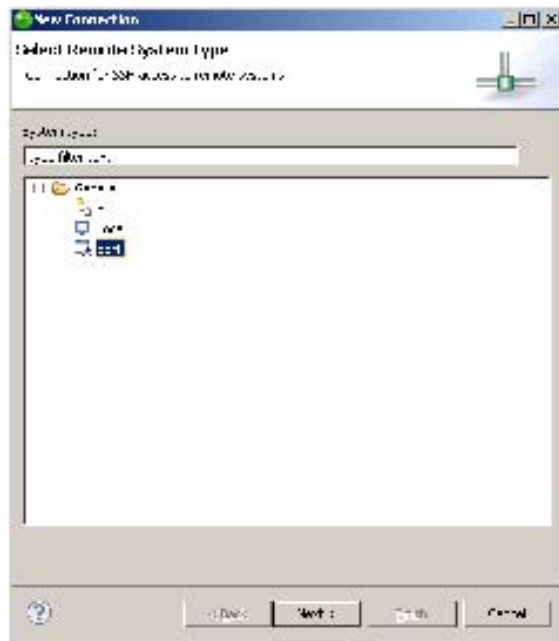
- Use QP2TERM
- Great tutorial on Midrange.com
 - ▶ <http://wiki.midrange.com/index.php/SSH>
 - ▶ Walks you through
 - ▶ Couple of minutes
 - ▶ Talk to Network Admin



In Zend Studio

- Remote Server Window

- ▶ Right click -> new -> Connection ->SSH -> Next
- ▶ Enter System Info (SSH must be installed and running)
- ▶ Next -> Finish



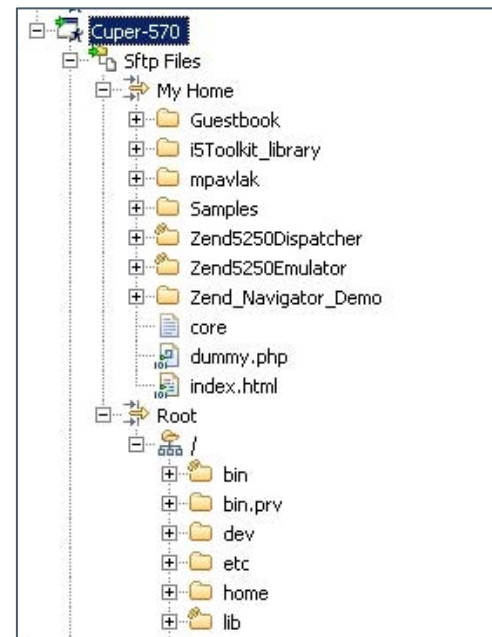
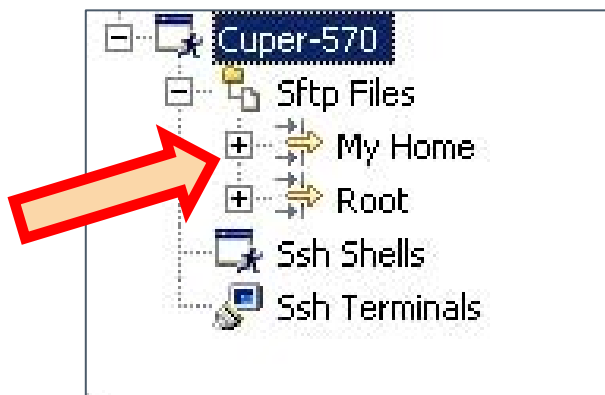
Open twistie and login

- Enter IBM i user credentials and go!



Access your files quicker

- Consider setting you user profile Home Directory
- This is something you should be able to do yourself
- No *SECOFR or *SECADM authority required
- CHGPRF HOMEDIR('/www/zendsvr/htdocs')



Zend Server for IBM i

www.zend.com

Debug Setup

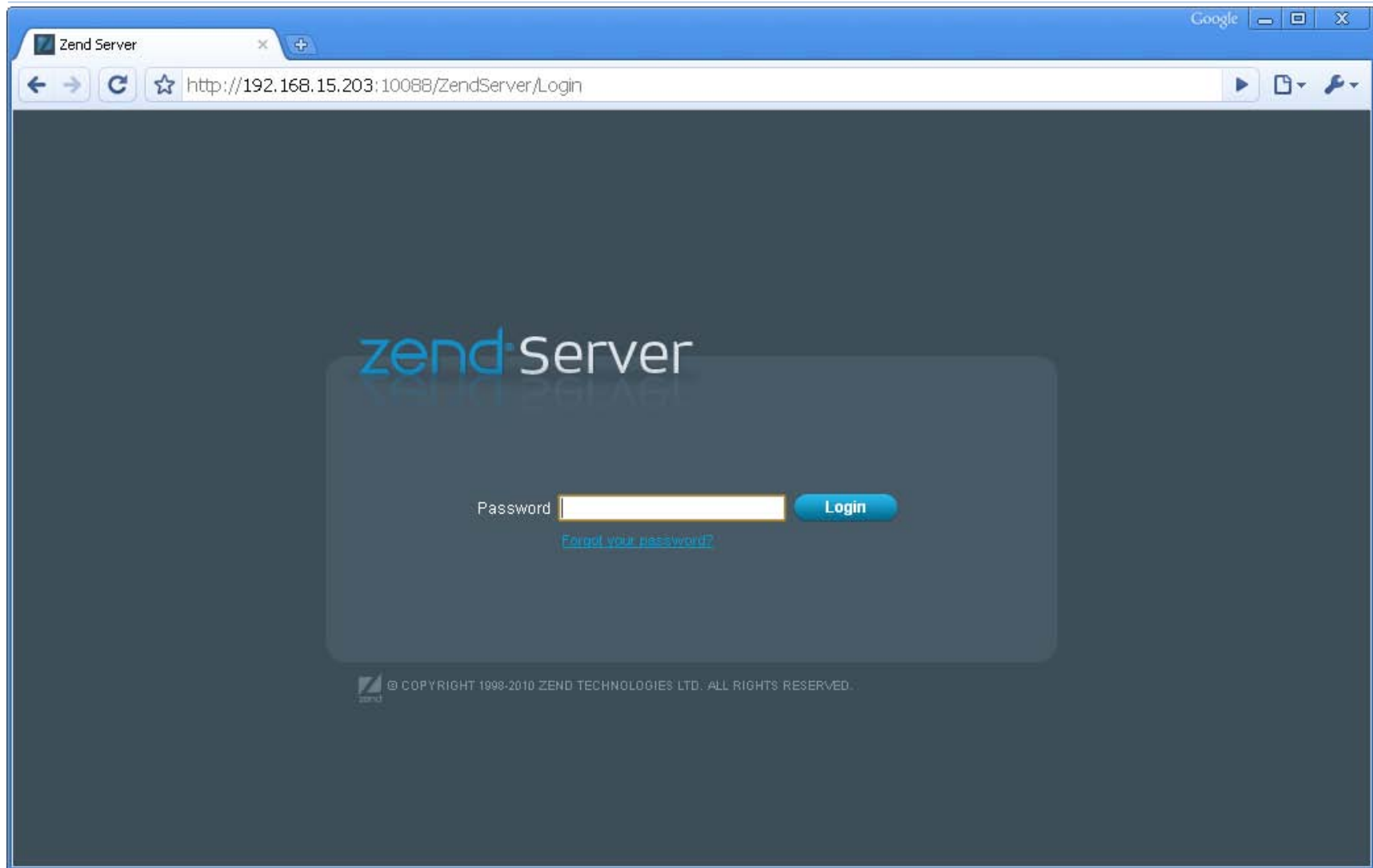
Host settings in Zend Server

- Debugging on IBM i is different because we tend to debug on the host for everything
- Most LAMP shops debug locally
- Difficult to do until IBM releases an IBM i emulator for Windows...and I'm not holding my breath!
- Let's look at the steps to setup...

Clear the way!

- Security is key in many shops
- Get to know the Network Manager
- Least access privilege vs. productivity
 - ▶ These two do not need to be mutually exclusive
 - ▶ Some communication is required
- Consider
 - ▶ Servers are typically VLANed to provide a physical security layer
 - ▶ Developers should be VLANed too.
 - ▶ Give developers needed access between VLAN's
 - ▶ Oh, and train them on why and how you are doing this

Login to Zend Server admin interface



Debug setup

- Proceed to server setup
- Then debugger
- This is an essential security feature
- Basic private LAN's are already setup
- Your IP **MUST** be in this list in order to debug!
- Consider restricting
- Talk to your Network Admin
- Firewalls are your friend, but will cause pain and suffering!
- Consider RDP for added flexibility in a secure environment.

Debug page

zend Server

Help | About | Logout

Monitor Rule Management Server Setup Administration

Components Extensions Directives Debugger Queue 5250 Bridge

Allowed Zend Studio Clients for Debugging

· · · Exact IP address only + Add

Current list of allowed hosts:

127.0.0.1	Remove
10.*.*.*	Remove
192.168.*.*	Remove
172.16.0.0/12	Remove

Denied Zend Studio Clients for Debugging

· · · Exact IP address only + Add

Use this list to exclude specific hosts from the allowed hosts list.

Restart PHP zend

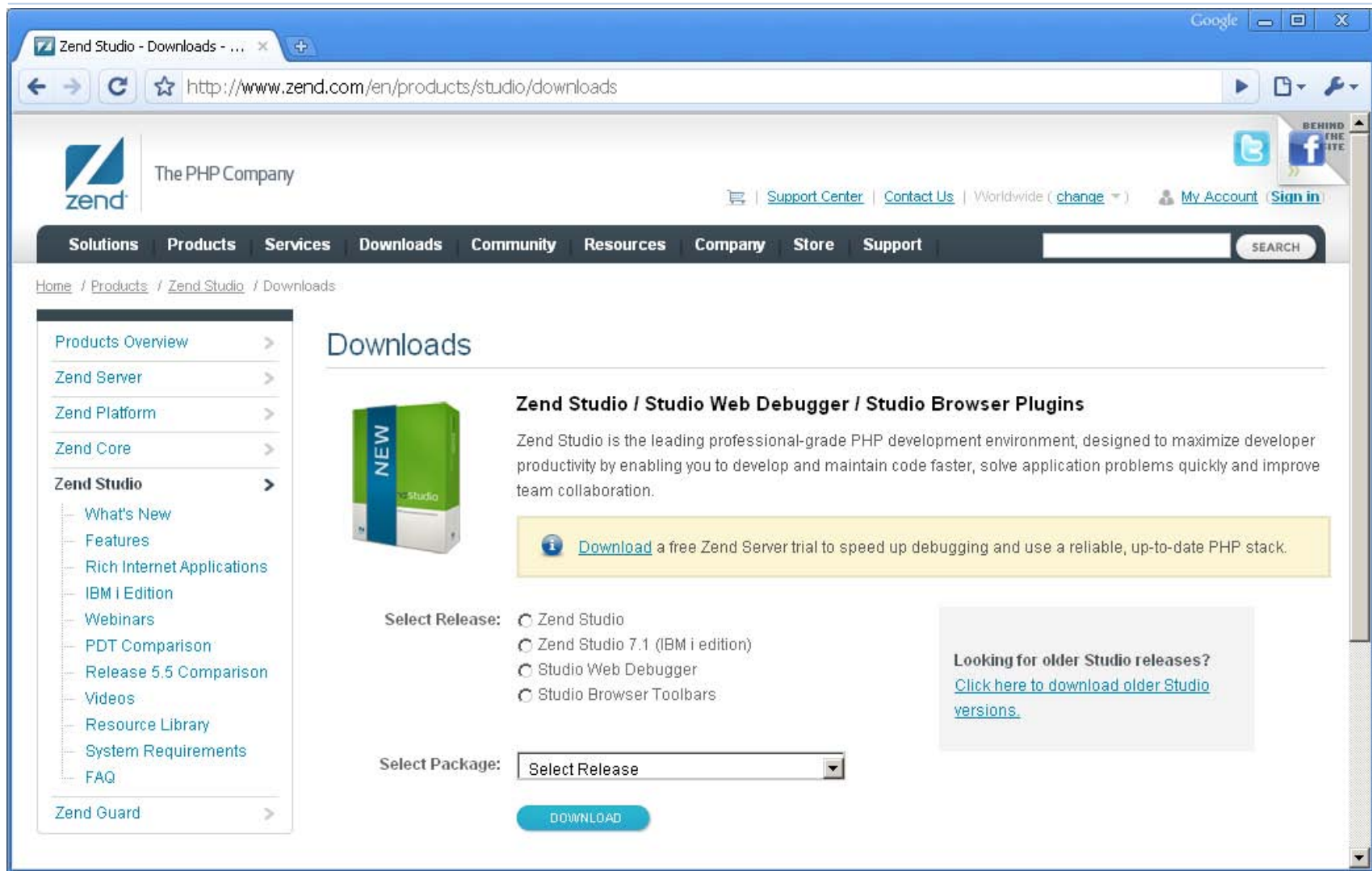
Popular Private LAN's built in!

Browser setup

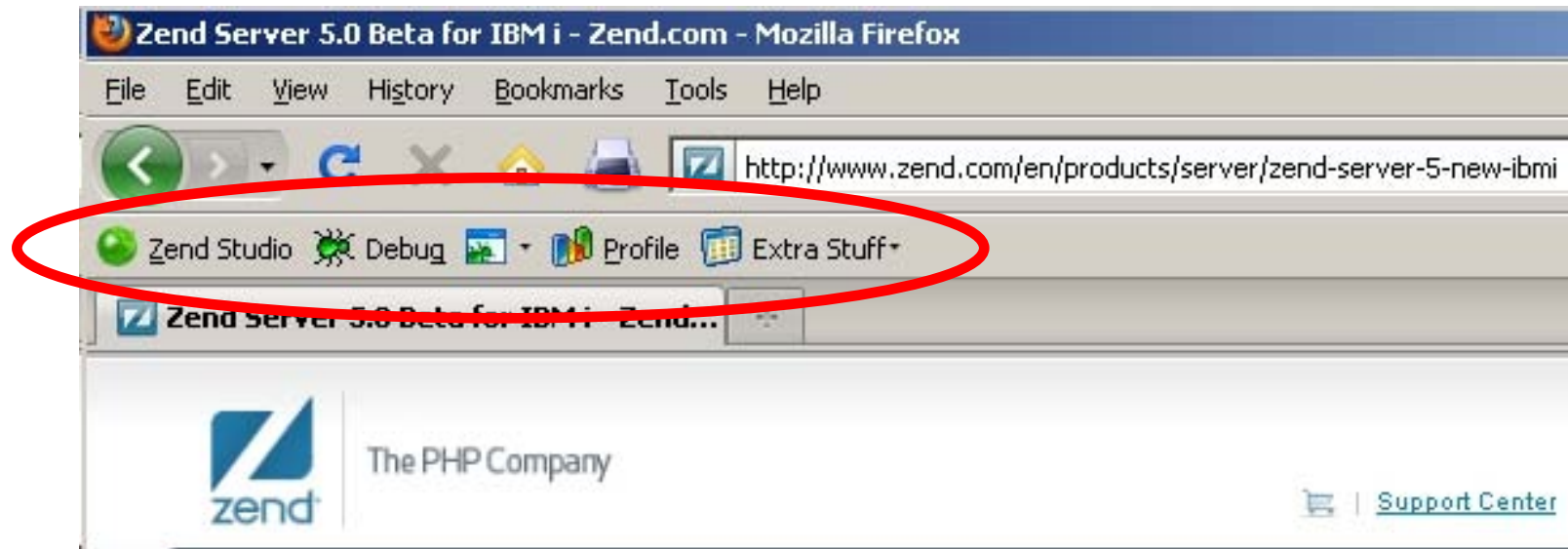
- Handy plug-ins are preferred
- Great way to launch solutions
- Go to zend.com for no charge plug-ins Firefox and IE
 - ▶ Zend Studio
 - ▶ Downloads
 - ▶ Studio browser toolbars
 - ▶ Follow easy directions to install
 - ▶ Recommend for both browsers
 - ▶ Check back for updates when browser revs



The download screen at Zend.com



Browser toolbar



Set the IP in the browser admin

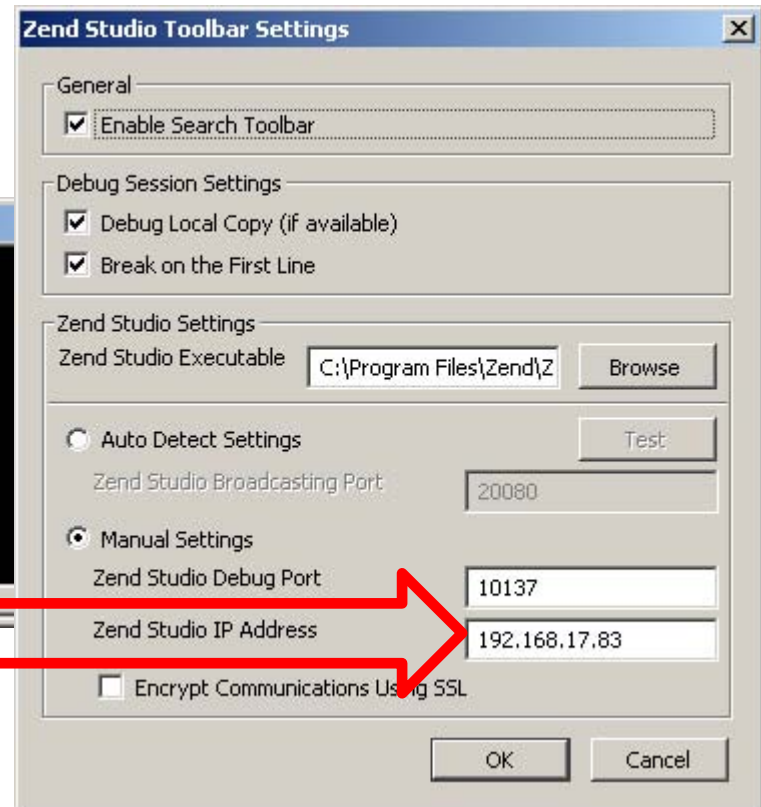
- Click the “Extra Stuff” button
 - ▶ Then “Settings”

```
C:\WINDOWS\system32\cmd.exe

Media State . . . . . : Media disconnected
Ethernet adapter Local Area Connection 2:

Connection-specific DNS Suffix . :
IP Address . . . . . : 192.168.17.83
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

C:\Documents and Settings\mike.p>
```



Zend Server for IBM i

www.zend.com

Code Tracing

Application Monitoring

Zend Server Monitor will watch your application for:

- ▶ PHP Errors (including warnings, notices, uncaught exceptions...)
- ▶ Failing functions (user-defined or internal)
- ▶ Failing DB queries
- ▶ Slow functions (user-defined or internal) or DB queries
- ▶ Slow request executions
- ▶ High memory consumption
- ▶ Errors reported by Zend Server components

When an issue is detected, Zend Server reports an event

Monitoring Events

Zend Server - Mozilla Firefox 3.5 Beta 4

File Edit View History Bookmarks Tools Help

http://localhost:10081/ZendServer/Index/Index#1256708440780

Most Visited Release Notes Fedora Project Red Hat Free Content

Zend Studio Debug Profile Extra Stuff Search for PHP information: on Zend.com Go

zend server Help | About | Logout

Monitor Rule Management Server Setup Administration

Dashboard Events Jobs Queue Statistics Code Tracing Server Info PHP Info Logs

Filter: All Open Events Show Filter Details Go to event by Id: Go

Total: 24 Last refresh time: 27-Oct-2009 22:40

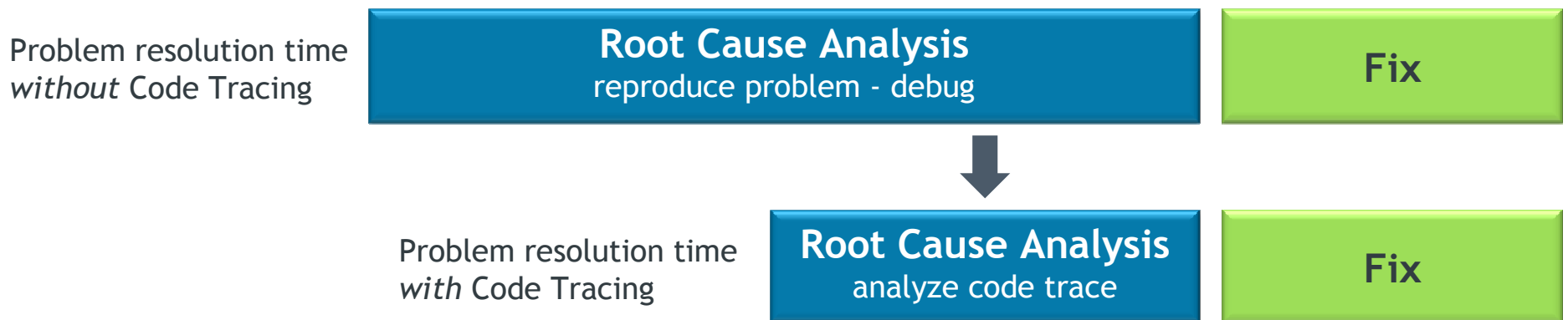
ID	Rule Name	Severity	Count	Status	First Occ.	Last Occ.	Occurred at...
000006	Custom Event	Warning	15	Open	15-Oct 16:36	27-Oct 19:58	
000007	Severe Slow Request Execution (Absolute)	Critical	5	Open	15-Oct 16:39	27-Oct 19:58	http://localhost/magento/index.php/
000023	PHP Error	Warning	1	Open	27-Oct 17:43	27-Oct 17:43	/var/www/html/phpExcelReader/Excel
000024	Fatal PHP Error	Critical	1	Open	27-Oct 17:43	27-Oct 17:43	/var/www/html/phpExcelReader/Excel
000022	Severe Slow Request Execution (Absolute)	Critical	1	Open	16-Oct 02:27	16-Oct 02:27	http://localhost/magento/
000017	Severe Slow Request Execution (Absolute)	Critical	2	Open	16-Oct 01:51	16-Oct 02:13	http://localhost/magento/index.php/cat
000021	High Memory Usage (Absolute)	Warning	1	Open	16-Oct 02:13	16-Oct 02:13	http://localhost/magento/index.php/cat

Change status to Closed Change

Restart PHP

Code Tracing

- Eliminates the need to reproduce problems
- Records live application execution when problems occur
- Activated through Zend Server monitoring rules or manually
- Works in a live production environment or in a test lab
- Cuts Root Cause Analysis Time by up to 50%

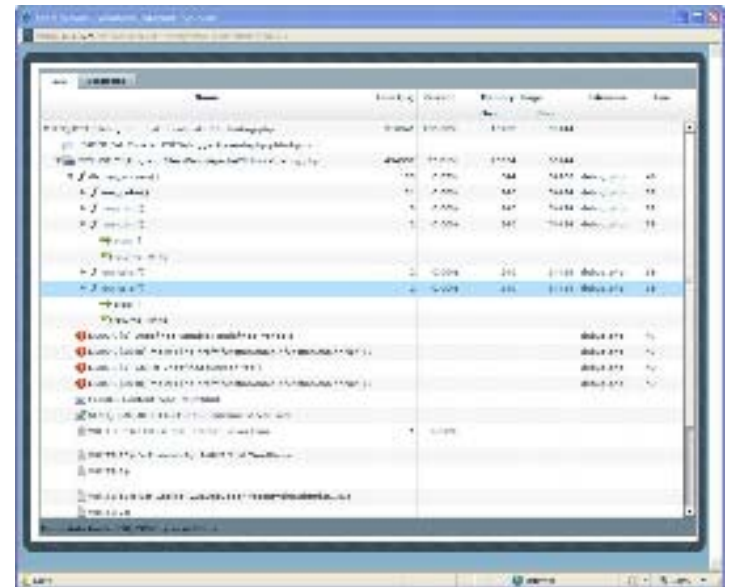


Code Tracing - Data Capture

- **Reproducing an issue is not always possible**
 - ▶ Dependency on specific SESSION or database state
 - ▶ Dependency on server load
 - ▶ “Replaying” the request is risky or impossible
- **Code Tracing captures the entire execution flow:**
 - ▶ Execution tree including function calls and included files
 - ▶ Function arguments and return parameters
 - ▶ Output and header generation
 - ▶ Location of errors, exceptions and Zend Monitor events
 - ▶ For each node, execution time and memory usage is measured

DVD-Like Playback of Application Problems

- Opening a Trace File enables you to “playback” the request execution flow using two perspectives:
- A Tree perspective: Pinpoint root cause by viewing the sequence of function calls
 - ▶ Highlights the critical path of function execution flow (duration)
 - ▶ Pinpoints events leading up to an error



Code Tracing Supported Workflows

- **Monitoring workflow:**

- ▶ When a monitoring event is created, the associated trace data of the specific request is captured
- ▶ Trace data is attached and associated to the monitoring event

- **Manual tests/functional workflow:**

- ▶ Manually through the GUI or from a browser by adding a parameter to the request

- **Production workflow**

- ▶ Can be activated automatically in case of a Zend Monitoring event, for example a PHP error, a slow execution or high memory usage

Zend Server for IBM i

www.zend.com

Demo

Demo Agenda

- **Code Tracing**
 - ▶ My busted script
- **Debug**
 - ▶ From browser application

Zend Server for IBM i

www.zend.com

Wrap up

Tips - Summary

- Get to know your Network Manager
- Don't give up! Open a support ticket
 - ▶ <http://www.zend.com/en/support-center/>
 - ▶ One year of Silver support (72 hour turnaround on email)
 - ▶ Continued or upgraded support available!
 - Gold - Business hour phone support
 - Platinum - 24x7 2 hours response on level 1
- Forums - <http://forums.zend.com/viewforum.php?f=77>
- Knowledgebase Articles (more coming!)
 - ▶ <http://kb.zend.com/index.php?View=entry&EntryID=334>
 - ▶ Education-Education-Education!

Upcoming Webinars

- **April**
 - ▶ Zend Server 5 for IBM i - Installation, Setup and More
- **May**
 - ▶ Submitting PHP Scripts to Batch Using Zend Server 5 for IBM i
- **June**
 - ▶ Drupal with Zend Server 5 for IBM i

Upcoming events

- **COMMON**

- ▶ Orlando, Florida - May 2 thru 6
- ▶ Visit the Zend Booth and a bunch of sessions on PHP and IBM i

- **Webcasts**

- ▶ April - Zend Server 5 for IBM i - Installation, Setup and More
- ▶ May - Submitting PHP Scripts to Batch
- ▶ June - Drupal with Zend Server 5 for IBM i

- **User Groups**

- ▶ Gateway/400 - www.gateway400.org April 8
- ▶ TVMUG - www.tv mug.info April 20
- ▶ MITEC - www.gomitec.com June 8

THE book on PHP for IBM i

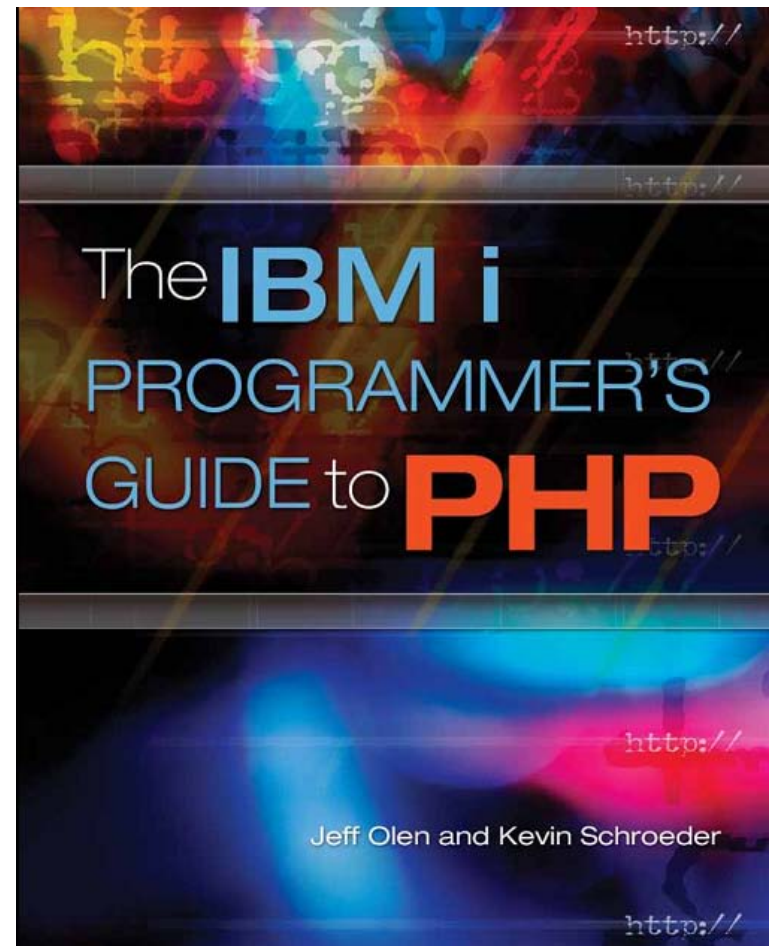
Kevin Schroeder from Zend's
Global Services Group

with

Jeff Olen, co-author of...

Get yours at the Zend Bookstore

<http://shop.zend.com/en/php-books>



Q&A