



STRATEGIC BUSINESS SYSTEMS: 2009 WINNER

*Power Systems Innovation Award: Best Web Solution
from IBM and COMMON*



PHP Case Study on IBM i

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New York PHP Community and User Group (NY-PHP)

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Strategic Business Systems, Inc.



The PHP Company

- **IBM Business Partner**
 - Provides hardware, software development, consulting for IBM i
 - Developer of web apps on i since 1996
 - Based in Ramsey, New Jersey
- **Zend (“the PHP company”) partner**
 - Zend brought PHP to IBM i in 2006
 - We offer Zend’s training and software to complement our own consulting/development services

Alan Seiden

PHP on IBM i Developer / Consultant / Mentor

- Contributor to IBM's Redbook *PHP: Zend Core for i5/OS*
- First IBM i developer certified in Zend Framework
- Developer of IBM/COMMON's "Best Web Solution" of 2009



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Blog/articles: alanseiden.com

What we'll discuss today

- **PHP review**
- **Update on Zend Server (new PHP install for i)**
- **Case study: re-imagine green screens as web**
- **Tips and techniques**

- **Answer any PHP questions**

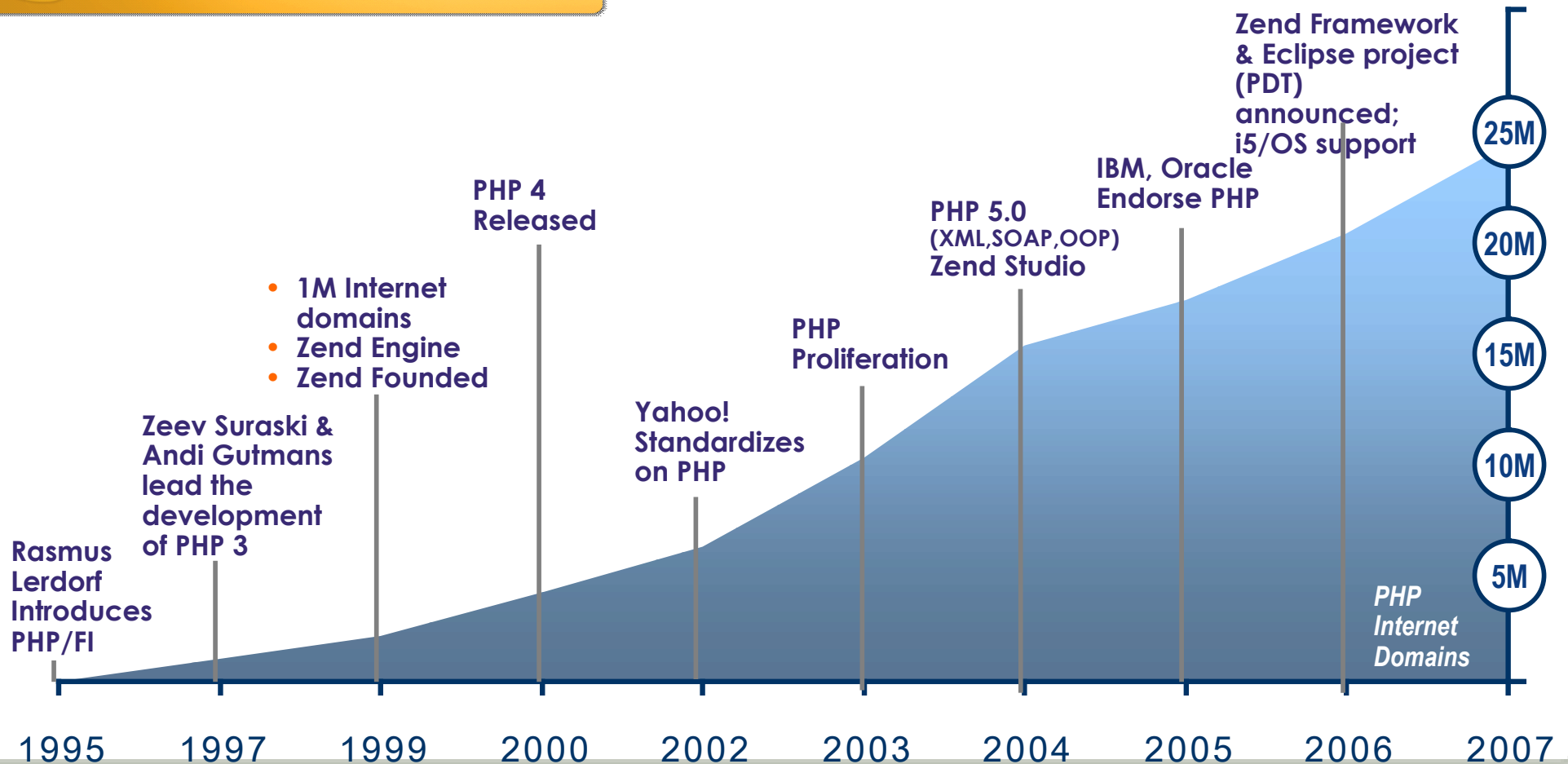
PHP's growth as web dev language (as of 2007)

34% of the internet runs on PHP

37% growth in PHP developers



ZF and PDT released, PHP 4 EOL announced



Who uses PHP?

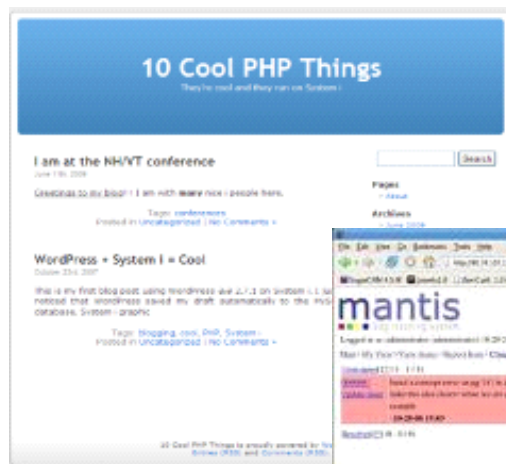
- **Yahoo, eBay, Wikipedia, Facebook**
- **Open source developers – 10,000+ projects**
- **Strong community worldwide**
- **7 million+ developers**
- **Growing community of IBM i shops**

Reasons for PHP's success

- **Easy way to get data to Web**
 - Generates ordinary HTML, viewable in any browser
- **Cross-platform: also runs on Windows, Linux, any mainstream OS**
- **Open source**
 - Managed by Zend, “the PHP company”
 - Contributors from community and corporations

Free, open source apps (fine on IBM i)

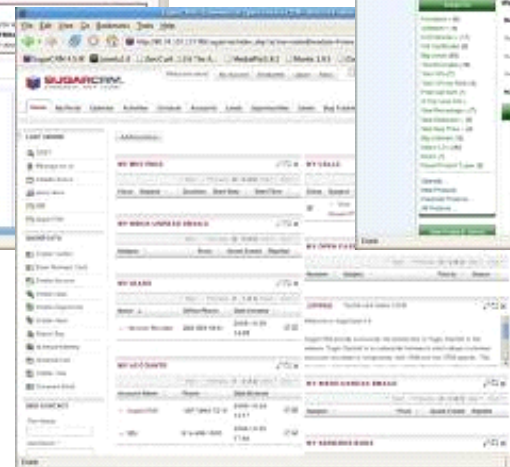
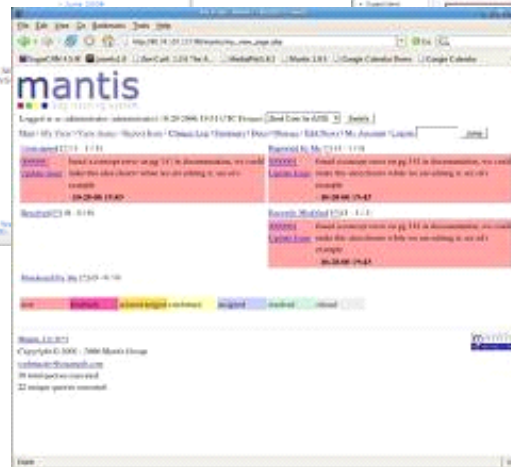
WordPress blog/CMS



MediaWiki (Wikipedia)



ZenCart e-Commerce



Bug Tracking/Helpdesk (Mantis400.com)

Sugar CRM

PHP on i—a short history

- **2004: i5php.net**
 - Unofficial PHP binary for “i” available online
- **2005: IBM and Zend got together**
- **2006: Zend Core for i5/OS**
 - Official release with help from IBM
 - Professional technical support from Zend
- **2007: Zend Studio: IDE/code editor**
- **2007: Zend Platform: performance booster and code tracer/monitor**
- **2008: Zend Framework supports “i” variant of db2**
- **2009: Zend Server Beta for “i”**
 - Combines the best of Core and Platform...watch for GA

PHP on i

- **Runs completely on your good old “i”**
 - Uses IBM’s native Apache web server
 - Backed by IBM, shipped with v5r4 and beyond
 - Connects directly to db2 database
- **Light on its feet**
 - Efficient—runs well out of the box
 - Create useful functionality quickly; start small and grow
 - Plenty of room for sophistication in larger apps

i5 Toolkit is included

- **i5 Toolkit lets you:**
 - re-use your RPG logic
 - call commands
 - access data areas and other resources
- **Documentation**
 - http://files.zend.com/help/Zend-Core-i5/i5_php_connector_api.htm
- **Samples**
 - http://files.zend.com/help/Zend-Core-i5/program_samples.htm

i5 Toolkit functions to call CL/RPG

- **i5_connect(server, user, password, options)**
 - `$conn = i5_connect("1.2.3.4", "MYUSER", "MYPWD");`
- **i5_command(command, inputs, outputs)**
 - Good for commands/programs with no parameters
 - E.g. `i5_command("call LIB_NAME/PROGRAM_NAME")`
- **i5_program_prepare(name, description)**
 - Sets up parameter names and data types
- **i5_program_call(program, params, retvals)**
 - Calls program with parameter values

i5_program_call in detail

```
bool i5_program_call(resource program,  
                    array params[,  
                    array retvals])
```

- **Program:** resource opened by `i5_program_prepare`
- **Params:** array of key => value pairs
 - Key: name of parameter
 - Named according to description given in “prepare”
 - Value: value of input parameter
- **Retvals:** array of key => value pairs
 - Key: name of output parameter
 - Again, named according to description given in “prepare”
 - Value: name of PHP variable to receive the output parameter

Reminder: how to install PHP

Install Zend Core (free)

- **Check the requirements/release notes**
 - <http://zend.com/en/products/platform/resources>
 - Scroll down to Zend Core for i5/OS v2.6
 - i5/OS V5R4, v6.1
 - PASE, Qshell, recent cumulative PTF package, more
- **Get FREE Zend Core for i5/OS**
 - Preloaded as licensed program or
 - Download from <http://zend.com/en/products/core/downloads>
 - Free account required
 - Look for “Zend Core for i5/OS V2.6”
 - Choose Windows-based installer or *SAVF
- **Install on your i5**
 - If you need MySQL, can select it, too
 - Start Zend Core: GO ZENDCORE/ZCMENU, Option 5 then 1

Apache PHP jobs run in ZEND

- Look in Zend subsystem for Apache/PHP jobs

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Subsystem Jobs                                SBSUSA
                                                         06/09/09 17:55:17

Subsystem . . . . . : ZEND

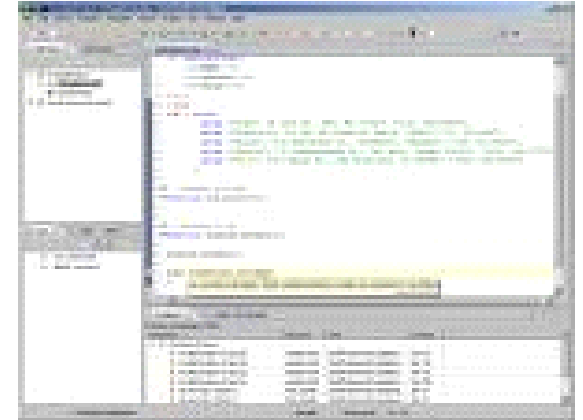
Type options, press Enter.
  2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
  8=Work with spooled files  13=Disconnect

Opt  Job          User          Type          -----Status-----  Function
---  ---          ---          ---          -----
  15_COMD  QTCP          BATCH        ACTIVE        PGM-EASYCOMD
  ZC_STR_PRN  ZENDADMIN    BATCHI       ACTIVE        PGM-prngd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
  ZENDCOREAP  ZENDADMIN    BATCHI       ACTIVE        PGM-httpd
                                                         More...

Parameters or command
===>
F3=Exit    F4=Prompt    F5=Refresh    F9=Retrieve    F11=Display schedule data
F12=Cancel F17=Top      F18=Bottom
```


Zend Studio for Eclipse, IBM i Edition

- **Better IDE than “Notepad”**
- **Free for IBM i customers**
 - <http://zend.com/en/products/studio/downloads>
 - Look for “IBM i Edition”
- **Alerts you to any syntax errors or other mistakes; offers interactive debugging and code completion (similar to how green screens provide an F4 prompt)**
- **For good performance, your PC needs 2GB RAM**



Zend Platform (optional)

Provides caching (fast!), debugging and event tracking, integration with Zend Studio (IDE)

The screenshot displays the Zend Platform dashboard for i5/OS. The navigation bar includes sections for Platform, PHP Intelligence, Performance, ZDS, Job Queues, and Integration. The main content area is titled 'Dashboard' and features a section for 'Events at a Glance'. This section includes a 'Load Filter' dropdown menu with options like 'Recent Events', 'Severe Common Events', and 'Common Events'. There is also a 'Show All' button and a search field for 'Find Event by Id'. Below these controls is a table listing various events with columns for Id, Event, Count, Last Occurrence, Location, URL, and Severity.

Id	Event	Count	Last Occurrence	Location	URL	Severity
34	Slow Script Execution (Absolute)	329	07 Apr 2009 20:42:05	localhost	.../QuickOrder	Moderate
9	Slow Script Execution (Absolute)	234	07 Apr 2009 19:47:51	localhost	.../index.php	Moderate
32	Slow Script Execution (Absolute)	153	07 Apr 2009 18:41:58	localhost	.../chard+napa+750	Severe
33	PHP Error	16	07 Apr 2009 16:28:24	localhost	.../5531043	Moderate
47	PHP Error	304	07 Apr 2009 16:25:59	localhost	.../advancedsearch	Moderate

Zend Platform: detail

Drill down to find the cause of performance lags or errors

Event Details For Event #29 - Mozilla Firefox

http://ebizdev.alliedbeverage.com/ZendPlatform/server/eventreport.php?event_id=29

Event Details

Report for Slow Script Execution (Absolute) #29

Severe Event

Requested URL: http://ebizdev.alliedbeverage.com/advancedsearch

Main file: /www/ebizdev/htdocs/html/index.php

Source file: In file /www/ebizdev/htdocs/html/index.php

Script ran for: 7183 msec

Event Occurrences Info:

Occurred **179** times (in 191 days), the first on **01 Dec 2008 13:14:59** and the last on **10 Jun 2009 16:08:51**. First occurrence was on virtual host **ebizdev.alliedbeverage.com** on server **localhost**.

Zend Studio Diagnostics:

[Test URL](#) [Debug URL](#) [Profile URL](#) [Show Source Code](#)

Event Context:

Data

- Variables
 - GET
 - POST
 - COOKIE
 - SERVER
 - REDIRECT_STATUS = 200
 - HTTP_HOST = ebizdev.alliedbeverage.com
 - HTTP_USER_AGENT = Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.0.4) Gecko/2008102920
 - HTTP_ACCEPT = text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
 - HTTP_ACCEPT_LANGUAGE = en-us,en;q=0.5

Zend Server...sneak peek

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 levels**
 - **Zend Server for IBM i Community Edition**
 - Available at no charge per IBM partnership
 - Includes “Optimizer+” that speeds up code
 - **Zend Server for IBM i**
 - Subscription available from Zend
 - High value extra features
 - Higher Support SLAs

Zend Server Installation

- **Current installation is beta**

- <http://www.zend.com/en/products/server/zend-server-5-new-ibmi>

- **Fast CGI built by IBM requires PTF's**

- Current group for 57nnDG1 – IBM HTTP Server for i5/OS
- http://www-912.ibm.com/s_dir/sline003.nsf/GroupPTFs?OpenView&view=GroupPTFs
- V5R4
 - PASE – SI36004
 - HTTP – SI36026
- i6.1
 - PASE – SI36005
 - HTTP – SI36027

Zend Server Administration

- **Single interface for “Core” and “Platform” controls**
- **Apache changes**
 - Single server (YAY!)
 - PASE server eliminated
 - IBM HTTP Server Powered by Apache
 - PHP implemented using Fast CGI developed by IBM
 - Restart button saves round trip to green screen!

Zend Server's Interface

The screenshot displays the Zend Server web interface. At the top, there is a navigation bar with the 'zend server' logo and links for 'Help | About | Logout'. Below this is a secondary navigation bar with tabs for 'Monitor', 'Rule Management', 'Server Setup', and 'Administration'. A third navigation bar contains links for 'Dashboard', 'Events', 'Jobs', 'Queue Statistics', 'Code Tracing', 'Server Info', 'PHP Info', 'Logs', and 'Applications'.

The main content area is divided into three sections:

- Recent Events:** A table listing recent events with columns for Id, Generated by Rule, Count, Last Occ., Severity, and Origin. The table shows five entries, with the first two being 'Critical' and the last three being 'Warning'.
- System Overview:** A section showing system details such as 'PHP Version 5.2.11' and 'Zend Framework Version 1.9.6'. It includes a 'more »' link and a 'Zend Server' section with various services and their status (ON/OFF).
- Tasks:** A section with links for 'Learn how to start with Zend Server and PHP' and 'Configure Zend Server Extensions'.

At the bottom of the interface, there is a license expiration warning: 'Your license will expire in 29 days. Click here to update your license'. On the right side of the bottom bar, there is a 'Restart PHP' button and the Zend logo.

Review: PHP basics on i

Review of PHP basics: Step 1

- **Learn some basic HTML**
 - Try <http://w3schools.com/html>
 - Tables (<table>, <tr>, <td>) useful for business data
 - “View Source” in browser to borrow bits of HTML
- **Optional: learn as needed**
 - Javascript
 - Adds dynamic functionality to pages
 - Cascading style sheets (CSS)
 - Modern way to specify colors, fonts, and other attributes of how a site looks

Step 2: Try a simple PHP script

- PHP scripts are text files that reside in the IFS
- Save script in /www/zendcore/htdocs/helloworld.php
- Run in browser URL:
<http://i5system:89/helloworld.php>

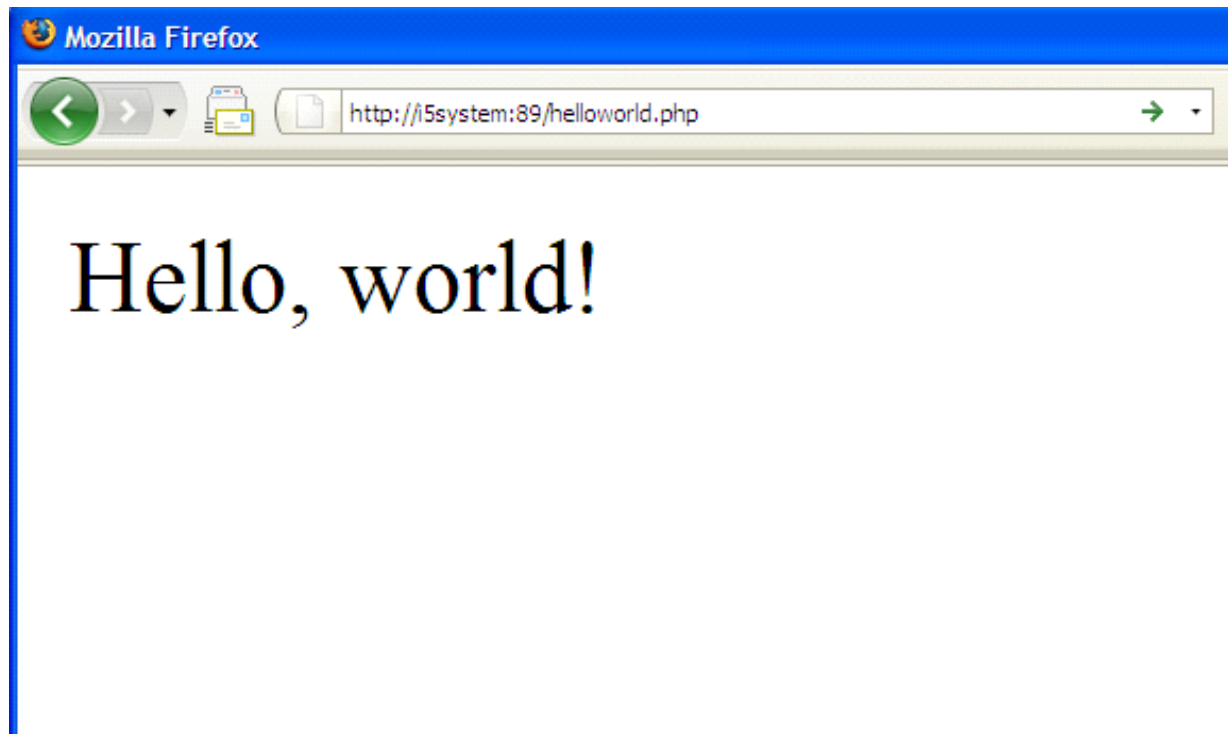
```
<?php

    // simple script to test PHP
    echo "Hello, world!";

?>
```

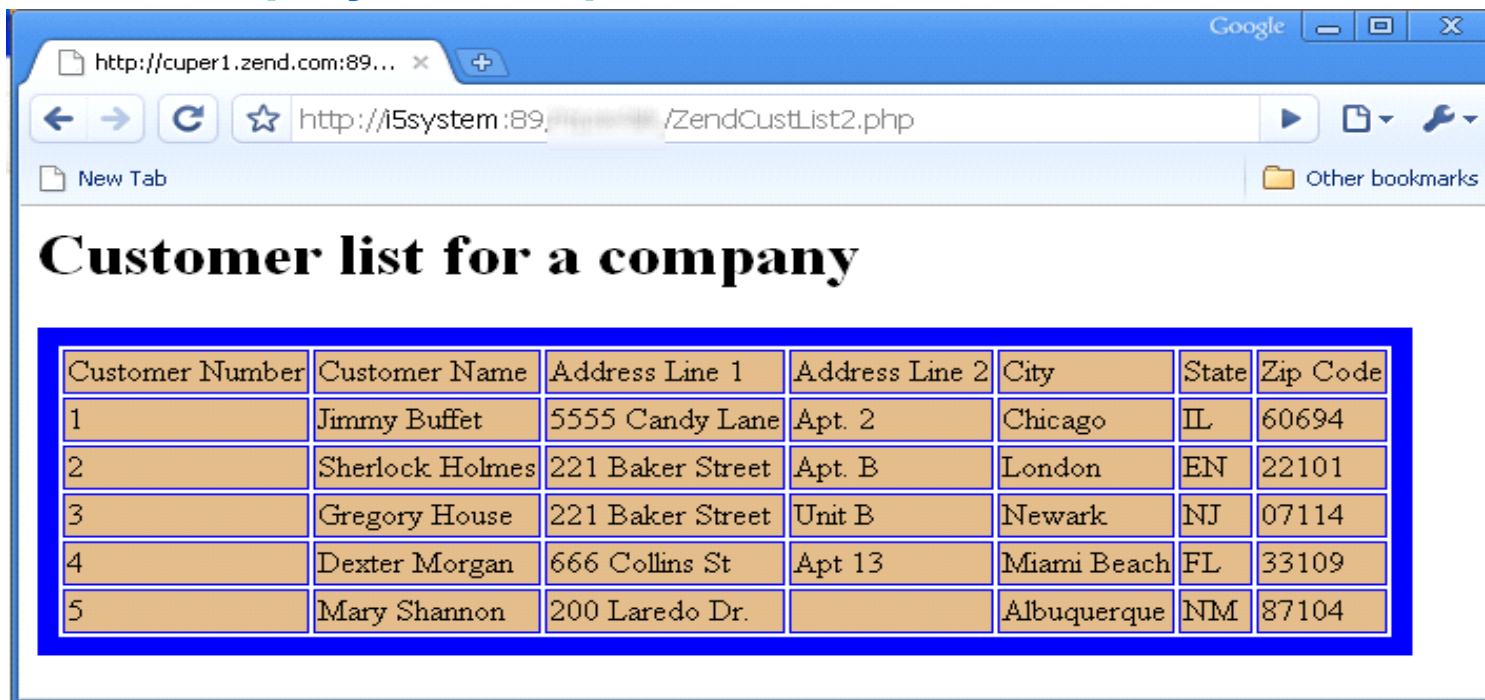
“Hello, world!” in browser

- **The output of helloworld.php**



Step 3: Access db2

- Example:
 - Connect to db2 on i
 - Select records from a db2 table
 - Load the records in an HTML table
 - Display the output



The screenshot shows a web browser window with the address bar containing the URL `http://i5system:89.../ZendCustList2.php`. The page title is "Customer list for a company". Below the title is a table with 7 columns: Customer Number, Customer Name, Address Line 1, Address Line 2, City, State, and Zip Code. The table contains 5 rows of data.

Customer Number	Customer Name	Address Line 1	Address Line 2	City	State	Zip Code
1	Jimmy Buffet	5555 Candy Lane	Apt. 2	Chicago	IL	60694
2	Sherlock Holmes	221 Baker Street	Apt. B	London	EN	22101
3	Gregory House	221 Baker Street	Unit B	Newark	NJ	07114
4	Dexter Morgan	666 Collins St	Apt 13	Miami Beach	FL	33109
5	Mary Shannon	200 Laredo Dr.		Albuquerque	NM	87104

Connection to DB2 for i

- Need three things (OK to leave blank for default):
 - Database name
 - User ID
 - Password

```
// Standard DB connection to DB2...
$conn = '*LOCAL'; $name = ""; $pwd = "";

$i5link = db2_connect($conn, $name, $pwd);
if (!$i5link)
echo 'Connection failed: '.db2_stmt_error().' : '.db2_stmt_errormsg();

$sql = "SELECT * from prodlib.customer";

$stmt = db2_exec($i5link,$sql)
or die("Failed query:".db2_stmt_error().": ".db2_stmt_errormsg());

?>
```

Reading data

Loop through record set

```
<h1> Customer list for a company</h1>
<TABLE BORDER="10" BORDERCOLOR="blue"><TBODY BGCOLOR="DEB887">
<TR><TD>Customer Number</TD><TD>Customer Name</TD><TD>Address Line 1</TD>
<TD>Address Line 2</TD><TD>City</TD><TD>State</TD><TD>Zip Code</TD></TR>

<?php

echo " <TR><TD> $row['CUSTNUM'] </TD>
    <TD>$row['CUSTNAME'] </TD>
    <TD>$row['CUSTADDR1']</TD>
    <TD>$row['CUSTADDR2'] </TD>
    <TD>$row['CUSTCITY']</TD>
    <TD>$row['CUSTSTATE'] </TD>
    <TD>$row['CUSTZIP']</TD></TR>";
}
echo ' </table> ';
db2_close($i5link);

?>
```

Resources

- **My basic PHP presentation:** <http://www.sbsusa.com/php/>
- **Support: Zend Core includes one year of “silver” support**
- **Forums and lists**
 - forums.zend.com (look for IBM i forums)
 - lists.nyphp.org (general PHP questions)
- **Books (online and print)**
 - PHP Manual: <http://php.net>
 - *Zend Core for i5/OS* Redbook
 - PHP on IBM i book by Jeff Olen & Kevin Schroeder (MC Press)
- **PHP User Groups**
 - nyphp.org, liphp.org



RPG/PHP side by side

That age-old issue

- **“New users don’t like the green screens”**
- **“We need to open up our apps/data to the outside, safely, and with a GUI”**
- **But we don’t want to lose our investment in RPG code**
- **We still want stability...and to run on the “i” !!**

First thought: automatic webfacing

- **Tools such as NewLook do it fast, but:**
 - Often require java or plug-ins for browser
 - Users know they're not true web apps
 - Still green screens in disguise
- **Zend has “5250 Bridge” for PHP**
 - Pulls 5250 data stream into a PHP app
 - Shows promise but:
 - Not automatic
 - Slow
- **These solutions serve a purpose but don't get you something new**

Next thought: approach for true web apps

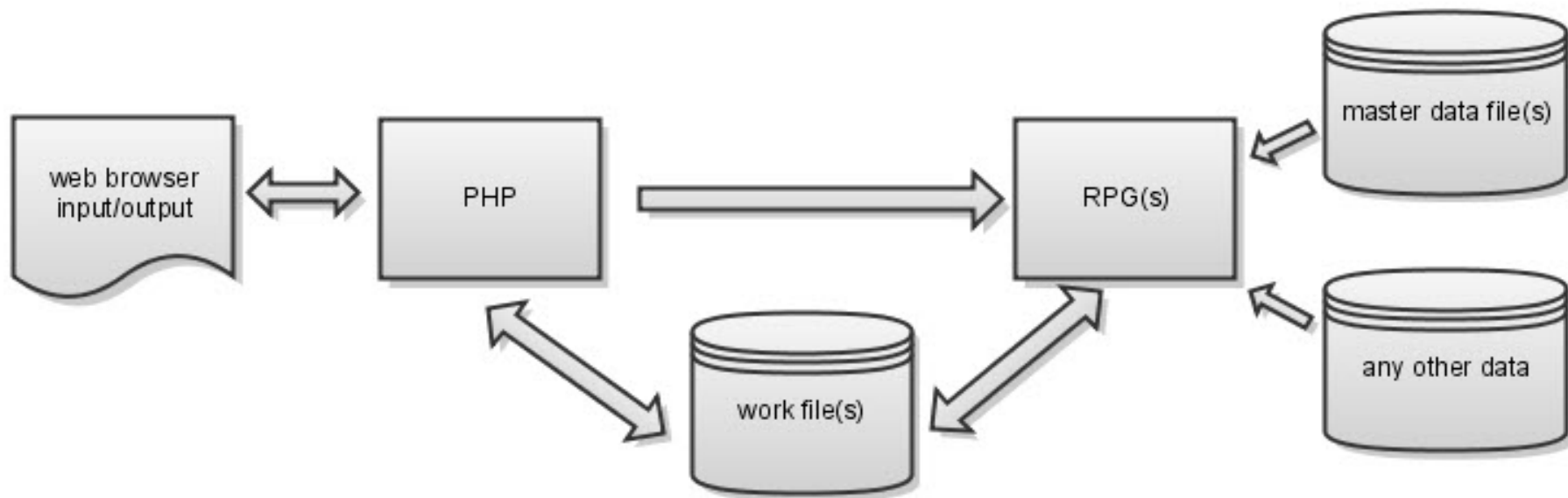
- **I used it with my team at SBS for the first time in 2002 (before PHP on i)**
- **A smart 'i' friend of mine just came up with the same approach independently**
- **It's time to talk about it**
- **All it needs is a catchy name**

Magic formula

- **PHP calls RPG with a unique session id and other key values**
 - RPG looks up data, does calculations, validation
- **Returns data and error messages in work file(s)**
 - Redirect output to a file instead of the screen
- **PHP reads the work file using SQL, outputs data on page**
- **It is worth the effort if your RPG is complex and valuable**

Flow of PHP/RPG

- **PHP controls the flow**
 - Receive input from browser
 - Zero-pad numeric fields
 - Write records (if any) to work file(s)
 - Call appropriate RPG(s)
- **RPG processes, calculates, validates**
 - Writes results to work files(s)
 - Returns status flag to PHP
- **PHP reads work file(s) and shows any validation results and data**



Parameter list of updated RPG

```
0008.00 H*  PARAMETERS      : SEQ   - (*CHAR 11) - transaction sequence #
0009.00 H*                               SESS  - (*CHAR 25) - session key
0010.00 H*                               FLAG  - (*CHAR  1) - Success Flag (Y/N)
0011.00 H*                               Y = ... Processed Normally
0012.00 H*                               N = Not Processed Normally (validation error)

0137.00 C    *ENTRY        PLIST
0138.00 C                               PARM                SEQ                11
0139.00 C                               PARM                SESS                25
0140.00 C                               PARM                FLAG                1
```

Work files to get validation messages from RPG

- **Transaction work file containing data**

```
Transaction sequence 284
Order Number      332
Sales Rep 105
Dollar total 100.35
Validation Request 2951
Validation Group 1
```

- **Validation log file containing validation errors and so on**

- “group” is used like: group 1 = header
- Each detail line can have its own group of messages.
 - group 2 = a detail line, group 3 another detail line. etc.

```
Validation Request      3673
Validation Group        1
Validation Unique       2951
Message Id  VOR4039
Message Severity  60
Message Text  Invalid model year/exterior/interior combination.
```


Use MONMSG

- **Avoid any possibility of a crash in RPG/CL**
 - If an RPG/CL does not complete, it won't return control
 - Web page will “hang” till it times out
- **Use MONMSG in CL; provide a return flag to tell PHP that an error occurred**
- **You could even email yourself the error message**
- **This technique will avoid head-scratching while you test, change file layouts, etc.!**

Tip: Encapsulate i5 calls

```
// PARTIAL CODE from our SBS_i5 "class" (grouping of functions)

$_outputParms = array();

public function callProgram($programName, $description, $parmsIn) {
// for programName, library is optional, e.g. MYLIB/MYPROG.
// if successful, fill the outputParms array with output values
$pgm = i5_program_prepare($programName, $description);

// get field names (keys) from description array.
$parmNames = array_keys($description);
// generate output parm array from them.
foreach($parmNames as $parmName) {
    $parmsOut[strtoupper($parmName)] = strtoupper($parmName); // looks like
    "AMOUNT"=>"AMOUNT"
} //(foreach($description as $key=>$descArray))

$ret = i5_program_call($pgm, $parmsIn, $parmsOut);
// create array of key=>value pairs from the variables created on i5_program_call
$this->_outputParms = compact($parmsOut);
}

public function getOutputParms() {
// return outputParms, an array.
return $this->_outputParms;
}
```

Now call the encapsulated i5 function

```
// In your mainline code:
$programToCall = "MYPROGRAM";
$description = array("SESS" => array(
    "Name" => "SESS",
    "IO" => I5_INOUT,
    "Type" => I5_TYPE_CHAR,
    "Length" => "25"),
    "SEQ" => array( // and so on...

// create array of input values
$parmsIn = array('SESS'=>$sessionKey,
    'SEQ'=>$zeroPaddedSequence,
    'FLAG'=>$actionFlag);

// "callProgram" handles prepare and call.
$i5Call = new SBS_i5();
$success = $i5Call->callProgram($programToCall, $description, $parmsIn);
if ($success === false) {
    throw new Exception('Could not call program.');
```

```
}//(if ($success === false))

// if we got this far, program ran successfully.
$returnValues = $i5Call->getOutputParms();

// validatedOK is true if FLAG = Y.
$validatedOk = (($returnValues['FLAG'] == 'Y') ? true : false);
```

Order Entry Case Study #1

Screen #1, Order header

```
Minnesota                               Order Entry                               Entered By YVONNES
Invoice #. 00192913-01                   Invoice Posted                               Order Date 12/15/08
Bill To... 2223492 (F4=Search)           Ship To FAMILIA
CALDERON RIVERA, MARGARITA              Name... CALDERON RIVAS, ELSA MARINA
754 26TH ST                              Addr1.. BARRIO LAS CRUCITAS
                                          Addr2..
                                          Addr3..
EAST MOLINE                             City... SANTA CRUZ DE YOJOA
IL 61244-1864                            Region. CORTES
Country USA United States                 Country HONDURAS
Phone 309-292-3297                       Phone.. 504-- -654-9412
Dealer. GUAMAR LA GUADALUPANA           Reference#
Empty Box Delivery Date . 12/15/08      Delv.Time. (F4=Search)

Request Pickup Date . . . 1/02/09       Pickup Time 0 (F4=Search)
                                          ESTA CAJA SE RECOJERA POR FEDEX

Request Ship Date . . . . 1/05/09

Zone./ Branch . . . . . GUAMAR / 65
Enter=Continue (F4=Search) (F12=Previous) (F20=Override Zone) (F22=Change Ship-To)
```

Screen #2, Order detail

OEORDD Order Inquiry Entered By YVONNES/Minneap
Region MN Minnesota Order Date 12/15/08
Bill To CALDERON RIVERA, MARGARITA Invoice # 00000000 -01
Ship To CALDERON RIVAS, ELSA MARINA Order Status Invoice Posted
Country 504 HONDURAS

Ord	Inv					Customs	Delivery	Extended
Qty	Qty	Item/Desc	Weight	Price	Insure\$	Fee	Charges	Amount
2=Edit	4=Pkg	Content	5=Adjust	Comm	6=Change	Posted	Item	7=Coupon
1	1	22	0	165.00	15.00	.00	.00	180.00
		22"X22"X22"						
<u>#/Pkgs</u>				Coupon		Invoice Date/By.		12/15/08 YVONNES
1		Declared Value...	\$500.00	Package Scanned.		1/08/09		YALITZAF
Ln#	001	Inv Seq-01	Comm	30.00	Invoice Posted...		1/08/09 YALITZAF	

Bottom

Order Total. 180.00
Invoice 01 Total. 180.00

Enter=Accept F1=New Box F2=Other Charges F7=Summary F24=More Keys

Screen #3, Content package from detail

(Option 4 from order header)

```
Invoice# 00000001 - 1 Package Contents JESSIE 2/02/10
Line#.... 0001 22"X22"X22"
          Dist Branch..... Honduras(50400/516-279-5205)
Total# of Pkgs..... 1 Delivered by..... FERNANDO ARGUIJ
Declared Value(Ins) 500 Delivery Date..... 2/01/09
Insurance Charges.. 15.00 Delivery signed by ELSA MARINA CALDERON
                                           Declared
Pkg# Package Content/Detail Descriptions Weight Customs$
1=Enter/Edit Content 2=Enter Claim 3=Assign Claim 4=Comment 5=Close Claim
6=Enter Customs Value
_ 1 -ZAPATOS
   -ROPA
   -CAMARA DE VIDEO
   -PAÑALES DESECHABLES

                                           Bottom

Enter=Accept F2=Print F12=Previous
```


Screen #4, Notes from order detail

F9 key launches this

```
JESSIE                               Invoice Notes
                                INVOICE  00192913

  _Date_  Notes                                     Created By
2=Edit  4=Delete
_ 1/04/09 Label 00192913-01 printed by YVONNES.      SYSTEM
_ 1/04/09 Invoice 00192913-01 printed by YVONNES.    SYSTEM
_ 1/04/09 Dealer changed from LAPAZM to GUAMAR by YVONNES  SYSTEM
_ 12/16/08 Price Overridden from 175.00 to 165.00 by YALITZAF  SYSTEM
CORRECCION
_ 12/16/08 Zone changed from LAPAZM To GUAMAR by YALITZAF  SYSTEM
_ 12/15/08 Package Content entered/updated by YVONNES      SYSTEM
_ 12/15/08 Invoice scheduled for P/U on 12/15/08 By YVONNES.  SYSTEM

Bottom

Add Notes █
_____
_____
_____

days

Enter=Continue  F3=Exit
```

Web page combines all 4 “green screens”

Address <http://i.medranoexpress.com/MedranoExpress/i5OE/oeorder.php?Invoice=...>

Go Links »



bienvenido! LA GUADALUPANA MARKET (GUAMAR) February 2,2010

Branch: Medrano Express - Minneapolis Phone: 612-721-4547

[Dealer](#) | [Update Profile](#) | [Work with Customers and Invoices](#)

Work with Order 00192913-1

Bill-to Customer: 2223492
 CALDERON RIVERA, MARGARITA
 754 26TH ST
 EAST MOLINE, IL 61244-1864
 USA
 Telephone: 309-292-3297

Ship-to: FAMILIA
 CALDERON RIVAS, ELSA MARINA
 BARRIO LAS CRUCITAS
 SANTA CRUZ DE YOJOA,
 CORTES
 HONDURAS
 Telephone: 6549412

Branch 65 Medrano Express - Minneapolis
Order Date 2008-12-15
Order taken by YVONNES (Branch-65)
Dealer: GUAMAR-LA GUADALUPANA MARKET
Zone: GUAMAR

Pickup Date/Comments: 2009-01-02 ESTA CAJA SE RECOJERA POR FEDEX
Shipment Date/Comments: 2009-01-05

Line#	Item	Item Description	# of Pkgs	Declared Value	Quantity	Unit Price	Customs Fee	Insurance	Extended Amount																				
1	22"X22"X22"	Box Size: 22 X 22 X 22 Weight: .00	1	500.00	1	165.00	.00	15.00	180.00																				
	Status: X																												
		<table border="1"> <thead> <tr> <th>Qty</th> <th>Package Content and Description</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Package 1 of 1</td> <td>Add/Update content</td> <td></td> </tr> <tr> <td>0</td> <td>ZAPATOS</td> <td>0.00</td> </tr> <tr> <td>0</td> <td>ROPA</td> <td>0.00</td> </tr> <tr> <td>0</td> <td>CAMARA DE VIDEO</td> <td>0.00</td> </tr> <tr> <td>0</td> <td>PAcLES DESECHABLES</td> <td>0.00</td> </tr> <tr> <td></td> <td>Total Content Value</td> <td>0.00</td> </tr> </tbody> </table>	Qty	Package Content and Description	Value	Package 1 of 1	Add/Update content		0	ZAPATOS	0.00	0	ROPA	0.00	0	CAMARA DE VIDEO	0.00	0	PAcLES DESECHABLES	0.00		Total Content Value	0.00						
Qty	Package Content and Description	Value																											
Package 1 of 1	Add/Update content																												
0	ZAPATOS	0.00																											
0	ROPA	0.00																											
0	CAMARA DE VIDEO	0.00																											
0	PAcLES DESECHABLES	0.00																											
	Total Content Value	0.00																											
Order Totals:			1		1		0.00	15.00	180.00																				

[Print Invoice](#)

[Print Labels](#)

[Add New Notes](#)

Order Notes

2008-12-15 Invoice scheduled for P/U on 12/15/08 By YVONNES. SYSTEM
 2008-12-15 Package Content entered/updated by YVONNES SYSTEM
 2008-12-16 Zone changed from LAPAZM To GUAMAR by YALITZAF SYSTEM

How do we fit all that on one page?

- Vertical scrolling
- Contrasting fonts and colors

Address <http://i.medranoexpress.com/MedranoExpress/ISOE/oeorder.php?Invoice=...> Go Links »

Medrano Express

bienvenido! LA GUADALUPANA MARKET (GUAMAR) February 2,2010
Branch: Medrano Express - Minneapolis Phone: 612-721-4547

Dealer | Update Profile | Work with Customers and Invoices

Work with Order 00192913-1

Bill-to Customer: 2223492
CALDERON RIVERA, MARGARITA
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Telephone: 309-292-3297

Ship-to: FAMILIA
CALDERON RIVAS, ELSA MARINA
BARRIO LAS CRUCITAS
SANTA CRUZ DE YOJOA,
CORTES
HONDURAS
Telephone: 6549412

Branch 65 Medrano Express - Minneapolis
Order Date 2008-12-15
Order taken by YVONNES (Branch-65)
Dealer: GUAMAR-LA GUADALUPANA MARKET
Zone: GUAMAR

Pickup Date/Comments: 2009-01-02 ESTA CAJA SE RECOJERA POR FEDEX
Shipment Date/Comments: 2009-01-05

Line#	Item	Item Description	# of Pkgs	Declared Value	Quantity	Unit Price	Customs Fee	Insurance	Extended Amount
1	22"x22"x22"	Box Size: 22 X 22 X 22 Weight: .00	1	500.00	1	165.00	.00	15.00	180.00
	Status: X	Qty Package Content and Description Value							
		Package 1 of 1 <input type="button" value="Add/Update content"/>							
		0 ZAPATOS							0.00
		0 ROPA							0.00
		0 CAMARA DE VIDEO							0.00
		0 PaCLEs DESECHABLES							0.00
		Total Content Value							0.00
Order Totals:			1		1		0.00	15.00	180.00

Order Notes

2008-12-15	Invoice scheduled for P/U on 12/15/08 By YVONNES.	SYSTEM
2008-12-15	Package Content entered/updated by YVONNES	SYSTEM
2008-12-16	Zone changed from LAPAZM To GUAMAR by YALITZAF	SYSTEM

One PHP script, four RPG programs


- **Call each RPG; it fills a work file with data to read**
- **Repeat 4x !**
- **“header” RPG returns useful information for calling “detail” RPG, etc.**
- **Show results in one PHP “view”**
- **(Thanks to Jessie Clark)**

Order Entry Case Study #2

Allied Beverage Group

Search Results (7 products found), order for EUROPA LIQUORS (001588) - Mozilla Firefox

Home Advanced Search Orders ABG Employee Connect Log out

 eBiz@ABG Welcome, Angel Wong #105

Home > Search Product Catalog > Search Results (7 products found), order for EUROPA LIQUORS (001588) PRICING MONTH: **June 2009**

Advanced Search

Search for item: [?] (proof °) AMERICO'S INC (001588) Off Premise Terms: NET
 with bottle price [?] to [?] (optional) DBA EUROPA LIQUORS Total List: \$ 118.54
 (\$): 155-57 PACIFIC ST, NEWARK NJ, 07102 Total Disc: \$ 20.00
 Phone: 973-688-8185 Est Total Net: \$ 98.54
 Cases: 1 Bottles: 0

Results for **Keywords: CHARD NAPA 375ML**

Product	Code	Size	Pack	Qty	Cs/Bt	Add Items	Price		Inventory		Vintage	Info	\$ Best Buy
							\$ Case	\$ Bottle	Case	Bottle			
Acacia Chardonnay A By Acacia	5607061	375 MI	12	<input type="text" value="3"/>	cases	Add			26	5	NV		
Cakebread Cellars Chardonnay Napa Valley 07	7433065	375 MI	12	<input type="text" value="1"/>	bottles	Add			9	5	2007		
Groich Hills Cellar Chardonnay	5544265	375 MI	12	<input type="text"/>	cases	Add			5	7	2006		
Levendi Chardonnay Red Hen 05	4591060	375 MI	12	<input type="text"/>	cases	Add			13	2	2005		
Merrvale Chardonnay Starmont 07	4223069	375 MI	12	<input type="text"/>	cases	Add			8	8	2007		
Schramsberg Blanc de Blanc	4056064	375 MI	12	<input type="text"/>	cases	Add			17	9	2005		

Original 5250-mode order entry process

- **Aimed at expert customer service users**
- **Sales reps accessed it using Jadvantage java applet in browser**
 - Better than nothing
 - S-l-o-w
 - Forced reps to have expert knowledge of system
- **Dicey wireless signals on the road = lost sessions**
- **RPG did important work but was too complex to make major changes to**

Intro screen

```
Session A - [24 x 80]
ORDER ENTRY

SALESMAN          CUST #          PHONE #
  .....          .....          .....

COMMENTS
  .....

YOUR RETURN TO NUMBER ... LOCATION ... DELIVERY DATE ..... BILL&HOLD ...
                                     "Y"=YES

ENTER A "Y" FOR ALL GIFT ..

Enter A 33 to Make Order A Sales P/U From Carlstadt ...

Enter A "M" to force A Mount Laurel Only Invoice ..

MA  a          MW          07/018
```


Intro with error message (customer)

Session A - [24 x 80]

ORDER ENTRY

SALESMAN 105	CUST # -	PHONE #
-----------------	-----------------------	----------------------

COMMENTS

INVALID CUSTOMER NUMBER

YOUR RETURN TO NUMBER 01 LOCATION 05 DELIVERY DATE BILL&HOLD . . .
"Y"=YES

ENTER A "Y" FOR ALL GIFT . . .

Enter A 33 to Make Order A Sales P/U From Carlstadt . . .

Enter A "M" to force A Mount Laurel Only Invoice . . .

MA a MW 07/034

Main screen

```
Session A - [24 x 80]
1 COLUMBIA PK LIQ INC.#734 014315 105 ANGEL WONG 05 CARLSTADT
  SHOPRITE N BERGEN 201-865-2033
  3131 KENNEDY BLVD .00 C BKPR PH:201 558 9500
  NORTH BERGEN NJ 07049 C.O.D. B ** 26 ** TWHF
-----
L# ORD PROD # DESCRIPTION SIZE L# ORD PROD # DESCRIPTION SIZE
-----
QTY TYP PR ALP L# RTN 99 INS 00 00
MA a MW 24/005
```

Search for a product by description

```
Session A - [24 x 80]
1 COLUMBIA PK LIQ INC.#734 014315 105 ANGEL WONG 05 CARLSTADT
  SHOPRITE N BERGEN 201-865-2033
  3131 KENNEDY BLVD .00 C BKPR PH:201 558 9500
  NORTH BERGEN NJ 07049 C.O.D. B ** 26 ** TWHF
-----
L# ORD PROD # DESCRIPTION SIZE L# ORD PROD # DESCRIPTION SIZE
-----
QTY 01 TYP 3 PR ALP ROSE L# RTN 00 INS 00 00
MA a MW 24/033
```

Select a product

Session A - [24 x 80]

E								CARL REG	CARL GIF	MT LAUREL				
QY	T	PROD#	DESCRIPTION	SIZE	H	PAK	CASES	BOT	CASES	BOT	REG	C	GIF	C
		4620065	ROSEN BLK MSCT03	12P 375ML		12	1	7						
		4620067	ROSEN BLK MSCT05	12P 375ML		12								
		4620068	ROSEN BLK MSCT06	12P 375ML		12	50	5						
		4636140	ROSEN CAB CUVEE	750ML		12	1050	2						
01	3	4636240	ROSEN CHARD CUVEE	750ML		12	979	9		9				
		9339540	ROSEN DESIREE	375ML		12	24	7						
		4630441	ROSEN KICK SYRAH 05	750ML		12		8						
		6217062	ROSEN LH VIOG 02	12P 375ML	6	12		4						
		4630361	ROSEN LH ZIN RAB 06	375ML		12								
		4620066	ROSEN MUSC 12P	375ML	8	12								
		4630142	ROSEN PET SIR HERT05	750ML		12								
		4630143	ROSEN PET SIR HERT06	750ML		12		8						
		4630144	ROSEN PET SIR HERT07	750ML		12	59	10						
		4628047	ROSEN PET SIR PICK06	750ML	6	12	1	6						
		4636340	ROSEN SV BLC CUVEE08	750ML		12	317	8						
		4669242	ROSEN VIOGNR K CUV05	750ML	6	12								
		4669245	ROSEN VIOGNR K CUV08	750ML		12	77	8						
		4630242	ROSEN ZIN APARIC 05	750ML		12	15	3						

COMMAND KEY 5 FOR ESCAPE

MA a MW 08/006

Help!

```
Session A - [24 x 80]
1 COLUMBIA PK LIQ INC.#734 014315 105 ANGEL WONG 05 CARLSTADT
  SHOPRITE N BERGEN 201-865-2033 CAN'T SELL THIS ITEM OFF PREMISE
  3131 KENNEDY BLVD .00 C BKPR PH:201 558 9500
  NORTH BERGEN NJ 07049 C.O.D. B ** 26 ** TWHF
-----
L# ORD PROD # DESCRIPTION SIZE L# ORD PROD # DESCRIPTION SIZE
-----
QTY 1 TYP 3 PR 4636240 ALP L# RTN 00 INS 00 00
MA a MW 24/029
```

Big blinking error message

What Allied wanted in web-based order entry

- **Good for sales reps and customers**
 - Keep speed while making easier for newcomers
 - Reps can copy from past orders
 - Lots of information at fingertips (fewer clicks)
- **Users can save drafts of orders**
 - We use the old RPG logic, but we're not tied to it
- **No problem if temporarily disconnected**
 - Stateless web connection can easily resume later
- **Overcome 90-item limit**
 - So we didn't have to treat that as an error
 - Internally we split order into 90-item bunches and sent multiple orders to RPG

Web ordering intro page

Orders - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ebizdev.alliedbeverage.com/order

Home Advanced Search Orders ABG Employee Connect Info Log out

eBiz@ABG

Welcome, Angel Wong #105

Home > Orders PRICING MONTH: February 2010

Account# * [?]
 Sales Pickup [?]
 Product Type both cases bottles [?]

Comments (optional) [?]
 Bill and Hold [?]
 Separate order [?]

Delivery Date [?]
 Gift [?]
 Entry Mode [?]

Drafts and committed orders

Action	Status [?]	Account	Comments	Order Dates		Cs	Bt	Totals (Estimated)		
				Created	Delivery			\$ List	\$ Discount	\$ Net
		014315: SHOPRITE N BERGEN		01/15/10	next avail	5	1	1180.44	2.40	1178.04
		041722: KING'S BAR & LIQUOR		01/15/10	next avail			.00	.00	.00
		001684: VINNY'S DISCT LIQ		02/10/10	next avail	2		1205.67	196.56	1009.11
		000262: PORTLAND W & L		02/10/10	next avail	2		990.33	.00	990.33
		040130: KRYSTAL WINE & LIQUO		12/16/09	sales p/u	2		641.98	88.90	553.08
	committed (web)	045070: CASA BELLA RISTORANT		11/18/09	next avail	1				View Order
	committed (web)	000262: PORTLAND W & L		08/26/09	41/44/07	1				View Order
	committed (web)	012164: J & J DRUGS		08/21/09	next avail	1	1			View Order
	committed (web)	012164: J & J DRUGS		07/24/09	next avail	6	3			View Order

Web with account type/search box

Orders - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ebizdev.alliedbeverage.com/order

Home Advanced Search Orders ABG Employee Connect Info Log out

Welcome, Angel Wong #105

Home > Orders PRICING MONTH: February 2010

Account# * 012213: Centanni Inc, North Arlington

Sales Pickup 012213: Centanni Inc, North Arlington

Product Type 018650: Center Deli, South Amboy

Comments (optional)

Bill and Hold

Separate order

Delivery Date next available

Gift

Entry Mode Expert

Create

	Comments	Order Dates		Cs	Bt	Totals (Estimated)		
		Created	Delivery			\$ List	\$ Discount	\$ Net
011596: Lighthouse Rest., West New York	EN	01/15/10	next avail	5	1	1180.44	2.40	1178.04
017337: Little Liquors, Totowa		01/15/10	next avail			.00	.00	.00
014315: Shoprite N Bergen, North Bergen		02/10/10	next avail	2		1205.67	196.56	1009.11
016454: Totowa Liquors, Paterson		02/10/10	next avail	2		990.33	.00	990.33
draft 000262: PORTLAND W & L		12/16/09	sales p/u	2		641.98	88.90	553.08
committed (web) 045070: CASA BELLA RISTORANT		11/18/09	next avail	1				View Order
committed (web) 000262: PORTLAND W & L		08/26/09	41/44/07	1				View Order
committed (web) 012164: J & J DRUGS		08/21/09	next avail	1	1			View Order
committed (web) 012164: J & J DRUGS		07/24/09	next avail	6	3			View Order

New York: Mon 15:23 Transferring data from o.aolcdn.com...

Web Mode #1: Quick Order Entry

Enter Product Codes - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ebizdev.alliedbeverage.com/Order/edit/sequence/30063

Home Advanced Search Orders ABG Employee Connect Info Log out

eBiz@ABG

Welcome, Angel Wong #105

Home > Orders > Enter Product Codes PRICING MONTH: February 2010

CENTANNI INC (012213) On Premise Terms: NET

DBA CENTANNI INC Total List: \$207.84
 11-35 RIVER ROAD, NORTH ARLINGTON NJ, 07032 Total Disc: \$.00
 Phone: 201-246-0100 Est Total Net: \$ 207.84
 Messages: (none) Cases: 7 Bottles: 0

Ship From: NORTH Delivery Date: next available (days: H) Mode: Expert Comments (optional):

product search Cancel Recalc Save Draft Preview Final prices determined when invoiced. Commit Order

Dlt	Qty	Cs/Bt	Code	Msg	Description	\$ List	\$ Disc	\$ Net	\$ Ext	Info	Sales Rep/House
X	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)						105: Angel Wong/30
X	3	cases	0222222		PRODUCT NOT FOUND						105: Angel Wong/30
This product cannot be ordered - This is not a valid product. (system msg: WP00041)											
X	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)						105: Angel Wong/30
DUPLICATE: This line item is a duplicate. (system msg: WP00062)											
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30
X		cases									105: Angel Wong/30

New York: Mon 15:28 Done

Search results

Search Results (45 products found), order for CENTANNI INC (012213) - Mozilla Firefox

http://ebizdev.alliedbeverage.com/advancedsearch/result/globalsearch/rose/minprice/10/maxprice

Home | Advanced Search | Orders | ABG Employee Connect | Info | Log out

Welcome, Angel Wong #105

Home > Search Product Catalog > Search Results (45 products found), order for CENTANNI INC (012213) PRICING MONTH: February 2010

Advanced Search

Search for item: [?] [\(proof °\)](#)

with bottle price (\$): [?] to [?] (optional)

CENTANNI INC (012213) On Premise Terms: NET
 DBA CENTANNI INC Total List: \$.00
 11-35 RIVER ROAD, NORTH ARLINGTON NJ, 07032 Total Disc: \$.00
 Phone: 201-246-0100 Est Total Net: \$.00
[Cases: 0](#) [Bottles: 0](#)

Results for Keywords: ROSE Minimum bottle price: 10 Maximum bottle price: 15

Product	Code	Size	Pack	Qty	Cs/Bt	Add Items	Price		Inventory		Vintage	Info	\$ Best Buy
							\$ Case	\$ Bottle	Case	Bottle			
Kourtakis Rose Reditis	5118020	1.5 Lit	6	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$19.99	\$16.66	8	2	NV		
Jadot Beauj Rose086p	5384242	750 MI	6	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$59.99	\$16.66	21	2	2008		1 cs: 49.98 / 8.33
Volteo Gamacha 08	5277440	750 MI	12	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$146.28	\$16.29	12	4	2008		1 cs: 104.28 / 8.69
Canella Prosecco Di Conegliano	9311840	750 MI	12	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$146.28	\$16.29	7	8	NV		1 cs: 104.28 / 8.69
Luis Felipe Edwards Rosa Blanco Cabernet Sauvignon 06	5930940	750 MI	12	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$211.00	\$16.66	33	2	NV		1 cs: 96.00 / 8.00
Ca'montini Luna Di Luna Premium Pink Merlot	4144380	187 MI	6	<input type="text"/>	<input type="text"/> cases	<input type="button" value="Add"/>	\$89.28	\$16.74	19	4	NV		1 cs: 52.29 / 8.72

New York: Mon 15:27 Done

Web Mode #2: Standard Order Entry

Build Order - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ebizdev.alliedbeverage.com/Order/edit/sequence/30063

Home Advanced Search Orders ABG Employee Connect Info Log out

Welcome, Angel Wong #105

Home > Orders > Build Order PRICING MONTH: **February 2010**

CENTANNI INC (012213) On Premise Terms: NET

DBA: CENTANNI INC Total List: \$207.84
 11-35 RIVER ROAD, NORTH ARLINGTON NJ, 07032 Total Disc: \$.00
 Phone: 201-246-0100 **Est Total Net: \$ 207.84**
 Messages: (none) Cases: 7 Bottles: 0

Ship From: NORTH Delivery Date: (days: H) Mode: Comments (optional):

Add a product: cases Or select from Customer Sales History:

Dlt	Qty	Cs/Bt	Code	Msg	Description	\$ List	\$ Disc	\$ Net	\$ Ext	Info	Sales Rep/House
✗	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)	\$1.00	.00	\$1.00	\$2.00		105: Angel Wong/30
✗	3	cases	0222222		PRODUCT NOT FOUND	.00	.00	.00	.00		105: Angel Wong/30
This product cannot be ordered - This is not a valid product. (system msg: WP00041)											
✗	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)	\$1.00	.00	\$1.00	\$2.00		105: Angel Wong/30
DUPLICATE: This line item is a duplicate. (system msg: WP00062)											

Customer Service North: (800) 272-1323 South: (800) 841-1948
 © Copyright Allied Beverage Group LLC. All Rights Reserved.

AJAX technology (javascript) loads dynamic info

Build Order - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ebizdev.alliedbeverage.com/Order/edit/sequence/30063

Home Advanced Search Orders ABG Employee Connect Info Log out

Welcome, Angel Wong #105

Home > Orders > Build Order PRICING MONTH: February 2010

CENTANNI INC (012213) On Premise Terms: NET

DBA CENTANNI INC Total List: \$207.84
11-35 RIVER ROAD, NORTH ARLINGTON NJ, 07032 Total Disc: \$.00
Phone: 201-246-0100 Est Total Net: \$ 207.84
Messages: (none) Cases: 7 Bottles: 0

Ship From: NORTH Delivery Date: next available (days: H) Mode: Standard Comments (optional):

Cancel Recalc Save Draft Preview

Add a product: Or select from Search: Customer Sales History:

Dlt	Qty	Cs/Bt	Code	Msg	Description	\$ List	\$ Disc	\$ Net	\$ Ext	Info	Sales Rep/House
✘	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)	\$1.96	00	\$1.96	193.92	Click for availability	
					Inventory Regular Gift						
					Case Bottle Case Bottle						
					Carlstadt 8 2 0 0						
					There's no shipment information for this product.						
✘	3	cases	0222222		PRODUCT NOT FOUND	00	00	00	00		105: Angel Wong/30
This product cannot be ordered - This is not a valid product.						(system msg: WP00041)					
✘	2	cases	5118020		KOURTAKI ROSE TABLE (1.5 L/6)	\$1.96	00	\$1.96	193.92		105: Angel Wong/30
DUPLICATE: This line item is a duplicate.						(system msg: WP00062)					

Customer Service North: (800) 272-1323 South: (800) 841-1948
© Copyright Allied Beverage Group LLC. All Rights Reserved.

Usability tips

Check error messages for user friendliness

- **Don't assume users are experts**
- **Old style**
 - "CODE NOT ON FILE"
- **New style**
 - "We're sorry, but the warranty code you entered was not valid."
 - (Better: provide a lookup to avoid errors)

- **Old style**
 - "WARNING-LIMIT EXCEEDED"
- **New style**
 - "You entered more than the maximum number of line items (100)."
 - (Better: find a way to allow more items, perhaps by calling the old RPG program once for each 100 you need to process.)

Graphical appeal = usability and “sizzle”

- **Need HTML skills or know someone who does**
- **Use corporate logos or graphics**
- **Photoshop, Snagit, or other graphic programs**
- **Borrow from sites that you like**
 - Use “View Source” command in browser
- **Match colors for instant professional look**
 - See next slide for a tip

Colorzilla for Firefox

- <https://addons.mozilla.org/en-US/firefox/addon/271>

NEMUG
The New England Midrange Users Group

2. Hover mouse/cross-hairs over color you want

1. Click "eye dropper"

3. See color codes

Home | Schedule

Members
Speaker Info
Directions
Application
From the President
Speaker Handouts
Contact an Officer

Next Regular Meeting - February 17, 2010

The New England Mid-Range Users Group is organized as a resource for users of IBM System i, i Series and AS/400 systems. If you were looking for the New England M User's Group (MUMPS) goto www.nemug.org

Date: Wednesday, February 17, 2010
Time: Sign In 5:15 p.m.; Speaker 6:00-7:00 p.m., Dinner to Follow
Place: Ramada Inn, 940 Fall River Avenue, Seekonk, MA
Topic: PHP Case Study on IBM i: Moving to the Web with PHP
Speaker: Alan Seiden, Strategic Business Systems
Dinner: Baked Ham with Raisin Sauce or Baked Stuffed Breast of Chicken, also included are soup, salad, potato

R.S.V.P to Aurora Technologies. Phone (401) 765-3721, Fax (401) 765-3722. Email info@nemug.org of this sheet, www.nemug.org

Include the information listed below. We must receive your reply no later than Friday, February 12, 2010

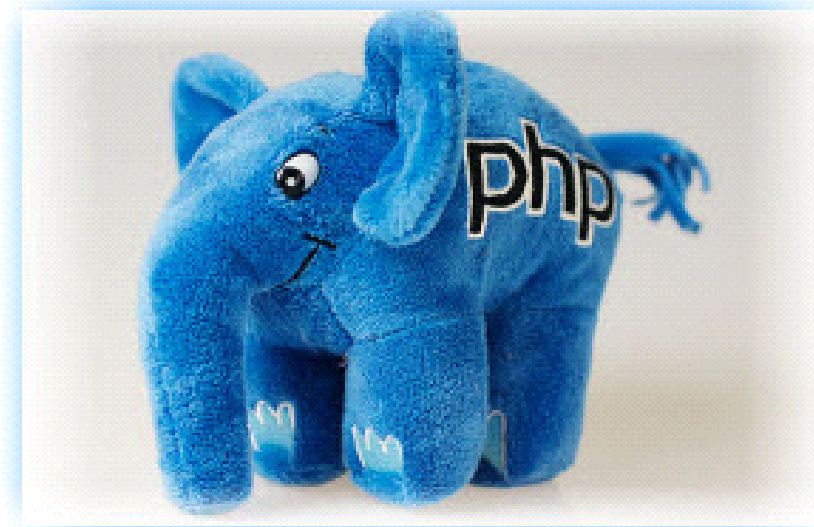
New York: Mon 00:36 | R: 2, G: 65, B: 145 | #024191 | ΔX: 818, ΔY: 21 | img

Now it's your turn

Questions? And more at TGIF

Alan Seiden

aseiden@sbsusa.com or 201-327-9400



To receive free PHP/i tips by email, write to **aseiden@sbsusa.com** with subject: “PHP tips.”