

PHP on System i – It's Here!

By Shabar Mor

IBM recently announced support for PHP on System i (i.e., System i5). The PHP platform will be delivered free of charge to i5 customers together with ZEND studio, the leading development tool for this environment. The expected GA date is July 2006. It is possible to download an evaluation copy of the platform from Zend's Web site: www.zend.com.

PHP is a server side scripting language. It allows very easy creation of dynamic Web applications and it is widely used today. PHP is open source, so we can find many ideas, scripts, and applications of PHP on the Web, allowing very rapid development of solutions. You can read more about PHP at <http://www.php.net>. The language popularity will bring many potential programmers and solutions to the System i environment. It is expected that the entire product line of ZEND to PHP environment will be supported on the i5. This includes ZendStudio IDE for PHP development and Zend Platform for the PHP production environment.

PHP on the i5 is currently implemented in the PASE environment (an AIX "emulation" on the i5). It supports database access to i5 DB2, but it is hopefully planned to support further connectivity to i5 resources in the future, including program call support, data queue, CLP, etc. (similar to java toolbox capabilities). Direct access to i5 resources will allow easy integration and Web enablement of existing applications. Currently one may use data base access to call existing applications as wrapped stored procedures. For more information on how to pass parameters to stored procedures, see the article at <http://www-128.ibm.com/developerworks/db2/library/techarticle/dm-0502scott>.

PHP is an important addition to i5 developers. It gives more possibilities to Web enable the system quickly since it is so easy to develop and implement PHP solutions. Java is not easy to code, and RPG/Cobol do not speak "Web" fluently; so PHP is an important option. And it will become even more attractive when (and if) the "PHP toolbox" for i5 connectivity is ready.

The next section of this article will guide the reader through the steps needed in order to get started in PHP on System i5.

Step 1– Download the Package

On the Zend Web site (www.zend.com) you will find a zip file which contains an imbedded save file. The save file includes Zend core for System i5. FTP this save file to an existing i5 save file.



Step 2 – Install the Package

Make sure that all requirements are met on your system. (This includes operating system level, required PTFs, and required license programs.) What a nice surprise ☺, ZENDCORE is packaged in a license program. From green screen

emulation, the installation is done via one command:

```
RSTLICPGM LICPGM(1ZCORE5) DEV(*SAVF)
SAVF(QGPL/ZCORPROD)
```

This creates all required directories, libraries, user profiles, http default configurations, etc. During the installation you will be prompted for the PHP administrator password. Upon installation completion a new "green screen" menu is available to you by typing `GO ZENDCORE/ZCMENU`. This menu allows for some administration tasks in the PHP environment on System i5.

After installation the http servers are started. `NETSTAT` option 3 will show 2 relevant ports in listen state:

- **Port 89** is used by the default apache native server. This server is used as a proxy, which forwards requests made by the user to the PASE apache server.
- **Port 8000** is used by the PASE apache server. This server is using a PHP module to process pages with PHP extensions.

Step 3 – Test Your Installation

With your browser, go to: <http://myi5Machine:89>. Note that the default port for PHP on i5 is set to 89. The screen shown in **Figure 1** should appear...

Welcome to Zend Core for i5!

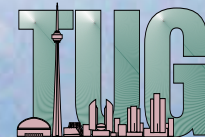


Figure 1.

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This is the default home page for Zend Core for i5 install. You can now place your content on this server.

You can also access the Zend Core administrative interface in order to configure your PHP and Zend Core settings. Choose the link to Zend Core administrative interface (<http://172.29.134.218:89/ZendCore>) and submit the administrator password (the password chosen during installation).

You are now running PHP scripts from the apache server on i5.

Step 4 – Your First Application

The following step is to load an existing PHP script from the Net and deploy it on the i5 PHP environment. There are countless links to existing PHP scripts on the Web, (for example: www.php.net, www.hotscripts.com/PHP, and many others.)

After downloading the application, deployment is as easy as uploading the PHP files to /www/ZendCore/HTDOCS.

Figure 3 shows the result of downloading the loan calculator script, transferring the PHP file to the i5 machine, and navigating to the url of this PHP page.

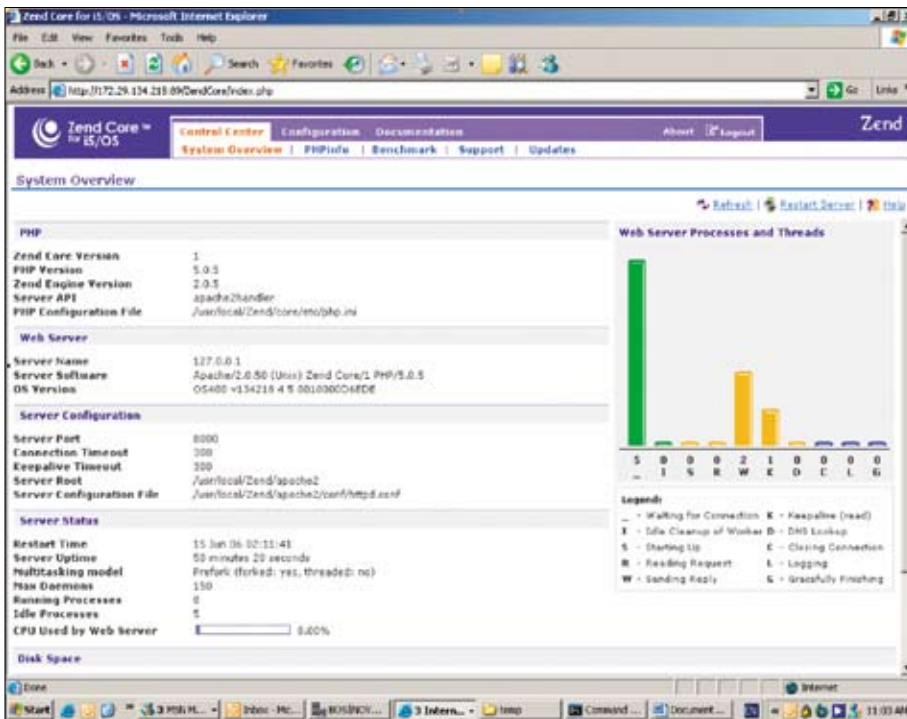


Figure 2.

PHP will display the main system view application, as shown in **Figure 2**. When this application works we know that our installation and configuration are OK.

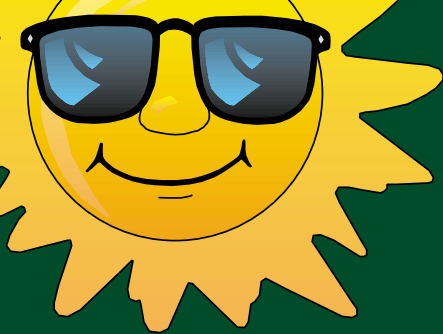
From this PHP application it is possible to see system information, PHP information, and even perform benchmarks on selected Web pages. Use the tabs on the page to navigate the application. The system view application contains a special tab that links to PHP documentation. You may use this documentation and “copy/paste capabilities” to get acquainted with the language.

It is important to emphasize that most of the scripts you will find on the Web will be “deployed” by copying the application to the correct directory. Applications that work with data bases such as MYSQL will need minor revisions to work with DB2/400.

Connectivity to I5 Resources

Since currently the only formal connectivity to i5 resources is via database access, we need to find workarounds to allow other connectivity methods from PHP to i5 resources.





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Figure 3.

Here are some alternatives:

- It is possible to invoke commands to the i5 server from PHP by using the data base capability to call a stored procedure. `QCMDXCL` is the stored procedure you want to use. The `QCMDXCL` stored procedure requires two input parameters:

- ▶ A character string that contains the system command
- ▶ The character length of that system command

For example: `CALL QSYS.QCMDXCL ('STRDBG UPDPROD(*YES)', 00000020.00000)`

- It is possible to call exiting programs by using a trigger program. For example, you can define a trigger on file PARM5. PHP will insert a row to file PARM5 and the trigger will perform according to the values inserted.
- PHP can do sockets, so it is possible to write a socket server in the system. The socket server will listen and receive requests from PHP clients. (This is similar to data queues, only it is synchronous (not async).)
- It is possible to write from PHP to a text file on the i5. Have the text file under journal and wait on the journal entry by using RCVJRNE.

These are all just basic ideas. They only demonstrate that the i5 is so flexible that we can find many ways to talk to it from PHP now, so there is no need to wait for PHP specific i5 connectivity tools.

Summary

PHP is good news for i5 users. It is simple to use, powerful, and has a huge knowledge base of programming skills. It is very easy to setup and use PHP on i5 (as described in this article), and it allows the i5 community to quickly “go Web”. More sophisticated connectivity to i5 resources will hopefully come later, however existing alternatives to PHP connectivity are “good enough” for now.

In order to better understand PHP, and specifically PHP on i5, the following links are suggested:

- www.php.net
- www.i5php.net
- www.zend.com
- www.hotscripts.com/PHP
- www.phpeditors.com

Many others exist.



Shahar Mor is President of Barmor Information Systems. Shahar has worked on the iSeries 400 for 16 years.

He started as a system administrator responsible for security, performance, database administration, backup and recovery procedures, and connectivity issues. He later became a senior programmer in a bank and then head of infrastructure for an insurance company.

Shahar now owns a consulting firm in Israel, which employs over 20 people who work on projects for the iSeries in the network environment. He also has written a Redbook for IBM on iSeries e-commerce and he is a Search400.com site expert for connectivity issues on the iSeries. Shahar is working closely with Midlink Canada (www.midlinkca.com) and can be reached at shahar@midlinkca.com.

Shahar was involved with the porting efforts performed by ZEND to bring PHP to System i5.