The PHP Company

User Guide
Zend Server Community 4.0.3

By Zend Technologies

www.zend.com

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Abstract

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Password Management

After completing the Installation process and opening Zend Server, a password definition page is displayed for first time users. This page only appears once and is used to define the Administration Interface's login password.

For security reasons, Zend Server cannot restore your password for you. However, you can reset your password if you have access to the application's files and Administrator privileges.

The following procedure describes how to reset a lost password from **outside** the Administration Interface.

To reset your password:

In Windows:

1. In the Start menu locate the Zend Server section and select **Zend | Change Password**. Your password is reset.
2. The next time you log in to the Administration Interface, you will be prompted to set a new password.

Other operating systems:

1. From the command line, run *gui_passwd.sh* that is located in: *<install_path>/bin*
2. You will be prompted to enter a new password.

Correct completion of this procedure in Windows: Zend Server displays the password definition page.

Correct completion of this procedure in other operating systems: You can log in with the new password.

If you are unable to change your password, refer to the Support Center for further information.

The following procedure describes how to change your password from **inside** the Zend Server Administration Interface.

To change your password from inside the Administration Interface :

1. In the Administration Interface, go to **Administration | Password**.
2. Enter your current password and enter your new password in the next two fields.
3. Click "Change Password" to apply changes.

Correct completion of this procedure results in Zend Server requiring you to log in with the new password the next time you access the Administration interface.

Support

Zend Technologies provides a wide range of resources for obtaining additional information and support, such as the Zend Support Center, the Zend Newsletter, and the Zend Developer Zone.

Zend Support Center

The Zend Support Center is a portal for information on all Zend Product related issues.

From the Zend Support Center you can access:

Zend Forums

Hosted user forums for the Zend product user community. See what other users have to say and get answers directly from the Zend Support team. Visit: http://forums.zend.com

Online Documentation

The Zend Product Online Documentation Center can be easily browsed and searched as a resource for accessing the most to date information on using all Zend Products. Visit: http://www.zend.com/en/resources/zend-documentation/

Open a Support Ticket (Only Available in Zend Server)

If you did not find the answer to your question in any of the Support resources, you can open a ticket with the Zend Support team, who will answer each ticket on an individual basis. This can be done through https://www.zend.com/en/helpdesk/newticket.php.

In Zend Server CE, the Community Edition, all Support is administered via the Forum.

Zend Newsletter

Zend's monthly Newsletter contains the hottest updates, special promotions and useful developer information.
To get the newsletter, log in to your Zend account at https://www.zend.com/en/user/myzend and mark the 'Yes, I want to receive Zend information' checkbox in the Communication Preferences category.

Zend Developer Zone Resource Center

The Zend Developer Zone is the leading resource center for PHP developers, where you can learn about PHP and meet the experts.
The Zend Developer Zone features the following:

- The PHP 5 Info Center
- Articles and Tutorials
- PHP and PEAR News Weeklies
- Worldwide Job Classifieds

Visit: http://devzone.zend.com

Feedback

Send feedback, questions and comments on the Online Help and Documentation to: documentation@zend.com.

Administration Interface

General Layout

Zend Server's Administration Interface is the main area for configuring and managing your development environment.
The Administration Interface is accessed through your browser by entering the link that is provided at the end of the installation process. Login is done through the Password administration page that appears when you access the Administration Interface for the first time.
Click here for more about configuring your password.

Note:
Using the standard browser buttons is not recommended: They may cause unexpected behavior.

The Administration Interface is comprised of the following tabs:

- **Monitor** - The Monitor tab is the main area for system information and it includes: Dashboard | |Server Info | PHP Info | Logs.
- **Server Setup** - The Server Setup tab is the main area for configuring your PHP and it includes: Components | Extensions | Directives | Debugger

In addition to the main Administration Interface, Zend Server comes with a tray utility called the Zend Controller that provides quick access to:

- Frequently searched reference information
- Quick links to the administration interface
- Extension control
- Benchmarking tool

Monitor

Dashboard

The Dashboard page is accessed from **Monitor | Dashboard** and is the default page after logging in to the Administration Interface.

The Dashboard page is a summary of information and quick links. The information in this page is divided into Tasks and a System Overview.

- Tasks include quick links to configuration tasks and useful information. Clicking on a link directs you to the appropriate page in the Administration Interface.
- The System Overview lists information about your environment including PHP version and a Zend Components status display.

Server Info

The Server Info page is accessed from **Monitor | Server Info.**

The Server Info page displays the details of your environment. The information displayed in this page is as follows:

- **Zend Server** - Product version.

- **PHP** - PHP version and the path to your PHP configuration file (php.ini). This information can also be accessed from the Administration Interface, on the PHP Info page.
- **Web Server** - Your Web server's IP, type and the operating system used to run the Web server.
- **Zend Framework** - Release version and directory location in your computer.
- **Zend Data Cache** - Release version and status.
- **Zend Debugger** - Release version and status.
- **Zend Guard Loader -** Release version and status.
- **Zend Java Bridge -** Release version and status.
- **Zend Optimizer+** - The status of the Optimizer+ component used for opcode caching and optimizations.

If your PHP application is business-critical, you probably want to make sure that your PHP runtime environment is up to date. Zend Server Updater ensures that you have the latest versions of PHP, Zend Server Components and Extensions. This feature is available only in the commercial version of Zend Server.

PHP Info

The PHP Info page is accessed from **Monitor | PHP Info.**

The PHP Info screen is a read-only page that outputs a large amount of information about the current state of PHP. It is an easily accessible representation of information contained in the php.ini file, including information about PHP compilation options and extensions, the PHP version, server information and environment, PHP environment, OS version information, paths, master and local values of configuration options, HTTP headers and the PHP License.

Note:
The values displayed in the PHP Info page may differ from the system-wide settings displayed further down the page in the "Local View" column of the Configuration section. To see the system-wide settings, view information listed in the "Master Value" column.

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Changing PHP Info

The Administration Interface allows easy changing of PHP info through the Setup tab. Any changes made in the Extensions, Components and Directives pages will be automatically updated in your php.ini file and will be reflected in the PHP Info page.

Note:
Configuration changes will only take effect once you PHP has been restarted by clicking Restart Server.

More information about the PHP Info display can be found in the PHP Manual, accessed by going to "PHP Options and Information".

Logs

The Logs page is accessed from **Monitor | Logs**.

The Logs page is a means for developers to view log information directly from the Administration Interface. This information can be used to investigate unwanted activity in your environment in terms of errors and application behavior.
The logs displayed in this page consist of the system logs, as determined by the type of Web server you use:

- Apache servers include three logs - PHP Error log, Apache Error log and Apache Access log - all of which reference the installation locations (except for the PHP Error log, which comes from the error_log directive).
- IIS servers include the PHP Error log.

Power users can edit the XML file to include additional logs. For more information on adding logs to the Logs page, see Working with Logs.

Server Setup

Components

The Components page is accessed from **Server Setup | Components.**
The Components page provides a convenient way to view and configure the components installed in your environment.

The following components can be turned On/Off and configured as follows:

Component	Status	Comments
Zend Data Cache	**On** - Activates the Data Cache: Scripts that include the Data Cache API can run. **Off** - Disables the Data Cache: Scripts that include the Data Cache API **cannot** run.	This component stores information and therefore has an additional action for clearing information.
Zend Optimizer+	**On** - PHP is optimized. **Off** - PHP **is not** optimized.	This component stores information and therefore has an additional action for clearing information.
Zend Java Bridge	**On** - The Java Bridge runs: Scripts containing the Java Bridge API can run. **Off** - The Java Bridge stops running: Scripts containing the Java Bridge API **cannot** run.	This component can be restarted.
Zend Debugger	**On** - Activates the Debugger for local and remote debugging with Zend Studio. **Off** - Disables the Debugger and does not permit debugging from Zend Studio.	The Debugger requires that you enter a list of IP addresses to allow, deny or permit remote debugging through a firewall.
Zend Guard Loader	**On** - Scripts encoded with Zend Guard run. **Off** - Scripts encoded with Zend Guard **cannot** run.	

Note:
For more information on adding additional components, see the Installation Guide.

The On/Off Status is used to configure your php.ini according to the components you want to load. If you intend to use functions related to a component in your code, verify that the extension is enabled and that the status is set to On.

Hovering the curser over the Information icon displays a brief component description.

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Extensions

The PHP Extensions page is accessed from **Server Setup | Extensions.**

The PHP Extensions page provides a convenient way to view and configure extensions.
Use this page to control and configure extensions that are loaded in your environment.
To find out how to add more extensions to this list, see Adding Extensions.

PHP extensions are sets of instructions that add functionality to your PHP. Extensions can also be employed to recycle frequently used code. You can place a set of functions into one extension and instruct your projects to utilize the extension. Another use for PHP extensions is to improve efficiency and/or speed. Some processor intensive functions can be better coded as an extension, rather than as straight PHP code.

If your PHP application is business-critical, you may wish be alerted to database access failures. Zend Server can monitor your application in production, alert you to failures or performance degradation, and provide you with diagnostic information for rapid root cause determination.
This feature is available only in the commercial version of Zend Server.

The Extensions page is list of the extensions included with the Zend Server installation and extensions added to the php.ini by the user. Use the Extensions page to view the status of all your extensions and to quickly and easily load and unload extensions.
You can also configure directives associated with certain extensions. Extensions with directives that can be configured have a Configure link next to them.
Clicking the link opens the PHP Directives page, filtered to the exact directives associated with the particular extension. Click the All option in the PHP directives page to see a complete list of directives.

Extension Status

Extensions can have one of three different statuses:

- Off - The extension is not running on the machine and code that includes the Extension's functions works.
- On- The extension is running on the machine.
- Built in- This applies to extensions that have dependencies on, or were complied with PHP. Built-in extensions cannot be removed and thus do not have an On/Off option.

Directives

The PHP Directives Info page is accessed from **Server Setup | Directives.**

The PHP Directives page allows you to easily edit your PHP configurations from the Administration Interface. From here, you can view and configure commonly used directives.
The available directives are grouped by category in expandable lists. Clicking the arrow next to the category name expands the list to expose the different options. Where relevant, input fields are added, to change a directive's value. The initial display shows the most commonly used Directives. Click "**All**" for

the full list of directives or use the "**Search**" component to locate a specific directive or use *ext:<extension_name>* to find directives by extension. You can also use the **Popular** option to view commonly used directives such as directives that define directories and languages.

Debugger

The Debugger page is accessed from **Server Setup | Debugger.**
The Debugger page is used to enable remote PHP debugging and profiling of Web applications using the Zend Debugger component.
This component enables developers using the Zend IDE to connect to a remote server to analyze (debug and profile) and fix code.

The Zend Debugger page allows you to configure the hosts for the following debug options:

- Hosts allowed to initiate debugging and profiling sessions.
- Hosts denied the permission to initiate debugging and profiling sessions.

Administration

Password

The Password and License page is accessed from **Administration | Password and License.**
From this page, you can change your login password and update your license.

To change or reset your password follow the instructions in Password Management.

Zend Controller

The Zend Controller is accessed from the system tray by clicking on the Zend Icon , or from the command line by running <install_path>/bin/zendcontroller.
Windows users can load the Zend Controller by going to <install_path>\bin and clicking *Zend Controller.exe.*
The Zend Controller is a system tray utility that provides quick access to frequently performed tasks and useful information.

Adding the Zend Controller to the Start Menu/System Tray/Taskbar

The Zend Controller resides in the System Tray/Taskbar. The Zend Controller may behave differently in each environment: In some systems, the Zend Controller may run as soon as the computer is started and in others, it doesn't. The following instructions are included to let you define the Controller's behavior according to your preferences:

- **GNOME - **View the instructions online at: http://www.ubuntugeek.com/howto-add-entries-in-gnome-menu.html
- **KDE -** view the KDE online documentation at: http://docs.kde.org/development/en/kdebase-workspace/kmenuedit/quickstart.html
- **Windows Vista and XP and 2008**
    1. Right-click **Start** and select Properties.
    2. Click the **Start** Menu tab and click the radio button next to Classic Start menu.
    3. Click the **Customize...** button and then the **Add...** button.
    4. Click the **Browse...** button and locate the .exe file. The default location is <install_dir>\bin\ZendController.exe.
    5. Highlight the program and click **OK**. Then click **Next**.
    6. Highlight the folder in which you want the application to appear or click **New Folder...** to create a new folder. Click **Next**.
    7. Select a name for the shortcut and click **Finish**.
       Note: In Windows XP, 2003, Vista and 2008, you may need administrative rights to make changes to the Start menu, depending on the existing user profiles and privileges.
- **Mac OS X**
    1. Go into the System Preferences.
    2. Click on Accounts, and select your account.
    3. Click on Startup Items.
    4. Click the '+' sign next to the Zend Controller file. The next time the system is restarted, the Zend Controller runs at startup.

Tasks

Working with Zend Server

The following text describes how to work with Zend Server. Each of the tasks in this section describes a different procedure that can be used to facilitate your PHP development process.

The following table lists the different tasks, their descriptions and the expected outcome of each task:

Task	Description	Outcome
Before Working with Zend Server	Review all the post installation tasks before working with Zend Server.	Access the Administration Interface.
Configuring Zend Server	A step-by-step overview of all the possible configuration tasks you need to perform to customize Zend Server and your PHP.	A customized configuration of Zend Server that suits your requirements. See also Best Practices.
Working with Zend Controller	How to configure your Zend Controller and use it to activate components and benchmark URLs.	Use the Zend Controller. The configuration creates a start button in the system tray.
Working with Extensions	How to enable and disable extensions.	The environment is customized to suit your requirements.
Working with Logs	How to view and add logs.	View and define which logs are displayed.
Working with Components	How to enable and disable components (Debugger, Data Cache Guard Loader, Java Bridge).	The environment is customized to suit your requirements.
Working with Directives	How to enable and disable directives.	The environment is customized to suit your requirements.
Working with Optimizer+	How to use the Optimizer+.	Improve performance by running the Optimizer+.
Working with Guard Loader	How to use the Guard Loader component.	Run code encoded with Zend Guard.
Working with Data Cache	How to use the Data Cache API.	Implement the Data Cache API functions into your PHP code.
Working with Java Bridge	How to use the Java Bridge.	Extend your PHP code to reach out to Java functionality in runtime.
Working with the Debugger	How to configure the Debugger to debug and profile code running with Zend Server.	Use the local and remote debugging features in Zend Studio for Eclipse.

Before Working with Zend Server

Zend Server is a tool that requires a minimal amount of actual interaction with the Administration Interface. Once your environment is setup, apart from occasionally logging in to view your system settings or your php.ini, there are not many day-to-day activities that require the Administration Interface.

The first point of reference for working with Zend Server is what to do after installation.

What to do After Installing Zend Server

The following section describes the tasks that should be performed after installing Zend Server for the first time.

These tasks cover all the different installation types (DEB, RPMand Windows). Each task is accompanied by a description of its purpose and the expected results.

Run the Administration Interface

Purpose: To verify the installation and that the Administration Interface is accessible.
Result: the Administration Interface opens in a browser.
The Administration Interface is a Web interface that runs through a browser.
This procedure describes how to view the Administration Interface.

To view the Administration Interface:

1. To run Zend Server locally, open a browser and enter the following URL:
   For Windows: http://localhost/ZendServer;
   For Linux/Mac: http://localhost:10081/ZendServer or https://localhost:10082/ZendServer
   If you are using a remote connection, replace localhost with your Host Name or IP.
2. The Zend Server login screen opens and prompts you to set a password.
   This screen only appears once and is not displayed again after your password is set.

The next time you log in to Zend Server, you are prompted for the password you set the first time you opened Zend Server.

Configure Your Password

Purpose: To ensure that you can access the Administration Interface.
Result: Your password is created.

When you first run Zend Server, the registration screen is displayed. Define your Zend Server login password in this screen.
To view the different password management options, click Password Management.

Check Apache

Purpose: To verify that the bundled Apache is installed and running.
Result: System confirmation.
This procedure describes how to check if the Apache Web server is running.

To check if the Apache server is running:
DEB, RPM: from the command line, run ps -ef | grep -E 'apache2|httpd'.
Windows: In the system tray, hover over the Apache Monitor icon to view the Apache status. If necessary, click to open a dialog with the Stop, Start and Restart options.

A notification with the Apache server status is displayed.

Note:
Every time the Apache is restarted, the following message is displayed: "httpd: Could not reliably determine the server's fully qualified domain name, using 127.0.0.1 for ServerName".
To resolve this situation, add a line to the Apache configuration file, as follows:
Open the file <install_path>/apache2/conf/httpd.conf and add the following line, placing your server's Host name in the brackets: ServerName [server name]

Check IIS

Purpose: To verify that the bundled Apache is installed and running.
Result: System confirmation.
This procedure describes how to check if the IIS server is running.

To check if the IIS server is running:
Use Microsoft: http://support.microsoft.com/kb/314771 [^]
Look for the presence of the following registry key:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\InetStp
-or-
Issue the following command in cmd :
Iisreset /status

If the following message is received, then IIS is not running:
“'iisreset' is not recognized as an internal or external command, operable program or batch file.” ----&61664; not installed
If the following messages are received, then IIS is running:
“Status for Windows Process Activation Service (WAS) : Running"
"Status for World Wide Web Publishing Service (W3SVC) : Running” ---&61664; installed

Run a Test on Your Web Server

Purpose: To verify that the installed Web server is running properly.
Result: The "Hello World" message is displayed in your browser.
This procedure describes how to run a test PHP script.

To run a simple test script:

1. Create a file called hello.php
2. Enter the following code into the file:

```
<?php
echo "Hello World";
```

```
?>
```

The "Hello World" message is displayed when the code runs in a browser.

1. Save the file in your Apache document root directory. Only files in this directory are serviced by the Web server. For information about the document root directory, see Deploying Code with Zend Server.
2. Open a browser and enter the following URL: http://localhost:<port number>/hello.php. Replace <port number> with the port you are using, The defaults are port 80 for Windows and port 10088 for the other operating systems unless you manually changed the port assignment.

Your browser displays the "Hello World" message.

Configure Debugger Access Control

Purpose: To enable PHP debugging using Zend Studio and Zend Server.
Result: You are able to debug your PHP code and view the results in Zend Studio.
Before working with the Debugger, configure the allowed hosts in **Server Setup | Debugger.**

Note:
By default, Zend Server comes with a permissive setting that allows all standard private IP addresses (for example 10.*.*.*) to access the Debugger. For security reasons, if you do not have an immediate need for permissive access, remove these ranges from the Allowed Hosts: 10.*.*.* / 192.168.*.* / 172.16.*.*.

Additional setup information can be found in the Installation Guide, in Package Setup and Control Scripts.

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Additional setup information can be found in the Installation Guide, in Package Setup and Control Scripts.

Configuring Zend Server

This section refers to the actual configuration workflow for using Zend Server. Here, we describe the general workflow. Each component also has a separate section describing how to work with the component in detail.

The Zend Server's Administration Interface is the main control center for configuring your PHP and Zend Server components. After installing Zend Server, use the Administration Interface to configure your PHP by performing the following actions:

1. In **Server Setup | Extensions**, define the extensions that should be "turned on" or "turned off". If you are planning to use functions related to an extension in your code, verify that the extension is turned on. If your extension has additional directives that are used to configure the extension's behavior, a configure link is included in the Directives column. Clicking this link leads you to the directives, pre-sorted to display the relevant directives.
2. The Directives page is accessed by clicking **Server Setup | Directives**. Here, you find all the directives relating to the extensions and components loaded in your PHP. If you cannot find a

directive in the directives page, look in **Server Setup | Extensions** or **Server Setup |** Components to check that the extension or component is "turned on".
See Adding Extensions for instructions on how to manually add an extension.

3. In **Server Setup |** Components, define the Zend Server components that should be "turned on" or "turned off". If you are planning to use functions related to Zend Server components in your code (such as the Optimizer+, Data Cache, Debugger, Guard Loader or Java Bridge), verify that the extensions are "turned on". If your Zend Server component has additional directives used for configuring the component's behavior, a configure link is included in the Directives column. Clicking this link leads you to the relevant directive in the Directives page .
4. In **Server Setup | Debugger,** define which hosts are allowed to connect to the server to use the Zend Debugger for debugging and which hosts are not allowed.

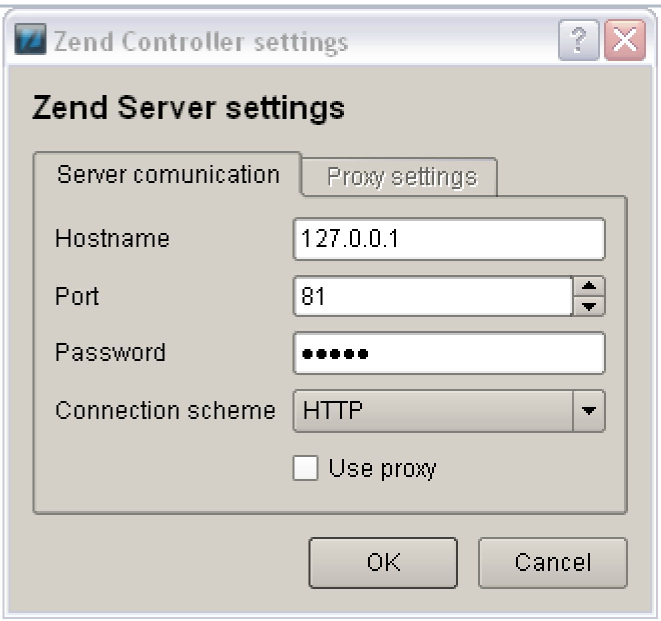
Working with Zend Controller

Initial Setup

The following procedure describes how to configure the Zend Controller's settings to communicate with Zend Server. This procedure should be completed before using the Zend Controller.

To Set up the Zend Controller:

1. Open the Zend Controller menu (right-click in Windows or Unix, Ctrl-Click in Mac).
2. In the Zend Controller's menu, click to open the Settings dialog.
3. Make sure the following settings are correct:
   - **Hostname** - unique name or IP number of the server on which Zend Server is running. Can be a remote server on the same LAN.
   - **Port** - The default ports are:
     - Windows: 80 for HTTP
     - Unix: 10081 for HTTP and 10082 for HTTPS
     If you changed the port of the Web server that runs Zend Server during the installation, change this value too.
   - **Password** - The password is automatically configured when you set your Administration Interface password.
   - **Connection Scheme** - Your preferred method of connecting the Control Panel with Zend Server for communication purposes, where HTTPS is a secured connection protocol.



Hostname: 127.0.0.1
Port: 81
Password: ●●●●●
Connection scheme: HTTP
☐ Use proxy

Once the Zend Controller is properly configured, you can use it to change the status of the following components; Data Cache, Debugger, Optimizer+ and Java Bridge. You can also access the Administration Interface directly by clicking one of the following Zend Controller buttons: Configure Zend Debugger, Zend Extension Configuration and PHP Info.
Other Zend Controller features include Multi-Source search and Benchmarking.

Using the Zend Controller Benchmark Tool

The Zend Controller Benchmark tool is a simple benchmark that developers can use to run performance tests on the URLs (Web pages) they develop. The main purpose of this tool is to identify the performance gain that is achieved when using Zend Server's Optimizer+ and Data Caching components. This can be done by turning the different Zend Server components on and off and running the benchmark.
The Zend Controller Benchmark tool does not replace standard benchmarking utilities. It is intended to provide a quick and easy way to measure performance without having to run elaborate and resource-expensive performance tests.

How it Works

The Benchmark tool checks HTTP request response times and lists them in a bar chart that displays when the test was started and the average amount of 'requests per second' received for the duration of the test (user defined, in seconds). These tests can be run once, without one of the performance-related components (Data Cache and Optimizer+), and then again (with each or all components turned on) to see the effect each component has on performance.

Before running a test, make sure the URL you enter is the exact URL and does not rely on redirection: Using a redirecting URL causes the test to fail.

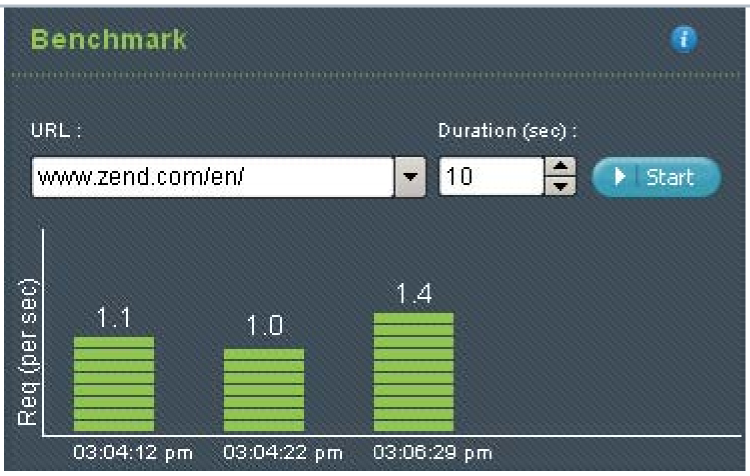
To run a Benchmark:

1. Open the Zend Controller
2. In the Benchmark section, enter a URL.
3. In the Duration section, define the amount of seconds to run the test.
   If you are comparing how different Zend Server components affect performance, make sure you run the tests at approximately the same time, to avoid large fluctuations in traffic volume and ensure that the traffic conditions are similar for each test.
4. Click **Go** to start running the test.
   Clicking **Abort** terminates the test without collecting test information.

The results are displayed in a bar chart. The Benchmark tool displays up to five test results. If there are more than five results, the tool displays the five most recent results.

Understanding Results

Once you have the results, the most important consideration is to determine what constitutes a good value.



URL: www.zend.com/en/

Duration (sec): 10

When testing the effect Zend Server components have on performance, the more requests per second, the faster the code.

Another consideration is the size of the page: Large pages take longer to load and should be checked during both high and low traffic to determine if the page is performing well.

Working with Extensions

The Extensions page provides a convenient way to view and configure PHP extensions.

Use this page to control and configure the extensions that are loaded in your environment.

Changing Extension Status

To change an extension's status:

1. Go to **Server Setup | Extensions**.
2. Select an extension. In the actions column, click Turn off or Turn on:

- Built-in extensions do not have the Turn on or Turn off option.
- After changing an extension's status, a message appears to prompt you to click the Restart Server button at the bottom of the screen .
- You can turn more than one extension on (or off) before you click Restart Server . All the changes that are made prior to restarting the server are applied after the restart.
- If you navigate to other tabs, the changes you make are saved and applied when the server is restarted.

Changes are updated in the Server Info page and in your php.ini file. Changes are also applied when the server is manually restarted.

Configuring Directives Associated with Extensions

To configure a directive associated with an extension:

1. Go to **Server Setup | Extensions**.
2. If the Extension has directives that can be configured, a link appears in the directives column.
   Clicking the link opens the Directives page, with the relevant directives already filtered.
3. Configure the directive as required.
   You can configure multiple directives before you save and apply your changes.
4. Click the Save Changes Save Changes button at the top right corner of the screen to save your changes. To discard changes, navigate away from the screen without clicking the Save Changes button.

Changes are updated in the Extension Configuration screen and in the php.ini file the next time the server is restarted.

Note:
Directives of extensions that are turned off can also be configured through the Extensions page. Added extensions that are not part of the original Zend Server list of extensions cannot be configured on the Extensions page.

Working with Logs

The Logs page is a log viewer for developers to view log information directly from the Administration Interface.

From this page you can:

- View a Log
- Filter log information
- Navigate inside a log
- Activate 'Auto Refresh'

Advanced users can also add logs to the list of logs to display in the "Log View" list.

View a Log

This procedure describes how to view a log file.

To view a log file:

1. Go to Monitor | Logs.
2. Select a log from the View Log list.
3. The log information is displayed in the main display area.

Use the Show option Show 20 lines (located below the main display) to determine how many lines to display. To use this option, enter a number between 5 and 200 and click **Go** to apply the setting.

Filter Log Information

This procedure describes how to filter a log file to fine tune the information to display specific results.

To filter a log file:

1. Select a log to display.
2. Go to the Filter area and enter the text to use for the filter: You can use any text.
3. Click **Refresh** or **Find**.

   The results are displayed in the main display area.

To run another query, change the text in the Filter area and click **Refresh**. There is no need to display the complete log again.

Navigate Inside a Log

This procedure describes the different navigation options available for navigating inside a selected log file.

Start - displays the first X lines of the log file.

Prev - shows the previous X lines of the log file.

Next - Shows the Next X lines of the log file.

End - displays the last X lines of the log file

'X' represents the number of lines that you specified in the Show option Show 20 lines. The default value is 20.

Activate 'Auto refresh'

The following procedure describes how to activate and deactivate the Auto refresh option. The Auto refresh option sets the log information to display the most recent log entries in the last lines of the log that is currently being viewed. Therefore, as the log changes over time, the content in the view is always current. This feature provides an easy way to view errors in "almost real-time". (Because the refresh rate is in seconds, there is at least a 3-5 second display lag, which is why the Auto refresh feature is not considered true real-time logging.)

To activate Auto refresh:

1. Select a log to display.
2. Click the Auto refresh check box to automatically refresh the log information.

As long as the log is displayed, the information is refreshed. Each time you choose another log or exit the page, the settings are reset.

Advanced - Add logs to the list of logs in the "Log View" list.

It is possible to add and display other logs that are specific to your environment in the Log Tail page.
To add these other logs requires that you view and access backend application files which, in normal circumstances, should not be changed. For this reason, we request that you perform this task only if you clearly understand the instructions. If for some reason the system does not load or malfunctions, please re-install Zend Server.

Power users may edit the XML file in <install_path>/gui/application/data/logfiles.xml to add as many logs as they may have.

To add log files to the list:

1. Open the file <install_path>/gui/application/data/logfiles.xml.
2. Add the name and location (full path) of the log files in the same format as the existing files and save.

3. Restart your PHP.

Log File Permissions

When the message "Log file /usr/local/zend/var/log/error.log does not exist or missing read permissions" appears:
Zend Server does not have permissions to read the log file, or, the file does not exist.

To allow Zend Server to read Log files on Linux:

1. Open a terminal and switch to root using "su" or "sudo -s".
2. Run the following commands:
   chmod a+r /usr/local/zend/var/log/error.log

Working with Components

The Components page provides a convenient way to view and configure the Zend Components installed in your environment.
Use this page to control and configure components loaded in your environment.

Changing Component Status

To change a component's status:

1. Go to **Server Setup | Components**.
2. Select a component and click the On switch ON in the component's status column.

- After changing the component's status, a message appears, prompting you to click the Restart Server button at the bottom of the screen Restart Server .
- More than one component can be loaded or unloaded before you click Restart Server . All the changes made prior to restarting the PHP are applied when the server restarts.
- Even if you navigate to other tabs, the changes are kept and are applied when the server restarts.

Changes are updated in the Components page and in your php.ini file. Changes are also applied when you manually restart your Web Server.

Configuring Directives Associated with Components

To configure a directive associated with a component:

1. Go to **Server Setup | Components**.
2. If the component has directives that can be configured, a link appears in the directives column.
   Clicking the link opens the Directives page with the relevant directives already filtered.
3. Configure the directive as required.
   You can configure multiple directives before you save your changes.
4. Click the Save Changes Save Changes button to save your changes. To discard changes, leave the screen without clicking Save Changes.

Changes will be updated in the Components page and in your php.ini file the next time the server restarts.

Note:
Directives of both loaded and unloaded components can be configured through the Components page.

Actions

Actions are additional activities that can be applied to a certain component when necessary.

The actions are as follows:

- Clear - Clears all cached information (Data Caching and Optimizer+ bytecode caching).
- Manage - Directs the user to an additional page inside the Administration Interface to manage and fine-tune a component. The basic definitions that are defined by directives are set by clicking Configure.
- Restart - Server-based components can be restarted using this action (for example the Java Bridge).

Adding New Components

The installation process determines which components are installed in your environment. Depending on your operating system, you can choose to customize your installation (Windows) or to work with a basic set of components that you can add to later on (DEB, RPM).
We provide all Zend components with loader binary when ZAMP is installed, however in examples like php.ini its entry is commented upon and therefore is not loaded.
In this case no additional installation is required but only configuration change.For installation specific instructions on how to add additional components, see Choosing Which Distribution to Install and click on your installation type for instructions.

Working with Directives

This tab is accessed from **Server Setup| Directives**

The initial display shows the most commonly used directives. Click "**All**" for the full list of directives or use the "**Search**" component to locate a specific directive.

Users are also directed to this page from the Extensions and Components pages when they click "Configure" for an extension or a component that has directives which can be configured.

To configure directives:

1. Expand one of the lists, use the Search/All or the popular options to locate the relevant directive.
2. Configure the directive as required.
   You can configure multiple directives before saving.
3. Click the Save Changes Save Changes button at the top right corner of the screen to save all the changes made or leave the page without saving to discard the changes
4. As soon as changes are made to this page, a prompt to Restart Server is displayed.
5. Click Restart Server.

The changes are updated in the Directives page and in your php.ini file.

Working with Optimizer+

The Optimizer+ runs out-of-the-box (by default, after installation). Optimizer+ allows you to gain a performance boost by reducing code compilation time. When PHP code is compiled for the first time, it is saved in the server's memory. Each time the code is called, the pre-compiled version is used instead of waiting for the code to compile, which causes a delay each time the code is used.

Note:
Using the Optimizer+ should not be confused with caching. The Optimizer+ saves a compiled script to the server 's memory, while Caching saves the script's output to the server's memory.

The general recommendation is to always keep the Optimizer+ set to 'On' to boost Web application performance.

If your PHP application is business-critical, you may wish be alerted to any performance slowdowns. Zend Server can monitor your application in production, alert you to performance issues or errors, and provide you with diagnostic information for rapid root cause determination.
This feature is available only in the commercial version of Zend Server.

When Not to use Optimizer+ (Blacklist)?

There are some instances where it is preferable not to store PHP byte-code for certain PHP files. To do so, you can make a list (a blacklist) of file names that you want the Optimizer+ to ignore or increase the Optimizer+ resource allocation.

Files and directives should be blacklisted under the following conditions:

- Directories that contain files that are larger than the allocated memory defined in: *zend_optimizerplus.memory_consumption* or or that contain more files than the allocated quantity of files, as defined in *zend_optimizerplus.max_accelerated_files*.
- Large files that have high memory consumption - If you have exhausted all your allocated memory, select the largest and slowest scripts blacklist them.
- Files that have long execution times (makes the compilation save irrelevant).
- Code that is modified on the fly (e.g., auto-generated template files).

Increasing Optimizer+ Resource Allocation

The following procedure describes how to change Optimizer+ resource allocation. This procedure is used as an alternative to blacklisting files and should be tried first, before adding a file to a blacklist (unless the file meets one of the criteria above). Optimizer+ settings can be changed to increase allocated memory and the maximum quantity of files. This alternative depends on the amount of memory available to allocate to the Accelerator.

Memory allocation can only be increased when the Optimizer+ is set to 'On'.

To increase the Optimizer+ memory allocation:

1. Go to **Server Setup | Components** and verify that the "Zend Optimizer+" component is set to 'On'.
2. Click the "Configure" link in the directives column to display the list of Optimizer+ directives.
3. Locate the directive: *zend_optimizerplus.memory_consumption* and increase the value according to your system's memory allocation abilities.

To increase the quantity of files:

1. Go to **Server Setup | Components** and verify that the "Zend Optimizer+" component is set to 'On'.
2. Click the "Configure" link in the directives column to display the list of Optimizer+ directives.
3. Locate the directive: *zend_optimizerplus.max_accelerated_files* and increase the value according to your system's memory allocation abilities.

If the memory fills up quickly (especially if there are only a few files), increase the memory allocation or blacklist the file. Files which exceed the allocated memory or file quantity are not accelerated.

Blacklisting Files

If none of the alternatives (described above) are suitable, or if the file meets one of the criteria for blacklisting a file, use the following procedure to create a blacklist file that contains the file names of the files you do not want to be byte-code cached by Optimizer+.

To create a blacklist file:

1. Create a .txt file using a text editor.
2. Write a list of the file names to blacklist (i.e., ignored by the Optimizer+).
   List each file name in a new line.
3. In **Server Setup | Components,** verify that the "Zend Optimizer+" component is set to 'On'.
4. Click the "Configure" link in the directives column to display the list of Optimizer+ directives.
5. Locate the directive: *zend_optimizerplus.blacklist_filename* and specify the full path to the file location.

The files in the blacklist are now ignored by Optimizer+.

Optimizer+ Duplicate Functions Fix

In situations where certain functions were (or were not) defined, some PHP code produces different opcodes, depending on the circumstances. This causes a discrepancy for the Optimizer+ in the situation where the Optimizer+ caches one version, and a sequence of events arises that requires a different function. If the discrepancy is not addressed, the script stops working and raises a "duplicate functions" error.

To maintain proper performance in these and similar situations, activate the *zend_optimizerplus.dups_fix* parameter. This parameter shuts down the Optimizer+ duplicate function check to prevent these errors from occurring.

This parameter can be defined in **Server Setup | Directives** by searching for *zend_optimizerplus.dups_fix*.

Working with Zend Guard Loader

The Zend Guard Loader is a PHP extension that is used to run code that was encoded or obfuscated using Zend Guard. If you chose to install this component, it is set to run by default, out-of-the-box.

To locate your installation package and verify if the component was installed by default or needs to be installed, see the Installation Guide, Choosing Which Distribution to Install.

PHP code that was either encoded or obfuscated using the Zend Guard, or which is license restricted will only work if the
Zend Guard Loader component is set to 'On'.

The Zend Guard Loader component can be set to 'On' or 'Off" from **Server Setup | Components**.

Note:
If you do not require the Zend Guard component for optimal performance, either do not install it, or set this component to 'Off'.

Working with Data Cache

The Data Cache API is used the same way as any other API: By inserting the API functions into your PHP code. The Data Cache component uses an API to cache partial PHP outputs using memory or disk.

You can further enhance the performance of your application by caching Web pages that don’t require frequent change.
This feature is available only in the commercial version of Zend Server.

The Data Cache API includes the following functionality:

- Storing variables to the Cache
- Fetching variables from the Cache
- Deleting variables from the Cache
- Clearing the Cache
- Disk/memory (SHM) storage
- Caching using namespaces
- Cache folder depth configuration

Disk / Shared-Memory Caching

This feature provides options to determine where to store cached variables. Memory caching improves server responsiveness and increases performance - primarily in environments that run high-traffic applications that can benefit from off loading activity directed toward their hard disk. Disk caching is more suitable for smaller applications and ensures the cached content is available after the machine is restarted.
SHM/disk storage is implemented by using the appropriate API functions and configuring the Data Cache directives.

Note:
Memory option error messages have been created to notify you if the store operation fails or you run out of allocated memory.

The following example shows the different storage options:

Example:

```
A simple key with no namespace stored on disk
if (zend_disk_cache_store("hello1", 1) === false){
    echo "error2\n";    exit();
}
Shared memory:
if (zend_shm_cache_store("hello1", 1) === false){
    echo "error2\n";    exit();
}
Store with namespace on disk
if (zend_disk_cache_store("ns1::hello1", 1) === false){
    echo "error2\n";    exit();
}
Shared memory:
if (zend_shm_cache_store("ns1::hello1", 1) === false){
    echo "error2\n";    exit();
}

Store with namespace on disk with limited lifetime (3)
if (zend_disk_cache_store("ns3::test_ttl", 2, 3) === false){
    echo "error12\n";    exit();
}
Shared memory:
if (zend_shm_cache_store("ns3::test_ttl", 2, 3) === false){
    echo "error12\n";    exit();
}
```

'namespace' Support

Using namespaces for caching provides the ability to define a key that can serve as an identifier to delete select items from the cache, rather than unnecessarily removing shared instances. '*namespace'* support is intended for environments that run large applications that are separated into modules. Applying a '*namespace*' to each module provides the identification necessary to pinpoint all the cached items that belong to a given module and remove only those specific items.

This does not mean that you must use the '*namespaces*' to clear the cache: The entire cache can be cleared by using the '*output_cache_remove*' function.

Setting the cached 'namespace':

The cache *'namespace'* is set by adding it as a prefix to the cache with '::' as the separator.

Example:

This example shows how to manipulate variable caching using a *'namespace'*

zend_disk_cache_store("my_namespace::my_key",$data) is fetched with

zend_disk_cache_fetch("my_namespace::my_key");

zend_shm_cache_clear("my_namespace") clears all the keys that start with "*my_namespace::*"

Cache Folder Depth Configuration

Defining the Cache folder depth is intended for environments that use a large number of keys. By definition, cached content is separated into different directories by key, to prevent performance degradation caused by accessing files that contain large amounts of content. This option is only available with disk caching. Increase the cache folder depth according to the quantity of content that requires caching (small amount = 0, large quantities = 2).

Note:

A single directory may include several keys, depending on the quantity of cached content.

The cache folder depth is defined by the directive zend_cache.disk.dir_levels. The value of the directive configures how the cached files are stored. The accepted values for this directive are 0, 1 or 2, where:

0 = one directory containing all the cache files

1 = a separate directory under the cache directory

2 = an additional sub directory for cached content under the cache directory

Working with Java Bridge

The Java Bridge is only active when the Java Bridge component is installed and activated (see the Installation Guide). The component's status and settings can be viewed and configured in the Administration Interface, from **Server Setup | Components**.

Note:

The Java Bridge requires that you have Sun Microsystems JRE 1.4 (or later) or IBM Java 1.4.2 (or later) installed on your computer. During or after installing (depending on the installation type), you are prompted to direct the installer to the JRE location. Therefore, you should already have JRE installed. 64-bit JRE is not supported.

More information about JREs and the latest updates can be obtained from the SUN Microsystems Website.

Configuration

This procedure describes how to configure the target Java runtime environment.

Configuring the runtime environment:

Use the following command to run JavaMW:

```
java com.zend.javamw.JavaServer
```

For correct execution, the classpath should include the javamw.jar file in the directory where JavaMW is installed.

Example:

```
UNIX, Linux, and Mac <install_dir>/bin/javamw.jar
Windows <install_dir>\bin\javamw.jar
```

Testing the Bridge Connection

The following code sample shows how you can, as an initial step, test the connection between your PHP and Java environments to ensure that the Java Bridge is defined properly and communicates with the correct Java. This code demonstrates the interaction between a PHP application and Java objects that occurs in the Java Bridge implementation.

To test the Java Bridge connection:

Create a new PHP script to create a Java object, as in the example below:

```
<?php
// create Java object
  $formatter = new Java("java.text.SimpleDateFormat",
                        "EEEE, MMMM dd, yyyy 'at' h:mm:ss a zzzz");
  // Print date through the object
  print $formatter->format(new Java("java.util.Date"))."\n";
  // You can also access Java system classes
  $system = new Java("java.lang.System");
  print $system."\n"; // will use toString in PHP5
  print "Java version=".$system->getProperty("java.version")." <br>\n";
  print "Java vendor=".$system->getProperty("java.vendor")." <p>\n\n";
  print "OS=".$system->getProperty("os.name")." ".
             $system->getProperty("os.version")." on ".
             $system->getProperty("os.arch")." <br>\n"; ?>
```

If the Java Bridge is correctly installed and running, you should receive the following response:

```
Friday, June 13, 2008 at 8:45:57 PM U.S Daylight Time class
java.lang.System Java version=1.6.0_06 Java vendor=Sun Microsystems
Inc.
OS=Linux 2.6.25.3-18.fc9.i686 on i386
```

This output shows the date, Java version, vendor and operating system and indicates that the connection is complete.

If you receive an error message instead of the expected output information, one of the following problems may have occurred:

1. The Java Bridge is not installed
2. The Java Bridge extension is not running (**Server Setup | Components**)
3. The Java Bridge Server needs to be restarted (**Server Setup | Components**)
4. The requested .jar file does not appear in the environment's classpath.

Once the connection is established, you can start using the API to call Java objects from your PHP.

Before using the Java Bridge API

Before you start incorporating the Java Bridge API in your code, you must be aware that when you call Java from PHP, you must use Java coding standards to call the correct objects, because the Java Bridge does not perform dynamic data conversion. You must perform the type conversion in your PHP code.

For example,

Example:

If you call a Java method that looks like this:

```
public void doSomething(int i);
```

Using what you would expect to work in PHP:

```
$var = "1"
$javaObject->doSomething($var);
```

The Java Bridge throws an exception. To avoid this, use the following line of code to convert the parameter from a string to a numeric value before the Java Bridge passes it:

```
$javaObject->doSomething($var + 0);
```

For more information, see the API, or Java Bridge Use Cases.

Working with the Debugger

Working with the Debugger

The Debugger API that is included in Zend Server is a remote debugging tool for developers who work with Zend Studio. If the Debugger Component is not set to "On" in the Components page, you are not

able to run remote debug sessions using Zend Studio. For more information on turning the Debugger Component to "On", see Working with Components.
From the Zend Server perspective, other than defining allowed hosts and denied hosts, no additional interaction is required.

The following procedure describes how to define allowed hosts for debugging. Users define allowed hosts to create a list of IP addresses (of computers that run Zend Studio) that have permission to debug the PHP code that runs on the server.

To define allowed hosts for debugging:

1. In the Administration Interface go to **Server Setup | Debugger**.
2. In the "Allowed Zend Studio Clients for Debugging" section, enter a valid IP address or use Wildcards (*) to specify a range of IPs.
3. From the drop-down list, select an option according to the type of IP address you entered. Click 'Exact IP address only' for a single IP, or one of the other options to represent a range of hosts.
4. Click + | Add to add the Host.
5. The changes are applied after you restart the Server Restart Server.

The IP or range of IPs is allowed to connect to the server to debug PHP code with Zend Studio .
To remove a specific IP from the list, click "Remove".
Important Note:
If your machine has several IP addresses (for example if you are using a wireless network connection on a laptop) verify that you have defined all the possible IP addresses as "Allowed Hosts for Debugging" or that the IP you want to use is first in the list of IPs in Zend Studio for Eclipse. (In **Window | Preferences | PHP | Debug | Installed Debuggers, v**erify that Zend Debugger is selected and click **Configure** in the Client Host/IP field.)

The following procedure describes how to define denied hosts for debugging. Users define denied hosts to create a list of IP addresses (of computers that run Zend Studio) that do **not** have permission to debug the PHP code that runs on this server.

To define denied hosts for debugging:

1. In the Administration Interface go to **Server Setup | Debugger**.
2. In the "Denied Zend Studio Clients for Debugging" section, enter a valid IP address or use Wildcards (*) to specify a range of IPs.
3. From the drop-down list, select an option according to the type of IP address you

entered. Click 'Exact IP address only' for a single IP, or one of the other options to represent a range of hosts.

4. Click + | Add to add the host.
5. The changes are applied after you restart the Server Restart Server.

The IP or range of IPs is denied permission to connect to the server to debug PHP code with Zend Studio.

To remove a specific IP from the list, click "Remove".

Note:

Do not add the same IP address to both the Allowed and Denied host lists. Pay attention when you specify a range of IP addresses: If you deny a range of addresses that includes an IP that was specified in the Allowed hosts, the host is not allowed to create a debug session.

Wildcards (Net Mask)

Wildcards use the asterisk (*) to define a string of IP addresses and to specify a range of IPs that are either allowed or denied hosts. This option makes it possible to specify a range of IPs from 0-255, according to the selected number of wildcards. For example, if you use the Net Mask option to deny the IPs 10.1.3. *, all the IP addresses beginning with 10.1.3. are denied access to the Studio Server (i.e., integration with Studio is not permitted for these IP addresses).

Working with Local Debugging

Local debugging occurs when your entire environment (Zend Studio for Eclipse, Debugger and Zend Server) is located on a single machine.

When working with an IDE such as Zend Studio for Eclipse, your project files are, in most cases, placed in a location that you have defined. To run the files on the Web Server, you must first move the files to the Web Server's document management directory called "htdocs".

Working with phpMyAdmin to Manage MySQL

Working with phpMyAdmin to Manage MySQL

phpMyAdmin is a tool written in PHP which is intended to handle the administration of MySQL over the Web. Currently, it can create and drop databases, create/drop/alter tables, delete/edit/add fields, execute any SQL statement, manage keys on fields, manage privileges, export data into various formats and is available in 55 languages.

The Zend Server Installer includes this component as part of the installation process in Windows and Zend Server Community Edition. Download the Linux and Mac version from http://www.phpmyadmin.net: They are available as RPM and DEB packages from your distribution's repository. See the Installation Guide for additional operating system and Installer-specific information.

The following types of Installations are available:

- Linux
- Mac OS X
- Windows

Working with phpMyAdmin to Manage MySQL

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The following types of Installations are available:

- Linux
- Mac OS X
- Windows

Working with MySQL Server: Linux

This procedure is relevant for users who manually downloaded and installed phpMyAdmin.
This procedure describes how Unix users with root privileges can use the phpMyAdmin tool to set up their environment to work with a MySQL server.
Before following these instructions, verify that your MySQL server is installed and running. If you do not have an Internet connection, make sure you have access to the phpAyAdmin installation package.

To extract and install phpMyAdmin:

1. Download the package from http://www.phpmyadmin.net.
2. Extract the package with the command *tar -xzvf phpMyAdmin-2.11.7-all-languages-utf-8-*

only.tar.gz .

3. Move the extracted directory to <install_path>/zend/gui/lighttpd/htdocs/phpMyAdmin with the following command:
   mv <extracted dir> <install_path>/zend/gui/lighttpd/htdocs/phpMyAdmin .
4. Change your directory using the following command: *cd <install_path>/zend/gui/lighttpd/htdocs/phpMyAdmin/*
5. Create a directory called config under the phpMyAdmin directory with the following command: *mkdir config .*
6. Open the phpMyAdmin Web Interface by following the link: https://localhost:10082/phpMyAdmin/scripts/setup.php .
   If you are using a different port or connecting from a remote server, replace the port number <10082> with the appropriate port number or replace <localhost> with the IP address of the remote computer.
7. Once the phpMyAdmin setup page is open, you can start configuring it to manage your MySQL Server.

To configure phpMyAdmin to work with an existing MySQL server:

1. In the phpMyAdmin setup page, click **Add** to add a MySQL server.
2. In the Add section, configure the following parameters:
   - **Server Host Name**: localhost for local servers. If you are not using a local server, enter your machine's IP address.
   - **Port socket path**.
   Most users will not have to change any settings.
3. In the Authentication Type drop-down, change the type to **http**.
4. Click **Add** to add the new server and fold the display.
   A message stating that a new server was added is displayed.
5. Go to Configuration and click **Save** to create a configuration file.
6. Take the configuration file and move it to <Missing>.
   Your server has now been added and can be configured with phpMyAdmin.

Further information on using phpMyAdmin can be found in the online documentation at: https://localhost:10082/phpMyAdmin/Documentation.html.

Note:
To log in to your phpMyAdmin server, you must use your existing MySQL server user name and password (usually "root" for administrators).

Working with MySQL Server: Mac OS X

The Zend Server Mac package includes MySQL and phpMyAdmin. This enables the files to be installed seamlessly and to ensure a smooth configuration process.

Configuration Definitions

File Locations

- mySQL binaries (such as 'mysql') reside in:
  <install_path>/mysql/bin/
- mySQL tables and database reside in:
  <install_path>/mysql/data/
- Configuration files, in particular, my.cnf reside at:
  <install_path>/mysql/data/

Default Port and Socket

Since, by default the 'Skip-networking' option is enabled, the MySQL server does not listen on a TCP/IP port at all; All interactions with 'mysqld' must be made via Unix sockets. The socket file resides at <install_path>/mysql/tmp/mysql.sock.

Starting and Stopping

Generally, zendctl.sh is used to start and stop Zend Server modules. To start and stop the MySQL server use:

```
<install_path>/bin/zendctl.sh stop-mysql
<install_path>/bin/zendctl.sh start-mysql
```

Password

Default user is: zend, and password is left blank
Change the password, either at the config file 'my.cnf', or using the phpMyAdmin interface. To access the phpMyAdmin interface go to Zend Server Dashboard and follow the 'Open phpMyAdmin' link.

phpMyAdmin Note:

phpMyAdmin access is by default allowed only from the localhost. To open phpMyAdmin interface to remote user comment out the following lines from <install_path>/gui/lighttpd/etc/lighttpd.conf:

```
138 #    $HTTP["remoteip"] !~ "127.0.0.1" {
139 #        $HTTP["url"] =~ "^/phpmyadmin/" {
140 #            url.access-deny = ( "" )
141 #            server.errorfile-prefix = "/usr/local/zend/gui/lighttpd/share/lighttpd-custom-errors/errorcode-"
142 #       }
143 #   }
```

Working with MySQL Server: Windows

If you already have phpMyAdmin

When you install Zend Server, you can use the custom installation type and choose not to install phpMyAdmin.

If you decide to install phpMyAdmin, a separate version is installed and the existing phpMyAdmin configurations are retained. The default location is <install_dir>\phpMyAdmin. The default authentication is user: root and no password.

A link to this phpMyAdmin installation is added in the Zend Server dashboard.

If you already have MySQL

If you have a local installation of MySQL, it will be automatically detected during the installation process.

If you want to set phpMyAdmin to a remote MySQL server (running on a separate machine), see the PHPMyAdmin online documentation.

Apache Note:

When running phpMyAdmin on Apache, the URL is case sensitive.

If you don't have anything (phpMyAdmin or MySQL)

When you install Zend Server, you can use the full or custom installation types to choose to install phpMyAdmin and MySQL.

Both phpMyAdmin and MySQL are installed on your local machine under the default location <install_dir>\phpMyAdmin

and <install_dir>\MySQL.

A link to this phpMyAdmin installation is added in the Zend Server Dashboard.

Components

About Components

Zend Server is comprised of several components that each contribute important functionality to facilitate the development process.

The components are:

- Debugger - The Zend Debugger communicates with the Zend (PHP) Engine to retrieve runtime information and present it in Zend Studio for root cause analysis.
- Optimizer+ - The Zend Optimizer+ component speeds up PHP execution vua opcode caching and optimization.

- Guard Loader - The Zend Guard Loader is used in order to run PHP scripts that are encoded with Zend Guard.
- Data Cache - The Zend Data Cache component provides a set of PHP functions to improve performance, by storing data in the cache.
- Java Bridge - The Zend Java Bridge component makes it possible to use Java classes and code from within PHP.
- Zend Framework - An open source framework for developing Web applications and Web services with PHP.

Click on a link to view a full description of the components architecture. To see how to work with a component, select a topic that begins with "Working with..." from the Tasks section. For a short description of each component and where it is installed, see the Installed Components section in the Installation Guide.

Debugger

The Zend Debugger component enables remote debugging of PHP scripts with Zend Studio.
The Zend Debugger communicates with the Zend (PHP) Engine to retrieve runtime information and present it in Zend Studio for root cause analysis purposes.

Note:
If your machine has multiple IP addresses, make sure you define all the IPs as allowed hosts in Zend Server.

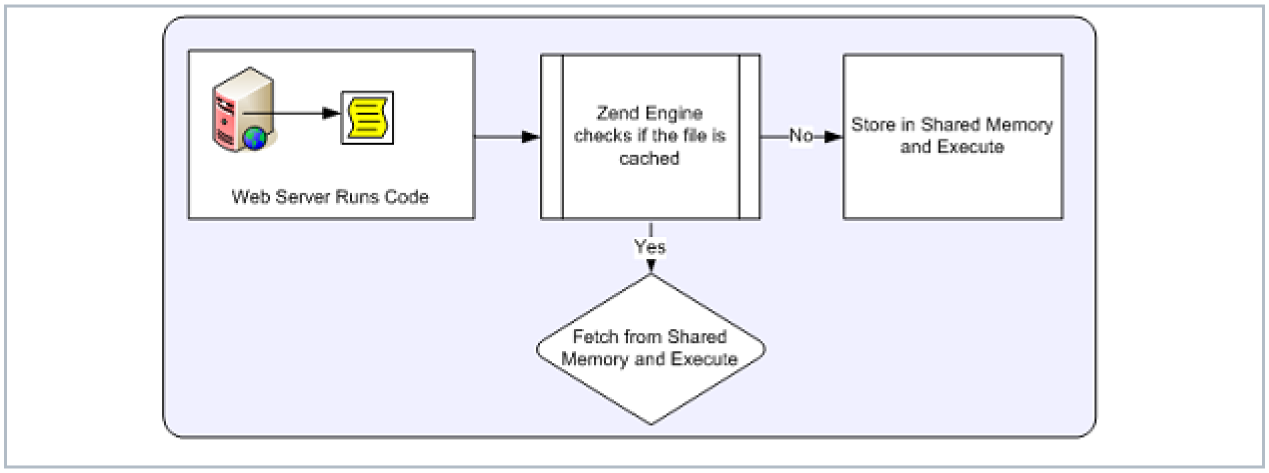
The Zend Debugger API communicates with the Zend (PHP) engine to reveal PHP runtime information such as variables, call stack and environment information. This information is then displayed and set up in Zend Studio to enable server side debugging, profiling and code coverage.

Optimizer+

The Zend Optimizer+ component speeds up PHP execution through opcode caching and optimization.

The Zend Optimizer+ improves PHP performance by storing precompiled script bytecode in the shared memory. This eliminates the stages of reading code from the disk and compiling it on future access. For further performance improvement, the stored bytecode is optimized for faster execution. This component works out-of-the-box and therefore does not require any configuration or changes to your code.

The Zend Optimizer+ speeds up PHP execution and increases server performance, resulting in better Web application performance.


Web Server Runs Code
Zend Engine checks if the file is cached
No
Store in Shared Memory and Execute
Yes
Fetch from Shared Memory and Execute

This component is intended for PHP developers who run complex PHP applications and can benefit from bytecode caching (which is especially helpful for working with Zend Framework).

Note:
The Optimizer+ works exclusively with Apache or FastCGI environments (no CLI or CGI support).

Guard Loader

The Zend Guard Loader runs PHP scripts that are encoded with Zend Guard.

The Zend Guard Loader runs outputs created by a separate product available from Zend, which provides an easy way to encode, obfuscate and license PHP code via an Eclipse-based interface or from the command line.

The Guard Loader must be installed on each Web server that runs files that were encoded with, or use, Zend Guard licenses.
The Zend Guard Loader translates encoded files to a format that can be parsed by the Zend Engine. This runtime process uses the Zend engine as a trigger to start the Zend Guard Loader component.

Zend Guard

Zend Guard is a separate product available from Zend that provides an easy way to encode, obfuscate and license PHP code via an Eclipse-based interface or from the command line.
To view the API, click Zend Guard Loader.
For additional information on using Zend Guard, see the Zend Guard User Guide, available online from http://files.zend.com/help/Zend-Guard/zend-guard.htm

Data Cache

The Zend Data Cache component provides a set of PHP functions to improve performance by storing data in the cache.

The Zend Data Cache is used to cache different types of data (e.g., strings, arrays and objects), as well as script output or script output elements for various durations. Items can be stored in shared memory (SHM) or to disk. Namespaces are supported, to group cached objects for easy management.

Data Caching is primarily used when it is impractical or impossible to cache the entire page output, such as when sections of the script are fully dynamic, or when the conditions for caching the script are too numerous. An example of this kind of usage is when some of the output is a form: The data may include credit card numbers, addresses and other kinds of information that should not be cached, for security reasons. For more information, see Working with the Data Cache.
The Data Cache API includes the following functionality :

- Storing variables to the cache
- Fetching variables to the cache
- Deleting variables from the cache
- Clearing the cache
- Disk/memory (SHM) storage
- Caching using namespaces
- Cache folder depth configuration

Java Bridge

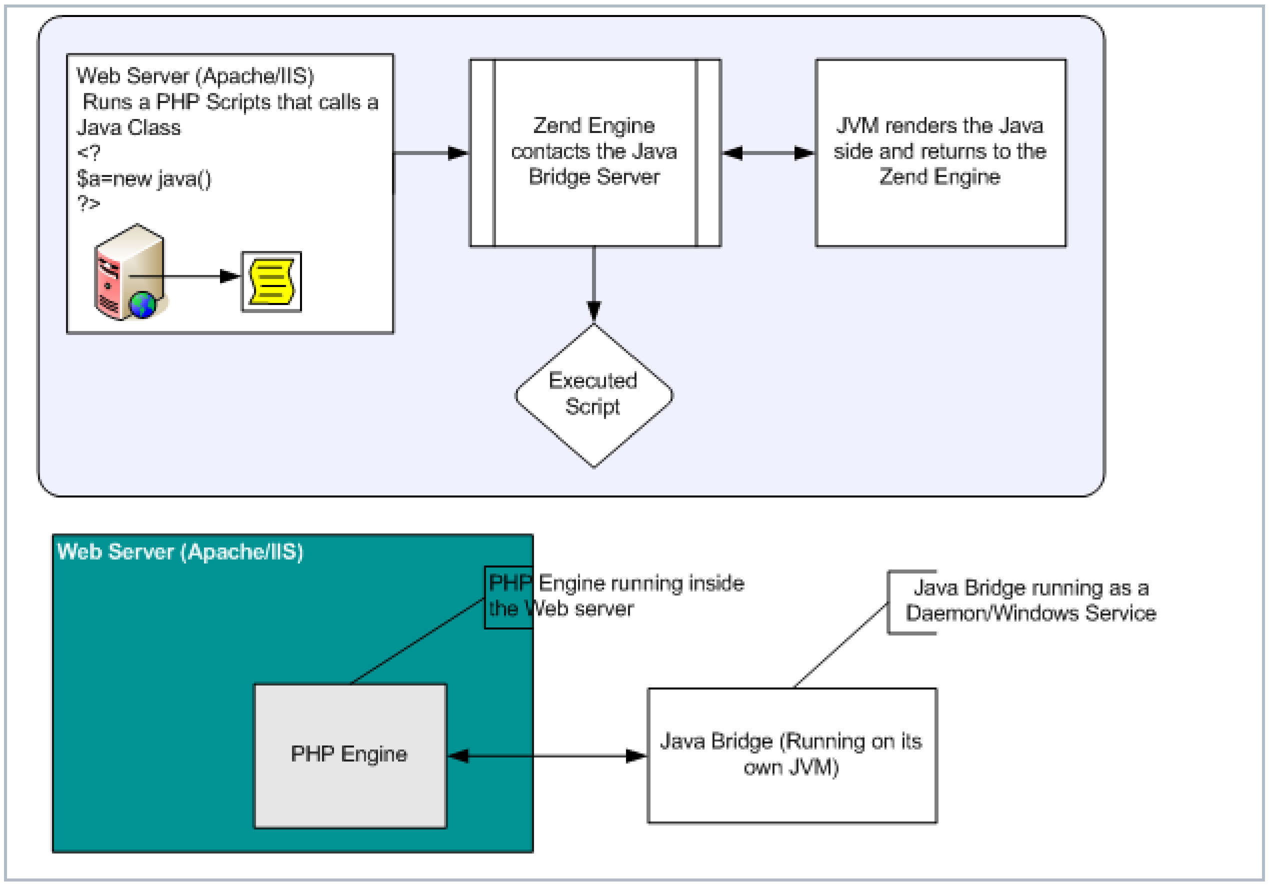
The Zend Java Bridge provides PHP developers with a way to use existing Java code and build PHP applications that use Java code.
The Java Bridge integrates Java code in PHP by connecting the PHP object system with the Java Bridge object system.

Note:
The Java Bridge requires that you have SUN Microsystems JRE 1.4 (or later) or IBM's Java 1.4.2 (or later) installed on your computer. During (or after)installing, (depending on the installation type, you are prompted to direct the installer to the JRE location. You should, therefore, already have JRE installed. 64-bit JRE is not supported.
More information about JRE and the latest updates can be obtained from SUN Microsystems’s website.

The Java Bridge PHP extension adds functions that allow you to instantiate new Java classes from inside your PHP script. Once a Java class is instantiated, the Java Bridge gets a message from the Zend Engine to execute the Java code. The Java Bridge executes the script and returns the results to the Zend Engine.

Zend Server includes the Java Bridge PHP Extension and the ability to restart the Java Bridge and configure the Java Bridge settings (from **Server Setup | Components**).
The Java Bridge is an optional component that is installed differently, depending on the operating system (WIN, UNIX, MAC) and the installation method format (EXE, DEB, RPM, Tarball). Once the extension is installed and its status is On, PHP code can use the Java Bridge API to call Java objects.

The process of calling Java objects in PHP is described in the following diagram:


Web Server (Apache/IIS)
Runs a PHP Scripts that calls a Java Class
<?
$a=new java()
?>
Zend Engine contacts the Java Bridge Server
JVM renders the Java side and returns to the Zend Engine
Executed Script
Web Server (Apache/IIS)
PHP Engine running inside the Web server
Java Bridge running as a Daemon/Windows Service
PHP Engine
Java Bridge (Running on its own JVM)

Advantages

The Zend Java Bridge provides the following advantages:

- J2EE application servers can be extended to include the advantages that PHP offers (relative to other Web-enablement languages), such as reduced development time, reduced time-to-market, lower TCO (Total Cost of Ownership), etc.
- PHP-centric companies can take advantage of J2EE services that are not present in scripting languages.
- The PHP/Java Bridge provides the ability to interact with plain Java objects.

- The Java Bridge operates without the overhead of a JVM for each Apache process.
- The Java Bridge consumes a set amount of memory that is disproportionately small relative to the amount of activity that it handles.

Zend Framework

Zend Framework is a high quality, open source framework for developing Web applications and Web services with PHP.
Built in the true PHP spirit, the Zend Framework delivers ease-of-use and powerful functionality. It provides solutions for building modern, robust and secure websites.

Zend Framework Resources

All the developer resources can be found at: http://framework.zend.com/

Why Zend Framework

(Taken from: http://framework.zend.com/whyzf/overview)
Extending the art and spirit of PHP, Zend Framework is based on simplicity: Object-oriented best practices, corporate friendly licensing and a rigorously tested agile code base. Zend Framework is focused on building more secure, reliable and modern Web 2.0 applications and Web services, and consuming widely available APIs from leading vendors like Google, Amazon, Yahoo!, and Flickr, as well as API providers and cataloguers like StrikeIron and ProgrammableWeb.

Expanding on these core themes, we have implemented Zend Framework to embody extreme simplicity and productivity, the latest Web 2.0 features, simple corporate-friendly licensing and an agile, well-tested code base that your enterprise can depend upon.

Extreme Simplicity & Productivity

We designed Zend Framework with simplicity in mind. To provide a lightweight, loosely-coupled component library simplified to provide 4/5s of the functionality everyone needs and that lets you customize the other 20% to meet your specific business needs. By focusing on the most commonly needed functionality, we retain the simplified spirit of PHP programming, while dramatically lowering the learning curve - and your training costs – so developers get up-to-speed quickly. We do this with:

Extensible and well-tested code base	**Flexible architecture**	**No configuration files necessary to get going**

Frameworks and best practices mean reduced training costs and quicker time-to-market – important factors in adoption decisions. Built so you can pick and choose just the pieces you need to turbocharge your web applications – all your developers know where to find their PHP / Zend Framework code, which speeds new development and reduces maintenance costs.

Latest Web Development Features

AJAX support through JSON – meet the ease-of-use requirements your users have come to expect
Search – a native PHP edition of the industry-standard Lucene search engine
Syndication – the data formats and easy access to them your Web 2.0 applications need
Web Services – Zend Framework aims to be the premier place to consume and publish web services
High-quality, object-oriented PHP 5 class library – attention to best practices like design patterns, unit testing and loose coupling

Friendly & Simple Licensing, Safe for the Enterprise

Based on the simple and safe new BSD license, with Zend Framework's License, you can rest assured that your code is compliant, unimpeachable and protected as you see fit. We also require all contributors to the open source Zend Framework to complete and sign a Contributor License Agreement (CLA) — which is based on the standard open-source Apache license — to protect your intellectual property (that is, your added-value) built on Zend Framework.

Fully Tested – Extend Safely and Easily

Tested. Thoroughly. Enterprise-ready and built with agile methods, Zend Framework has been unit-tested from the start, with stringent code coverage requirements to ensure that all code contributed has not only been thoroughly unit-tested, but also remains stable and easy for you to extend, re-test with your extensions and further maintain.

Zend Controller

The Zend Controller runs parallel to the Administration Interface, to provide easy access to useful developer tools and information.
The Zend Controller is a small utility that you can use to remotely access the Administration Interface for tasks such as turning components on and off. The Zend Controller also provides developer resources, including the Benchmark Tool and a search area that lists sites targeted for PHP developer use.

Reference Information

This section contains reference information for PHP developers. Here you will find information about using the Java Bridge, the extensions included in this release and other system-related information.

The list of extensions provides an overview of all the extensions that are included and their status (On, Off, Disabled). A description of what each status means can be found in PHP Extensions.

In this section:

Java Bridge Use Cases

This section describes some of the common uses for the Java Bridge. The usage scenarios and examples discussed here provide a framework for the Java Bridge's uses, rather than a complete picture. Real world experience indicates that companies are finding more and more applications for the Java Bridge, beyond what was initially anticipated.

Usage Scenarios

There are two usage scenarios that describe the most common applications for the PHP/Java Bridge:

- **Integration with Existing Java Infrastructure** - PHP is a fully featured scripting language engineered to cover virtually all of an enterprise's requirements. At the same time, many enterprises have a long history of application development in Java. The Java Bridge enables enterprises to continue to use their Java infrastructure - applications, databases, business logic and various Java servers (WebLogic, JBoss, Oracle Application Server, etc.).
- **Accessing Java Language and Architecture** - Some enterprises require the full set of PHP capabilities, yet have a specific need for select Java based applications. SIP signaling in the communications industry or JDBC for creating connectivity to SQL databases are two examples of impressive, industry specific products. The Java Bridge enables enterprises to adopt a PHP standard and to use their preferred Java based applications.

Activities

This section describes two sample activities that indicate some of what you can do with the PHP/Java Bridge. In the sample activities, it is important to differentiate between Java and J2EE. The difference will impact on architecture and in turn, on the script code.

The important differences are:

- Java is a programming language. Java applications created in Java for the enterprise are not bound to a specific framework. Therefore, it is possible and perhaps preferable for an enterprise to relocate code libraries to the server that runs Zend Server.
- J2EE is a structured framework for application scripts developed for J2EE. It is preferable that J2EE servers be left intact.

Example 1: A Case Study in Java Bridge Performance (Java)

The Forever Times newspaper maintains a PHP-based website - let's call it ForeverOnline.com. The newspaper has been searching for a real-time Stock Ticker application to add to their already successful and heavily visited website. The Forever Times Newspaper feels that real-time financial information is the one thing their website is lacking.

Forever Times believes they have found exactly the Stock Ticker application they need. The application provides up-to-date quotations from all the major markets, currency rates, and even links to some of the local exchanges. However, the application is written in Java and uses existing Java libraries.

Forever Times realizes that a PHP-based Web implementation that handles Java requests - a Java Bridge - is their best bet. At the same time, they are concerned that the performance of their Website remains optimal. To Forever Times' horror, in testing the new application, they find that loading the site with user-requests for the Stock Ticker slows down the performance of the whole website.

The following code example illustrates how the Java Bridge applies to this business scenario and others like it:

Example:

```
<?
// create Java object
$stock = new Java("com.ticker.JavaStock");
// call the object
$news = $stock->get_news($_GET['ticker']);
// display results
foreach($news as $news_item) {
print "$news_item<br>\n";
}
?>
```

The example code can be understood as follows:

- The code example is written in PHP and forms part of a PHP Web application.
- The PHP code creates the Java object-"com.ticker.JavaStock"-which is the PHP proxy.
- Requests come into the PHP based Website - ForeverOnline.com - which then references the Stock Ticker application.
- Stock Ticker references a custom object- get_news-in the JVM library. This is all in native Java.
- The PHP code then outputs the results on the Website.

As opposed to a typical Java Bridge Implementation, the Zend Server Java Bridge implementation addresses performance issues through the Java Bridge architecture.
Implementing the Java Bridge is a way to address scalability issues by using the Java Bridge to handle all communication in a single JVM instance, instead of in several instances.

Note:
While the single JVM constitutes a single point of failure, the fact is, Zend's PHP-Java connection is the most robust on the market. Failures in systems of this type generally tend to occur when the Java Server is overloaded, rather than as a result of glitches in the applications. Zend Server's system architecture insures performance by diminishing overhead. However, in the event of failure, the Java Bridge supports a restart feature that makes monitoring the status of the Java Server and restarting quick and simple. One last point: if the failure was caused by a glitch in the application, the same thing would most likely occur in each of the JVMs in the non-Zend system!

Example 2: A Case Study in Management Integration (J2EE)

A company called FlowerPwr.com sells flowers over the Internet. They are a successful East Coast-based firm that has an aggressive management profile. They are currently in the process of acquiring a West Coast competitor - let's call it Yourflowers.com - that provides a similar service.
FlowerPwr.com has its own website: Its various enterprise applications are written in PHP.
Yourflowers.com also has its own Website: However, all its applications are Java-based and were developed for J2EE. They have their own J2EE application server. FlowerPwr.com needs to begin operating as an integrated commercial entity as soon as possible, in a way that conceals the fact that the companies have merged.
Using the Java Bridge, FlowerPwr.com can create a common portal in PHP. The company can leave Java up and running and take full advantage of their acquisition's existing Java services. FlowerPwr.com can do this over an existing portal using PHP.
The following code example illustrates how the Java Bridge can apply to this business scenario and others like it:

Example:

```
<?
// EJB configuration for JBoss. Other servers may need other settings.
// Note that CLASSPATH should contain these classes
$envt = array(
"java.naming.factory.initial" =>
"org.jnp.interfaces.NamingContextFactory",
"java.naming.factory.url.pkgs" =>
"org.jboss.naming:org.jnp.interfaces",
"java.naming.provider.url" => " jnp://yourflowers.com:1099");
$ctx = new Java("javax.naming.InitialContext", $envt);
// Try to find the object
$obj = $ctx->lookup("YourflowersBean");
// here we find an object - no error handling in this example
$rmi = new Java("javax.rmi.PortableRemoteObject");
$home = $rmi->narrow($obj, new Java("com.yourflowers.StoreHome"));
$store = $home->create();
// add an order to the bean
$store->place_order($_GET['client_id'], $_GET['item_id']);
print "Order placed.<br>Current shopping cart: <br>";
// get shopping cart data from the bean
$cart = $store->get_cart($_GET['client_id']);
foreach($cart as $item) {
print "$item['name']: $item['count'] at $item['price']<br>\n";
}
// release the object
$store->remove();
?>
```

The example code can be understood as follows:

1. The code example is written in PHP and forms part of a PHP Web application.
2. The PHP application first initializes an operation with the EJB, located at a specific URL that has the name:"//yourflowers.com:1099."
3. The code then specifies the bean-YourflowersBean-that the application will look for.
4. Next, the bean object is returned from the EJB server.
5. The application then calls methods-in this case, the Java application includes two functions:
    - *place_order receiving two numbers* - client ID and the item ID to add to shopping cart

- *get_cart receiving one number* - client ID and returning the list of the items placed in the shopping cart so far.

After script execution, the referenced class may be disposed.

Adding Extensions

This section includes information for the following Operating Systems:

- Zend Server on UNIX/Linux
- Zend Server Community Edition on UNIX/Linux/Mac

Zend Server users can benefit from extension management capabilities for third party extensions as well as for Zend Extensions. This enables users to load and unload all extensions directly from the Zend Server Extensions page.

Important: The newly added extensions will be visible in the Administration Interface's Extensions page however, the directive configuration option will not be active and directives belonging to the extension have to be configured directly from the php.ini file.

Disclaimer:

Zend Technologies does not provide support for third party products, including extensions. Therefore, if an issue for support arises, please remove all third party extensions by commenting out the reference to them in your php.ini before referring to the Support Center - http://www.zend.com/en/support-center/.

There are two types of extensions: PHP extensions and Zend extensions. The extension provider should supply information regarding the extension type (Zend or PHP). Make sure to also check the provider's documentation for possible compatibility issues, PHP version compatibility and any other additional configurations that may be required.

To add Zend extensions:

1. Download the extension.

   Place the extension in your extensions directory.

   To locate the extensions directory, open the Administration Interface to **Monitor | PHP Info** and check the value for the directive extension_dir=.

   By default, your extensions directory is located in:

   <install_path>/zend/lib/php_extensions

2. Add the following line to your php.ini:

   zend_extension=<full_path_to_extension_so_file>

3. Restart your server.

4. **To restart your server**:

   Click Restart Server Restart Server in the Administration Interface.

   Ensure that the extension is properly loaded by checking the output of PHPInfo in the

Administration Interface.

Note:
If you try to load a PHP extension as a Zend extension, in Linux you may receive the following error message in your server's error log: "<extension_name> doesn't appear to be a valid Zend extension." If this occurs, remove it and add it as a PHP extension, following the instructions under "To Add PHP Extensions", below.

To add PHP extensions

1. Download the third party extension. Many third party extensions can be found at http://pecl.php.net.
   Extensions are obtained directly from external web repositories.
2. Place the PHP extension in your extensions directory.
   To locate the extensions directory, open your php.ini and check the value for the directive extension_dir=.
   By default, your extensions directory is located in:
   <install_path>/lib/php_extensions
3. Add the following line to your php.ini:
   extension=<my_extension_name>.so
   Ensure that you replace <my_extension_name> with your extension's name.
4. Restart your Web server.
   Ensure that the extension is properly loaded by checking the Administration Interface: See **Monitor | PHP Info** for the output of PHP Info.

The extensions appear in your Administration Interface under the Extensions tab and you can use the Administration Interface to load and unload the extension.

Adding Extensions for Windows

The following procedure describes how to download compiled extensions for Wndows DLL files.

Windows Note:
When downloading extensions for Windows from PECL, make sure to download the non thread-safe (NTS) version **ONLY**.

To download extensions:

1. Go to: http://www.php.net/downloads.php.
2. In the Windows binaries section, select: "**PECL <current ZendServer PHP version> Non-thread-safe Win32 binaries**" (64-bit users can use this too).
3. Click the package to start a download process. Follow the download instructions and extract the ZIP file.
4. Select the .dll you want.
5. To add the extension, go to the extension directory, *<install_path>*\ZendServer\lib\phpext, and add the .dll file there.
6. Go to your php.ini file and add the following line: extension=<extension_name>.dll.
7. To verify that the extension was loaded properly, go to **Setup | Extensions** and locate the extension from the list.

   When loading new extensions, also examine the log files.

For more information on these extensions, go to http://pecl4win.php.net/.

Note: The extensions in this site are thread-safe and therefore should not be downloaded for use with Zend Server.

Note:

Some extensions need directives to change the Extension's default configurations. These directives should be added added to your php.ini file manually. There is no way to predict which directives extensions may have: For each third party extension you want to add, make sure to go to the project's source site to check for additional information related to the extension.

Loading the mod_ssl Module

The mod_ssl module allows you to enable SSL support on your Apache web server and is needed to enable Apache for SSL requests (https).

For more information on the mod_ssl module, see the mod_ssl user manual at http://www.modssl.org/docs/2.8.

The bundled Apache that comes with Zend Server includes support for the ssl_module, but this needs to be loaded in order to activate it. You must have acquired an SSL certificate from an SSL certificate provider (e.g., http://www.slacksite.com/apache/certificate.html) or have created your own SSL certificate for the mod_ssl to be loaded.

To load the mod_ssl module:

1. Open your httpd.conf file.

   By default, this is located in:

   Windows: <install_path>\apache2\conf\httpd.conf

   Linux/Tarball: <install_path>/apache2/conf/httpd.conf

2. Un-comment the following line by removing the "#".

```
Include conf/extra/httpd-ssl.conf
```

   This calls the SSL configuration file.

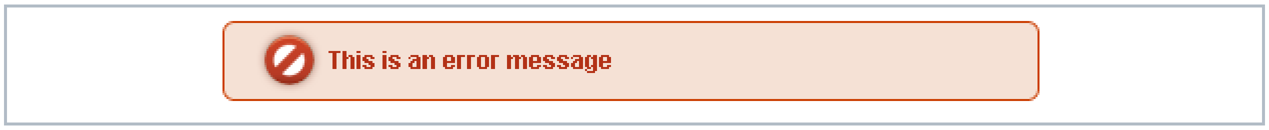
3. Place your server.crt and server.key certification files in the 'conf' folder.
4. Restart the Apache server for the changes to take effect.

The mod_ssl module is loaded.

Info Messages

Zend Server displays different types of messages that are color coded according to their level of severity. The following list describes the four different options and what each color means:

Error Messages



This is an error message

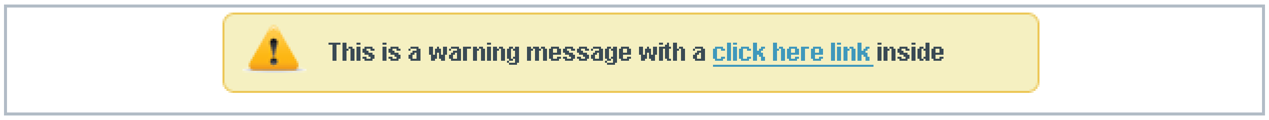
Messages that are Red indicate that some kind of system error has occurred. If you receive a message like this follow the instructions in the message.

The recommended actions are:

- Follow the instructions in the message.
- If the message appeared after an action was performed - try to redo the last action (such as to click Save, Add etc.).
- Visit the Support Center - http://www.zend.com/en/support-center/
- Open a Support Ticket - Support
- Reinstall Zend Server - Choosing Which Distribution to Install

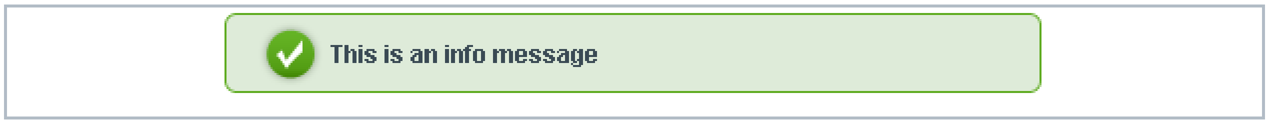
Notices

Messages that are Yellow indicate that a non-critical error occurred. If you receive a message like this it will contain information on how to proceed. This type of error includes messages to the user about usability issues.


This is a warning message with a click here link inside

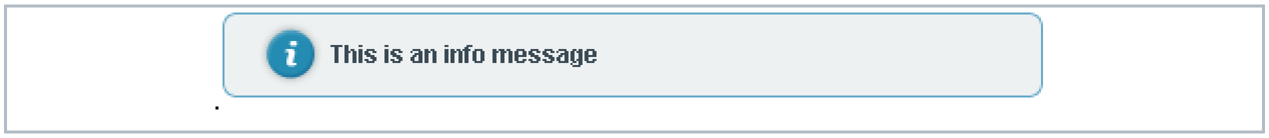
Success Messages

Messages that are Green indicate the success of an action. If you receive a message like this it means that your last action was completed successfully and no additional actions are required (such as Restart Server).


This is an info message

Info Messages

Messages that are Blue indicate that there is an important message. If you receive a message like this, in most cases no action is required apart from reading the information


This is an info message

For example:

Log file C:Program Files/Zend/Apache2/logs/error.log does not exist or missing read permissions

When this Server Error Log Info Message is displayed, one of the following has occurred:

- No log files are available
- Files have been moved
- Permissions have been tampered with

API Reference

Introduction

The API reference includes reference information for working with the API's. Each page includes a description of the component along with the functions for interacting with the component and the directives for configuring the component's behavior as follows:

- Zend Debugger
- Zend Optimizer+
- Zend Guard Loader
- Zend Data Cache
- Zend Java Bridge
- Zend Extension Manager
- Zend Utils

Zend Debugger

The Zend Debugger is a remote debugging tool for developers working with Zend Studio.
The Zend Debugger is an API that communicates with the Zend (PHP) Engine to retrieve runtime information and reveal it in Zend Studio for debugging purposes.
Note: If your machine has multiple IP addresses, make sure you define all IPs as allowed hosts in Zend Server.

PHP API

Function: *debugger_start_debug()*
Triggers a debug session from within a script

Returns:
Available since: 3.6

Function: *boolean debugger_connect()*
Initiates a tunnel connection

Returns: TRUE the connection is established or FALSE could not connect
Available since: 3.6

INI Directives:

zend_debugger.allow_hosts
Specifies the hosts that are allowed to connect (hostmask list) with Zend Debugger when running a remote debug session with Zend Studio

Default value(s):
127.0.0.1/32,10.0.0.0/8,192.168.0.0/16,172.16.0.0/12:
Type: string
Measurement units:
Available since: 3.6

zend_debugger.deny_hosts
Specifies the hosts that are not allowed to connect (hostmask list) with the Zend Debugger when running a remote debug session with Zend Studio

Default value(s):
:
Type: string
Measurement units:
Available since: 3.6

zend_debugger.allow_tunnel
A list of hosts (hostmask list) that can use the machine on which Zend Server is installed to create a communication tunnel for remote debgging with Zend Studio. This is done to solve firewall connectivity limitations

Default value(s):
:
Type: string
Measurement units:
Available since: 3.6

zend_debugger.max_msg_size
The maximum message size accepted by the Zend Debugger for protocol network messages

Default value(s):
2097152:
Type: int
Measurement units:
Available since: 3.6

zend_debugger.httpd_uid
The user ID of the httpd process that runs the Zend Debugger (only for tunneling)

Default value(s):
-1:

Type: int
Measurement units:
Available since: 3.6

zend_debugger.tunnel_min_port
A range of ports that the communication tunnel can use. This defines the minimum value for the range

Default value(s):
1024:
Type: int
Measurement units:
Available since: 3.6

zend_debugger.tunnel_max_port
A range of ports that the communication tunnel can use. This defines the maximum value for the range

Default value(s):
65535:
Type: int
Measurement units:
Available since: 3.6

zend_debugger.expose_remotely
Define which clients know that the Zend Debugger is installed:
0 - Never. The presence of the Zend Debugger is not detected by other clients
1 - Always. All clients can detect the Zend Debugger
2 - Allowed Hosts. Only clients listed in zend_debugger.allow_hosts can detect the Zend Debugger
Any other value makes the Zend Debugger undetectable (same as "Never")

Default value(s):
2:
Type: int
Measurement units:
Available since: 3.6

zend_debugger.passive_mode_timeout
The Debugger's timeout period (in seconds) to wait for a response from the client (Zend Studio)

Default value(s):
20:
Type: int
Measurement units: seconds
Available since: 3.6

Zend Optimizer+

The Zend Optimizer+ is a Zend Server component used to speed PHP execution through opcode caching
The Zend Optimizer+ is bytecode cache and optimization component.
It improves server performance by storing compiled PHP bytecode in shared memory thus saving the stages of reading it from the disk and compiling it on second access. Optimizer+ works exclusively with Apache or FastCGI environments (no CLI or CGI support). One of the chief Optimizer+ advantages is that it requires little or no configuration.

PHP API

Function: *boolean accelerator_reset()*
Resets the contents of the Optimizer+ shared memory storage.
Note: This is not an immediate action. The shared memory storage is reset when a request arrives while the shared memory storage is not being used by a script.

Returns: Returns TRUE unless the Optimizer+ is disabled.
Available since: 3.6

External Configuration File: Optimizer+ blacklist file

The Optimizer+ blacklist file is a text file that holds the names of files that should not be accelerated. The file format is to add each filename to a new line. The filename may be a full path or just a file prefix (i.e., /var/www/x blacklists all the files and directories in /var/www that start with 'x'). Files are usually triggered by one of the following three reasons:
1) Directories that contain auto generated code, like Smarty or ZFW cache.
2) Code that does not work well when accelerated, due to some delayed compile time evaluation.
3) Code that triggers an Optimizer+ bug.
Parameters:

INI Directives:

zend_optimizerplus.enable
Optimizer+ On/Off switch. When set to Off, code is not optimized.

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.use_cwd
If set to On, use the current directory as a part of the script key
When this directive is enabled, the Optimizer+ appends the current working directory to the script key, thus elminating possible collisions between files with the same name (basename). Disablingthe directive improves performance, but may break existing applications.
Default value(s):

1:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.validate_timestamps
If enabled, the Optimizer+ checks the file timestamps and updates the cache accordingly.
When disabled, you must reset the Optimizer+ manually or restart the webserver for changes to the filesystem to take effect.
The frequancy of the check is controlled by the directive "zend_optimizerplus.revalidate_freq"
Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.revalidate_freq
How often to check file timestamps for changes to the shared memory storage allocation.

Default value(s):
2:
Type: int
Measurement units: seconds
Available since: 4.0

zend_optimizerplus.revalidate_path
Enables or disables file search in include_path optimization
If the file search is disabled and a cached file is found that uses the same include_path, the file is not searched again. Thus, if a file with the same name appears somewhere else in include_path, it won't be found. Enable this directive if this optimization has an effect on your applications. The default for this directive is disabled, which means that optimization is active.
Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.inherited_hack
Enable this hack as a workaround for "can't redeclare class" errors
The Optimizer+ stores the places where DECLARE_CLASS opcodes use inheritance (These are the only opcodes that can be executed by PHP, but which may not be executed because the parent class is missing due to optimization). When the file is loaded, Optimizer+ tries to bind the inherited classes by using the current environment. The problem with this scenario is that, while the DECLARE_CLASS opcode may not be needed for the current script, if the script requires that the opcode at least be defined, it may not run. The default for this directive is disabled, which means that optimization is active.

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.dups_fix
Enable this hack as a workaround for "duplicate definition" errors

Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.log_verbosity_level
The verbosity of the Optimizer+ log
All Optimizer+ errors go to the Web server log.
By default, only fatal errors (level 0) or errors (level 1) are logged. You can also enable warnings (level 2), info messages (level 3) or debug messesges (level 4).
For "debug" binaries, the default log verbosity level is 4, not 1.
Default value(s):
1:
Type: int
Measurement units:
Available since: 4.0

zend_optimizerplus.memory_consumption
The Optimizer+ shared memory storage size. The amount of memory for storing precompiled PHP code in Mbytes.

Default value(s):
64:
Type: int
Measurement units: MBytes
Available since: 4.0

zend_optimizerplus.max_accelerated_files
The maximum number of keys (scripts) in the Optimizer+ hash table
The number is actually the the first one in the following set of prime numbers that is bigger than the one supplied: { 223, 463, 983, 1979, 3907, 7963, 16229, 32531, 65407, 130987 }. Only numbers between 200 and 100000 are allowed.
Default value(s):
2000:
Type: int
Measurement units:

Available since: 4.0

zend_optimizerplus.max_wasted_percentage
The maximum percentage of "wasted" memory until a restart is scheduled

Default value(s):
5:
Type: int
Measurement units: %
Available since: 4.0

zend_optimizerplus.consistency_checks
Check the cache checksum each N requests
The default value of "0" means that the checks are disabled. Because calculating the checksum impairs performance, this directive should be enabled only as part of a debugging process.
Default value(s):
0:
Type: int
Measurement units:
Available since: 4.0

zend_optimizerplus.force_restart_timeout
How long to wait (in seconds) for a scheduled restart to begin if the cache is not being accessed
The Optimizer+ uses this directive to identify a situation where there may be a problem with a process. After this time period has passed, the Optimizer+ assumes that something has happened and starts killing the processes that still hold the locks that are preventing a restart. If the log level is 3 or above, a "killed locker" error is recorded in the Apache logs when this happens.
Default value(s):
180:
Type: int
Measurement units: seconds
Available since: 4.0

zend_optimizerplus.blacklist_filename
The location of the Optimizer+ blacklist file
For additional information, see "Extermal Configuration File", above
Default value(s):
:
Type: string
Measurement units:
Available since: 4.0

zend_optimizerplus.save_comments
If disabled, all PHPDoc comments are dropped from the code to reduce the size of the optimized code.

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.fast_shutdown
If enabled, a fast shutdown sequence is used for the accelerated code
The fast shutdown sequence doesn't free each allocated block, but lets the Zend Engine Memory Manager do the work.
Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_optimizerplus.optimization_level
A bitmask, where each bit enables or disables the appropriate Optimizer+ passes

Default value(s):
0xfffffbbf:
Type: int
Measurement units:
Available since: 4.0

zend_optimizerplus.enable_slow_optimizations
Enables or disables the optimization passes that may take significant time, based on an internal runtime calculation

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

Zend Guard Loader

The Guard Loader is a Zend extension that loads and runs PHP scripts that are encoded with Zend Guard)
The default setting is 'On' for this component. If you do not plan to use the Guard Loader to run code encoded by Zend Guard, set the directive zend_loader.enable = 0. This disables the built-in auto-loading mechanism.

PHP API

Function: *boolean zend_loader_enabled()*
Checks the Zend Optimizer+ configuration to verify that it is configured to load encoded files

Returns: Returns TRUE if the Guard Loader is configured to load encoded files. Returns FALSE if the Guard Loader is not configured to load encoded files.
Available since: 4.0

Function: *boolean zend_loader_file_encoded()*
Returns TRUE if the current file was encoded with Zend Guard or FALSE otherwise. If FALSE, consider disabling the Guard Loader

Returns: TRUE if Zend-encoded, FALSE otherwise
Available since: 4.0

Function: *array zend_loader_file_licensed()*
Compares the signature of the running file against the signatures of the license files that are loaded into the License Registry by the php.ini file. If a valid license file exists, the values of the license file are read into an array. If a valid license does not exist or is not specified in the php.ini, it is not entered in the PHP server's license registry. If a valid license that matches the product and signature cannot be found in the license directory, an array is not created. For information on the proper installation of a license file, as well as the php.ini directive, see the Zend Guard User Guide

Returns: Returns an array or FALSE.
If an array is returned, a valid license for the product exists in the location indicated in the php.ini file.
Available since: 4.0

Function: *string zend_loader_current_file()*
Obtains the full path to the file that is currently running. In other words, the path of the file calling this API function is evaluated only at run time and not during encoding

Returns: Returns a string containing the full path of the file that is currently running
Available since: 4.0

Function: *boolean zend_loader_install_license(string license_file, boolean overwrite=0)*
Dynamically loads a license for applications encoded with Zend Guard.

Parameters:
string license_file - Name of the license file
boolean overwrite - Controls if the function overwrites old licenses for the same product
0=Do not overwrite
1=Overwrite

Returns: TRUE if the license was loaded successfully, FALSE otherwise

Available since: 4.0

Function: *string zend_obfuscate_function_name(string function_name)*
Obfuscate and return the given function name with the internal obfuscation function

Parameters:
string function_name - Name of the function to obfuscate

Returns: Returns the obfuscated form of the given string.
Available since: 4.0

Function: *int zend_current_obfuscation_level()*
Returns the current obfuscation level support (set by zend_optimizer.obfuscation_level_support) to get information on the product that is currently running.

Returns: Current obfuscation level
Available since: 4.0

Function: *boolean zend_runtime_obfuscate()*
Start runtime-obfuscation support to allow limited mixing of obfuscated and un-obfuscated code

Returns: TRUE if succeeds, FALSE otherwise
Available since: 4.0

Function: *string zend_obfuscate_class_name(string class_name)*
Obfuscate and return the given class name with the internal obfuscation function

Parameters:
string class_name - Name of the class to obfuscate

Returns: Returns the obfuscated form of the given string
Available since: 4.0

Function: *array zend_get_id(boolean all_ids=false)*
Returns an array of Zend (host) IDs in your system. If all_ids is TRUE, then all IDs are returned, otherwise only IDs considered "primary" are returned

Parameters:
boolean all_ids - If all_ids is TRUE, returns all IDs, otherwise returns only IDs that are considered "primary"

Returns: Array of host IDs
Available since: 4.0

Function: *string zend_loader_version()*
Returns Zend Guard Loader version

Returns: Zend Guard Loader version
Available since: 4.0

INI Directives:

zend_loader.enable
Enables loading encoded scripts. The default value is On
If you do not plan to use the Zend Guard Loader to load encoded files, you can slightly improve performance by adding the zend_loader.enable = 0.
This disables the transparent auto-loading mechanism that is built into the Zend Guard Loader
Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_loader.disable_licensing
Disable license checks (for performance reasons)
If you do not need to use any licensing features, you can disable the Zend Guard Loader license request. Setting this option lowers Guard Loader memory usage and slightly enhances performance
Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_loader.obfuscation_level_support
The Obfuscation level supported by Zend Guard Loader. The levels are detailed in the official Zend Guard Documentation. 0 - no obfuscation is enabled

Default value(s):
3:
Type: int
Measurement units:
Available since: 4.0

zend_loader.license_path

Path to where licensed Zend products should look for the product license. For more information on how to create a license file, see the Zend Guard User Guide

Default value(s):
:
Type: string
Measurement units:
Available since: 4.0

Zend Data Cache

The Zend Data Cache API is a set of functions for caching data items or output.
The Zend Data Cache is used for the partial caching of content to your shared memory or disk.

PHP API

Function: *boolean zend_shm_cache_store(string namespace::key, mixed value, int ttl=0)*
Stores a variable identified by key into the cache. If a namespace is provided, the key is stored under that namespace. Identical keys can exist under different namespaces

Parameters:
string namespace::key - The data's key. Optional: prefix with a namespace
mixed value - Any PHP object that can be serialized
int ttl - - Time to live, in seconds. The Data Cache keeps an object in the cache as long as the TTL is not expired. Once the TTL is expired, the object is removed from the cache

Returns: FALSE if cache storing fails, TRUE otherwise
Available since: 4.0

Function: *boolean zend_disk_cache_store(string namespace::key, mixed value, int ttl=0)*
Stores a variable identified by a key into the cache. If a namespace is provided, the key is stored under that namespace. Identical keys can exist under different namespaces

Parameters:
string namespace::key - The data key. Optional: prefix with a namespace
mixed value - Any PHP object that can be serialized.
int ttl - - Time to live, in seconds. The Data Cache keeps objects in the cache as long as the TTL is not expired. Once the TTL is expired, the object is removed from the cache

Returns: FALSE if cache storing fails, TRUE otherwise
Available since: 4.0

Function: *mixed zend_shm_cache_fetch(mixed namespace::key)*
Fetches data from the cache. The key can be prefixed with a namespace to indicate searching within the specified namespace only. If a namespace is not provided, the Data Cache searches for the key in the global namespace

Parameters:
mixed namespace::key - The data key or an array of data keys. Optional for key's name: prefix with a namespace

Returns: FALSE if no data that matches the key is found, else it returns the stored data, If an array of keys is given, then an array which its keys are the original keys and the values are the corresponding stored data values
Available since: 4.0

Function: *mixed zend_disk_cache_fetch(mixed namespace::key)*
Fetches data from the cache. The key can be prefixed with a namespace to indicate searching within the specified namespace only. If a namespace is not provided, the Data Cache searches for the key in the global namespace

Parameters:
mixed namespace::key - The data key or an array of data keys. Optional for key's name: prefix with a namespace

Returns: FALSE if no data that matches the key is found, else it returns the stored data, If an array of keys is given, then an array which its keys are the original keys and the values are the corresponding stored data values
Available since: 4.0

Function: *boolean zend_shm_cache_delete(mixed namespace::key)*
Finds and deletes an entry from the cache, using a key to identify it. The key can be prefixed with a namespace to indicate that the key can be deleted within that namespace only. If a namespace is not provided, the Data Cache searches for the key in the global namespace

Parameters:
mixed namespace::key - The data key or an array of data keys. Optional for key's name: prefix with a namespace

Returns: TRUE on success, FALSE on failure.
Available since: 4.0

Function: *boolean zend_disk_cache_delete(string namespace::key)*
Finds and deletes an entry from the cache, using a key to identify it. The key can be prefixed with a namespace to indicate that the key can be deleted within that namespace only. If a namespace is not provided, the Data Cache searches for the key in the global namespace

Parameters:
string namespace::key - The data key or an array of data keys. Optional for key's name: prefix

with a namespace

Returns: TRUE on success, FALSE on failure.
Available since: 4.0

Function: *boolean zend_shm_cache_clear(string namespace)*
Deletes all entries from all namespaces in the cache, if a 'namespace' is provided, only the entries in that namespace are deleted

Parameters:
string namespace - The data key. Optional: prefix with a namespace

Returns: If the namespace does not exist or there are no items to clear, the function will return TRUE. The function will return FALSE only in case of error.
Available since: 4.0

Function: *boolean zend_disk_cache_clear(string namespace)*
Deletes all entries from all namespaces in the cache, if a 'namespace' is provided, only the entries in that namespace are deleted

Parameters:
string namespace - The data key. Optional: prefix with a namespace

Returns: If the namespace does not exist or there are no items to clear, the function will return TRUE. The function will return FALSE only in case of error.
Available since: 4.0

INI Directives:

zend_datacache.shm.max_segment_size
The maximal size of a shared memory segment

Default value(s):
32: for: WindowsAll , for: linux-i386 , for: linux-x86_64 , for: linux-amd64 ,
2: for: darwin , for: sunos , for: freebsd-i386 , for: freebsd-x86_64 , for: aix-ppc ,
Type: int
Measurement units: MBytes
Available since: 4.0

zend_datacache.shm.memory_cache_size
Amount of shared memory to be used by the cache

Default value(s):
32: for: WindowsAll , for: linux-i386 , for: linux-x86_64 , for: linux-amd64 ,

2: for: darwin , for: sunos , for: freebsd-i386 , for: freebsd-x86_64 , for: aix-ppc ,
Type: int
Measurement units: MBytes
Available since: 4.0

zend_datacache.disk.save_path
The path for storing cached content to the disk

Default value(s):
datacache:
Type: string
Measurement units:
Available since: 4.0

zend_datacache.disk.dir_level
Directory depth, for storing keys

Default value(s):
2:
Type: int
Measurement units:
Available since: 4.0

zend_datacache.enable
Enables the Data Cache. The Data Cache cannot work without this directive. The Data Cache can be turned on or off from the Administration Interface

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_datacache.apc_compatibility
When enabled, the Data Cache extension registers APC compatibility methods

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

Zend Java Bridge

The Java Bridge API is a set of functions used to call Java classes and code from within PHP
The Zend Java Bridge is an extension for integrating Java code in PHP by connecting the PHP object system with the Java object system

PHP API

Class: JavaException is a PHP class that inherits from the default PHP5 class "Exception"
Available since: 3.6

Function: *public object JavaException::getCause()*
Get the Java exception that led to this exception

Returns: A Java exception object, if there was an exception, NULL otherwise
Available since: 3.6

Function: *object java(string class_name, ...)*
Creates a Java object

Parameters:
string class_name - Class name to create
... - Additional arguments are treated as constructor parameters

Returns: The Java object that was created, NULL otherwise
Available since: 3.6

Function: *object java_last_exception_get()*
Returns a Java exception object for the last exception that occurred in the script: only the last exception is stored by the Java Bridge

Returns: Java exception object, if there was an exception, NULL otherwise
Available since: 3.6

Function: *java_last_exception_clear()*
Clears the last Java exception object record from the Java Bridge storage

Returns:
Available since: 3.6

Function: *java_set_ignore_case(boolean ignore)*
Sets the case sensitivity for Java calls when there are mixed cases in your PHP script

Parameters:
boolean ignore - If set, the Java attribute and method names are resolved, regardless of case

Returns:
Available since: 3.6

Function: *java_throw_exceptions(int throw)*
Controls if exceptions are thrown on Java exception. When an exception is thrown by a Java application, this function controls if the exception caught by the PHP code will continue to be thrown or not (if not, it is stored in the Java Bridge's internal memory)

Parameters:
int throw - If true, a PHP exception is thrown when a Java exception happens. If set to FALSE, use java_last_exception_get() to check for exceptions

Returns:
Available since: 3.6

Function: *java_set_encoding(string encoding=UTF-8)*
Sets encoding for strings received by Java from the PHP code to verify that the encoding is the same in the PHP and Java code

Parameters:
string encoding - Default encoding type is UTF-8

Returns:
Available since: 3.6

Function: *java_require(string path)*
Includes an additional CLASSPATH/JAR in a PHP script context

Parameters:
string path - URL pointing to the location of the Jar file. This function accepts the following protocols:
https://, http://, file://, ftp://
It can also be a local path: E.g., c:\

Returns:
Available since: 3.6

Function: *java_reload(string new_jarpath)*
Reloads Jar files that were dynamically loaded - on demand

Parameters:
string new_jarpath - The path to the Jar files

Returns:
Available since: 3.6

INI Directives:

zend_jbridge.server_port
The TCP port on which the server is listening
Default is 10001. Must be the same as the server's zend.javamw.port
Default value(s):
10001:
Type: int
Measurement units:
Available since: 4.0

zend_jbridge.ints_are_longs
Converts PHP integers into java.lang.Long integers, primarily for 64-bit machines
Translates PHP integer values to java.lang.Long integers (64-bit) instead of java.lang.Integer integers (32-bit). The default setting is off
Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_jbridge.encoding
Sets the encoding type that is passed from PHP to Java

Default value(s):
UTF-8:
Type: string
Measurement units:
Available since: 4.0

zend_jbridge.use_java_objects
Uses basic Java objects and does not attempt to convert them to primitives
When set to 0, preserves the current implementation (which converts basic Java objects to primitives (e.g., java.long.Short to short).
When set to 1 for the Java Bridge, returns Java objects and does not convert them to primitives
Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

Zend Extension Manager

The Zend Extension Manager (ZEM) manges all the Zend product line extensions.
Because every Zend extension is compiled for each PHP version, the ZEM selects the proper extension version, depending on the PHP runtime. In addition, the ZEM exposes the C language API that reflects all the information for the managed extensions and is responsible for managing the licences of these extensions
Every INI directive of form 'zend_extension_manager.dir.xxx=yyy' string, where 'xxx' is a reserved name (see below), is considered to be an extension that should be managed. The 'xxx' is called 'extensionId' and 'yyy' is treated as a path to the subtree, where all the extension compilations are located. The ZEM always selects the proper version
Because the loading order of extensions is significant, there is a special 'load order' file that specifies the loading order of managed extensions. If the file is not supplied, the declaration order in the PHP INI files is significant
All Zend product line extensions can only be loaded by the ZEM.

External Configuration File: load order file

The load order file specifies the extension loading order. This file contains plain text with a single 'extensionId' per line. The extension IDs are not necessarily found in php.ini files. The nonexistent IDs are not considered, but may be reserved for future use (i.e., system upgrade)
This file should not be modified.
Parameters:

INI Directives:

zend_extension_manager.log_verbosity_level
Log message verbosity level.
The default level is usually set to 1, which includes very important information messages, errors and warnings.
Switch the level to 2 to see the notices. Higher levels (up to 5) are reserved for debug purposes only.

IMPORTANT: The ZEM is absolutely required to load any Zend extension from the Zend product line. There is other way to load Zend extensions besides using the ZEM.
Default value(s):
1:
Type: int
Measurement units:
Available since: 3.6

zend_extension_manager.load_order_file
The path to the location of the load file. The load file contains the information about the extensions' loading order
The file should be in plain text. Each line should list only one extensionId. The order of lines (extensionIds) determines the the order of loading the appropriate extensions. If a particular extensionId is not managed in any INI file, the ID is skipped.
Default value(s):
zem_order:

Type: string
Measurement units:
Available since: 3.6

zend_extension_manager.activate_signal_handlers
UNIX only: Activates SIGSEGV and SIGABRT signal handlers.
If enabled, the stack trace is printed when the signal is received. This directive can be combined with 'zend_extension_manager.wait_for_debugger'.
Default value(s):
false:
Type: boolean
Measurement units:
Available since: 3.6

zend_extension_manager.wait_for_debugger
UNIX only: Automatically pauses the process received by SIGSEGV and SIGABRT.
If enabled, the process is paused when the signal is received, so that 'gdb' can be easily attached.
'zend_extension_manager.activate_signal_handlers' must be enabled.
Default value(s):
false:
Type: boolean
Measurement units:
Available since: 3.6

Zend Utils

The Zend Utils extension is used to expose the Zend Extension Manager's functionality via a PHP API.
Because the Zend Extension Manager (ZEM) is PHP-neutral, it only exposes a C-language API.
The Zend Utils extension takes you one step further and makes the ZEM's API usable from a PHP runtime environment.

PHP API

INI Directives:

zend_utils.log_verbosity_level
Sets the log verbosity level of Zend Utilis logs [0-5]

Verbosity_level for most components that have a log (except Zend Debugger, Zend Guard Loader and Optimizer+):
0-ZERROR (is always be displayed - indicates an error that can't be recovered)
1-ZWARNING (displays a warning - indicates a warning (recoverable error) that the application can still run with)
2-ZNOTICE (displays a notice - indicates that something wrong has happened)
3-ZDBG1 (debug purposes only - high priority messages)
4-ZDBG2 (debug purposes only - medium priority messages)
5-ZDBG3 (debug purposes only - low priority messages)

Default value(s):
0:
Type: int
Measurement units:
Available since: 4.0

zend_utils.use_graceful_restart
Restart API uses a graceful restart

Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

Zend Download Server

The Zend Download Server (ZDS) component improves Apache's scalability by taking over static content downloads and passing them to a dedicated process that is optimized for parallel downloads (not supported in Windows OS).
The Zend Download Server (ZDS) enhances Apache's static download capabilities. This releases Apache processes to handle more dynamic requests. There are two ways to define which files will be serviced by the ZDS: Either by the API or by an external configuration file (mime_type). A single ZDS process can handle substantially more concurrent downloads compared to Apache.

PHP API

Function: *void zend_send_file(string filename, string mime_type=, string custom_headers=)*
Outputs the contents of a file to a client using the ZDS and terminates the script.

Parameters:
string filename - The full path to the file for the download
string mime_type - MIME type of the file. The function probes the file, using the list in the mime_type file. If that fails, the file is treated as an application/octet-stream.
string custom_headers - User defined HTTP headers that are sent instead of the regular ZDS headers. If nothing is specified, a few essential headers are sent, anyway.

Returns:
Available since:

Function: *void zend_send_buffer(string buffer, string mime_type=, string custom_headers=)*
Ouputs the contents of a string buffer to a client using ZDS and terminates the script.

Parameters:
string buffer - The actual content for the output
string mime_type - MIME type of the file. If nothing is specified, the file is treated as an

application/octet-stream.
string custom_headers - User defined HTTP headers that will be sent instead of regular ZDS headers. If nothing is specified, a few essential headers are sent, anyway.

Returns:
Available since:

Function: *int zds_get_pid()*
Returns the download server's process ID.

Returns: The download server's process ID.
Available since:

External Configuration File: mime_types

The mime_types file is an external list of file extensions that should be sent through the Zend Download Server.
Parameters:

INI Directives:

zend_dserver.enable
Enables or disables the Zend Download Server (ZDS) component. This can also be done in Zend Server, from Server Setup | Components. When turned to 'On', the ZDS passes downloads to a dedicated process. When turned to 'Off', all downloads are handled by the Apache server

Default value(s):
1:
Type: boolean
Measurement units:
Available since:

zend_dserver.mime_types_file
The full path to the MIME type file.

Default value(s):
zend_mime_types.ini:
Type: string
Measurement units:
Available since:

zend_dserver.log_file
The location of the Zend Download Server (ZDS) log file

Default value(s):
ZDS.log:

Type: string
Measurement units:
Available since:

zend_dserver.log_verbosity
Log's Verbosity Level
The extension's log verbosity level. 1 - Fatal errors (ZDS goes down)
2 - Errors (The currect request bails out
3 - Warnings (not good, but continue)
4 - Notice (important info)
5 - Info (verbosity information)
Default value(s):
2:
Type: int
Measurement units:
Available since:

zend_dserver.min_file_size
The minimal file size that can be served via a ZDS process. Smaller files are served via Apache

Default value(s):
64:
Type: int
Measurement units: KBytes
Available since:

zend_dserver.nice
The ZDS process priority level. The lower the number, the higher the priority the process is given.

Default value(s):
10:
Type: int
Measurement units:
Available since:

zend_dserver.disable_byterange
Disables handling byte-range requests. All requests return an entire file

Default value(s):
0:
Type: boolean
Measurement units:
Available since:

zend_dserver.etag_params

The file attributes that are taken as part of an etag.

Default value(s):
:
Type: string
Measurement units:
Available since:

zend_dserver.mmap_chunk
The size of the data chunks that are read from the file into the socket.

Default value(s):
256:
Type: int
Measurement units: KBytes
Available since:

Zend Page Cache

The Zend Page Cache component is used to cache the entire output of PHP scripts without changing the PHP code.
The Zend Page Cache improves PHP application performance by caching the entire output of PHP scripts (HTML, XML, etc.) while still maintaining dynamic capabilities through an elaborate rules system. Rules are configured in the Zend Server Administration Interface.

PHP API

Function: *page_cache_disable_caching()*
Disables output caching for the current request. This overrides any caching settings that are configured for the current request.

Returns:
Available since: 4.0

Function: *page_cache_disable_compression()*
Does not allow the cache to perform compression on the output of the current request. This overrides any compression settings that are configured for this request.

Returns:
Available since: 4.0

Function: *page_cache_remove_cached_contents(string URL)*
Clears cached contents for all requests that match a specific URL or regular expression

Parameters:
string URL - The URL or regular expression

Returns:
Available since: 4.0

Function: *page_cache_remove_all_cached_contents()*
Clears all cached contents

Returns:
Available since: 4.0

INI Directives:

zend_pagecache.enable
Enables the Zend Page Cache extension

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_pagecache.save_path
Location where the cache files are saved. This must point to an existing location.

Default value(s):
pagecache:
Type: string
Measurement units:
Available since: 4.0

zend_pagecache.dir_depth
Depth of directory tree in which cached files are stored

Default value(s):
2:
Type: int
Measurement units:
Available since: 4.0

zend_pagecache.log_verbosity_level
The log verbosity level [0-5]
The extension's log verbosity level. Level 1 includes very important information messages, errors and warnings. Level 2 displays notices. Greater levels (up to 5) are reserved for debug purposes
Default value(s):

0:
Type: int
Measurement units:
Available since: 4.0

zend_pagecache.dependencies_file
The location of the configuration file in which caching rules are stored

Default value(s):
page_cache_deps.xml:
Type: string
Measurement units:
Available since: 4.0

zend_pagecache.compression_enable
Enables file compression of cached output

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_pagecache.clean_frequency
How often expired entries are removed from the cache. The cleaning frequency is configured in seconds

Default value(s):
300:
Type: int
Measurement units: seconds
Available since: 4.0

zend_pagecache.log_rotation_size
The maximum size of the log file before it is rotated
The maximum size of the log file before it is rotated
Default value(s):
10:
Type: int
Measurement units: MBytes
Available since: 4.0

Zend Monitor

The Zend Monitor component is integrated into the runtime environment and serves as an alerting and collection mechanism for information regarding PHP script problems.
Zend Monitor is a Zend Server component that integrates into the PHP runtime environment and

watches for various events, such as errors, failing functions, slow scripts, database errors, etc. When an event occurs, the Zend Monitor collects and reposrts all the relevant debugging information. This information can then be used for debugging and root cause analysis.

PHP API

Constant: int ZEND_MONITOR_EVENT_ALL
All event types are reported (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_NONE
No events are reported, except for custom events (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_CUSTOM
Custom event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_SLOWFUNC
Slow function execution event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_FUNCERROR
Function error event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_SLOWSCRIPT
Slow script execution event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_SLOWSCRIPT_REL
Relative slow script execution event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_MEMUSAGE
High memory usage event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_MEMUSAGE_REL

Relative high memory usage event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_OUTPUTSIZE
Large output size event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_PHPERROR
PHP error event (for monitor_event_reporting)
Available since: 4.0

Constant: int ZEND_MONITOR_EVENT_JAVAEX
Java exception event (for monitor_event_reporting)
Available since: 4.0

Function: *monitor_pass_error(int errno, string errstr, string errfile, int errline)*
Passes an error to the Monitor component with file and line details. This function is used in error handlers. An alternative is to use trigger_error. However, this function does not indicate the file name and line number: It only passes the error message.

Parameters:
int errno - Error code
string errstr - Error string
string errfile - Error file
int errline - Error Line

Returns:
Available since: 4.0

Function: *monitor_custom_event(string class, string text, mixed user_data)*
Creates a special (custom) event that is generated from your code. The information collected consists of the three following parameters: Class, Text and User Data.

Parameters:
string class - event type
string text - string to appear in the event
mixed user_data - optional. Any additional data to store with the event

Returns:
Available since: 4.0

Function: *void monitor_set_aggregation_hint(string hint)*
Incorporates the locations of occurrences in the script when there are events that require those location for diagnosing the reason an event occured. Only events of the same type are aggregated. The collected information is viewed in the Zend Server Administration Interface.

Parameters:
string hint - aggregation hint string

Returns:
Available since: 4.0

Function: *int monitor_event_reporting(int new_error_reporting=null)*
Enables or disables the event reporting of some event types by passing a bit-mask (as is done in PHP error_reporting), but with the constants listed above, in ZEND_MONITOR_EVENT*.
Note: You cannot enable events that are disabled in the Event Rules file

Parameters:
int new_error_reporting - The new error reporting to use

Returns: The previous error_reporting or FALSE if there is an error
Available since: 4.0

INI Directives:

zend_monitor.enable
Enables or disables the Monitor component. This can also be done from the Zend Server Administration Interface. When set to On, the Monitor collects information to be displayed as events in Zend Server. When set to Off, the PHP is not monitored at all

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

zend_monitor.log_verbosity
Log's Verbosity Level
The extension's log verbosity level. Level 1 includes very important information messages, errors and warnings. Level 2 displays notices. Greater levels (up to 5) are reserved for debug purposes
Default value(s):
2:
Type: int
Measurement units:

Available since: 4.0

zend_monitor.log_rotation_size
The maximum size of the log file before it is rotated
The maximum size of the log file before it is rotated
Default value(s):
10:
Type: int
Measurement units: MBytes
Available since: 4.0

zend_monitor.shm_size
How much shared memory to allocate for event collection. If you exceed the allocated memory, an error message is reported to the log.

Default value(s):
4194304: for: WindowsAll ZenithPE , for: linux-i386 ZenithPE , for: linux-x86_64 ZenithPE , for: linux-amd64 ZenithPE ,
2097152: for: darwin ZenithPE , for: sunos ZenithPE , for: freebsd-i386 ZenithPE , for: freebsd-x86_64 ZenithPE , for: aix-ppc ZenithPE ,
Type: int
Measurement units:
Available since: 4.0

zend_monitor.max_shm_segment_size
The maximum size of a shared memory segment

Default value(s):
4194304: for: WindowsAll ZenithPE , for: linux-i386 ZenithPE , for: linux-x86_64 ZenithPE , for: linux-amd64 ZenithPE ,
2097152: for: darwin ZenithPE , for: sunos ZenithPE , for: freebsd-i386 ZenithPE , for: freebsd-x86_64 ZenithPE , for: aix-ppc ZenithPE ,
Type: int
Measurement units:
Available since: 4.0

zend_monitor.events_transport_parameter
Network Parameter for Event Reporting to the Monitor Node.
The Network Parameter is used for communication for event reporting between the Monitor Agent and the Monitor Node (IPC communication)
Default value(s):
events.sock: for: UnixAll ZenithPE ,
events: for: WindowsAll ZenithPE ,
Type: string
Measurement units:
Available since: 4.0

zend_monitor.report_super_globals
Superglobals to include in an event report.
Which PHP Superglobal variables should be included an event report.
The possible options are:
(P)post
(R)raw post data
(G)get
(C)cookies
(V)server
(F)files
(E)env
(S)session
Default value(s):
PRGCVF:
Type: string
Measurement units:
Available since: 3.6

zend_monitor.super_globals_to_secure
Superglobals to secure prior to reporting
Which PHP Superglobal variables should be secured, i.e., passed through a security filter prior to being included in an event report.
The possible options are:
(P)post
(R)raw post data
(G)get
(C)cookies
(V)server
(F)files
(E)env
(S)session
The Super_globals_to_secure directive is directly related to the security_black_list directive, below. The two directives respectively indicate which superglobals should be secured (as specified in super_globals_to_secure), and which keys of the superglobal are secured (as specified in monitor_black_list) - that is, which keys are replaced with the string: <BLOCKED_VALUE>
Default value(s):
PRGCVF:
Type: string
Measurement units:
Available since: 3.6

zend_monitor.security_black_list
A comma-separated list of Keywords or the path to a file (with '@' as preffix)that lists the keyword values to exclude. Each value in the file must be written in a new line (do not use

commas as a separator). If specified as a list or in the file the keyword values will NOT be displayed in Issues The Keywords are detected from the Super Globals, and its value will be hidden. For example: if one of the keywords is 'password', this word is searched in all of the Super Globals and the value pointed by 'password' will be hidden and replaced with the string: <BLOCKED_VALUE>

Default value(s):
:
Type: string
Measurement units:
Available since: 3.6

zend_monitor.max_super_globals_string_len
The maximum length of a superglobal to include in an event report
When the string is passed, any characters that exceed the limit are truncated and '...' is appended to the end of the string the end, to indicate that this is a partial value.
Default value(s):
100:
Type: int
Measurement units:
Available since: 3.6

zend_monitor.event.request_slow_exec.disabled_on_function_slow_exec_event
Disables Slow Request Execution events after Slow Function Execution Events are triggered. This prevents the Monitor from creating an additional Event Report containing the details of the same request.

Default value(s):
0:
Type: boolean
Measurement units:
Available since: 4.0

zend_monitor.event.request_slow_exec.disabled_on_high_load.threshold
Sets the load level to disable Slow Request Execution events for the same request that already triggered a high load event.

Default value(s):
0:
Type: int
Measurement units:
Available since: 4.0

zend_monitor.event.request_relative_slow_exec.min_exec_time
The minimum request execution time for a relativity check.
The minimum execution time for a request to be compared to the average request execution time.

Default value(s):
100:
Type: int
Measurement units: milliseconds
Available since: 4.0

zend_monitor.event.request_relative_large_mem_usage.min_mem_usage
The minimum request memory usage for a relativity check
The minimum memory usage of a request to be compared to the average request memory usage.
Default value(s):
100:
Type: int
Measurement units: KBytes
Available since: 4.0

zend_monitor.event.request_relative_large_output_size.min_output_size
The minimum request output size for a relativity check
The minimum output size of a request to be compared to the average request output size.
Default value(s):
100:
Type: int
Measurement units: KBytes
Available since: 4.0

zend_monitor.event.zend_error.silence_level
This directive controls the Monitor behavior when the silence operator (@) or error_reporting(0) directives are set
The values are:
0: PHP warnings and errors are reported.
1: PHP warnings and errors are *not* reported.
2: PHP warnings and errors are reported even after error_reporting(0) is set, but not when the silence operator (@) is used
Default value(s):
1:
Type: int
Measurement units:
Available since: 4.0

zend_monitor.requests_statistics.warmup_requests
How many requests to run before deviation events are calculated (to collect data for the average). This is used to calculate averages for relative events.

Default value(s):
500:
Type: int
Measurement units:

Available since: 4.0

zend_monitor.requests_statistics.request_lifetime
How long to wait (in seconds) before statistics are reset if a request is not called
How long (in seconds) to hold statistics in memory. If a request is not called within that time period, the statistics are reset
Default value(s):
300:
Type: int
Measurement units:
Available since: 4.0

zend_monitor.events_rules_xml_file_name
Event rules XML configuration file.
The name and path to the XML file that contains the defininitons for event rules and actions. This file should not be edited manually
Default value(s):
events_rules.xml:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.use_fast_timestamp
Enables fast time sampling which is dependent on CPU cycles and frequency, otherwise, the directive uses operating system timing (which may be less accurate)

Default value(s):
1:
Type: boolean
Measurement units:
Available since: 4.0

Zend Monitor Node Daemon

The Zend Monitor Node Daemon is the node events collector

INI Directives:

zend_monitor.global_directives_ini_file
Global Directives ini File
The .ini file that contains the global directives, as defined in ZendGlobalDirectiveDD.xml
Default value(s):
GLOBAL_DIRECTIVES_INI_FILE:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.log_verbosity

The Log's verbosity level
The Log's verbosity level
Default value(s):
2:
Type: int
Measurement units:
Available since: 4.0

zend_monitor.log_rotation_size
The maximum size of the log file before it is rotated
The maximum size of the log file before it is rotated
Default value(s):
10:
Type: int
Measurement units: MBytes
Available since: 4.0

zend_monitor.events_rules_xml_file_name
Events Rules XML File Name. For the full path, concatenate it with zend.conf_dir value
The name of the file that contains the XML for the Events Rules and Actions
Default value(s):
events_rules.xml:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.smtp_server
SMTP server
The SMTP server to use to send event mails
Default value(s):
:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.smtp_port
SMTP Port
The SMTP Port that the SMTP server uses to send event mails
Default value(s):
25:
Type: int
Measurement units:
Available since: 4.0

zend_monitor.sendmail_from
Send Mail From email Address

An email address to be used as the 'from mail' for Event mails
Default value(s):
:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.gui_host_name
Host name (and port) of the Zend Server GUI
This host name is used to build a link to an issue when the user is notified of the issue
Default value(s):
:
Type: string
Measurement units:
Available since: 4.0

zend_monitor.max_events_queue_size
Maximum size of the Events Queue
The maximum size of the Received Events queue. If events are received beyond the maximum size, the incoming events are dropped out
Default value(s):
30:
Type: int
Measurement units: MBytes
Available since: 4.0

Zend Server Best Practices

Introduction

Welcome to the Zend Server Best Practices Guide.

The following content is a collection of knowledge and information based on the experience of Zend's Development and Product Management team and the PHP community.

In this document, you will find reference information on the following development issues.

- The Performance section describes how to increase performance using Zend Server.
- The Security section lists several additional security precautions you can take to secure your Zend Server installation and Web application.
- The Development section includes instructions and tips for developers.
- The Deployment section describes the different deployment options (to remote servers, hosting, etc.) and how to go live with your Web application.
- The Troubleshoot section includes solutions to known issues, possible problems and an error message reference.

If you have a tip or best practice that you would like to see here, please feel free to send it to documentation@zend.com.

Performance

What's in the Performance Section

In the Performance section, you will find information on how to configure and optimize Zend Server and components to increase performance.

This document includes information on the following performance issues:

- Optimizing Zend Server Performance - This section provides a description of each performance component and includes recommendations on when the component should be installed and for which conditions it should be disabled or removed.
- Fine Tuning Optimizer+ - This section provides advanced settings to further enhance the performance gains achieved when Optimizer+ run out-of-the-box.
- Configuring PHP for Performance - This section explores the optimal php.ini configurations and settings to get the best PHP performance optimization.

- IIS Configuration Optimization - Tuning adjustment to optimize the FastCGI configuration for IIS6 and IIS7.

Optimizing Zend Server Performance

The Zend Server components are designed to encompass several different requirements. However, there is no point in adding or using certain components when they are not needed. This primarily happens when you install a component that you do not use. For example, if you do not need to call Java objects from your PHP code, there is no need to have the Java Bridge running. In addition, it would be better not to install this optional component at all, especially as you will be prompted to install a Java Runtime Environment that is not required if you are only running PHP.

In this section, we describe each performance component, including when you should install the component, when to disable the component and when applicable, when to remove the component.

Component	Description	Turn Off	Comment
Debugger	A remote debugging tool for developers working with Zend Studio.	Not recommended to turn off as it is great for development environments. In production when not debugging code	If you are not going to debug your code with the Debugger, for example in a production environment, disabling this component may provide a slight performance gain
Optimizer+	Speeds up PHP execution through opcode caching and optimization.	Disabling has a negative impact on performance.	
Guard Loader	Loads and runs encoded PHP scripts (Encoded with Zend Guard)	Required only if you are running PHP code that was encoded with Zend Guard.	If you are not a Zend Guard user either remove this component or do not install it (it is an optional component).
Data Cache	Cache data items or output	If you are not using the Data Cache API in your code for partial content caching.	
Java Bridge	Calls Java classes and code from PHP	Required only If you call Java code or objects from your PHP.	If you are not a Java user either remove this component or do not install it (it is an optional component).

Fine Tuning Optimizer+

The performance improvement gained by letting the Optimizer+ run out-of-the-box can be further enhanced with fine tuning. These are advanced settings that need to be evaluated based on your environments usage specifications and performance requirements.

Note:
These are only recommendations, in most cases such fine tuning should not be necessary.

Disabling Code Change Auto-Detection

In the Administration Interface, to view the specific directives for Optimizer+, go to **Server Setup | Components** and click on the Directives link next to the Optimizer+.
Look for "***zend_optimizerplus.validate_timestamps***" and set the value to Off.
This speeds up the server, but also requires that you restart the server (Restart Server if you deploy new versions of existing files.
When to change: If your PHP code is rarely updated/changed or if you are capable of manually restarting your PHP on every code update.
When not to change: If you are in development and you are frequently changing code, or if you do not have control over the code update process.

Decreasing Code Validation Frequency

In the Administration Interface, to view the specific directives for Optimizer+, go to **Server Setup | Components** and click the Directives link next to the Optimizer+.
Look for "***zend_optimizerplus.revalidate_freq***" and set the value to 30 (seconds).Zend Server is now set to check PHP file changes every 30 seconds.
When to change: If you do not change PHP files often and some delay between file update and site update is acceptable, you may set it even higher.
When not to change: If you have frequently changing files and you need the changes to take effect immediately.

Configuring PHP for Performance

You may be able to add an additional performance boost to your PHP applications by properly configuring your PHP runtime environment settings. You can edit the directives below from the Administration Interface via **Server Setup | Directives**.

Warning:
Changing some of these settings may cause certain PHP applications to stop functioning. Therefore, use discretion when you disable them and test your environment: It is important that you fully understand the purpose of each directive before you modify it.

Optimal php.ini configurations and settings for maximum performance optimization:

Name	Recommended Value	Zend Server Default	Description
realpath_cache_size	256K	256K	Determines the size of the realpath cache to be used by PHP. This value should be increased on systems where PHP opens many files, to reflect the quantity of the file operations performed.
realpath_cache_ttl	120	120	Duration (in seconds) for which to cache realpath information for a given file or directory. For systems with rarely changing files, consider increasing the value.
error_reporting	E_ALL & ~E_NOTICE	E_ALL	The error_reporting() function sets the error_reporting directive at runtime. PHP has many levels of errors: Using this function sets the error level for the duration (runtime) of your script.
register_long_arrays	Off	Off	Tells PHP whether or not to register the deprecated long $HTTP_*_VARS type predefined variables. When On (default), long predefined PHP variables (like $HTTP_GET_VARS) are defined. If you're not using them, it's recommended to turn them off for performance reasons. Instead, use the superglobal arrays (like $_GET). This directive became available in PHP 5.0.0 and was dropped in PHP 6.0.0.
register_argc_argv	Off	Off	Tells PHP whether to declare the argv and argc variables (that contain the GET information).
magic_quotes_gpc	The default is: Off This feature is deprecated as of PHP 6.0.0.		Sets the magic_quotes state for GPC (Get/Post/Cookie) operations. When magic_quotes are On, all ' (single-quote), " (double quote), \ (backslash) and NULLs are escaped with a backslash automatically.
include_path	As short as possible, depending on the application's needs	".;/path/to/php/pear"	Specifies a list of directories where the require(), include(), fopen(), file(), readfile() and file_get_contents() functions look for files. The format is like the system's PATH environment variable: A list of directories separated with a colon in Unix or semicolon in Windows.
max_execution_time	30	30	This sets the maximum time (in seconds) that a script is allowed to

			run before it is terminated by PHP. This helps prevent poorly written scripts from tying up the server. The default setting is 30 s. When running PHP from the command line, the default setting is 0 s. The maximum execution time is not affected by system calls, stream operations, etc. See the set_time_limit() function for more details. You cannot change this setting with ini_set() when running in safe mode. The only workaround is to turn off safe mode or to change the time limit in the php.ini. Your Web server may have other timeout configurations that can also interrupt PHP execution. Apache has a Timeout directive and IIS has a CGI timeout function. Both default to 300 seconds. See your Web server documentation for specific details.
memory_limit	128M	128M	Sets the maximum amount of memory (in bytes) that a script can allocate. This helps prevent poorly written scripts from consuming all the available memory on a server. This setting can also be fine tuned during development to reach an optimal setting. When an integer is used, the value is measured in bytes. Note: To have no memory limit, set this directive to -1.
output_buffering	4096	4096	Allows you to buffer the PHP output instead of having it sent directly as soon as it is generated.

IIS Configuration Optimization

Tuning FastCGI Configuration for IIS6

Note:
These performance enhancements are defined by default when you install Zend Server.

By default, Zend Server runs with a maximum of ten concurrent PHP instances. For high load Web servers, it is recommended to increase this value, based on your performance requirements and other hardware/software limitations (such as memory, CPU, etc.).

To control the maximum amount of concurrent PHP instances:

1. Go to C:\WINDOWS\system32\inetsrv\fcgiext.ini.
2. Locate the entry for "php" under Types.
3. Locate the section corresponding to this entry (usually under "[PHP]").
4. Append the following line at the end of this section:

   MaxInstances=10

This will enable Zend Server to run ten PHP instances, for high loads. If you have lots of memory and high loads, you can increase this value even more.

To control the amount of requests handled by a single PHP instance before recycling:

1. Go to C:\WINDOWS\system32\inetsrv\fcgiext.ini.
2. Locate the entry for "php" under Types.
3. Locate the section corresponding to this entry (usually under "[PHP]").
4. Append the following line at the end of this section:

   InstanceMaxRequests=10000

This will allow a single PHP instance to handle 10,000 requests, instead of the default 1,000.
If you set this number higher, make sure you increase the value of *PHP_FCGI_MAX_REQUESTS* located in the same file accordingly.

Tuning FastCGI Configuration for IIS7

Note:
These performance enhancements are defined by default when installing Zend Server.

By default, Zend Server runs with a maximum of ten concurrent PHP instances. For high load Web servers, it is recommended to increase this value, based on your performance requirements and other hardware/software limitations (such as memory, CPU, etc.).

Requirements: IIS7 Resource Kit -
(x86) http://www.iis.net/downloads/default.aspx?tabid=34&i=1682&g=6
(x64) http://www.iis.net/downloads/default.aspx?tabid=34&i=1683&g=6
Once installed, you can administer your FastCGi settings from the Internet Information Services (IIS) Manager.
From here, you can configure your *MaxInstances* and *InstanceMaxRequests.*

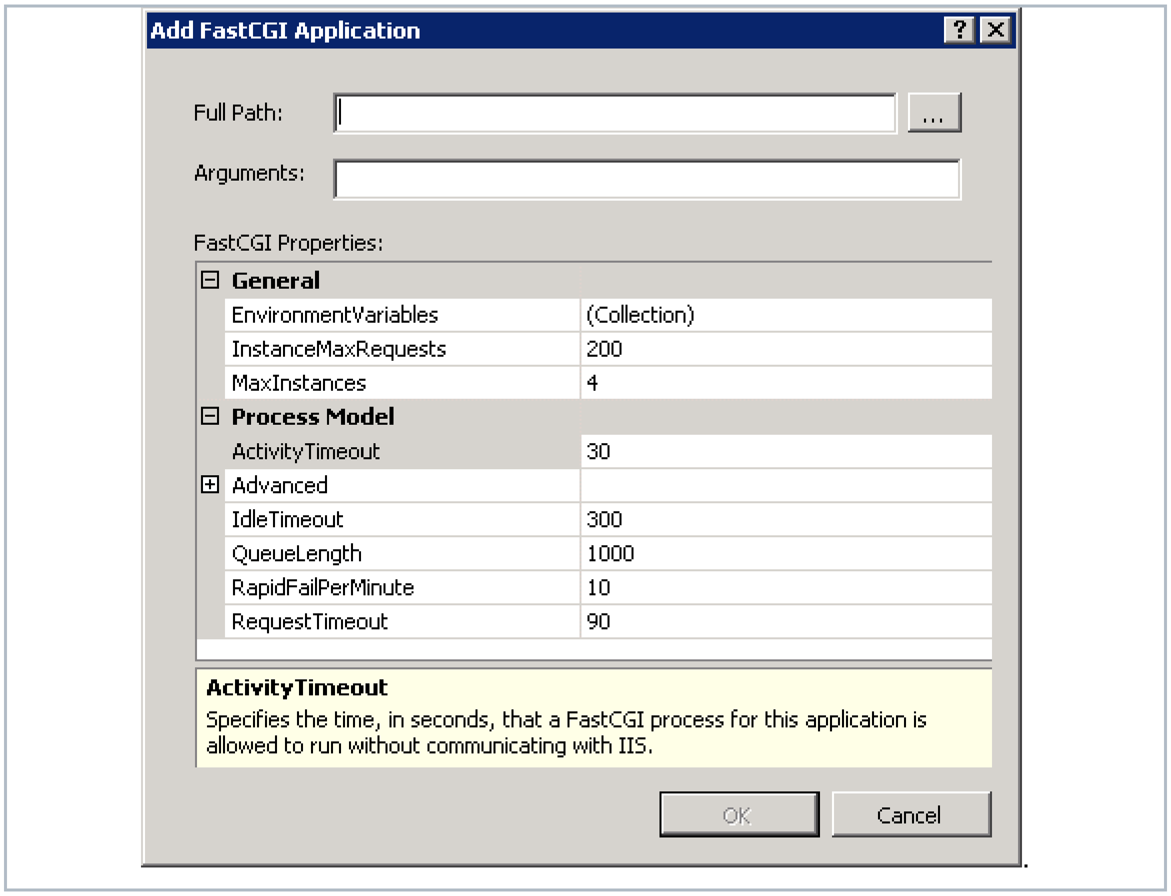
To tune FastCGi configuration for IIS7:

1. Go to **Start | All Programs | Administrative Tools | Internet Information Services 7 -**

Application Server Manager.

2. Select the server to manage from the left tree.
3. Click FastCGI Settings and select <install_dir>\bin\php-cgi.exe.
4. In the Actions section (on the right), click "Add Application..."

   The Add FastCGI Application dialog opens:



Full Path:

Arguments:

FastCGI Properties:

General	
EnvironmentVariables	(Collection)
InstanceMaxRequests	200
MaxInstances	4
Process Model	
ActivityTimeout	30
Advanced	
IdleTimeout	300
QueueLength	1000
RapidFailPerMinute	10
RequestTimeout	90

ActivityTimeout
Specifies the time, in seconds, that a FastCGI process for this application is allowed to run without communicating with IIS.

5. Tweak the variables as necessary.

   The recommended Zend default is *MaxInstances=10* and *InstanceMaxRequests=10000.*

Depending on which settings you change, the Web server's memory and CPU consumption are adjusted.

Security

What's in the Security Section

In the Security section, you will find information on how to configure and optimize the Zend Server and components to function more securely.

This document includes information on the following security issues:

- Allowed Hosts - This section describes the Allowed Hosts lists and offers recommendations on which hosts to add to the Allowed Hosts list for development and production environments.
- Securing the Administration Interface - This section provides information on how to set an IP address-based access control list on the Web server running the Administration Interface for the Windows, Linux and Mac OS X operating systems.
- Configuring PHP for Security - This section explores how you can add an additional security boost to your PHP applications by properly configuring your PHP runtime environment settings.

Configuring Debugger Access Control

The allowed hosts list is a list of IP addresses that are permitted to initiate a Debugger session on the Web server on which Zend Server is installed.
The default value for *zend_debugger.allow_hosts* intentionally covers a wide range of IP addresses. This is to make the initial installation of Zend Server compatible for a large selection of environments. However, **this also can be a security risk,** as you are permitting a wide range of IP addresses to access your Web server. Therefore, we recommend that you limit accessibility and create a secure environment by only using specific hosts (full IP address) recognized by you that you are sure you want to permit to connect.

To change this value in the Administration Interface, go to **Server Setup | Debugger**, remove all the IP range settings and set the specific IP's that you permit to connect to Zend Server.

Depending on if you are working on a development or production environment, you may want to consider different defaults.
In development environments, all the machines that require access to debug should be allowed. In production environments, it is safer to limit access or even allocate a single machine to allow access. Not only will this make your environment more secure, it may also help limit and prevent unnecessary traffic on your production server

Securing the Administration Interface

Purpose: To provide an additional security layer to the existing password protection – especially crucial to production environments.

Note:
This solution does not replace the appropriate firewall precautions you should take to deny access to the Administration Interface from certain IP addresses.

By default, access to the Administration Interface is password protected. If you want to secure access to the Administration Interface, you can do so by setting an IP address-based access control list on the Web server running the Administration Interface.
After following this procedure, users that try to access the Administration Interface from not-allowed (unauthorized) IP addresses are not able to access the Administration Interface.

Linux and Mac OS X:
The administration Interface runs on a dedicated lighttpd Web server. To secure access to the Administration Interface, edit your lighttpd configuration file in one of the following ways:

1. To only allow access from localhost, replace your lighttpd.conf with the pre-configured file called lighttpd.conf-localonly that is in the same directory.
2. To limit access to specific IP addresses, open your lighttpd.conf and add the IP addresses as follows:
   ```
   $HTTP["remoteip"] !~ "10.1.2.163|10.1.6.46|127.0.0.1" { $HTTP["url"] =~
   "^/ZendServer/" { url.access-deny = ( "" ) } }
   ```
   This example shows how to allow access from 10.1.2.163, 10.1.6.46 and localhost and deny the rest.

   You can also do:
   ```
   $HTTP["remoteip"] !~ "10.1.2.163|10.1.6.*|127.0.0.1" { $HTTP["url"] =~
   "^/ZendServer/" { url.access-deny = ( "" ) } }
   ```
   This means that you allow access from 10.1.2.163, 10.1.6.46, 127.0.0.1 (localhost) and hosts from 10.1.6.0 and deny the rest.

3. After applying the changes to your configurations, restart the lighttpd server with the command: # *<install_path>/bin/lighttpd.sh restart* or alternatively # *<install_path>/bin/zendctl.sh restart-lighttpd*

For additional resources and information on Lighttpd, see https://calomel.org/lighttpd.html.

Windows:

There are a few precautions you can take in order to secure your connection:

- Be secured using SSL connection - a certificate is needed by 3rd party vendors to enable encryption between client and server.
  All IIS versions (5,6,7) use this surf-safe mode.
- Use https connection which enables encryption.
- Configure your Username and Password using 7-12 alpha-numeric numerals. Set your Password immediately after first-time installation.
- Protect your connection using Anti-Virus.
- Windows users should update their Microsoft Installation packs with the provided updates to avoid back-doors and loop-holes.

To limit IP access:

- Enter your Web server's configuration and define the IP addresses that should be enabled.
  Apache users should refer to the Apache documentation -
  http://httpd.apache.org/docs/2.2/howto/access.html - Access control by host

For more information about IIS security-related topics, visit the following Microsoft Web site:
http://www.microsoft.com/technet/security/prodtech/IIS.mspx

Configuring PHP for Security

You may be able to add an additional security boost to your PHP applications by properly configuring your PHP runtime environment settings. You can edit the directives below from the Administration Interface by going to **Server Setup | Directives**.

Warning:

Changing some of these settings may cause certain PHP Applications to stop functioning. Therefore, use discretion while disabling them and test you environment - it is important that you fully understand the purpose of each directive before modifying it.

Optimal php.ini configurations and settings for maximum security protection from external threats:

Name	Default	Optimal Value	Description
disable_functions			This directive allows you to disable certain functions for security reasons. It takes on a comma-delimited list of function names. disable_functions is not affected by Safe Mode. This directive must be set in the php.ini file: For example, you cannot set this in httpd.conf.
disable_classes			This directive allows you to disable certain classes for security reasons. It takes on a comma-delimited list of class names. The disable_classes directive is not affected by Safe Mode. This directive must be set in php.ini: For example, you cannot set this in httpd.conf.
magic_qotes_gpc	0	0	Sets the magic_quotes state for GPC (Get/Post/Cookie) operations. When magic_quotes are on, all ' (single-quotes), " (double quotes), \ (backslash) and NULLs are escaped with a backslash, automatically.
allow_url_include	0	0	This option allows the use of URL-aware fopen wrappers with the following functions: include(), include_once(), require(), require_once(). Note: This setting requires that allow_url_fopen be set to On.
expose_php	1	0	Decides whether PHP may expose the fact that it is installed on the server (e.g., by adding its signature to the Web server header). It is no security threat in any way, but it makes it possible to determine whether you use PHP on your server or not.
display_errors	1	0	This determines whether errors should be printed to the screen as part of the output or if they should be hidden from the user. Value "stderr" sends the errors to stderr instead of stdout. The value is available as of PHP 5.2.4. In earlier versions, this directive was of type boolean. Note: This is a feature to support your development and should never be used on production systems (e.g., systems connected to the Internet). Note: Although display_errors may be set at runtime (with ini_set()), it won't have any affect if the script has fatal errors. This is because the desired runtime action does not get executed.
register_globals	0	0	Whether or not to register the EGPCS (Environment, GET, POST, Cookie, Server) variables as global variables. Relying on this feature is highly discouraged. Please read the security chapter in the PHP manual on Using register_globals for related information. Note: register_globals is affected by the variables_order directive.

Do you want to learn more about securing your PHP?

Why don't you take a look at our Security Training.

Development

What's in Development

In the Development section, you will find information on how to use Zend Server and components in development for efficient detection and diagnosis of issues.

This document includes information on the following development issues:

- Working with Zend Framework - This section explores the benefits of the Zend Framework pre-configured stack that includes all the system components for developing Web applications with PHP and how to load Zend Framework's classes in your scripts.
- Configuring Zend Framework - This section presents the advantages of port-based virtual hosts and describes how to configure Zend Server to run Zend Framework projects in a development environment, using port-based virtual hosts.
- Advanced Diagnostics with Zend Server - This section presents suggestions to help diagnose problems by event rules.

Working with Zend Framework

Zend Framework users who deploy Zend Server will benefit from a pre-configured stack that includes all the system components for developing Web applications with PHP.

The Zend Framework files are placed in:

- **Windows**: <install_path>\share\ZendFramework
- **RPM, DEB, Tarball and MAC**: <install_path>/share/ZendFramework

Loading Zend Framework Classes

There are two ways to load Zend Framework's classes in your script:

1. Using the Zend Loader:

The Zend Loader utility class checks whether the class already exists within the script. If it does, it will create the relevant file from the class name using Zend Framework's naming convention (See http://framework.zend.com/manual/en/coding-standard.naming-conventions.html for more information on Zend Framework's naming conventions). If the class already exists, this will speed up performance. Using the Zend Loader also has the added advantage of loading classes outside of Zend Framework.

To use the Zend Loader:

1. Load the Zend Loader utility class once in your script:
   `Require_once 'Zend/Loader.php';`
2. From now, load each class using the class name:
   `Zend_Loader::loadClass('Zend_Class_Name');`
3. For example, in order to load the Zend Http Client:
   `Zend_Loader::loadClass('Zend_Http_Client);`

2. Using require / include calls

Classes can also be called using the conventional require or include calls:

To use 'require class':

1. Enter a 'require' command for the relevant file into your script:
   `Require 'File.php';`
2. For example, to require the Zend Http Client Class:
   `require 'Zend/Http/client.php';`

In order to see a full list of Zend Framework's components, including more information on the functionality and use of the various components, see http://framework.zend.com/manual

Configuring Zend Framework

Configuring Zend Server to Run a Zend Framework Application

The following procedure describes how to configure Zend Server to run Zend Framework projects in a development environment, using port-based virtual hosts. The advantage of port-based virtual hosts is in the ease of running several isolated applications on the same Web server. This overall solution allows developers working on a Zend Framework project in Zend Studio to immediately test any code changes locally.

The following procedure uses instructions suitable for Zend Studio for Eclipse and the Apache bundled with Zend Server. A similar procedure with some modifications can apply for other IDEs and web servers.

To configure Zend Server to run a Zend Framework application:

1. Create a new Zend Framework project.

If you have not already done so, create a new Zend Framework project using the New Zend Framework Wizard in Zend Studio for Eclipse.

2. Define a virtual host on Zend Server that will point to the new project's public directory:
    a. Find the full path to your project's *public* directory.
    In Zend Studio for Eclipse, go to the project browser and right-click on the public directory from the menu choose Properties. The full path is listed in the Resource Tab's location field.
    b. Open your Apache configuration file (in most cases it will be httpd.conf and located in your Apache installation directory).
    Where is my Apache configuration file?
    c. Go to the end of the file and add the following section:

```
Listen 10089
<VirtualHost *:10089>
    DocumentRoot "DOCUMENT_ROOT"
    <Directory "DOCUMENT_ROOT">
        Order allow,deny
        Allow from all
    AllowOverride all
</Directory>
</VirtualHost>
```

3. Replace "DOCUMENT_ROOT" with the full path to the *public* directory, enclosed in double quotes ("DOCUMENT_ROOT")
    Replace the port number with a unique port number dedicated to this Virtual Host. The port number (10089) has to be the same value for "Listen" and "VirtualHost".
4. Zend Framework's MVC implementation makes use of the Front Controller pattern. You must therefore rewrite all incoming requests (except those for static resources, which your application need not handle) to a single script that will initialize the FrontController and route the request. If you're using mod_rewrite for the Apache web server, create the file <Project_Name>/public/.htaccess with the following contents:

```
# public/.htaccess
RewriteEngine On
RewriteCond %{REQUEST_FILENAME} -s [OR]
RewriteCond %{REQUEST_FILENAME} -l [OR]
RewriteCond %{REQUEST_FILENAME} -d
RewriteRule ^.*$ - [NC,L]
RewriteRule ^.*$ /index.php [NC,L]
```

Note:

Some web servers may ignore .htaccess files unless otherwise configured. Make sure that your web server is configured to read the .htaccess file in your public directory.

5. Restart your Web server from the command line (windows user can use the Apache Monitor tool).

Your Zend Framework projects will now be accessible from a browser through: http://localhost:10089/ (the port number 10089 should be replaced with the unique port you dedicated to this virtual host).

Where is My Apache Configuration File?

Apache uses a main configuration file for all its settings, typically this file is called httpd.conf or apache2.conf. The location of this file varies depending on your installation:

- **Windows**:
- <install_dir>\Apache2.2\conf\httpd.conf
- If you changed the location of your Zend Server installation, your document root will be located at <installation_directory>\ Apache2.2\conf\httod.conf, where <installation_directory> is the location of the directory in which Zend Server is installed.
- **Linux**:
- If you installed Zend Server from a repository (DEB or RPM packages), the location of your configuration file is defined by your distribution's Apache packages, and will vary depending on your distribution and configuration.
- Common locations include:
  - Debian / Ubuntu - /etc/apache2/apache2.conf
  - Fedora Core / RHEL / CentOS - /etc/httpd/httpd.conf
- If you installed Zend Server using the generic Tarball package - /usr/local/zend/apache2/conf/httpd.conf.
- If you changed the location of your Zend Server installation, your document root will be located at <installation_directory>/ apache2/conf/httpd.conf, where <installation_directory> is the location of the directory in which Zend Server is installed.
- **Mac**:
- /usr/local/zend/apache2/conf/httpd.conf

Advanced Diagnostics with Zend Server

The information contained in an Issue (**Monitor | Events**) is geared towards analyzing and resolving all sorts of problems that are common to running Web Applications in PHP.

Based on the type of rule on which triggered an issue you can immediately begin to start solving the issue.

The first step is to make sure that the issue was genuinely generated.

To do this consider one of the following:

1. Is this a real error or should the Monitor Rule parameters be modified (thresholds, functions list, etc.)?
2. Can I use the monitor API to solve this problem (i.e. identify the problem as a known issue to be ignored, so that no additional events will be added to the issue)?
3. Is the detected behavior accepted behavior for the specific situation (time, script, load etc.) that should be ignored.
4. Use the Administration Interface to manage issues by changing the Status to **Ignored**. All events that happen and are aggregated to that issue will still be monitored but the issue will stay ignored.

Once you have established that the issue represents a real problem, you can start to handle the issue.

Use the links below to drill down by type of rule for suggestions that can help diagnose problems.

Rule names in this page are in their basic form without the severity or reference to absolute and relative.

Click on a Rule name (Link) to view diagnostics information by rule.

Custom Event | Slow Function Execution | Function Error | Slow Request Execution | High Memory Usage | Inconsistent Output Size | PHP Error | Java Exception | Database Error.

Custom Event

***Description**: When the API function 'zend_monitor_custom_event' is called from inside PHP code, it generates an event. When enabled an event will be generated and displayed in the Monitor | Events.*

Information Collected:

The most important details are:

- Function Name - As displayed in the Issue’s General Details
- Function Arguments - The arguments of the function that triggered the event are listed in the Function Data tab.
- user_data - if specified in the function call that triggered the event it will display additional user defined data.

In most cases, these details alone should be enough to indicate what happened to trigger an event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Debugger

Possible Causes and Solutions:

Custom Events are defined by users according to specific requirements. These events can only be triggered by specific code in a specific application and therefore it is only possible to say that the application's logic triggered the event.
There are certain circumstances where applying a Custom Event can be useful:

1. When handling logging routines and exceptions by adding a call to '*zend_monitor_custom_event*' with the data that has been logged or held in the exception.
2. In logical closure situations. For example when handling 4inputs that require monitoring the value of the input (for different actions) to prevent inputting values that are not acceptable for the business logic. Adding the function '*zend_monitor_custom_event*' will give you the ability to trigger an event when an unacceptable value is passed and also provide the necessary backtrace information to understand how the value got there.
3. More...

Slow Function Execution

Description*: When a specific function in your code runs slowly, Zend Monitor identifies it as an event worth reporting. The "Slow Function Execution" Rule contains the following monitoring definitions, runtime duration and a list of functions that should be monitored.*

Information Collected:

The most important details are:

- Function Name - As displayed in the Issue's General Details
- Function Arguments - The arguments of the function that triggered the event are listed in the Function Data tab.

In most cases, these details alone should be enough to indicate what happened to trigger an event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Profiler
- Open code in editor

- Run the Debugger

Possible Causes and Solutions:

Queries to a DB (database) - long, elaborate and complicated DB queries may take a long time and make the function appear to take a long time to execute.
There are many ways to speed up DB queries such as:

- Revise the SQL query itself - make it simpler
- Improve the structure of your DB tables
- Use RDBMS features that can improve speed such as indexes, prepared statements, stored procedures, and more.
  All these are only suggested possible causes and each event. Developers have to analyze each occurrence to understand the specific reasons behind the slow execution time.

Long running actions - Some actions triggered by a function can, by definition take a long time. Examples of long running actions can be using a function to run code from the command line or remote access queries with Web services or searching for files in a directory. In most cases, these uses of a function cannot be refined and the best action is to ignore these issues when they occur.
False Positives - Sometimes functions run slowly. Not all functions that run slowly are indicative of a problem in your code or environment and they may be no indication of unacceptable behavior. If this is the case, remove the function from the Rule's "Watched Functions" list or set issues triggered by this function to ignored.

Function Error

Description*: When a specific function in your code returns FALSE, it generates an event. The "Function Error" Rule contains a list of monitored functions (i.e. functions that when returning FALSE will trigger an event).*

Information Collected:

The most important details are:

- Function Name - As displayed in the Issue's General Details
- Function Arguments - The arguments of the function that triggered the event are listed in the Function Data tab.
- Backtrace – identify what happened before the error happened that may have caused a problem such as incorrect data or problematic input data.

In most cases, these details alone should be enough to indicate what triggered the event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Debugger
- Open code in editor
- Redefine database queries
- View information in the Logs
- Run the Profiler

Possible Causes and Solutions:

Generally, logic errors trigger Function Error events such as queries that you expect to return something and they do not and not PHP errors.
If you have a function that you need to return FALSE as an acceptable value, remove the function from the monitored functions list.

- Internal PHP functions – If you are using internal PHP functions, the best reference for investigating the problem is use the PHP manual< http://php.net/> (The Zend Controller's Search option provides quick access to searching the PHP Manual.
- You can also check your logs to see if they show PHP error information logged the same time the function error occurred.
- User define functions – If it is a user defined function, running the debugger will help find out if the function is running complicated actions that are causing the function to fail. Using Breakpoints while debugging, will further pinpoint the problematic area in the code.
- False Positives - Sometimes functions are supposed to return FALSE. Not all functions that return FALSE are indicative of a problem in your code or environment and they may be no indication of unacceptable behavior. If this is the case, remove the function from the Rule's "Event Condition" list or set the status of issues triggered by this function to ignored.

Note:
Removing a function from the rule, affects all instances of the function. Before removing the function from the list, make sure the function does not require monitoring wherever it is used.

Slow Request Execution

Description: *When a specific request runs longer then a specified duration it generates an event. The "Slow Request Execution" Rules contains the durations that trigger events either severe or normal and either relative to a specific value (absolute) or to a percentage (relative measurement per URL).*

Information Collected:

The most important details are:

- URL - As displayed in the Issue's General Details
- Request data - Listed in the Request.

In most cases, these details alone should be enough to indicate what happened to trigger an event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Profiler
- Open code in editor
- Run the Debugger
- View information in the Logs
- Run general diagnostics on the machine's performance in terms of memory and CPU usage.

Possible Causes and Solutions:

Slow requests in general indicate that there is a performance problem and they generally appear when there is a heavy load, which in turn causes Web applications to perform poorly.
Check the following:
Bottlenecks caused by un-optimized queries or multiple queries, such as un-joined queries, slow queries and multiple short queries. Use the Profiler to see how many queries are running at the same time or set thresholds to find queries that take a long time to run.
Check to see if a different CPU intensive process was running in the background taking up the CPU and making everything run slowly.
Look at the amount of calls to the function - are there too many? add breakpoints and run again to manually trace per query what happened. Possible Solution: cache the information using a Data Cache API as a PHP array or use the Page Cache to cache the presentation layer.
Profiler results - analyze the profiler results and isolate functions/areas that consume the majority of the time and analyze each function/area code separately to isolate the possible cause of the problem.

High Memory Usage

***Description**: When a specific PHP request consumes more than the specified amount of memory it generates an event. The "High Memory Usage" Rules contain the memory consumption setting (i.e. the amount of memory the request has to consume to trigger an event).*

Information Collected:

The number of occurrences is the best indicator. A single occurrence can be disregarded (change the Status of the Issue to Closed) only if it occurs multiple times it is worth investigating. Closed events that continue to receive new activity open automatically.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Open code in editor to see if the script can be improved
- View information in the Logs

Possible Causes and Solutions:

- Database Functions - Some queries may return large record sets and should be refined.
- Iterative functions – functions that include many ‘foreach’ loops may cause excessive memory usage and should be reviewed to see if less memory can be consumed.
- False Positives - Sometimes requests consume large amounts of memory. Not all requests that consume lots of memory are indicative of a problem in your code or environment and they may be no indication of unacceptable behavior. If this is the case, set issues triggered by this function to ignored.

Inconsistent Output Size

***Description**: When a specific PHP request’s output size deviates from the average by the percentage specified (measured per URL) it generates an event. The “Inconsistent Output Size” Rule contains the output size’s deviation percentage (i.e. the amount of output the request has to generate in order to trigger an event).*

Information Collected:

The output size in the Group Details helps to analyze the nature of the event. For example if the output size is 0 you can determine that nothing was outputted and try to understand why.
Generally, PHP errors and Function errors are generated at the same time as the Inconsistent Output Size error, which can provide further information.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Debugger
- View information in the Logs

- Open code in editor
- Run the Profiler

Possible Causes and Solutions:

Small Output Sizes - It is important to look at the results that show a smaller output size to help identify why this output was so large. This usually indicates that the requested output was not fully generated.
Possible Solution - Look for related PHP errors and Function Errors and then view the PHP and Web server logs for further details.

PHP Error

Description*: When a specific PHP error is reported, it generates an event. The "PHP Error" Rule contains a list of monitored PHP error types. This event type complements the error_reporting settings in your php.ini by reporting specific errors even if they are set to disabled in your php.ini..*

Information Collected:

The most important details are:

- Function Name - As displayed in the Issue's General Details
- Error Data - Listed in the Error Data tab.
- Backtrace – to investigate what function calls were executed just before the error was reported.
- In most cases, these details alone should be enough to indicate what happened to trigger an event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Run the Debugger
- Open code in editor
- Redefine database queries
- View information in the Logs

Possible Causes and Solutions:

Syntax/Parse Errors - missing or incorrect syntax in code that is found during PHP compilation
Fatal Runtime Errors - such as E_WARNING and E_ERROR - indicate that there was a call to an undefined function or that you did not load a specific extension or when classes and Functions are defined twice. Possible Solution: Open code and view Line and function that triggered the error.

Uncaught Exceptions - generate fatal errors, with a complete backtrace to trace the reason why the PHP error was reported.
Runtime Warnings - The code did not run as expected. Normally a notice is displayed and the code continues to run in an unexpected manner or the code will crash. Possible solutions: check your code for the following wrong DB QUERIES missing FILES, STREAMS functions that are performing DIV BY ZERO

Java Exception

***Description**: When Java code called through the Java Bridge fails due to an uncaught Java exception, , it generates an error. The "Uncaught Java exception" Rule determines if Uncaught Java Exceptions are reported or not.*

Information Collected:

The most important details are:

- Function Name - As displayed in the Issue's General Details
- Error Data - Listed in the Error Data tab including the Java Stack and Java error string.

In most cases, these details alone should be enough to indicate what happened to trigger an event.

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Open code in editor
- Run the Debugger
- Run the Profiler
- Redefine database queries
- View information in the Logs

Possible Causes and Solutions:

Based on the exception type, investigate the Java code and fix to stop generating the event – all relevant information should be collected in the issue.
False Positives - Sometimes developers write code to intentionally trigger an Uncaught Java Exception. Not all triggered exceptions are indicative of a problem in your code or environment and they may be no indication of unacceptable behavior. If this is the case, set issues triggered by this function to ignored.

Database Error

***Description**: When a specific watched database function returns FALSE, it generates an event. The "Database Error" Rule contains a list of monitored functions (i.e. functions that when returning FALSE will trigger an event).*

Information Collected:

The most important details are:

- Function Data - Listed in the Function Data tab.
- Function Name - As displayed in the Issue's General Details
- The error type will show if it is an SQL query error , shell code error, java code error

Applicable Diagnostic Actions:

Click on a link to see how to perform each action tools are listed in order of relevance to helping solve the event:

- Open code in editor
- Run the Debugger
- View information in the Logs

Possible Causes and Solutions:

Possible causes:
Check that the connection to the DB is working. Possible Solution: verify the connection data is correct (address, user name, passwords etc.)and manually re-establish the connection.
External code problems such as malformed non-PHP code (code that can trigger a PHP error). Solution: Fix SQL code.
Function errors should to help understand the problem according to the content of the error.
Use the debugger to find the code/query that failed.
Incorrect database queries can trigger the event. Solution: redefine database queries and verify that the correct query syntax is used.

Deployment to Production

What's in Deployment to Production

In the Deployment to Production section, you will find information on how to deploy code that runs on Zend Server.

This document includes information on

Deploying Code with Zend Server - This section presents suggestions on how to best deploy your PHP code to run with Zend Server for production and development environments.

Deploying Code with Zend Server

This procedure describes how to deploy your PHP code to run with Zend Server.
Zend Server provides all the components for creating an environment suitable for developing and deploying PHP applications.
In order for a PHP Application to run you need a Web server. Apache is bundled by default with Zend Server and is used to run your PHP code. This option may vary depending on your operating system, for instance, MS Windows also supports an existing IIS installation so you can choose either Apache or IIS and in Mac Zend Server uses the distribution's Apache.

The process of writing PHP applications is separated into two distinct sections: Development and Production.

- Development includes developing and debugging your code. In most cases this is done on a developers machine or on a remote server with limited or password protected access.
- Production is when the Web application has reached a level of maturity that allows it to be exposed to its target audience. The only tasks that should be done are debugging (remote) and uploading changes. It is against best practices to make changes to code running on a Production server and the preferred method is to use FTP/SFTP to upload changes.

Development

Where to Put the Code?

In order to run a PHP application, your PHP files must be placed in a specific location that indicates to the Web server what files to service.
When you are ready to run your PHP code on a Web server, place the files under the following directory according to your operating system and preferences:
Windows:

- Apache: <install_dir>\Apache2\htdocs

- IIS: C:\inetpub\wwwroot

Mac and Tarball:

- <install_path>/apache2/htdocs

DEB

- The distribution's default location is: /var/www

RPM

- The distribution's default location is: /var/www/html

Running the Code / Application

Open a browser and enter the URL: http://localhost:/<yourPHPfile>.php
Replace <port number> with the port you are using. The defaults are port: 80 (for Windows) and port: 10088 (for the other operating systems), unless you changed the port by preference.
Replace <yourPHPfile>.php with name of the file you want to access/run.

Note:
Remember to use the port name according to the port number you defined.

To find out how to locally debug your code once its deployed in a Web server, see Working with Local Debugging.

Troubleshoot

What's in the Troubleshoot

Welcome to the Zend Server Troubleshoot section. The following content is a collection of knowledge and information based on the experience of Zend's Development and Support teams and the PHP community.

In the Troubleshoot section, you will find solutions to known issues, possible problems and an error message reference. If you encounter any of these issues while working with Zend Server, this information can help you resolve the matter quickly to enable you to return to your normal workflow.

This document includes information on the following issues:

All operating systems

- Zend Server Exception Caught - When the port settings are not configured as expected
- License Not Working - Your new license does not activate the features
- Zend Controller Cannot Login - Zend Controller does not start as expected
- Zend Controller Cannot Run Benchmark - There is an issue with the URL you are trying to test

- Error: Failed to Communicate with Zend Studio - The communication with Zend Studio has failed
- Changing the Component's Log Directory - Configuration options for advanced users

Windows only

- Windows: Zend Server isn't Running Out of The Box - You've installed Zend Server successfully, but an error message is displayed in the browser when you click the short cut.
- Windows: Zend Server not Loading - Zend Server or a related process causes unexpected system behavior
- Windows: Internet Explorer Blocking Zend Server - IE7 running on Windows 2008 Server blocks Zend Server and prompts you to add its URL to the Trusted Zone.
- Windows: IIS URL Rewrite Setup - Recommendations on which URL rewrite engine to use and where to download from.

Linux and Windows

- Support Tool - Your opportunity to enable the Support team to provide better service by allowing us to gather server configuration and setup information.

Windows: Zend Server isn't Running Out of The Box

This item refers to Windows OS using IIS (5-7)

After installing Zend Server, clicking on the shortcut opens the browser with an error.

Possible cause: It could be that your Web site is not running

Solution: Turn on your Web site

To turn on your Web site:

1. Go to My Computer
2. Right-click and from the menu select Manage
   The management Console is displayed.
3. In the navigation tree locate the node "Internet Information Services"
4. Under this node is a list of Web sites, make sure that the Web site Zend Server is associated with is running.
   If it is not running there will be a red indicator on the folder.
5. To set the Web site to run, right-click on the folder and set to start.
   Try to run Zend Server again.

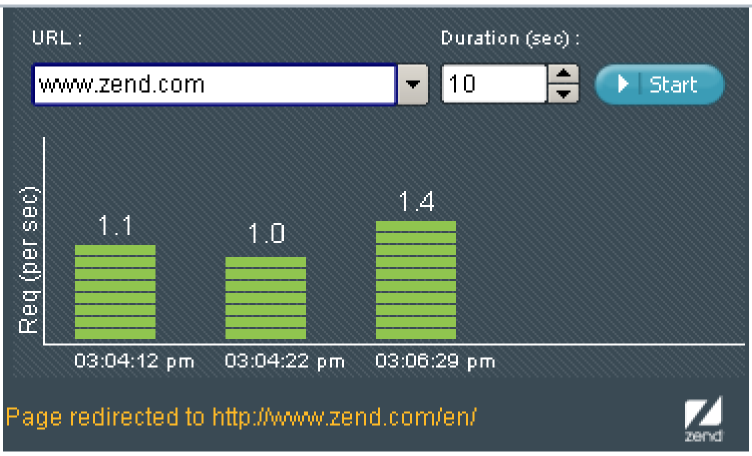
If this did not solve the problem more information can be found in the Zend Support Center: http://www.zend.com/en/support-center/.

Supported Web sites:

IIS5 users will only have one Web site. Whereas, IIS6 and IIS7 support multiple Web sites. When activating a Web site, make sure that you are activating the appropriate Web site (the site that was selected in the installation process).

Zend Controller Cannot Run Benchmark

The following message may appear after you enter a URL into the Zend Controller's benchmark: "Page redirected to ..."



Page redirected to http://www.zend.com/en/

This means that the URL that you entered is not the "exact" URL or is being redirected for some reason. In order to run the test, specify an exact URL or use the suggested address and click **Start** again.

Zend Controller Cannot Login

After installing Zend Server you try to run the Zend Controller and a message is displayed in the Zend Controller stating that it cannot log in.

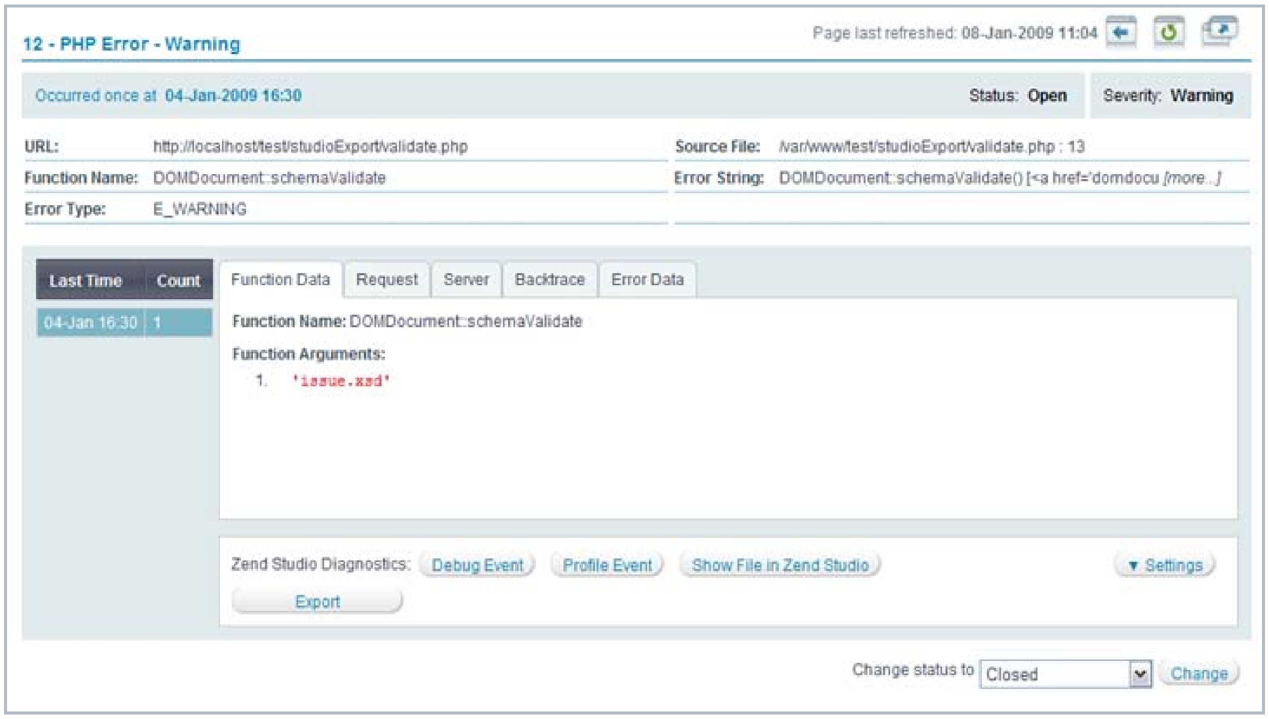
Possible causes:

1. You have not yet logged in to Zend Server for the first time and therefore your password has not been defined.
   Log in to Zend Server and set your password.
2. The password setting is incorrect.
   Open the Zend Controller settings menu, right click on and select **Settings** from the menu. Reenter your password in the Password field.
3. Your port number is incorrect.
   Open the Zend Controller settings menu, right click on and select **Settings** from the menu. Make sure the port number is correct (same as in the URL for opening Zend Server.

Error: Failed to Communicate with Zend Studio

The following error message appears in Zend Server when using the Zend Studio Diagnostics that are available from the **Monitor | Events | Event Details** page.

Failed to communicate with Zend Studio. Go to the online help's 'troubleshoot' section to find out how to fix the connection



12 - PHP Error - Warning

Page last refreshed: 08-Jan-2009 11:04

Occurred once at 04-Jan-2009 16:30 Status: Open Severity: Warning

URL:	http://localhost/test/studioExport/validate.php	Source File:	/var/www/test/studioExport/validate.php : 13
Function Name:	DOMDocument::schemaValidate	Error String:	DOMDocument::schemaValidate() [<a href='domdocu [more...]
Error Type:	E_WARNING		

Last Time	Count
04-Jan 16:30	1

Function Name: DOMDocument::schemaValidate

Function Arguments:

1. 'issue.xsd'

Change status to Closed

This error message can be caused by a several possible problems:

When running diagnostics on an alternate server:

1. The Zend Debugger is not running on the alternate server.
   Solution - Make sure that the Zend Debugger is running and available on the alternate server by going to the Zend Server Administration Interface and in **Server Setup | Components** check that the Zend Debugger is turned on.
2. The connection parameters in **Server Setup | Monitor** are not the same as the settings in Zend Studio's Debugger preferences. (IP address, Port and if you are using SSL).
   Solution - Check the settings in Zend Studio for Eclipse. For instructions go to: http://files.zend.com/help/Zend-Studio-Eclipse/zend-studio-eclipse.htm and make sure the Zend Studio for Eclipse debug settings are the same as defined in Zend Server.
3. The Zend Studio IP address is not allowed to debug on the alternate server.
   Solution - Go to your Administration Interface and make sure that the Zend Studio IP address

that appears in **Server Setup | Monitor** is an allowed host to debug - the setting should be in the alternate server's Zend Server Administration Interface under **Server Setup | Debugger**.

Windows: Zend Server not Loading

This Item is only relevant for Windows.

If for any reason, you cannot load Zend Server or one of the Zend Server related process causes a crash or unexpected system behavior, use the installer in Repair mode.

To run the installer in repair mode:

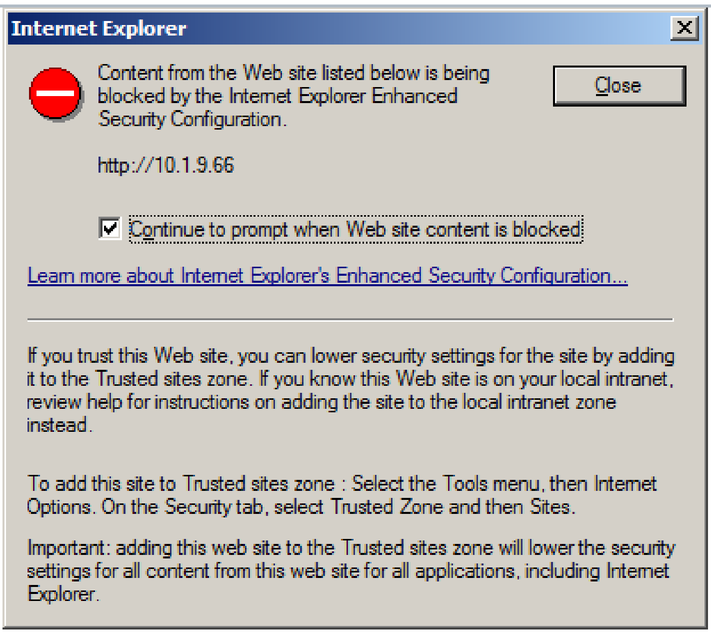
1. Run the installer file or go to Start | Control Panel | Add or Remove Programs | Zend Server and select Modify to run the installer
2. Click next to complete the repair process and Finish to close the Installer

You should now be able to run Zend Server. If you are still encountering problems, check out our Support Center at: http://www.zend.com/en/support-center

Windows: Internet Explorer Blocking Zend Server

This item is relevant for Internet Explorer 7 running on Windows 2008 Server.

After installing Zend Server for the first time, you may encounter an Internet Explorer system message stating that Zend Server was blocked (see image below).


Internet Explorer

Content from the Web site listed below is being blocked by the Internet Explorer Enhanced Security Configuration.

http://10.1.9.66

[✓] Continue to prompt when Web site content is blocked

Learn more about Internet Explorer's Enhanced Security Configuration...

If you trust this Web site, you can lower security settings for the site by adding it to the Trusted sites zone. If you know this Web site is on your local intranet, review help for instructions on adding the site to the local intranet zone instead.

To add this site to Trusted sites zone : Select the Tools menu, then Internet Options. On the Security tab, select Trusted Zone and then Sites.

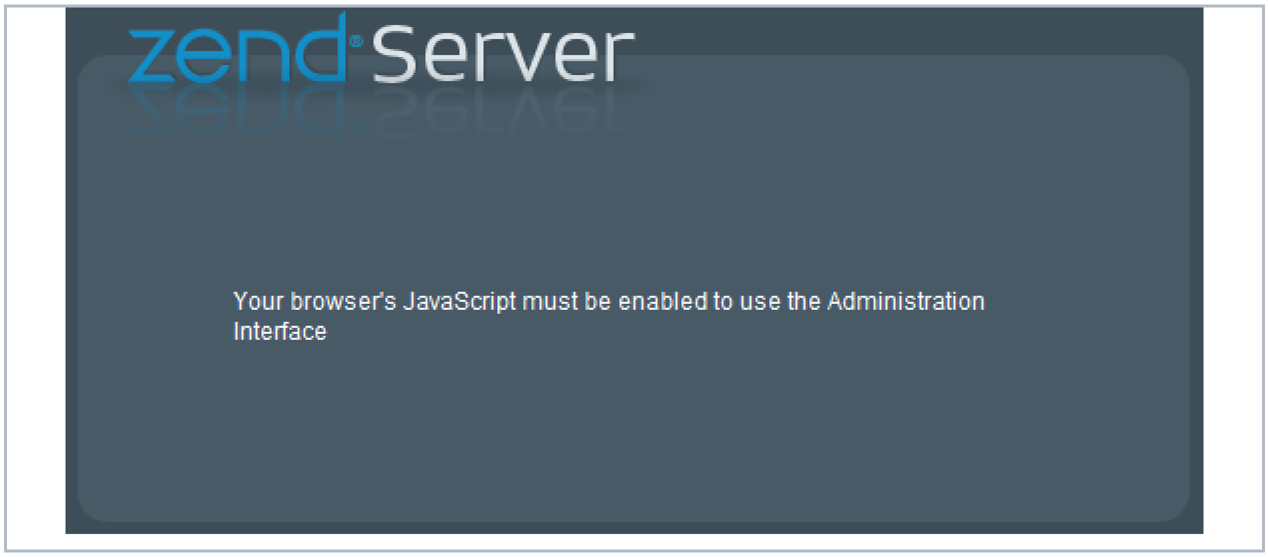
Important: adding this web site to the Trusted sites zone will lower the security settings for all content from this web site for all applications, including Internet Explorer.

This is a security message prompting you to add Zend Server to the trusted sites zone.
This procedure describes how to add Zend Server to the trusted sites zone in Internet Explorer 7 running on Windows 2008 Server.

To add a Web site to the Trusted sites zone:

1. Go to **Tools | Internet Options.**
2. Click to display the **Security** tab.
3. Select "**Trusted Zone**" and then **Sites.**
4. Click **Add** to include Zend Server as a trusted site.
5. Click **Close** and then **OK** to save the changes and close the dialog.

Zend Server will now be added as a trusted site and the message will not appear.
Depending on your security settings, you may only see the following message:



Your browser's JavaScript must be enabled to use the Administration Interface

This also indicates that Zend Server is not a trusted site. As soon as the site is added to the trusted zone, this message is no longer displayed.

Windows: IIS URL Rewrite Setup

A rewrite engine does not come standard with IIS. If you haven't done so already, you will have to download and install one.
There are several online resources that can help you set this up:

- Zend Framework users should see: http://framework.zend.com/wiki/display/ZFDEV/Configuring+Your+URL+Rewriter

- For Microsoft's URL rewrite module for IIS 7.0 see: http://learn.iis.net/page.aspx/460/using-url-rewrite-module/.

License Not Working

This issue is relevant for all operating systems.

Problem: While running Zend Server in Community Edition, I enter a new license and nothing happens.

Expected Result: Entering a valid license should reactivate Zend monitor, Zend Page Cache and Zend Download Server.

Solution: Click Restart Server to make sure the license change is applied.

Still doesn't Help: Try to manually Restart your PHP from the command line or go to the Zend Support Center - http://www.zend.com/en/support-center/ for information about our support options.

Changing the Component's Log Directory

This issue is intended for advanced users who want to change the directory for storing Zend component Log files.

By default, component logs are written to the directory specified in the directive zend.log_dir in the ZendGlobalDirectives.ini file located in *<install_path>/etc/conf.d/ZendGlobalDirectives.ini* .

If you change the path, the following components will write their logs to the new location:

- monitor.log
- monitor_node.log
- monitor_zdo.log
- page_cache.log

Linux

To Change the Log directory in Linux:

1. Create the new logs directory with write permissions in order to be able to write the logs in the new directory.
2. The new directory has to be owned by the Apache NOBODY user profile and belong to the file system group *zend.* To move the directory to the zend group run the following command as user *root*:

```
chown -r [Apache-user]:zend [new directory]
```

3. Open *<install_path>/etc/conf.d/ZendGglobalDdirectives.ini* and change the value of zend.log_dir to the new log directory
4. Run zendctl.sh stop and zendctl.sh start to apply the changes, this script is located in *<install_path>/bin/*

Now the log files for the Zend Page Cache and Zend Monitor components will be written to the new location. This means that some log files such as Apache and PHP, will still be written to the default directory (<install_path>/var/log)

Windows

To Change the Log directory in Windows:

1. Create the new logs directory
2. Open *<install_path>\etc\cfg\ZendGlobalDirectives.ini* and change the value of zend.log_dir to the new log directory
3. To apply changes manually restart your Web server (Apache or IIS)

Now the log files for the Zend Page Cache and Zend Monitor components will be written to the new location. This means that some log files such as Apache and PHP, will still be written to the default directory (<install_path>\logs).

Support Tool

The Zend Support Tool gathers server configurations and setup information.

The gathered information is used to help Zend's support team to troubleshoot support issues and provide comprehensive and efficient support.

Collected Information

In general, the information collected is defined in the definition file. If, for security reasons, you do not want to disclose specific information, you can edit the file to not include that information. However, the more information the support team can access, the better the chance of quickly resolving support-related issues.

Linux

To run the support tool:

```
<install_path>/bin/bugreport.sh
```

The default location for saving the files is:

$TMPDIR/zend_server_report_bug_$TIMESTAMP.tar.gz
If *TMPDIR* is not defined, it results to */tmp*

The definition file is located in:
<install_path>/share/bugreport/files
This file contains the definitions for which files and directories to collect. Through this file you can also define the name that will be used to create the archive, in case you do not want to use the default name.
Example:
/etc/apache2/conf.d apache_conf.d
Means, take the contents of the entire */etc/apache2/conf.d* directory and rename it to *apache_conf.d*
<install_path>/share/bugreport/commands
Defines which commands to run and include in the output.

Once a report is generated, you will see the following output:
Sample Output:

```
#  <install_path>/bin/bugreport.sh
The information was collected successfully.
Use free text to describe the issue in your own words.
To submit the information press CONTROL-D
Archive created at /tmp/zend_server_report_bug_123008052721.tar.gz
```

Windows

The Support Tool software may be found in: <install_path>\bin\SupportTool.exe.

1. Open the Support Tool from Start menu, Zend Server/Support Tool.
2. Select a directory to generate the archive file to (Desktop is default).
3. Click Create.
   A Zip file is created on the desktop of the current user. The file is created with a time stamp including date and time.

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