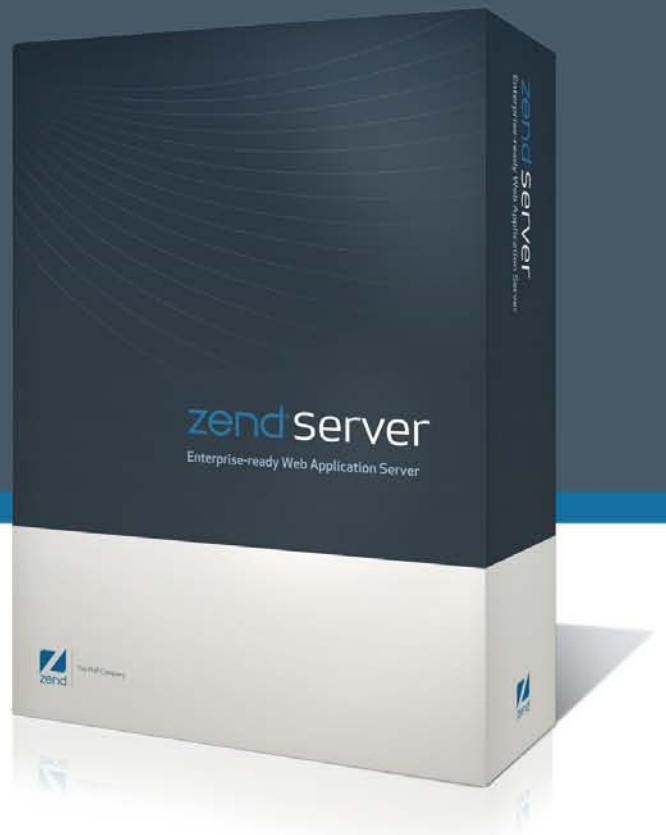




The PHP Company

Zend Server Cluster Manager 5.6 Installation Guide

By Zend Technologies



Abstract

This is the Installation Guide for Zend Server Cluster Manager Version 5.6.

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Getting Started

The following list describes the initial configuration tasks that you can do with Zend Server Cluster Manager. Some of these tasks depend on if you already have Zend Server installed on a server or servers or if you are building a cluster and starting with Zend Server Cluster Manager.

If you have not yet installed Zend Server Cluster Manager see [Running the Zend Server Cluster Manager Installation](#).

Once Zend Server Cluster Manager is installed you can start configuring your settings. If you are using settings from a previously configured Zend Server you may not have to make any changes to your settings although you may want to check your events to see that they are generating at optimal levels and if necessary modify event thresholds. See [Optimizing Monitoring](#) for more information on the monitoring workflow.

If you have installed and created a cluster and you have not previously configured any settings you will be running on default settings. The default settings are as follows:

- [Zend Monitor](#) will be running and collecting events based on default thresholds.
- Zend Session Clustering is in standby mode on the servers.
- [Zend Job Queue](#) is running without any active jobs.
- [Page Cache](#) is loaded without any active caching rules.

For a complete list of components see [Installed Components](#)

Installation Overview

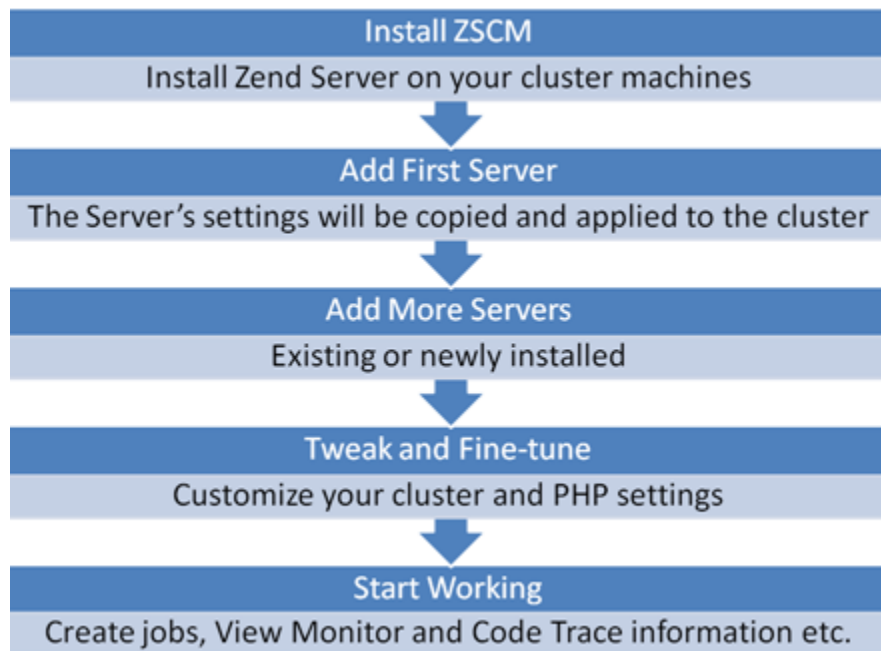
Zend Server Cluster Manager can be installed on one of the following operating systems Linux and Windows. A cluster can be created when you add servers to be managed by Zend Server Cluster Manager.

You may already have Zend Server installed on one or more machines so you can to create a cluster out of the existing servers. Alternatively, you may have a group of servers with no connection between them and you want to turn them into a cluster.

Note:

A cluster managed by Zend Server Cluster Manager can only consist of servers that are running the same operating system and major Zend Server version.

The following image describes the installation process, click on an area in the diagram or on the list below for more information about each step.



Installation

For instructions on installing Zend Server Cluster Manager see [Installing Zend Server Cluster Manager](#). If you want to know how to install Zend Server see [Choosing which Distribution to Install](#) in the Zend Server Installation Guide.

Adding a Server

Adding a server is a process of associating a server running Zend Server to a cluster by using Zend Server Cluster Manager. If you already have servers running Zend Server, [click here](#) for instructions on how to add a server.

Note:

To add a server you must know the Server's IP address and the Zend Server login password - that is defined upon initial login after installation.

Configuration

There are three types of rules that you can configure in Zend Server Cluster Manager. Monitoring, Caching and Recurring Jobs. These rules, when configured will be applied to all servers in your cluster. Moreover, all information collected about them will be aggregated and displayed in Zend Server Cluster Manager.

- For information on configuring Monitor Rules, see [Monitoring](#)
- For information on configuring Caching, see [Caching](#)
- For information on configuring Recurring Jobs, see [Recurring Jobs](#)

Information on configuring your PHP and your cluster can be found in the Zend Server Reference Manual as follows:

[Code Tracing](#), [Components](#), [Extensions](#), [Directives](#), [Debugger](#), [Monitor](#) and [Job Queue](#) with the exception of Servers and Session Clustering which are only found in Zend Server Cluster Manager.

Running the Zend Server Cluster Manager Installation

The following installation instructions refer to installing Zend Server Cluster Manager according to installation type (DEB, RPM and Windows). The instructions below state the installation command for complete information on installing and additional packages see each versions installation instructions in the Zend Server installation guide.

Important Note:

Zend Server Cluster Manager cannot be installed on a machine with an existing Zend Server installation.

DEB, RPM Automatic Installation Script

The following procedure describes how to run a script that will automatically create your DEB or RPM repositories and install Zend Server Cluster Manager.



1. Download the package called "Linux x86 Installer (RPM/DEB Setup Script)" from zend.com - <http://www.zend.com/en/products/server-cluster-manager/downloads>
2. Locate and extract the package:
ZendServer-X.X.X-RepositoryInstaller-linux.tar.gz
3. To change to the directory with the installer scripts run:
`cd ZendServer-RepositoryInstaller-linux/`
4. Run the following command:
`install.sh`

After installing, a completion notification will appear, with a notice that Zend Serve Cluster Manager has been installed.

To access the Administration Interface (Web) open your browser at:

<https://localhost:10082/ZendServerManager> (secure) or <http://localhost:10081/ZendServerManager>.

Upon initial log in, you will be prompted to define your password.

DEB

The Deb installation method requires that you setup a repository before installing Zend Server Cluster Manager. For instructions on setting up a repository see [Manually Installing Zend Server](#).

This method uses "aptitude" to handle the installations, upgrades and additional packages.



To install:

1. Once the repository is set up, run the appropriate command:

```
aptitude install zend-server-cluster-manager
```

The actual installation will require your conformation.

After installing, a completion notification will appear, with a notice that the servers have started.

To access the Administration Interface (Web) open your browser at:

<https://localhost:10082/ZendServerManager> (secure) or <http://localhost:10081/ZendServerManager>.

Upon initial log in, you will be prompted to define your password and enter your license information..

For information on how to upgrade your installation see [Upgrading Zend Server](#).

RPM (RHEL, CentOS, Fedora and OEL)

The RPM installation method requires that you setup a repository before installing Zend Server Cluster Manager. For instructions on setting up a repository see [Manually Installing Zend Server](#).

This method uses "yum" to handle all installations, upgrades and additional packages.



1. Once the environment is setup, run the appropriate command according to the product version and PHP support you require:

To install **Zend Server Cluster Manager** run:

```
yum install zend-server-cluster-manager
```

2. To clean your packages cache and ensure retrieval of updates from the web, run:

```
yum clean all
```

After installing, a completion notification will appear, with a notice that the servers have started.

To access the Administration Interface (Web) open your browser at:

<https://localhost:10082/ZendServerManager> (secure) or <http://localhost:10081/ZendServerManager>.

Upon initial log in, you will be prompted to define your password.

RPM (SLES and OpenSUSE)

The RPM installation method requires that you setup a repository before installing Zend Server Cluster Manager. For instructions on setting up a repository see [Manually Installing Zend Server](#).

This method uses "zypper" to handle all installations, upgrades and additional packages.



1. Once the environment is setup, run the appropriate command according to the product version and PHP support you require:

To install **Zend Server Cluster Manager** run:

```
zypper install zend-server-cluster-manager
```

After installing, a completion notification will appear, with a notice that the servers have started.

To access the Administration Interface open your browser at: <https://localhost:10082/ZendServerManager> (secure) or <http://localhost:10081/ZendServerManager>.

Upon initial log in, you will be prompted to define your password.

Windows

The following procedure describes how to install Zend Server Cluster Manager on Windows using a binary distribution.



To install Zend Server Cluster Manager:

1. After completing the download, double-click on the .exe file to start the installation process.
2. Read and accept the License Agreement to start the installation process.
3. Select a Web Server type.
There are two options, to set Zend Server Cluster Manager to run with an existing IIS Web Server or Install Apache.
4. Browse to a location for installing Zend Server Cluster Manager or use the default destination: "C:\Program Files\Zend\".
5. In the MySQL Database Installation dialog you are asked whether you would to install MySQL on your machine. The options are:
 - **No** - Does install MySQL on your machine. Select this option if you already have MySQL installed on your machine.
 - **Yes** - Installs MySQL on your machine. If you select this option, you must specify a root password in the Specify MySQL root password section.
6. Click the **NEXT** button to advance to the Confirmation dialog.
7. Click Install to start the installation.

A browser opens after the installation, to display the Administration Interface's login screen. Use the password you specified in the installation process to log in. If it was selected during the installation, a shortcut is added to your desktop, otherwise, bookmarking the page at this point will help you to easily locate the link.

Upgrading Zend Server Cluster Manager

The following procedures describe how to upgrade an existing Zend Server Cluster Manager for DEB, RPM and Windows.

RPM (using yum), RPM (using zypper), and DEB (using aptitude)

The following procedure describe how to upgrade Zend Server Cluster Manager using the supported methods (yum, aptitude and zypper).

RPM Upgrade Note:

After upgrading, you will need to manually start your server by running the command:

```
<install_path>/bin/zendctl.sh start.
```



To perform these actions you must have root privileges.



To upgrade RPM (RHEL, CentOS, Fedora and OEL) using yum run:

```
yum update zend-server-manager
```

To upgrade DEB using aptitude run:

```
aptitude update
```

```
aptitude upgrade
```

To upgrade only Zend packages, run:

```
# aptitude install `dpkg --get-selections|grep zend| awk -F " " '{print $1}' |xargs`
```

The upgrade process locates newer packages and downloads them.

To upgrade RPM (SLES and OpenSUSE) using zypper run:

```
zypper update
```

The upgrade process locates any components of the product version that are newer and downloads them.

Windows



To upgrade Zend Server Cluster Manager on Windows:

1. After completing the download, double click on the .exe file to start the upgrade process.
2. Click the **NEXT** button to advance to the Confirmation dialog.
3. Click **Install** to start the upgrade process.

Upgrading a Zend Server Cluster

In order to upgrade a Zend Server cluster, you must upgrade your cluster manager, followed by each node separately. Use the procedure that applies to the operating system on your machine (DEB, RPM (RHEL, CentOS, Fedora and OEL), RPM (SLES and OpenSUSE) to complete the upgrade process. It is highly recommended to review the [FAQ's](#) before beginning the upgrade.



To upgrade a Zend Server cluster:

1. Upgrade the cluster manager (DEB, RPM (RHEL, CentOS, Fedora and OEL), RPM (SLES and OpenSUSE), Windows).

Upgrading a Windows installation of Zend Server is accomplished by going to Zend's [download page](#) and selecting the relevant installation. When upgrading Zend Server Cluster Manager, upgrade the cluster manager, and then the nodes. For more information see [Upgrading a Zend Server Cluster](#).

2. Take one or more nodes off of the load balancer and disable one by one in the Zend Server Cluster Manager Administration Interface.

Disabling the nodes ensures that your sessions will be transferred to a different node.

Note:

The disabling process performs a Graceful Shutdown, which will increase the load on active nodes during this process since some of the node's sessions are moved to other nodes.

3. Upgrade the nodes using the relevant procedure:
 - DEB
 - RPM (RHEL, CentOS, Fedora and OEL)
 - RPM (SLES and OpenSUSE)
 - Windows
4. Once the upgrade is complete, you can enable the nodes and return them to the load balancer.

Note:

Zend Server Cluster Manager upgrade does not affect the PHP operation of nodes, but actions such as Monitoring and Code Tracing will not be available until all the nodes have completed the upgrade process. Therefore, it is recommended to upgrade a chunk of the cluster at a time. You can then return the upgraded chunk to the cluster before beginning the process with the additional nodes. This will avoid PHP/site downtime, but does reduce the capacity of the cluster.

FAQ

1. **What is the downtime I should be prepared for?**

If you download all the files/packages in advance, upgrading the nodes will take approximately 10 minutes in Linux and 20 minutes in Windows. (The time may vary according to your system and settings.) The cluster manager's upgrade can take longer as the database is upgraded during the process as well. The time depends on the size of your database and the load on your database machine.

2. **Do I have to update my MySQL?**

The cluster manager upgrade process will take care of your database schema upgrade.

3. **Do I lose any sessions or cached content?**

If you take the nodes off the cluster one by one, you will not lose sessions. Most of the cached contents on the nodes will be lost (opcode cache, data cache, page cache), and the Monitoring and Code Tracing data will be kept in the node along with its references in the MySQL database.

4. **Should I make backups?**

Since it is always safer to make backups, we suggest making a backup of the MySQL database and the cluster manager installation folder. We also recommend making a backup of your application files and data.

Uninstalling Zend Server Cluster Manager

The following instructions describe how to uninstall Zend Server Cluster Manager according to operating system type.

DEB

The following instructions describe how to delete or uninstall using *'aptitude'*.



To perform these actions you must have root privileges.



To uninstall Zend Server Cluster Manager (leaving the configuration files in place) run:

```
# aptitude remove '~nzend.* '
```

To delete Zend Server Cluster Manager from the system with no traces left run:

```
# aptitude purge '~nzend.* '
```

Both instances remove Zend Server Cluster Manager from your system. Information collected by Zend Server Cluster Manager and stored in the database will not be removed by the uninstall process.

If you want to delete this information:

To delete the database run the command:

```
mysql> drop database zend_monitor;
```

To delete the MySQL 'zend' user created by the Zend Server Cluster Manager installation:

```
mysql> drop user 'zend'@localhost;  
mysql> drop user 'zend'@'%';
```

RPM

The following instructions describe how to uninstall Zend Server Cluster Manager:



To uninstall run:

```
zendctl.sh stop
```

And then run:

```
# yum -y remove zend-server-manager && yum -y remove `rpm -qa|grep zend|xargs`
```

To uninstall **ZSCM** with **PHP 5.2** run:

```
# yum -y remove zend-server-php-5.2 && yum -y remove `rpm -qa|grep zend|xargs`
```

To uninstall **ZSCM** with **PHP 5.3** run:

```
# yum -y remove zend-server-php-5.3 && yum -y remove `rpm -qa|grep zend|xargs`
```

This will stop the Zend Server Cluster Manager daemons and remove the program, including any additional packages that were installed.

When uninstalling, the configuration files are not removed. They remain in the same location with an additional suffix: `.rpmsave` so that they can be reused in a newer installation. For example: a file called `example.ini` is renamed to `example.ini.rpmsave`, after you run the uninstall.

Information collected by Zend Server Cluster Manager and stored in the database will not be removed by the uninstall process.

If you want to remove this information:

To drop the database run the command:

```
mysql> drop database zend_monitor;
```

To drop the MySQL 'zend' user created by the Zend Server Cluster Manager installation:

```
mysql> drop user 'zend'@localhost;
```

```
mysql> drop user 'zend'@'%';
```

Windows

The following instructions describe how to uninstall Zend Server Cluster Manager:



To uninstall:

1. Use the Windows Control Panel: **Start | Control Panel | Add or Remove Programs**.
2. In the **Add or Remove Programs** dialog, locate and click the Zend Server Cluster Manager package in the list.
3. Click "Remove".
The Installer runs in uninstall mode.
4. Follow the instructions and click "Finish" to complete the uninstallation process.

This will stop the Zend Server Cluster Manager services and remove the program, including any additional packages that were installed.

To cleanup your system, after uninstalling Zend Server Cluster Manager also delete the following:

- Uninstall MySQL
- Delete <install folder>\ZendServerManager
- Delete <install folder>\MySQL51
- Delete <install folder>\Apache2

Licenses and Registration

Entering for the First Time

The first time Zend Server Cluster Manager runs, the Configuration Wizard is displayed.

In order to start working with Zend Server Cluster Manager you have to complete the information in the wizard by clicking Next to advance through the steps.

Note:

If you see a button called "Enter Without a License you are viewing Zend Server and not Zend Server Cluster Manager. This option is not available for Zend Server Cluster Manager.

The Zend Server Cluster Manager Setup Wizard

Once you have completed the wizard you will be directed to the Zend Server Cluster Manager's dashboard.

After your information is defined for the first time in the Configuration Wizard, you can always go to **Administration | License and Password** to change/update your information.

If you only enter partial information, the next time you login to Zend Server Cluster Manager you will be prompted to fill in the missing information as follows.

- **Step 1: End User License Agreement**

This mandatory step requires that you read and agree to the license before you can continue, the **Next** button will be disabled until this option is approved

- **Step 2: Password**

This step will be displayed when you access the system for the first time. This password will be used by you, to log in to the Zend Server Cluster Manager Administration Interface. Passwords must be between 4 - 20 characters long. Additional security information can be found in Securing the Administration Interface.

- **Step 3: Licensing Details**

This step is displayed until you enter valid license details.

Zend Server Cluster Manager - Your license key and Order Number should be in the email sent to you after purchasing Zend Server Cluster Manager. This information will also be stored in your Zend user account along with expiration information.

Cluster Members - In addition to your Zend Server Cluster Manager license, you should have a Cluster Members license. This license determines how many servers you can add to your cluster

Subscription details - This non-mandatory field allows you to subscribe receive product related updated my email (unsubscribe method and details will be displayed in the emails you will receive).

▪ **Step 4: Database Connection**

The database is intended for storing event information that is aggregated from the servers in your cluster. Before continuing to the next step you can see a list of the database settings and information that you will require to either locate or install a Database.

This step requires that you enter your database information. You can choose to connect to an existing MySQL 5.0 (or higher) database that you may have or allow the wizard to create a schema for you.

Username - only accepts a valid database username.

Password - only accepts a valid password to an existing database

Host - only accepts a valid host name/IP Address of a server. The following values are not accepted, localhost, 127.x.x.x or 0.0.0.0

Port - only accepts a valid port number by default, 3306.

Create the database for me - This will create a MySQL 5.0 database with default values, the default username is 'root'.

I have already set up the database - This will connect to the database on the defined host and the username will be changed to 'zend'.

For instructions on how to manually setup the database on your own see [Zend Server Cluster Manager Database](#).

If you do not already have a license, go to the [licensing page on zend.com](#) to find out how to get a license.

License Expiration

Before a license expires, a notification is displayed at the bottom of the Administration Interface, telling you how long you have left until your license expires and where to go to renew your license.

Once a license expires or if you enter an invalid license, Zend Server Cluster Manager will display a License Page. Any page you try to access will keep redirecting to this page until a valid license is entered.

During this time, all settings are kept and are immediately restored, along with the functionality, when a new license is entered.

Password Management

For security reasons, Zend Server cannot restore your password for you. However, you can reset your password.

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 Cluster Manager 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.

UNIX and Linux 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 Cluster Manager 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 Cluster Manager Administration Interface.



To change your password from inside the Administration Interface:

1. In the Administration Interface, go to **Administration | Password and License**.
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 Cluster Manager requiring you to log in with the new password the next time you access the Administration interface.

Zend Server Cluster Manager Database

Zend Server Cluster Manager requires a MySQL 5.0 (or above) database in order to store information aggregated from the servers belonging to the cluster.\

Important Note:

If Zend Server Cluster Manager cannot connect to the database, the only available action in the Administration Interface is to login.

If the problem persists, contact Customer Support at <http://www.zend.com/en/support-center/>.

When installing Zend Server Cluster Manager for the first time, you will be prompted to setup the Zend Server Cluster Manager database.

This can be done in one of two methods:

1. **Create the database for me** - Allows you to provide an administrator username (usually root) and password for the database. The setup wizard will then use these credentials to create a schema and a dedicated (unprivileged) user which will be used by Zend Server Cluster Manager to store data. The administrator credentials are not saved and will never be used beyond this step.
2. **I have already set up the database** - Allows you to manually create a schema and a user in your existing database and set Zend Server Cluster Manager to use these existing credentials. While this method requires additional manual intervention, it may be more suitable for environments where the person installing Zend Server Cluster Manager does not have administrator permissions to access the database. Instructions on how to manually configure the Zend Server Cluster Manager database are as follows:

Manually Configuring the Zend Server Cluster Manager Database

This procedure describes how to manually create and setup a Zend Server Cluster Manager database schema and user.

Before creating the database, make sure that the server on which you are installing the database is accessible by Zend Server Cluster Manager and all Zend Server instances that are potential cluster members.



To manually create and setup a Zend Server Cluster Manager database:

1. Install a MySQL Server 5.0.X or 5.1.X you can also use an existing database server for this purpose as long as it is a compatible MySQL version and accessible from all the servers.
2. Open MySQL to external connections by editing the MySQL configuration file (usually my.cnf on Linux; my.ini on Windows)
 - i. Backup your current configuration file
 - ii. Comment-out or remove *skip-networking* (if it is set)
 - iii. Set *bind-address* to 0.0.0.0
 - iv. Restart MySQL
3. Connect to the MySQL database with an administrator user (e.g. root)
4. Create a schema named 'zend_monitor'. This will be used by Zend Server Cluster Manager to store Data:

```
CREATE DATABASE IF NOT EXISTS zend_monitor;
```

5. Run the following commands to create a user (e.g. 'zend') which will be used by Zend Server Cluster Manager to access the database you just created:

Note: Replace <username> and <password> in the following SQL commands with the username and password you wish to use.

```
GRANT CREATE,DROP,ALTER,DELETE,INDEX,INSERT,SELECT,UPDATE,
CREATE TEMPORARY TABLES,LOCK TABLES,CREATE VIEW,
SHOW VIEW,ALTER ROUTINE,
CREATE ROUTINE,
EXECUTE ON `zend_monitor`.* TO '<username>'@'%' IDENTIFIED BY
'<password>';
FLUSH PRIVILEGES;
```

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In the Zend Server Cluster Manager Configuration Wizard (step 4), select the option "I have already setup the database" and enter the user name, password, host, and port for the schema you have just created.

Zend Server Cluster Manager will create tables and populate the database as needed.