

Alibaba Cloud: Hands-On-Exercise

Application Deployment

Deploy web application sample to Alibaba Cloud. The minimum deployment should involve using of one ECS and one RDS instance.

Application Deployment

To deploy web application on Alibaba cloud (i.e., should involves using of one ECS and one RDS). I preferred to write a code in PHP language and built the CRUD operation where front-end s/w tools are installed on ECS and backend database deployed on RDS.

Following are the referral useful links to deploy the web application and to test it further as a pre-requisite:

On ECS over the CentOS image – I decided to installed following software and tools:

- Free Alibaba cloud account - <https://www.alibabacloud.com/campaign/free-trial>
- Apache: <http://httpd.apache.org/>
- PHP: <http://www.php.net/>
- MySQL: <http://www.mysql.com/>
- CentOS: <http://www.centos.org/>
- phpMyAdmin: <http://www.phpmyadmin.net/>
- **Sample Web-application (CRUD based):** <https://github.com/RANBIJAY/CRUD-Operation-Alibaba-ECS-RDS>

Suggestion: For best practice, it's always recommended to execute and run the sample application at your own environment first (i.e., local machine), before deploying it into the target cloud services.

Before starting of our hands-on exercise, let's do first benchmark set-up for both ECS and RDS services. During set-up process, users have a choice to opt either 'subscription' or 'pay-as-go' model depending on their needs.

I purchased super-high benchmark configuration for deployment of the sample web application and doing further R&D exercise in future assignment. The details are available below for reference:

1. Benchmarking of ECS

For ECS instance, from the offered list of System, Marketplace and Custom Image, I preferred to go with CentOS system image for hands-on, as I am more comfortable to Linux based environment rather than Windows. Also, I have Mac machine for doing my personnel R&D or innovation for my personnel interest.

Product

Elastic Compute Service

Instance Name:

i-a2daukxawmdw3athp40j

Configuration Details

Instance: 2-core, 8GB Generation III Network Enhanced sn2ne

IO optimized instance: IO optimized instance

System disk: /dev/xvda Ultra Cloud Disk

Bandwidth: 5.0000Mbps Data Transfer

CPU: 2Core

Available zone: Asia Pacific SOU 1 Zone A

OS: CentOS 7.3 64bit

Mem: 8GB

Region: Asia Pacific SOU 1 (Mumbai)

Network type: VPC

Manage service: Yes

Secure | https://billing.console.aliyun.com/?spm=5176.2020520101.aliyun_topbar.77.67ee6765coFsR#/order/detail/buy/500360312700409

Home Products Billing Management English

Basic Information

Order No.: 500360312700409	Order Type: New Order
Creation Time (UTC+8): 2018-05-08 12:27:39	Payment Time (UTC+8): 2018-05-08 12:27:51
Payment Status: Paid	

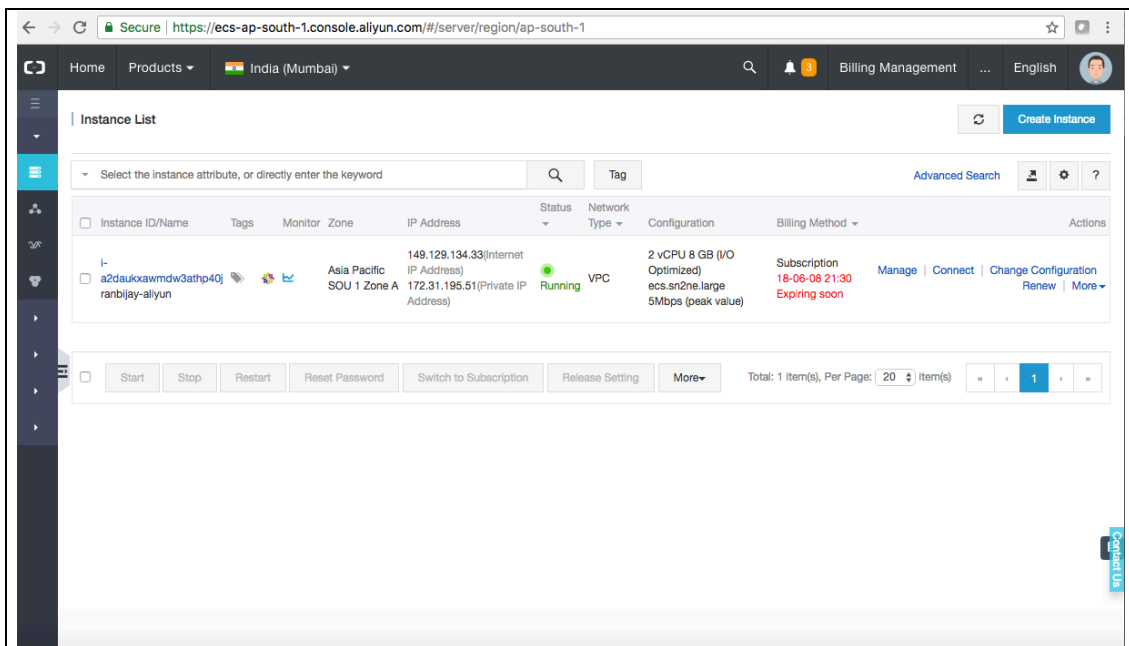
Order Details

Product	Quantity	Configuration Details	Billing Method	Start/end Time (UTC+8)	Amount	Tax
Elastic Compute Service Instance Name: i-a2dauxawmdw3atp40j	1	Instance: 2-core, 8GB Generation III Network Enhanced sn2ne IO optimized instance: IO optimized instance System disk: /dev/xvda Ultra Cloud Disk Bandwidth: 5.0000Mbps Data Transfer CPU: 2Core Available zone: Asia Pacific SOU 1 Zone A OS: CentOS 7.3 64bit Mem: 8GB Region: Asia Pacific SOU 1 (Mumbai) Network type: VPC Manage service: Yes	By Month(s) (1 Month(s))	2018-05-08 12:27:51 - 2018-06-09 00:00:00	\$0.000 USD	\$0.000 USD

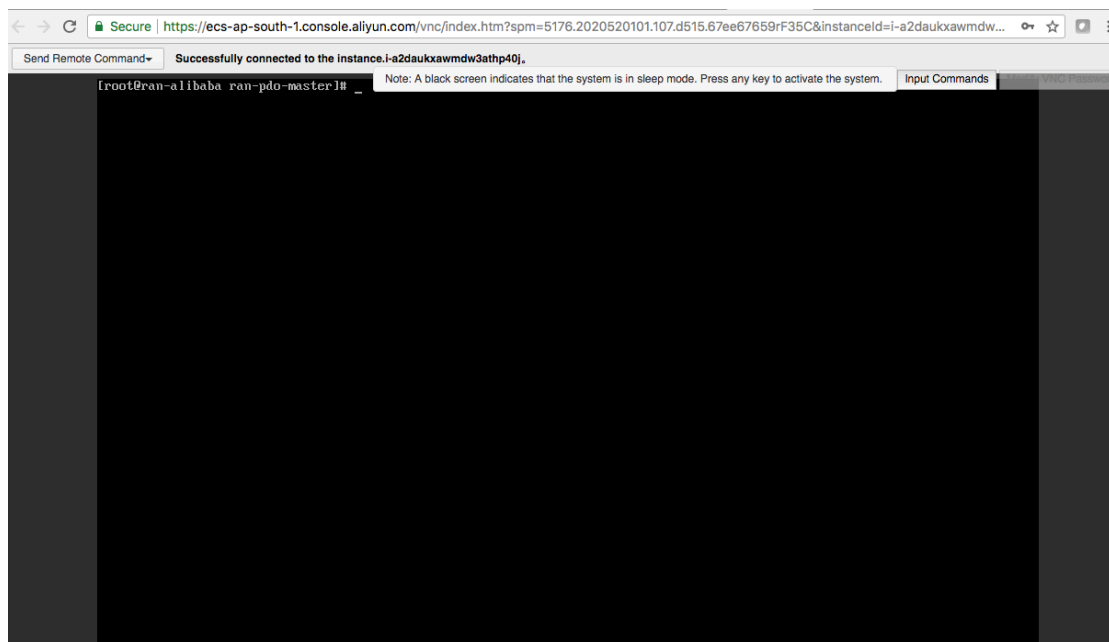
Summary

Subtotal :	\$0.000 USD
Tax :	\$0.000 USD

After ECS instance get activated, the status of instance been turned "Running" in status.



To test it further, how it works? Just clicked on “Connect” option at the right side of the Instance list portal, it opens the “Management console” for doing further exercise. Before getting the screen you need to provide **VNC connection password**. (Alert: The VNC connection password is viewable only once. Ensure you record this password and keep it in a secure location for subsequent login attempts.)



2. Benchmarking of RDS

Product

ApsaraDB for RDS

Instance Name:

rm-6gjgil677k1r6xs1r

Configuration Details

RDS Specifications: 1 Core, 1 GB

Database type: MySQL

Database version: 5.7

Internet traffic: cost debited based on daily traffic usage

Zone: Asia Pacific SOU 1 Zone A

Node type: High-Availability Edition

Region: Asia Pacific SOU 1 (Mumbai)

Storage: 5GB

Network type: VPC

The screenshot shows the 'Order Details' page in the Alibaba Cloud Billing console. The order number is 500377519350409, and the payment status is 'Paid'. The order details table lists the product as 'ApsaraDB for RDS' with a quantity of 1. The configuration details include RDS Specifications (1 Core, 1 GB), Database type (MySQL), Database version (5.7), Internet traffic (cost debited based on daily traffic usage), Zone (Asia Pacific SOU 1 Zone A), Node type (High-Availability Edition), Region (Asia Pacific SOU 1 (Mumbai)), Storage (5GB), and Network type (VPC). The billing method is 'By Month(s)' (1 Month(s)), and the start/end time is 2018-05-24 09:53:18 - 2018-06-25 00:00:00. The amount is \$0.000 USD, and the tax is \$0.000 USD. The summary section shows a subtotal of \$0.000 USD, tax of \$0.000 USD, and a total of \$0.000 USD.

Product	Quantity	Configuration Details	Billing Method	Start/end Time (UTC+8)	Amount	Tax
ApsaraDB for RDS Instance Name: rm-6gigli677k1r6xs1r	1	RDS Specifications: 1 Core, 1 GB Database type: MySQL Database version: 5.7 Internet traffic: cost debited based on daily traffic usage Zone: Asia Pacific SOU 1 Zone A Node type: High-Availability Edition Region: Asia Pacific SOU 1 (Mumbai) Storage: 5GB Network type: VPC	By Month(s) (1 Month(s))	2018-05-24 09:53:18 - 2018-06-25 00:00:00	\$0.000 USD	\$0.000 USD

Summary	Amount
Subtotal :	\$0.000 USD
Tax :	\$0.000 USD
Total :	\$0.000 USD

My current ApsaraDB for RDS Management portal looks like below image. Before doing any exercise to make sure the status of instance should be "Running".

The screenshot shows the 'RDS Management' page in the Alibaba Cloud console. The 'Basic Information' tab is selected. The table lists the following instances:

Instance Name	Status	Created Time	Instance Type	Database Engine	Availability Zone	Network Type	Billing Method	Tags	Action
rm-6gigli677k1r6xs1r rm-MySQL-5.7-Lat...	Running	2018-05-24 09:54	Regular	MySQL 5.7	Asia Pacific SOU 1 (Mumbai) ZoneA	VPC (VPC:vpc-a2dd3m4qne6yqsp57tcz)	Monthly subscription will expire in 30 day(s)		Manage Renew More
rm-6g34s3sk85jakek ran-MySQL-5.6	Running	2018-05-24 08:52	Regular	MySQL 5.6	Asia Pacific SOU 1 (Mumbai) ZoneA	VPC (VPC:vpc-a2dd3m4qne6yqsp57tcz)	Monthly subscription will expire in 30 day(s)		Manage Renew More
rm-6gizum3z20dh581o3 ran-high-availab...	Running	2018-05-14 17:02	Regular	MySQL 5.7	Asia Pacific SOU 1 (Mumbai) ZoneA	VPC (VPC:vpc-a2dd3m4qne6yqsp57tcz)	Monthly subscription will expire in 20 day(s)		Manage Renew More
rm-6gqv22254ie8806i		2018-05-08		MySQL	Asia Pacific SOU 1	VPC (VPC:vpc-	Monthly subscription		

Total: 4 Item(s), Per Page: 30 Item(s)

Since, I opted MySQL DB to use for my hands-on exercise. Related to MySQL, quick start, set-up and configuration details are well documented and available in Alibaba Cloud Document center for reference, helped me to do my hands-on in an easy manner.

Set-up MySQL root database user account as below **[Alert:** Creating master account activation will disappear account/database management from RDS instance portal, once the master account gets activated. Best practice here to create first database and account (ordinary one) and give privilege Read/Write to access them]

The screenshot shows the 'Accounts' page in the Alibaba Cloud RDS console. The instance is 'rm-MySQL-5.7...' and is in a 'Running' state. The 'Accounts' tab is selected, showing a table with one account named 'ran_rds' with an 'Activate' status. The account is associated with 'ran-pdo Read/Write' and 'test_rds Read/Write' databases. The account description is 'Ran RDS account'. Action buttons for 'Reset Password', 'Modify Permissions', and 'Delete' are available for this account. A 'Create Account' button is also present in the top right of the account list area.

Account	Status	Associated Database	Account Description	Action
ran_rds	Activate	ran-pdo Read/Write test_rds Read/Write	Ran RDS account	Reset Password, Modify Permissions, Delete

Whitelist setting:

The screenshot shows the 'Whitelist Settings' page in the Alibaba Cloud RDS console. The instance is 'rm-MySQL-5.7...' and is in a 'Running' state. The 'Security' tab is selected, and the 'Whitelist Settings' sub-tab is active. A table lists the current whitelist settings. The first entry is 'default' with a 'Modify Clear' button. Below it, two rows show IP addresses and CIDR blocks. A note at the bottom explains the purpose of the whitelist settings.

IP Address	CIDR Block	Action
172.31.195.0/24	172.31.195.51	149.129.134.33
172.31.195.50/24		

Note: Add 0.0.0.0/0 to the IP whitelist to allow all addresses to access. Add 127.0.0.1 only to the IP whitelist to disable all address access. [Whitelist Settings Description](#)

Other product also explored and used for hands-on purpose, such as:

- Object Storage Service (to upload/download the sample web app)
- Cloud-Monitor Service

Steps of Hands-on Exercise:

Step1: Installing Apache, PHP 7.2 and MySQL on CentOS 7.4 System ECS Instance

1. Note

In this exercise, I use the hostname/Public_IP address with the IP **149.129.134.33**.

I will add the EPEL repo here to install latest phpMyAdmin as follows:

```
[root@ran-alibaba /]# rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY*
```

```
[root@ran-alibaba /]# yum -y install epel-release
```

To edit files on the shell, I'll install the nano editor. If you prefer vi/vim for file editing, then skip this step.

```
[root@ran-alibaba /]# yum -y install nano
```

2. Installing MySQL / MariaDB

MariaDB is a MySQL fork of the original MySQL developer Monty Widenius. MariaDB is compatible with MySQL and I've chosen to use MariaDB here instead of MySQL. Run this command to install MariaDB with yum:

```
[root@ran-alibaba /]# yum -y install mariadb-server mariadb
```

Then we create the system startup links for MySQL (so that MySQL starts automatically whenever the system boots) and start the MySQL server:

```
[root@ran-alibaba /]# systemctl start mariadb.service
```

```
[root@ran-alibaba /]# systemctl enable mariadb.service
```

Set passwords for the MySQL root account:

```
[root@ran-alibaba /]# mysql_secure_installation
```

```
[root@ran-alibaba /]# mysql_secure_installation
```

In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here.

```
Enter current password for root (enter for none): <--ENTER
```

Ok, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorization.

```
[root@ran-alibaba /]# Set root password? [Y/n]
```

```
New password: <--yourmariadbpassword
```

```
Re-enter new password: <--yourmariadbpassword
```

Password updated successfully!

Reloading privilege tables.

... Success!

By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for him or her. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment.

Remove anonymous users? [Y/n] <--ENTER

... Success!

Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] <--ENTER

... Success!

By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] <--ENTER

- Dropping test database...

... Success!

- Removing privileges on test database...

... Success!

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

Reload privilege tables now? [Y/n] <--ENTER

... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB installation should now be secure.

Thanks for using MariaDB!

[root@ran-alibaba /]#

3. Installing Apache

CentOS 7 ships with Apache 2.4. Apache is directly available as a CentOS 7 package, therefore we can install it like this:


```
[root@ran-alibaba /]# yum -y install httpd
```

Now configure your system to start Apache at boot time...

```
[root@ran-alibaba /]# systemctl start httpd.service
```

```
[root@ran-alibaba /]# systemctl enable httpd.service
```

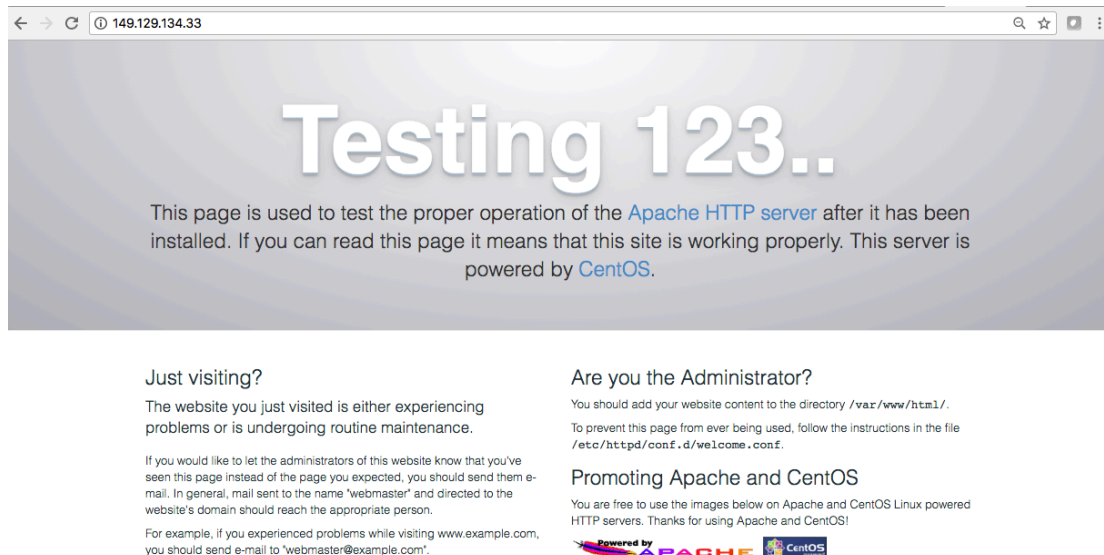
To be able to access the web server from outside, we have to open the HTTP (80) and HTTPS (443) ports in the firewall. The default firewall on CentOS is firewalld, which can be configured with the firewalld-cmd command.

```
[root@ran-alibaba /]# firewall-cmd --permanent --zone=public --add-service=http
```

```
[root@ran-alibaba /]# firewall-cmd --permanent --zone=public --add-service=https
```

```
[root@ran-alibaba /]# firewall-cmd --reload
```

Now direct your browser to the IP address of your server, in my case <http://149.129.134.33/>, and you should see the Apache placeholder page:



4. Installing PHP

The PHP version that ships with CentOS as default is quite old (PHP 5.4). Therefore I will show you in this exercise some options to install newer PHP versions like PHP 7.0 or 7.1 from Remi repository.

Add the Remi CentOS repository.

```
[root@ran-alibaba /]# rpm -Uvh http://rpms.remirepo.net/enterprise/remi-release-7.rpm
```

```
[root@ran-alibaba /]# Install yum-utils as we need the yum-config-manager utility.
```

```
[root@ran-alibaba /]# yum -y install yum-utils
```

and run yum update

```
[root@ran-alibaba /]# yum update
```

Now you have an option to choose which PHP version you want to use on the server. PHP version at a time with Apache mod_php. To install PHP, run this command:

```
[root@ran-alibaba ~]# yum -y install php
```

To Install PHP 7.2, use:

```
[root@ran-alibaba ~]# yum-config-manager --enable remi-php72
```

```
[root@ran-alibaba ~]# yum -y install php php-opcache
```

We must restart Apache to apply the changes:

```
[root@ran-alibaba ~]# systemctl restart httpd.service
```

5. Testing PHP / Getting Details About Your PHP Installation

The document root of the default website is /var/www/html. We will create a small PHP file (info.php) in that directory and call it in a browser to test the PHP installation. The file will display lots of useful details about our PHP installation, such as the installed PHP version.

```
[root@ran-alibaba ~]# nano /var/www/html/info.php [install nano editor on CentOS: yum -y install nano]
```

In nano editor, type following code and exit.

```
<?php
```

```
phpinfo();
```

To switch from nano editor to root-command, in Mac OSX: press **fn+F2**. Now we call that file in a browser (e.g. <http://149.129.134.33/info.php>):

PHP Version 7.2.6

System	Linux ran-alibaba 3.10.0-862.2.3.el7.x86_64 #1 SMP Wed May 9 18:05:47 UTC 2018 x86_64
Build Date	May 23 2018 09:52:17
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/10-opcache.ini, /etc/php.d/20-bcmath.ini, /etc/php.d/20-bz2.ini, /etc/php.d/20-calendar.ini, /etc/php.d/20-cctype.ini, /etc/php.d/20-curl.ini, /etc/php.d/20-dom.ini, /etc/php.d/20-exif.ini, /etc/php.d/20-fileinfo.ini, /etc/php.d/20-fp.ini, /etc/php.d/20-gd.ini, /etc/php.d/20-gettext.ini, /etc/php.d/20-gmp.ini, /etc/php.d/20-iconv.ini, /etc/php.d/20-javascript.ini, /etc/php.d/20-ldap.ini, /etc/php.d/20-libxml.ini, /etc/php.d/20-mbstring.ini, /etc/php.d/20-mcrypt.ini, /etc/php.d/20-mysqlnd.ini, /etc/php.d/20-pdo.ini, /etc/php.d/20-phar.ini, /etc/php.d/20-posix.ini, /etc/php.d/20-redis.ini, /etc/php.d/20-shmop.ini, /etc/php.d/20-simplexml.ini, /etc/php.d/20-sockets.ini, /etc/php.d/20-ssl.ini, /etc/php.d/20-sysmsg.ini, /etc/php.d/20-syssem.ini, /etc/php.d/20-sysvshm.ini, /etc/php.d/20-tidy.ini, /etc/php.d/20-tokenizer.ini, /etc/php.d/20-xml.ini, /etc/php.d/20-xmlreader.ini, /etc/php.d/20-xmlwriter.ini, /etc/php.d/20-xsl.ini, /etc/php.d/30-mysql.ini, /etc/php.d/30-pdo_mysql.ini, /etc/php.d/30-pdo_sqlite.ini, /etc/php.d/30-wddx.ini, /etc/php.d/30-xmldb.ini, /etc/php.d/40-zip.ini
PHP API	20170718
PHP Extension	20170718
Zend Extension	320170718
Zend Extension Build	API320170718.NTS
PHP Extension Build	API20170718.NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
IPv6 Support	enabled
OTrace Support	available, disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, compress.bzip2, phar, zip
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, sslv3, tls, tlsv1.0, tlsv1.1, tlsv1.2
Registered Stream Filters	zlib.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed, dechunk, bzip2.*, convert.iconv.*

This program makes use of the Zend Scripting Language Engine:
Zend Engine v3.2.0, Copyright (c) 1998-2018 Zend Technologies
with Zend OPcache v7.2.6, Copyright (c) 1999-2018, by Zend Technologies

zendengine

Configuration

As you see, PHP 7.2 is working, and it's working through the Apache 2.0 Handler, as shown in the Server API line. If you scroll further down, you will see all modules that are

already enabled in PHP. MySQL is not listed there which means we don't have MySQL support in PHP yet.

6. Getting MySQL Support In PHP

To get MySQL support in PHP, we can install the `php-mysqld` package. It's a good idea to install some other PHP modules as well as you might need them for your applications. You can search for available PHP5 modules like this:

```
[root@ran-alibaba /]# yum search php
```

Pick the ones you need and install them like this:

```
[root@ran-alibaba /]# yum -y install php-mysqld php-pdo
```

In the next step I have installed some common PHP modules that are required by CMS Systems like Wordpress, Joomla, and Drupal (for future exercise and learning):

```
[root@ran-alibaba /]# yum -y install php-gd php-ldap php-odbc php-pear php-xml php-xmlrpc php-mbstring php-soap curl curl-devel
```

Now restart Apache web server:

```
[root@ran-alibaba /]# systemctl restart httpd.service
```

Now reload `http://149.129.134.33/info.php` in your browser and scroll down to the modules section again. You should now find lots of new modules like curl etc. there:

mysqli		
mysqli Support		enabled
Client API library version	mysqli 5.0.12-dev - 20150407 - Sld: 38f6a242847fa7519001be390c38ae0cafe387 S	
Active Persistent Links	0	
Inactive Persistent Links	0	
Active Links	0	

Directive	Local Value	Master Value
mysqli.allow_local_infile	On	On
mysqli.allow_persistent	On	On
mysqli.default_host	no value	no value
mysqli.default_port	3306	3306
mysqli.default_pw	no value	no value
mysqli.default_socket	/var/lib/mysql/mysql.sock	/var/lib/mysql/mysql.sock
mysqli.default_user	no value	no value
mysqli.max_links	Unlimited	Unlimited
mysqli.max_persistent	Unlimited	Unlimited
mysqli.reconnect	Off	Off
mysqli.rollback_on_cached_plink	Off	Off

mysqli	
mysqli	enabled
Version	mysqli 5.0.12-dev - 20150407 - Sld: 38f6a242847fa7519001be390c38ae0cafe387 S
Compression	supported
core SSL	supported
extended SSL	supported
Command buffer size	4096
Read buffer size	32768
Read timeout	86400
Collecting statistics	Yes
Collecting memory statistics	No
Tracing	no
Loaded plugins	mysqli_debug, trace, auth_plugin_mysql_native_password, auth_plugin_mysql_clear_password, auth_plugin_sha256_password
API Extensions	mysqli_pdo, mysqli

mysqli Statistics	
mysqli Statistics	mysqli Statistics

If you don't need the php info output anymore, then delete that file for security reasons.

```
[root@ran-alibaba /]# rm /var/www/html/info.php
```

7. phpMyAdmin installation

phpMyAdmin is a web interface through which you can manage your MySQL databases.

phpMyAdmin can now be installed as follows:

```
[root@ran-alibaba ~]# yum -y install phpMyAdmin
```

Now we configure phpMyAdmin. We change the Apache configuration so that phpMyAdmin allows connections not just from localhost (by commenting out the `<RequireAny>` stanza and adding the **'Require all granted'** line):

```
[root@ran-alibaba ~]# nano /etc/httpd/conf.d/phpMyAdmin.conf
```

Inside the nano editor, the screens should be

[...]

```
Alias /phpMyAdmin /usr/share/phpMyAdmin
```

```
Alias /phpmyadmin /usr/share/phpMyAdmin
```

```
<Directory /usr/share/phpMyAdmin/>
```

```
AddDefaultCharset UTF-8
```

```
<IfModule mod_authz_core.c>
```

```
# Apache 2.4
```

```
# <RequireAny>
```

```
# Require ip 127.0.0.1
```

```
# Require ip ::1
```

```
# </RequireAny>
```

```
Require all granted
```

```
</IfModule>
```

```
<IfModule !mod_authz_core.c>
```

```
# Apache 2.2
```

```
Order Deny,Allow
```

```
Deny from All
```

```
Allow from 127.0.0.1
```

```
Allow from ::1
```

```
</IfModule>
```

```
</Directory>
```

```
<Directory /usr/share/phpMyAdmin/>
```

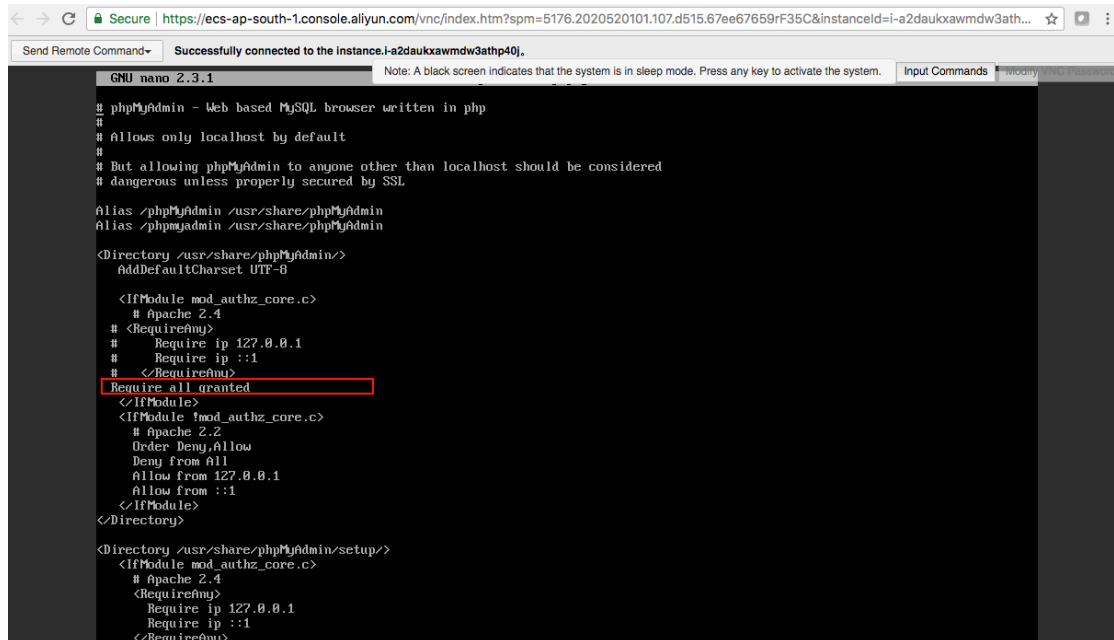
Options none

AllowOverride Limit

Require all granted

</Directory>

[...]



```
GNU nano 2.3.1      Note: A black screen indicates that the system is in sleep mode. Press any key to activate the system.
# phpMyAdmin - Web based MySQL browser written in php
#
# Allows only localhost by default
#
# But allowing phpMyAdmin to anyone other than localhost should be considered
# dangerous unless properly secured by SSL
Alias /phpMyAdmin /usr/share/phpMyAdmin
Alias /phpmyadmin /usr/share/phpMyAdmin

<Directory /usr/share/phpMyAdmin/>
    AddDefaultCharset UTF-8

    <IfModule mod_authz_core.c>
        # Apache 2.4
        <RequireAll>
        #   Require ip 127.0.0.1
        #   Require ip ::1
        </RequireAll>
        Require all granted
    </IfModule>
    <IfModule !mod_authz_core.c>
        # Apache 2.2
        Order Deny,Allow
        Deny from All
        Allow from 127.0.0.1
        Allow from ::1
    </IfModule>
</Directory>

<Directory /usr/share/phpMyAdmin/setup/>
    <IfModule mod_authz_core.c>
        # Apache 2.4
        <RequireAll>
        Require ip 127.0.0.1
        Require ip ::1
        </RequireAll>
```

Next, we change the authentication in phpMyAdmin from cookie to http:

```
[root@ran-alibaba /]# nano /etc/phpMyAdmin/config.inc.php
```

[...]

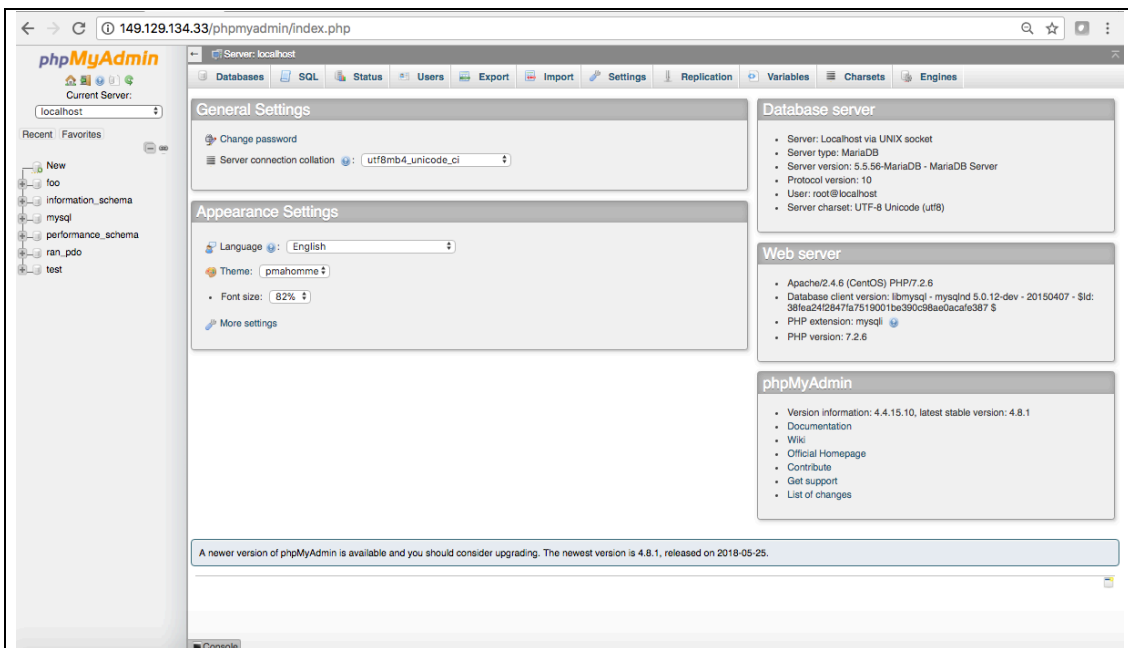
```
$cfg['Servers'][$i]['auth_type'] = 'http'; // Authentication method (config, http or cookie based)?
```

[...]

Restart Apache:

```
[root@ran-alibaba /]# systemctl restart httpd.service
```

Afterwards, you can access phpMyAdmin under <http://149.129.134.33/phpmyadmin/>:



Step2: phpmyadmin_connect_to_rds [Tutorial on connecting your phpmyadmin to an external Cloud RDS instance]

```
[root@ran-alibaba /]# nano /etc/phpMyAdmin/config.inc.php
```

--ADD LINES BELOW THE PMA CONFIG AREA AND FILL IN DETAILS--

```
$i++;

$cfg['Servers'][$i]['host']      = '<RDS-Endpoint>';

$cfg['Servers'][$i]['port']     = '3306';

$cfg['Servers'][$i]['socket']   = '';

$cfg['Servers'][$i]['connect_type'] = 'tcp';

$cfg['Servers'][$i]['extension'] = 'mysql';

$cfg['Servers'][$i]['compress'] = FALSE;

$cfg['Servers'][$i]['auth_type'] = 'config';

$cfg['Servers'][$i]['user']     = '<Username>';

$cfg['Servers'][$i]['password'] = '<Password>';
```

```
Secure | https://ecs-ap-south-1.console.aliyun.com/vnc/index.htm?spm=5176.2020520101.107.d515.67ee67659rF35C&instanceId=i-a2dauxawmdw3ath...
$cfg['Servers'][$i]['history'] = ''; // DEFAULT: 'pma_column_info'
// table to store SQL history
// - leave blank for no SQL query history
// DEFAULT: 'pma_history'
$cfg['Servers'][$i]['verbose_check'] = TRUE; // set to FALSE if you know that your pma_* tables
// are up to date. This prevents compatibility
// checks and thereby increases performance.
// whether to allow root login
// Host authentication order, leave blank to not use
$cfg['Servers'][$i]['AllowDeny']['rules'] = array(); // Host authentication rules, leave blank for defaults
$cfg['Servers'][$i]['AllowNoPassword'] = FALSE; // Allow logins without a password. Do not change the FALSE
// default unless you're running a passwordless MySQL server
$cfg['Servers'][$i]['designer_coords'] = ''; // Leave blank (default) for no Designer support, otherwise
// set to suggested 'pma_designer_coords' if really needed
$cfg['Servers'][$i]['bs_garbage_threshold'] = 50; // Blobstreaming: Recommended default value from upstream
// DEFAULT: '50'
$cfg['Servers'][$i]['bs_repository_threshold'] = '32M'; // Blobstreaming: Recommended default value from upstream
// DEFAULT: '32M'
$cfg['Servers'][$i]['bs_temp_blob_timeout'] = 600; // Blobstreaming: Recommended default value from upstream
// DEFAULT: '600'
$cfg['Servers'][$i]['bs_temp_log_threshold'] = '32M'; // Blobstreaming: Recommended default value from upstream
// DEFAULT: '32M'

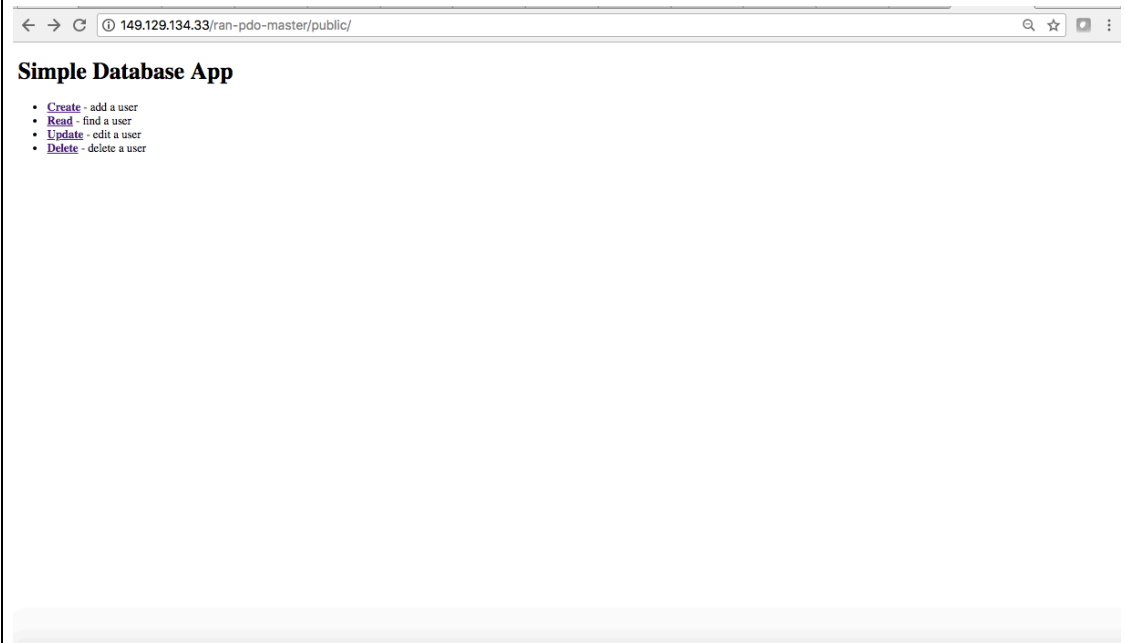
$i++;
$cfg['Servers'][$i]['host'] = '149.129.134.33'; // rds.aliyuncs.com';
$cfg['Servers'][$i]['port'] = '3306';
$cfg['Servers'][$i]['socket'] = '';
$cfg['Servers'][$i]['connect_type'] = 'tcp';
$cfg['Servers'][$i]['extension'] = 'mysql';
$cfg['Servers'][$i]['compress'] = FALSE;
$cfg['Servers'][$i]['auth_type'] = 'config';
$cfg['Servers'][$i]['user'] = 'root';
$cfg['Servers'][$i]['password'] = 'root';

/*
 * End of servers configuration
 */
```

Step3: Testing Web-Application URL:

<http://149.129.134.33/ran-pdo-master/public/>

Screen-shot UI:



← → ↻ 149.129.134.33/ran-pdo-master/public/create.php ☆ ⋮

Simple Database App

Add a user

First Name

Alibaba-Mum

Last Name

Cloud-Mum

Email Address

alicloudmumbai@gmail.com

Age

20

Location

Mumbai

Submit

[Back to home](#)

Backend:

← → ↻ 149.129.134.33/phpmyadmin/index.php#PMAURL=3:sql.php?db=ran-pdo&table=users&server=2&target=&token=f2726a4df75cc2a5d68dba066730e767 ☆ ⋮

phpMyAdmin

Current Server:

ranintranet2725.mysql.aliyuncs.com

Recent Favorites

Recent

information_schema

mysql

performance_schema

ran-pdo

New

users

test_rds

Server: ranintranet2725.mysql.ap-south-1.rds.aliyuncs.com:3306 » Database: ran-pdo » Table: users

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 4 (5 total, Query took 0.0004 seconds.)

SELECT * FROM `users`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table

Sort by key: None

+ Options

				id	firstname	lastname	email	age	location	date
<input type="checkbox"/>	Edit	Copy	Delete	1	Ranbijay	Kumar	dranbijaykumar@gmail.com	36	Bangalore	2018-05-24 20:53:51
<input type="checkbox"/>	Edit	Copy	Delete	3	Tanya	Bahadur	tanyabahadur123@gmail.com	30	Bangalore	2018-05-24 20:54:33
<input type="checkbox"/>	Edit	Copy	Delete	5	Rajvika	Singh	tanyabahadur123@gmail.com	3	Bangalore	2018-05-24 21:14:40
<input type="checkbox"/>	Edit	Copy	Delete	7	Alibaba	Cloud	alicloud@gmail.com	19	China	2018-05-25 15:58:42
<input type="checkbox"/>	Edit	Copy	Delete	9	Alibaba-Mum	Cloud-Mum	alicloudmumbai@gmail.com	20	Mumbai	2018-05-25 16:01:28

Check All

With selected:

Edit

Delete

Export

Show all | Number of rows: 25 | Filter rows: Search this table

Query results operations

Console view Print view (with full text) Export Diagram chart Create view