Using Cloud Databases in the Cloud Control Panel
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Cloud Databases is the latest relational database service from Rackspace. We have just made it available in the new Cloud Control Panel from Rackspace at http://mycloud.rackspace.com.

One of the advantages of Cloud Databases is that it makes it really easy to provision your MySQL instance. In addition, connecting to your database from Cloud Sites is actually very simple. I was talking to a new developer at a high school the other day and he thought that databases on the cloud were some sort of black magic: they are not. They are just like your database running on your own server, but because they are hosted at Rackspace, it is very easy to provision them and our Rackers are ready to help you manage them 24x7.

What we will do here is to create a database and write a very simple webpage that does two things:

- It will tells us that our MySQL instance is alive and well
- It can double as a MySQL simple calculator!

This way, when you are out and about, you can impress folks when the need arises to know what is the value of SIN(PI()) or SHA1(‘Your own name’).

For this sample “calculator,” we will be using some basic SQL statement composition using concatenation so please don’t try this in production. You don’t want to be the victim of a SQL injection attack. Use it in your development environment in your password-protected site.

The simple web page
When we are done, here is what the web page will look like. It’s very utilitarian. We will call this page “clouddatabases.php”. If you change this name, just make sure to update the POST as it posts to itself.
Here is what the page returned when I entered PI()*3*3

![Image](image_url)

The database connection worked, and MySQL says that PI()*3*3 = 28.274334

Again, this will be a super simple page just to connect to MySQL on Cloud Databases and do some simple expressions. Let’s see how easy it is to create a Cloud Database using the Cloud Control Panel.

**CREATING YOUR CLOUD DATABASE**

One of the things we are doing in the new Cloud Control Panel is to make it really easy to interact with the Rackspace cloud. Something good to know is that Control Panel actually makes no use of any internal Rackspace APIs. It uses the same APIs that you already know of.

Let’s get started. When I did this I was using the pre-production instance of Control Panel but you will be able to get to it at [http://mycloud.rackspace.com](http://mycloud.rackspace.com).

When you click on the Database section of the Cloud Control Panel, you will see the following screen. Just click on the “Create MySQL instance” button to start the process.

![Image](image_url)

The first thing you will need to think about is, yes, the name, but more importantly, what datacenter you want this to be located at and what instance size you may need. I am selecting ORD as that is where I have my site.
You can also create users and assign passwords in the Control Panel. Please note that users get all rights to the database (except GRANT), so you may want to assign the right permissions to each user using your favorite MySQL tool. We will see that later here.

At the bottom part of this page, you are also able to create your first database and users.

Once you click “Create Instance,” your instance, database and users will start to be provisioned.
For a few moments your database instance will show as in “BUILD” but you will have a hostname available to keep working.
After a few moments, you will see the database change to “ACTIVE” as you can see below.

Your database and your user are there.
Congratulations! You just got yourself a database in the Rackspace cloud!

Moving on...

Let’s say that you are getting excited and think your site is going to use a little more memory. Using the Cloud Control Panel, that is a matter of a few clicks.

Use the “Actions...” drop down and select “Resize RAM.”

You will see the following dialog. Select the new size and click “Resize RAM.”
After a few moments, the status of your instance will change and it will become Active, as you can see below.

It was really simple (and it required no screwdrivers).

Let’s go ahead and create a Read Only user. I always like to have one handy. Select your instance, and click on “Create User.”
Fill in the details for this read only user.

Note that we only named the user “fddb_readonly” but we did not really make it read only. That is something we can do later in MySQL Workbench or your favorite MySQL tool.

You will now see two users:
Our database is ready, and we are almost done. Let’s do the PHP now.

You will see the code at the end of this article in text for you to copy-paste, but I want to point out the four changes you will need to make to it: you will need to have your own database hostname, user name, and the password and database name. Just modify the file to make sure they match what you actually used above (you can just copy-paste the long hostname from your database instance details in Cloud Control panel). The values you see below are my own instance.

```
$THE_HOST = "Sc70345ad036fc112dc0a14ee1db7992f5c172db.rackspaceclouddb.com";
$THE_USER = "fmdb_readonly";
$THE_PWD = "fmdb_readonly";
$THE_DB = "FEATUREMANIA";
```

Once your file is ready, just copy it to your Cloud Site. Here I am using FileZilla to copy the file to my site’s cgi-bin folder.
And the web page should work now. We are done with the little app. Let’s calculate the value of PI()*3*3. After entering that expression in the input box and clicking ‘Submit’ here is what we see:

![Database connection worked and MySQL says that PI()*3*3 = 28.274336](image)

**Working with your MySQL instance from your workstation**

By default, Cloud Databases are only available within the Rackspace infrastructure. In order to access my instance from my workstation at home, I created a Load Balancer. This allows me to have a public IP address against my instance. When creating the load balancer, don’t forget to set it to use the MySQL:3306 port and to add your database as a node.

Make sure to copy the IP address to the clipboard as you will need it to connect.

![Load Balancer Details](image)

I am going to use MySQL Workbench below. Connecting with my instance is easy. Just create a new connection and use the public address of your load balancer in the host name, use the standard port, and the user name, password and database name you used above.
You are now connected to your instance in MySQL Workbench, ...

... and you can start working against it. See below where I just return the MySQL value for PI().
As I mentioned above, you may want to tweak your permissions to match your app needs. At this point you are now ready to do your database work against a Cloud Database: create new users, tweak permissions, change passwords, create your tables and schema, etc.
That’s it. Like I mentioned above, next time you are at a party and people are arguing about what is the value of SIN(PI()/2), you can just connect to your box and get the answer, straight from MySQL running on Cloud Databases.

I hope this was useful for those of you getting started with Cloud Databases. As you can tell, connecting to your Cloud Database is just like connecting to any other MySQL database.

As usual, let me know what kind of cool applications you are working on.

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COPY-PASTE THIS (replace your own HOST, DB, USER and PWD values)

```html
<html>
<head><title>Connecting to Cloud Databases</title></head>
<body>
<pre>
<?php

// Get "e"
$arg_expr = trim($_POST["e"], "");
if($arg_expr == "") {
    $arg_expr = "PI()";
} else {
    if(get_magic_quotes_gpc()) {
        $arg_expr = stripslashes($arg_expr);
    }
    // Connect to the database
    $connection = mysql_connect($THE_HOST, $THE_USER, $THE_PWD);
    if (!$connection) {
        die('I could not connect to the database. The error is: ' . mysql_error());
    }
    mysql_select_db($THE_DB, $connection);
    // Calculation
    $result = mysql_query("SELECT ($arg_expr);", $connection);
    $row    = mysql_fetch_array($result, MYSQL_NUM);
    $eValue = $row[0];
    printf("The database connection worked, and MySQL says that %s = %s<BR>%s", $arg_expr, $eValue, mysql_error());
    mysql_free_result($result);
    mysql_close($connection);
} else {

}</pre>
</body>
</html>
```

This is a simple PHP example to test your connection to Rackspace Cloud Databases. It does not require your database to have any tables.

Because this sample uses string concatenation to compose SQL statements, only use this in your development environment in your password-protected site.

EXAMPLES:

- PI() * 3
- curdate()
- 3 AND 4 > 4
- MID('Rackspace', 1, 4)
- SIN(PI() / 2)
- SHA1('Rackspace Cloud Databases')