



IBM Bluemix – <http://ibm.biz/bluemixph>

*A platform where developers can act like kids in a sandbox —except this box is enterprise-grade.*

## IBM Bluemix Tutorial

### Uploading and Running a MySQL Web-based Management in Bluemix v2.0

This laboratory exercise demonstrates how to upload and run phpMyAdmin.

phpMyAdmin is a free software tool written in PHP, intended to handle the administration of a MySQL database server over the Web ([www.phpmyadmin.net/](http://www.phpmyadmin.net/)).

#### Prerequisite

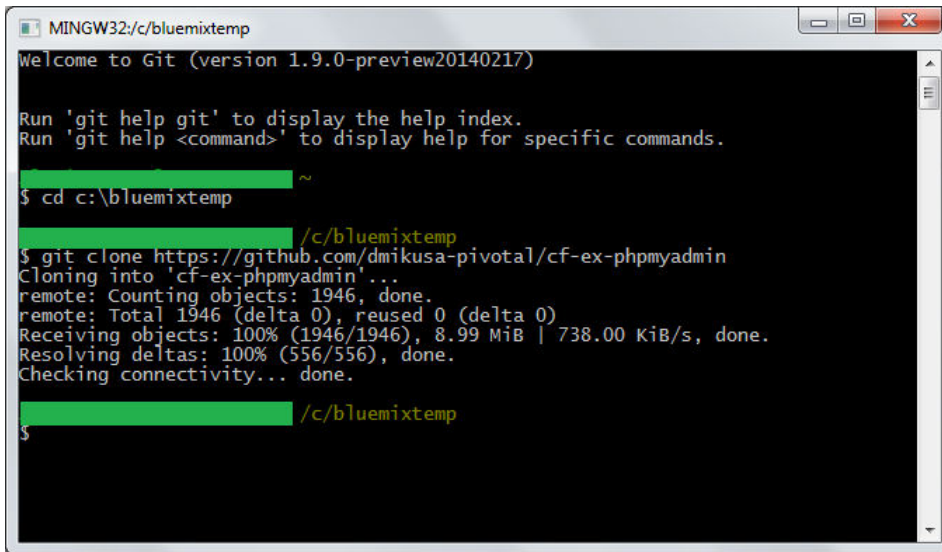
Item	Comment
Git	do the “Setting-up Laboratory Environment” (section: Installing Git) laboratory exercise to install Git
cf tool	do the “Setting-up Laboratory Environment” (section: Installing the cf tool) laboratory exercise to install the cf tool
Bluemix Account	do the “Creating a Bluemix Account” laboratory exercise if you do not have a Bluemix account

#### Procedure

1. Make sure that the folder `c:\bluemixtemp` exists. If not, create this folder.

2. Open a Git Bash. Enter the following commands to go to the `c:\bluemixtemp` folder and download the phpMyAdmin web application.

Git Bash
<pre>GIT&gt;cd c:\bluemixtemp GIT&gt;git clone https://github.com/dmikusa-pivotal/cf-ex-phpmyadmin</pre>

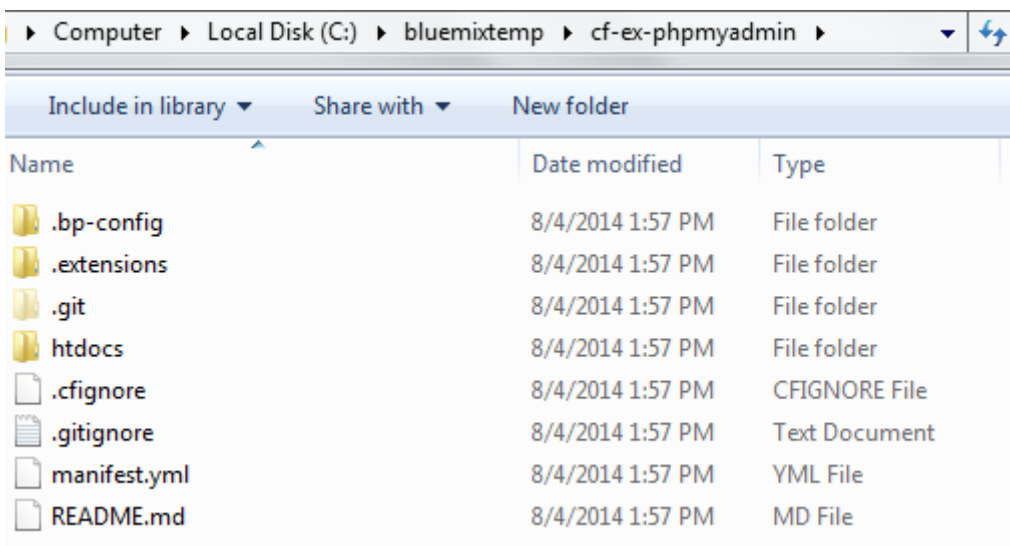


```
MINGW32/c/bluemixtemp
Welcome to Git (version 1.9.0-preview20140217)

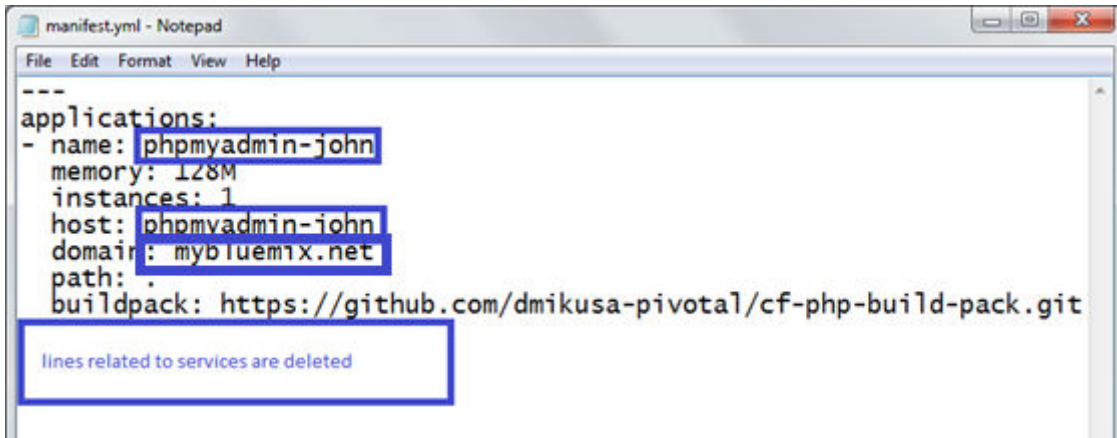
Run 'git help git' to display the help index.
Run 'git help <command>' to display help for specific commands.

~
$ cd c:\bluemixtemp
/c/bluemixtemp
$ git clone https://github.com/dmikusa-pivotal/cf-ex-phpmyadmin
Cloning into 'cf-ex-phpmyadmin'...
remote: Counting objects: 1946, done.
remote: Total 1946 (delta 0), reused 0 (delta 0)
Receiving objects: 100% (1946/1946), 8.99 MiB | 738.00 KiB/s, done.
Resolving deltas: 100% (556/556), done.
Checking connectivity... done.
/c/bluemixtemp
$
```

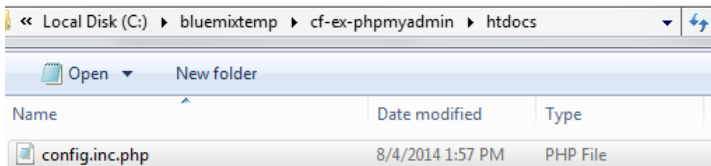
3. Open a Windows Explorer window. Go to the `c:\bluemixtemp\cf-ex-phpmyadmin` folder.



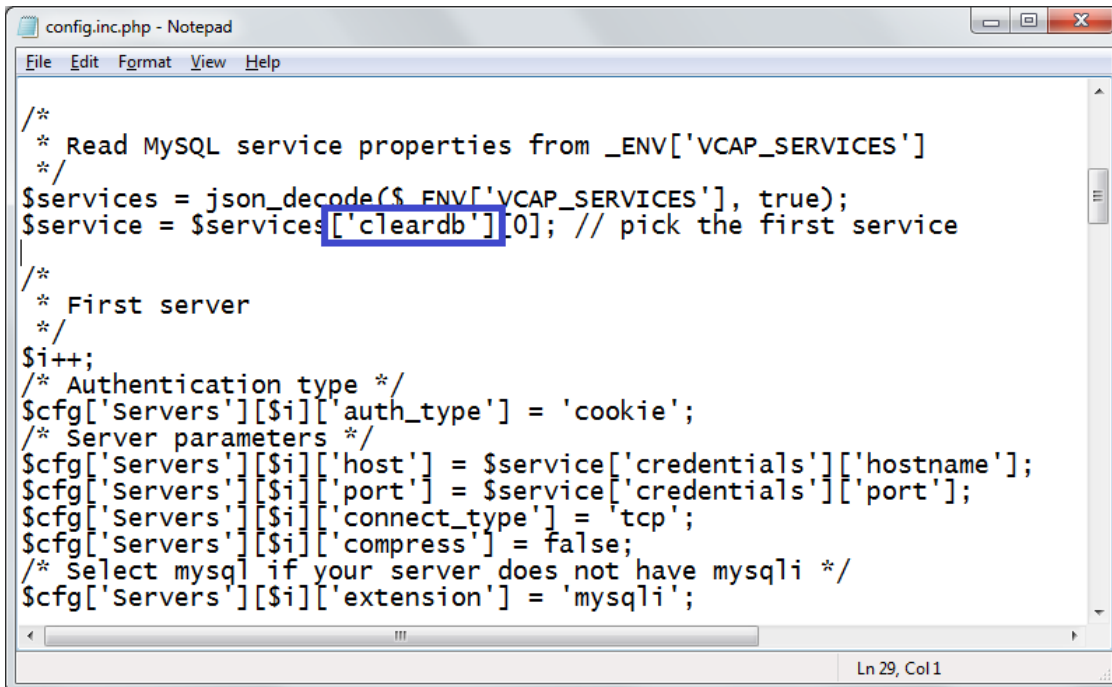
4. Open the `manifest.yml` file in Notepad. Change the following values:
  - a. name: `phpmyadmin-<your name>`
  - b. host: `phpmyadmin-<your name>`
  - c. domain: `mybluemix.net`
  - d. delete all lines related to services



5. Close Notepad.
6. In Windows Explorer, go to the `c:\bluemixtemp\cf-ex-phpmyadmin\htdocs` folder.



7. Open the `config.inc.php` file in Notepad. Look for the word 'cleardb'.
  - a. change the word 'cleardb' to 'mysql-5.5'
  - b. make sure that the you type exactly 'mysql-5.5'



```
config.inc.php - Notepad
File Edit Format View Help

/*
 * Read MySQL service properties from _ENV['VCAP_SERVICES']
 */
$services = json_decode($_ENV['VCAP_SERVICES'], true);
$service = $services['cleardb'][0]; // pick the first service

/*
 * First server
 */
$i++;
/* Authentication type */
$config['Servers'][$i]['auth_type'] = 'cookie';
/* Server parameters */
$config['Servers'][$i]['host'] = $service['credentials']['hostname'];
$config['Servers'][$i]['port'] = $service['credentials']['port'];
$config['Servers'][$i]['connect_type'] = 'tcp';
$config['Servers'][$i]['compress'] = false;
/* Select mysql if your server does not have mysqli */
$config['Servers'][$i]['extension'] = 'mysqli';
```

Ln 29, Col 1

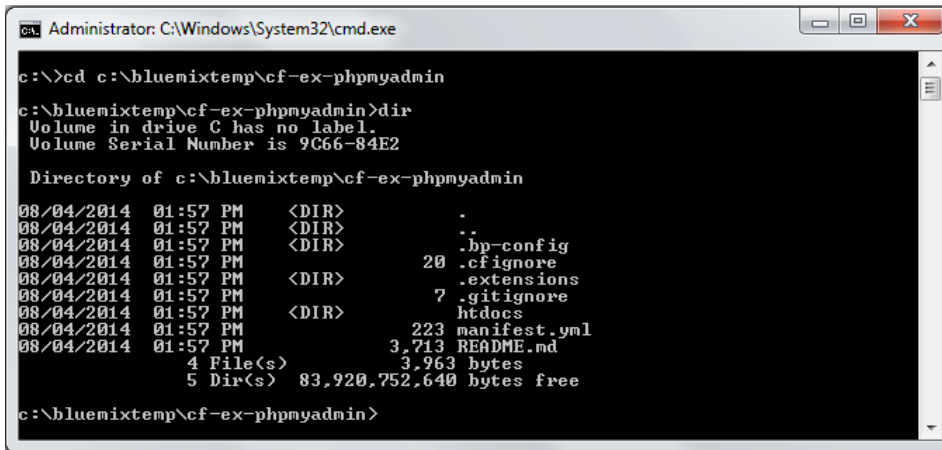
**Note:** The phpMyAdmin web application regularly gets updated. It is possible that the version you downloaded through git is relatively newer than the one used in this laboratory manual. This means that some of the files you downloaded (e.g., `config.inc.php`) have some differences from the sample screenshots provided in this manual.

8. Close Notepad.

- Open a Windows command prompt. Enter the following command to go to the directory of the downloaded phpMyAdmin web application.

**Windows Command Prompt**

```
CMD>cd c:\bluenixtemp\cf-ex-phpmyadmin  
CMD>dir
```

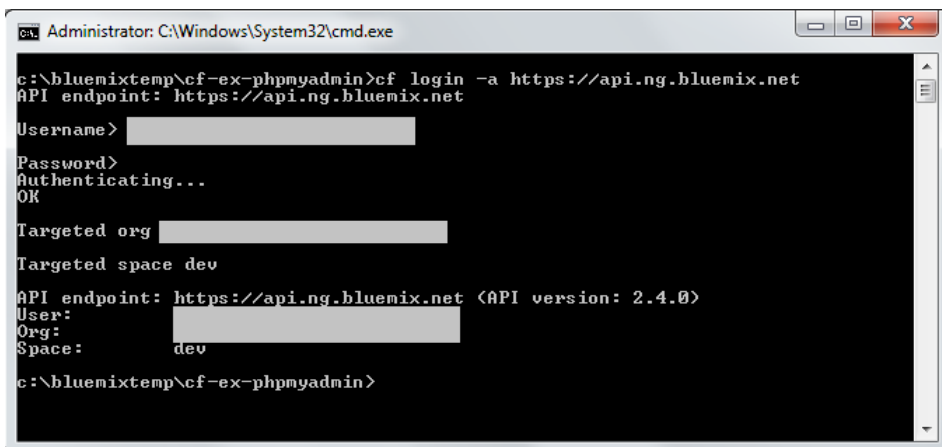


```
Administrator: C:\Windows\System32\cmd.exe  
c:\>cd c:\bluenixtemp\cf-ex-phpmyadmin  
c:\bluenixtemp\cf-ex-phpmyadmin>dir  
Volume in drive C has no label.  
Volume Serial Number is 9C66-84E2  
  
Directory of c:\bluenixtemp\cf-ex-phpmyadmin  
  
08/04/2014  01:57 PM    <DIR>          .  
08/04/2014  01:57 PM    <DIR>          ..  
08/04/2014  01:57 PM    <DIR>          .bp-config  
08/04/2014  01:57 PM                20      .cfignore  
08/04/2014  01:57 PM    <DIR>          .extensions  
08/04/2014  01:57 PM                7      .gitignore  
08/04/2014  01:57 PM    <DIR>          htdocs  
08/04/2014  01:57 PM                223 manifest.yml  
08/04/2014  01:57 PM                3,713 README.md  
               4 File(s)                3,963 bytes  
               5 Dir(s)  83,920,752,640 bytes free  
  
c:\bluenixtemp\cf-ex-phpmyadmin>
```

- Enter the following command to login to Bluemix. Enter your Bluemix username and password when prompted.

**Windows Command Prompt**

```
CMD>cf login -a https://api.ng.bluemix.net
```

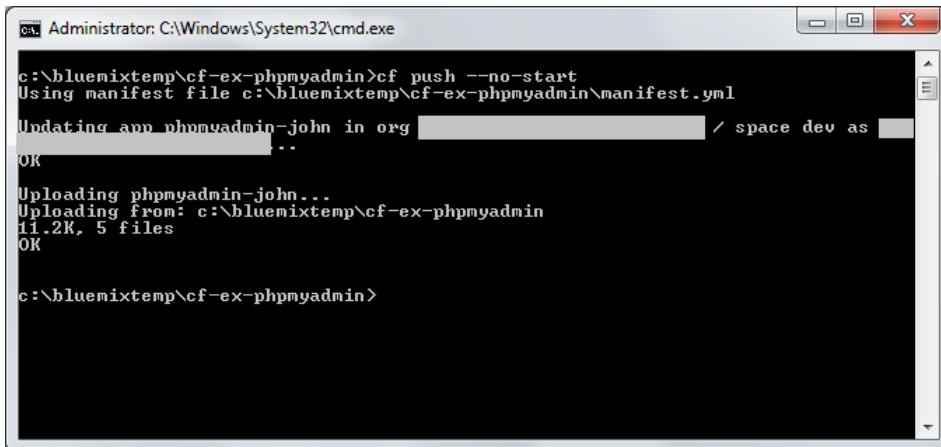


```
Administrator: C:\Windows\System32\cmd.exe  
c:\bluenixtemp\cf-ex-phpmyadmin>cf login -a https://api.ng.bluemix.net  
API endpoint: https://api.ng.bluemix.net  
Username> [redacted]  
Password> [redacted]  
Authenticating...  
OK  
Targeted org [redacted]  
Targeted space dev  
API endpoint: https://api.ng.bluemix.net (API version: 2.4.0)  
User: [redacted]  
Org: [redacted]  
Space: dev  
c:\bluenixtemp\cf-ex-phpmyadmin>
```

11. Enter the following command to upload the phpMyAdmin web application to Bluemix.

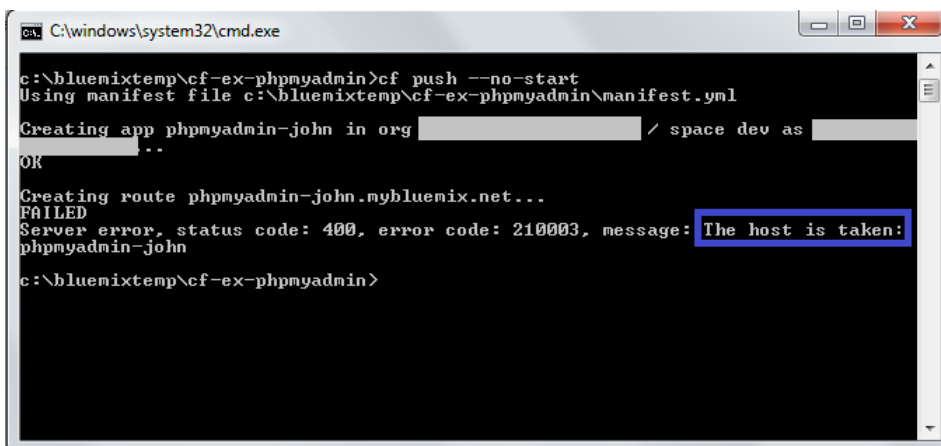
Windows Command Prompt
CMD>cf push --no-start

Note: All of the necessary information to push the application are found already in the `manifest.yml` file. This is the reason why the push command used in this step only has one parameter.



```
Administrator: C:\Windows\System32\cmd.exe
c:\bluenixtemp\cf-ex-phpmyadmin>cf push --no-start
Using manifest file c:\bluenixtemp\cf-ex-phpmyadmin\manifest.yml
Updating app phpmyadmin-john in org [REDACTED] / space dev as [REDACTED]
OK
Uploading phpmyadmin-john...
Uploading from: c:\bluenixtemp\cf-ex-phpmyadmin
11.2K, 5 files
OK
c:\bluenixtemp\cf-ex-phpmyadmin>
```

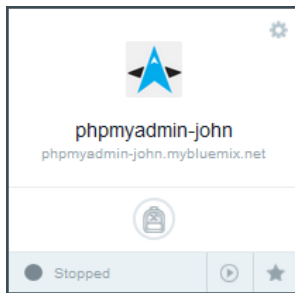
12. If you encounter the error “The host is taken”, modify the `name` and `host` fields found in the `manifest.yml` file and try to upload the application again.



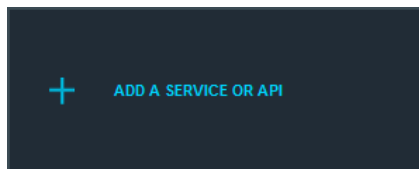
```
C:\windows\system32\cmd.exe
c:\bluenixtemp\cf-ex-phpmyadmin>cf push --no-start
Using manifest file c:\bluenixtemp\cf-ex-phpmyadmin\manifest.yml
Creating app phpmyadmin-john in org [REDACTED] / space dev as [REDACTED]
OK
Creating route phpmyadmin-john.mybluemix.net...
FAILED
Server error, status code: 400, error code: 210003, message: The host is taken:
phpmyadmin-john
c:\bluenixtemp\cf-ex-phpmyadmin>
```

13. Go to the IBM Bluemix website and login using your Bluemix account (<http://ibm.biz/bluemixph>).

14. In the dashboard, click your newly uploaded application.



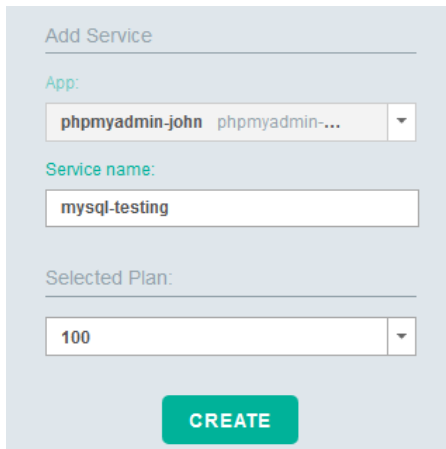
15. In the page showing the overview of your application click “ADD A SERVICE OR API”.



16. Under “Data Management”, click “mysql”.



17. In “Add Service” form, change the service name to “mysql-testing”. Click “CREATE”.

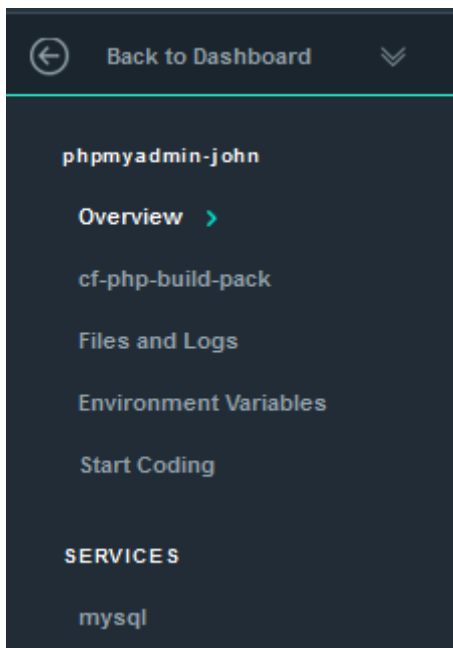


The image shows the 'Add Service' form in IBM Bluemix. It has a light blue background. At the top, it says 'Add Service' with a horizontal line. Below that, there's a label 'App:' followed by a dropdown menu showing 'phpmyadmin-john' and 'phpmyadmin-...'. Then, there's a label 'Service name:' followed by a text input field containing 'mysql-testing'. Below that, there's a label 'Selected Plan:' followed by a dropdown menu showing '100'. At the bottom, there's a green button with the text 'CREATE'.

18. In the Dashboard, click the “START” button.



19. In the left pane, click “Environment Variables”.



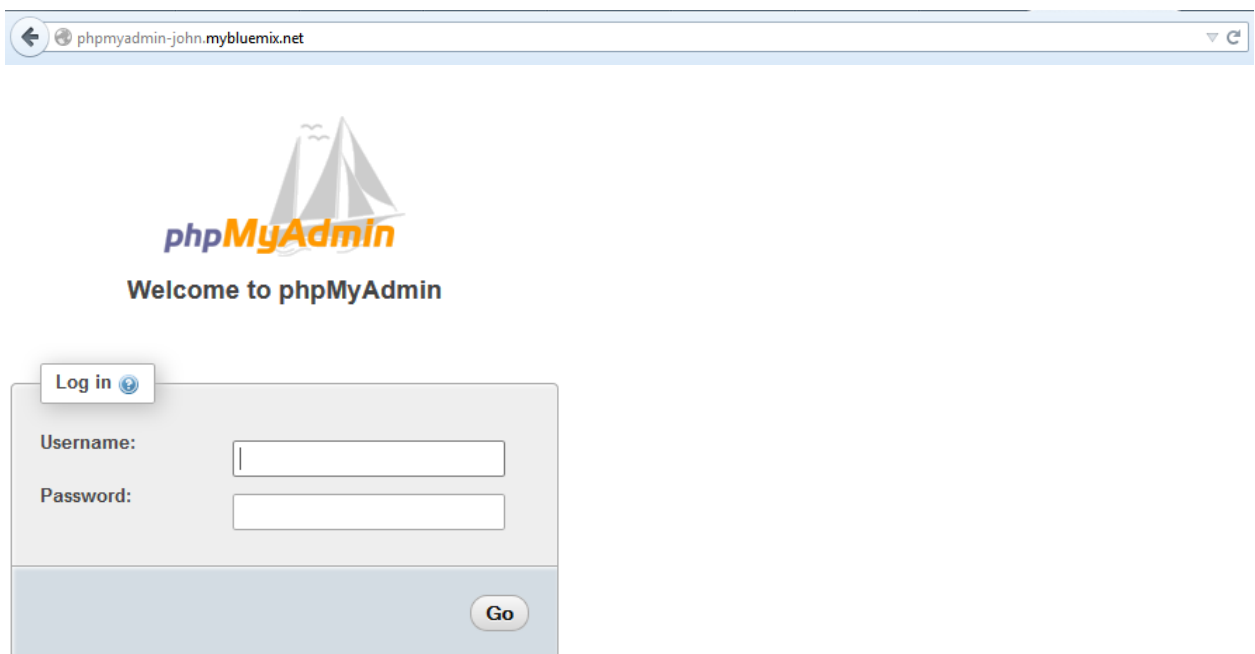


20. Under “Environment Variables”, take note of the username and password. This is needed when you login to the phpMyAdmin web application. In addition, take note of the database name.

You may want to save the username, password, and database name in a text file so that you can easily access these values when needed.

```
{
  "mysql-5.5": [
    {
      "name": "mysql-testing",
      "label": "mysql-5.5",
      "plan": "100",
      "credentials": {
        "name": "d25fced9e97488e9226bae8ae1079f4",
        "hostname": "192.155.247.251",
        "host": "192.155.247.251",
        "port": 3307,
        "user": "u6L1qIn6P1ieS",
        "username": "u6L1qIn6P1ieS",
        "password": "pP6xQmbzpdMHt",
        "uri": "mysql://u6L1qIn6P1ieS:pP6xQmbzpdMHt@192.155.247.251:3307/d25fced9e97488e9226bae8ae1079f4"
      }
    }
  ]
}
```

21. Open another browser tab and go to <http://phpmyadmin-<your name>.mybluemix.net>.



phpmyadmin-john.mybluemix.net

**phpMyAdmin**  
Welcome to phpMyAdmin


Log in

Username:

Password:

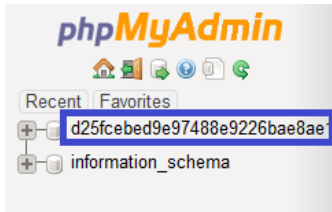
Go

22. Use the username and password you took note from the “Environment Variables” to login to the phpMyAdmin application.



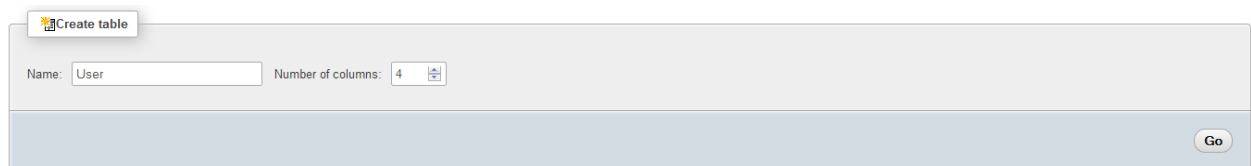
The image shows the phpMyAdmin login interface. At the top is the phpMyAdmin logo with a sailboat icon and the text "Welcome to phpMyAdmin". Below this is a "Log in" button with a user icon. The login form contains two fields: "Username:" with the value "u6L1qln6PlieS" and "Password:" with a masked password represented by dots. A "Go" button is located at the bottom right of the form.

23. In the left pane of the phpMyAdmin application, click the name of the database that you took note in the “Environment Variables”. You will create a table in this database for testing purposes.



24. In the “Create table” form, type the following:
- a. Name: User
  - b. Number of columns: 4

Click “Go”.



The image shows the "Create table" form in phpMyAdmin. It has a tab labeled "Create table". The form contains two fields: "Name:" with the value "User" and "Number of columns:" with the value "4". A "Go" button is located at the bottom right of the form.

25. Define the following column names and types:

- a. username / TEXT
- b. password / TEXT
- c. lastname / TEXT
- d. firstname / TEXT

Click “Save”.

The screenshot shows the MySQL Structure tab for a table named 'User'. The table has 1 column(s). The columns are defined as follows:

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index	A I	Comments
username	TEXT		None						
password	TEXT		None						
lastname	TEXT		None						
firstname	TEXT		None						

Below the table definition, there are sections for 'Table comments:', 'Storage Engine:' (set to InnoDB), and 'Collation:'. At the bottom right, there is a 'Save' button.

26. Click the “SQL” tab followed by the “INSERT” button.

The screenshot shows the MySQL SQL tab. The top navigation bar includes 'Browse', 'Structure', 'SQL' (highlighted), 'Search', 'Insert', 'Export', 'Import', 'Operations', and 'Triggers'. The main area contains a text box with the following SQL query:

```
1 INSERT INTO `User` (`username`, `password`, `lastname`, `firstname`) VALUES ([value-1],[value-2],[value-3],[value-4])
```

Below the text box, there are buttons for 'SELECT \*', 'SELECT', 'INSERT' (highlighted), 'UPDATE', 'DELETE', and 'Clear'. On the right side, there is a 'Columns' list containing 'username', 'password', 'lastname', and 'firstname'. At the bottom, there is a 'Delimiter' dropdown set to semicolon, a checkbox for 'Show this query here again', a checkbox for 'Retain query box', and a 'Go' button.

27. Insert a row in the User table containing the following values:

- a. username: user1
- b. password: abc123
- c. lastname: Delacruz
- d. firstname: Juan

You can do this by changing the contents of the query text area from:

```
INSERT INTO `User`(`username`, `password`, `lastname`, `firstname`) VALUES ([value-1],[value-2],[value-3],[value-4])|
```

To:

```
INSERT INTO `User`(`username`, `password`, `lastname`, `firstname`) VALUES ('user1','abc123','Delacruz','Juan')|
```

Once the contents of the query text area is changed, click the “Go” button.

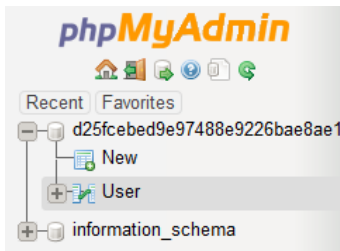
28. The row is inserted successfully if you see the following message:

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0020 seconds.)

29. Repeat the previous steps to insert a second row. The second row in the User table should contain the following:

- a. username: user2
- b. password: secret123
- c. lastname: Garcia
- d. firstname: Maria

30. In the left pane, click the User table.



31. Verify that the two rows are inserted successfully.

username	password	lastname	firstname
user1	abc123	Delacruz	Juan
user2	secret123	Garcia	Maria

32. The User table and its contents can be used for sample applications that you will create in other laboratory exercises.