

ConPaaS hands-on

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For this hands-on session we will use the ConPaaS installation in the cluster computer of the Vrije Universiteit in Amsterdam. The cluster is heavily firewalled so to access it you must configure your Web browser to use a SOCKS tunnel located at `130.37.30.108` on port 80. Do not forget to undo this configuration after the end of the lab! (anyway we will tear down the tunnel when it is no longer necessary).

You can access the ConPaaS front-end by directing your browser to `http://10.100.0.97:9999/`. Create yourself an account, and log in.

Additional documents are available at `http://bit.ly/MCKti1` (the lecture slides, this exercise sheet, the comand-line tools etc.).

In this exercise we will install the famous Wordpress content management system (www.wordpress.org) in ConPaaS. WordPress is implemented in PHP using a MySQL database so we will need a PHP and a MySQL service in ConPaaS.

1. Create a MySQL service, start it, reset its password. Copy the IP address of the master node somewhere, we will need it in step 4.
2. Create a PHP service, start it.
3. Download a Wordpress tarball from `http://www.wordpress.org`, and expand it in your computer.
4. Copy file `wordpress/wp-config-sample.php` to `wordpress/wp-config.php` and edit the `DB_NAME`, `DB_USER`, `DB_PASSWORD` and `DB_HOST` variables to point to the database service. You can choose any database name for the `DB_NAME` variable as long as it does not contain any special character. We will reuse the same name in step 6.
5. Rebuild a tarball of the directory such that it will expand *in the current directory* rather than in a wordpress subdirectory. Upload this tarball to the PHP service, and make the new version active.

6. Create a SQL script which creates a new database with the same name as in step. This script needs exactly one line:

```
CREATE DATABASE databasename;
```

Upload the script using the “load database from file” button of the MySQL service.

7. Open the page of the PHP service, and click “access application.” Your browser will display nothing because the application is not fully installed yet. Visit the same site at URL `http://xxx.yyy.zzz.ttt/wp-admin/install.php` and fill in the requested information (site name etc).
8. That’s it! The application should now work.
9. Scale the system up and down: add/remove agent VMs in the PHP and the MySQL service.

Question 1: Why is it necessary to copy-paste database parameters in the PHP application in step 4? How would you improve ConPaaS to make this step superfluous?

Question 2: Scale your PHP service so that it has two or three PHP servers. In wordpress, create a new post (in directory `/wp-admin/` within the application, click on “Posts” in the left-side column, then “Add new”). In your new post, upload an image file by clicking the little square just next “upload/insert” on top of the small tool bar. Insert the image in your post, then save the post. View your post, and reload it several times. What is going on? Can you explain the reason why things do not work as expected, and what could be done to fix it?

Question 3: Repackage the PHP application after having added a bug to it. For example, in file `wordpress/wp-config.php`, remove a semi-column at the end of one line. Upload this buggy application, and try to access it. How would you find such a bug if you didn’t know where it is? Check how to enable the debugging mode in the ConPaaS documentation.

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