

IT 341: Introduction to System Administration

Project #A: Hosted Web Services

1. Log in to your virtual machine as `sysadmin`

2. Update apt-get

```
sudo apt-get update
```

3. Check and see if the Apache web server is already installed

```
dpkg -l | grep apache
```

If not, then install it:

```
sudo apt-get install apache2
```

4. Check and see if the MySQL Server is already installed

```
dpkg -l | grep mysql
```

If not, then install it:

```
sudo apt-get install mysql-server-5.7
```

5. Install php

```
sudo apt-get install php libapache2-mod-php
```

```
sudo apt-get install php-cli php-mysql
```

6. Go to https://codex.wordpress.org/Installing_WordPress and read the Detailed Instructions for installation. Start by executing the following commands (from `/home.itvm2x-yz/sysadmin`):

```
curl -O https://wordpress.org/latest.tar.gz  
tar -xzf latest.tar.gz
```

7. **READ** through the rest of the instructions, but **do not do them yet...**

Note that some aspects of the installation ask you to use a web browser. Because your VM does not (and should not) have a GUI, you will need to

find some ways to work around that – such as **tunneling** into your VM from the physical machine or finding a **CLI** solution...

8. **Read Step 2 (Create the Database and a User)** – specifically, the instructions under the heading **Using the MySQL Client** – and decide on values for the following items:

- **adminusername**
- **databasename**
- **wordpressusername**
- **password**

(**hostname** can simply be **localhost**)

Be conscientious about these! Then, complete that step.

9. **Read Step 3 (Set up wp-config.php)** and complete the step by creating your **wp-config.php** file according to the directions given.

10. **Complete Step 4 (Upload the files)** by moving the **wordpress** directory to the root of the filesystem hierarchy and changing the directory's name to **blog**.

11. **Read Step 5 (Run the Install Script)** but hold off on completing it for now because you need to make some configuration changes first...

12. Open the **apache2.conf** file for editing:

```
sudo nano /etc/apache2/apache2.conf
```

Find the section with entries that look like this...

```
<Directory [...]>
    [...]
</Directory>
```

...and add the following entry:

```
<Directory /blog>
    Require all granted
</Directory>
```

13. Open the **000-default.conf** file for editing:

```
sudo nano /etc/apache2/sites-available/000-default.conf
```

Find the line with DocumentRoot and change it like this:

```
DocumentRoot /blog
```

14. Inside your /blog directory, create a small html file with some simple code. You might call it something like test.html and it might look something like this:

```
<html>
  <head>
    <title>Test Page</title>
  </head>
  <body>
    <p>This is just some text...</p>
  </body>
</html>
```

15. Make sure the Apache webserver is running and attempt to download your test from within your own VM:

```
curl localhost/test.html          (NOTE: This will work only
                                   from your own VM)
curl [YOUR VM NAME]/test.html
curl 10.0.0.XXX/test.html         (XXX is the last part of your
                                   VM's IP address)
```

Using curl with no options will simply print the HTML to standard output. Then, try the *last two* from other hosts on the network – other VMs and it20.

16. Your VM will probably be running the Apache webserver on port 80. To check this, run: sudo netstat -tulpn | grep apache

You will probably get output looking something like this (with 80 being the port number, in this case):

```
tcp6      0      0 :::80          :::*           LISTEN      1351/apache2
```

~~Make a note of the port number. On your physical machine, create a SSH tunnel from some free local port (ex. 44001) on the physical machine to the aforementioned port number on your VM. Check this by opening a browser and attempting to navigate to your test page with the following path: http://localhost:44001/test.html~~

~~(Replace 44001 with the correct *local* port, if you chose a different one.)~~

You probably will not even need to do any port forwarding on your physical machine. It will probably be sufficient to type in your browser:

[http://\[YOUR VM IP\]/test.html](http://[YOUR VM IP]/test.html)

17. Assuming you are able to complete the previous step, you should be ready to do the aforementioned set-up described in **Step 5 (Run the Install Script)**. ~~You would, of course, need to replace example.com with localhost and the correct local port number...~~

18. Post-setup, see if you can navigate to your blog from:

- Your physical machine
- Another physical machine on the it.cs.umb.edu network
- A machine on the cs.umb.edu network
- A machine external to both networks

This may require some level of port-forwarding. You want to be able to access your blog site from your own physical machine, but for the rest, do not spend too much time on it.

19. Start using your blog, as a blogger.

20. Check out your Apache and MySQL logs, to see if you can understand what they are telling you. This may be easier if you do this after having some interaction with your site.