# Singapore Polytechnic

**School of Computing**

Fundamentals of Computing

Assignment: Manage Ubuntu Server and Wordpress Web Site



### Instructions

1. You work individually for tasks **1,2,3,4,5 and 6**
2. You have to work in a group of maximum of **4 students** for tasks **7, 8 and 9.**
3. You should finish your assignment and submit your documentation before 8:00 pm on 11/August/2019**(Sunday)**
4. You are required to practice and demonstrate your skills and capability in Managing Ubuntu Server and wordpress web site.
5. For task **6, 7 and 8** in the assignment, you need to document major steps/commands, with screenshots, as well as **testing** and troubleshooting processes.
6. Every student needs to be able to answer interview questions for ALL tasks.

5. An interview/presentation session will be done at the end of the assignment. All members of the group have to be present; no mark will be awarded if you did not attend the interview session.

**A Tasks**

1. **Create a new Virtual machine for assignment**

**hostname: p\*\*\*\*\*\*\***

**Where p\*\*\*\*\*\*\*\* is your student admission number**

Resources: [Practical 9](https://docs.google.com/document/d/1GfsTqEZZbm3HdpuG8olzvUw1tAxZdFFearSkcsxZSSU/edit?usp=sharing)

or you can use the image provided [Ubuntu Image](https://www.dropbox.com/s/t1gnm1p8vxfkmq0/ubuntu1.7z?dl=0)

1. **Install Apache web server, PHP and Mysql server**

* Apache service should be started automatically after system boot
* Mysql Service need to be manually started after system boot.

Resource: [Practical 11](https://docs.google.com/document/d/1w8Ef27p1XVcItX-KT5WIXa6V-kTLhcuMMy0eetcuv_s/edit?usp=sharing)  HTTPD and PHP  
  
 [Practical 14 Install Mysql Server](https://docs.google.com/document/d/1-sMpMldLtis-27cY5IBGyYuyGtWck9h0IvDoTB4RoAs/edit?usp=sharing)

1. **Create Groups and Permissions**

Group: SysAdmin(with 2 users) Manage Ubuntu server

WebDev(with 2 users) Update contents for wordpress web site

After you create above groups, you need to set proper permissions for group members to access the resources, using the **LEAST Privilege.  
  
Sample for reference only:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Users** | **groups** | | **Tasks to do** |
| **SysAdminUser1** | SysAdmin | **sudo** | Manage Ubuntu server, for example, start/stop server, install/update/remove package |
| **SysAdminUser2** | SysAdmin | **sudo** |
| **WebDevUser1** | WebDev |  | Update contents for wordpress web site in the web site root directory |
| **WebDevUser2** | WebDev |  |

1. **Install, Configure and Monitor Wordpress web site**

* Your root document for wordpress web site: /var/www/html/P\*\*\*\*\*\*\*

* Configure Apache web server to set the document root to /var/www/html/p\*\*\*\*\*

[Reference for you](https://www.dyclassroom.com/howto-ubuntu/how-to-change-document-root-of-apache-on-ubuntu)

* Set proper permission for **www-data** system user, as well as WebDev
* Create a database user in MYSQL server for PHP application to access mysql server, and assign proper rights.

User name: **wordpress-user-p\*\*\*\*\*\*\***

Mysql database name for Wordpress: wordpress-db-p\*\*\*\*\*\*\*  
  
Resource:[Assignment Resource: Host Wordpress locally](https://docs.google.com/document/d/1Q5ohm3MO1kM2bRGdRFtH3Nb55KJTXPdciLUtfSLQRLI/edit?usp=sharing)

**Monitor log files generated by Ubuntu Server, Apache server, and mySql Server. Show the latest 20 log entries.**

|  |
| --- |
| Log data is used by **SysAdmin and WebDev** team to better understand how the system is performing and to diagnose any issues that might arise. Log data can be produced by the ubuntu server, web server, mysql server and Wordpress web site itself, This might include anything from access logs produced by your web server to security audit logs produced by the operating system itself. Your team needs reliable and timely access to these logs at all times, regardless of whether the instance that originally produced the log is still in existence.  For this reason, it’s important to move log data from the instance to a more durable storage platform as close to real time as possible.  Adapted from: <https://d1.awsstatic.com/whitepapers/managing-your-aws-infrastructure-at-scale.pdf> |

1. Upload your **Practical reflections** [practical 1, 2, 3, 4,5,6,7] and design your web site which is **easier** for users to use.
2. Back up your local ubuntu server and wordpress web site for recovery in case of failure.  
     
   For example: you may consider to back up VM image, take snapshot, or back up web contents, some important configuration files.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*END of Individual TASKS \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. Register an account in AWS and Provision an Ubuntu 18 virtual machine

You should be able to SSH to the instance **Resources:**[Assignment Resource: Subscribe AWS Account](https://docs.google.com/document/d/1n9spdE8zc3ngmdRO7btZRJ-LuJhvYIDUznLHJr-nUfo/edit?usp=sharing)  
  
[Assignment Resources: SSH to AWS Ubuntu EC2](https://docs.google.com/document/d/1HamTYOE_CMH2i0-GawRmwTfRZbnn-TPDojJhIwoB4DY/edit?usp=sharing)

1. Set up Apache Web Server, PHP, and MySQl server on AWS instance  
     
   Resource: [Practical 11](https://docs.google.com/document/d/1w8Ef27p1XVcItX-KT5WIXa6V-kTLhcuMMy0eetcuv_s/edit?usp=sharing)  HTTPD and PHP  
     
    [Practical 14 Install Mysql Server](https://docs.google.com/document/d/1-sMpMldLtis-27cY5IBGyYuyGtWck9h0IvDoTB4RoAs/edit?usp=sharing)
2. Configure and manage Wordpress web site on AWS ubuntu (similar to WordPress web site hosted locally on you ubuntu VM in task 5)

**B. Marking scheme:**

|  |  |
| --- | --- |
| Task | Maximum marks |
| 1 | 5 |
| 2 | 5 |
| 3 | 10 |
| 4 | 10 |
| 5 | 30 (14 for 7 **practical reflections**, 16 for design) |
| 6 | 5 |
| **7(cloud, group)** | 5 |
| **8(cloud, group)** | 5 |
| **9(cloud, group)** | 5 |
|  |  |
| Documentation(**group**) | 10 |
| Demo/Interview Q & A (individual) | 10 |