

Singapore Polytechnic School of Computing

Module: ST2413 Fundamentals of Computing (FOC)
Course/Year: DAAA, DCITP, DISM, DIT / Year 1
Assignment: Manage Ubuntu Server and Wordpress Web Site
Total Pages: 5

Instructions

1. You work individually for tasks **1, 2, 3, 4, 5** and **6** (Section A Individual Component).
2. You have to work in a group of maximum of **4 students** for tasks **7, 8** and **9** (Section B Group Component).
3. You are required to practice and demonstrate your skills and capability in Managing Ubuntu Server and Wordpress web site.
4. You are **required to document all steps and commands, with screenshots**, as well as **testing** and **troubleshooting** processes for individual task (task **1 to 6**) and group task (task **7 to 9**)
5. Every student needs to be able to answer interview questions for **ALL** tasks.
6. 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.
7. All task (individual and group) in the assignment is to be documented in the word document.
8. Individual and group documentation should be **submitted separately** in the Brightspace submission. Individual documentation is expected to be submitted in the **Individual Assignment Submission**. Group leader from each group is expected to submit the group documentation in the **Group Assignment Submission section**.
9. You should finish your assignment and submit your documentation by **11:59pm on 04 August 2023 (Friday)**.

A Individual Component

1. Create a new Virtual machine for assignment

hostname: p*****

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

Resource: You can use the image provided in Practical 09 Linux Quick Tour (PoliteMall: Learning Resources -> Topic 6: Overview of the Linux Operating System -> Practical 09 Linux Quick Tour -> **ubuntu1.7z**)

2. 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.

3. Create Groups and Permissions

Group: sysadmin (with 2 users)	Manage Ubuntu server
webdev (with 2 users)	Update contents for Wordpress Web site

After you have created the 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		

4. 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*****
- 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*****

**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>

5. Upload your **Practical Lab Documents (the practical documentation that you had done previously during the lab)** [practical lab docuemnt 1, 2, 3, 4, 5, 6] and design your web site to make it **easier** for users to use.
6. Backup your local Ubuntu server and Wordpress web site for recovery in case of failure.

*******END of Individual Component*******

B Group Component

7. Register an account in AWS Academy and provision an Ubuntu 18.04 virtual machine. You should be able to SSH to the instance.
8. Set up Apache Web Server, PHP, and MySQL server on AWS Academy instance.
9. Configure and manage Wordpress Web site on AWS Academy instance (similar to Wordpress Web site hosted locally on your ubuntu VM in Task 4).

B Marking Scheme

Task	Maximum Marks
1	13
2	9
3	9
4	9
5	12
6	10
7	8
8	2
9	8
10 Interview Q & A (individual)	10
11 Documentation (group)	10
Total	100