



VICTORIA UNIVERSITY OF  
**WELLINGTON**  
TE HERENGA WAKA

**CYBR371: SYSTEM AND NETWORK SECURITY  
2024– T1**

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*Lab 1: Linux Account Management and ACLs*

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*Submission Deadline: 23:59:00 (NZST) on Sunday, 17 March 2024*

Instructions: Sign in into the NetLab (<https://netlab.ecs.vuw.ac.nz/>) with the provided credentials and complete the following labs:

- Lab 1: Linux Account Management
- Lab 2: Linux Access Control List

# 1 Part 1 - Linux Account Management

Complete the lab “Linux Account Management” and answer the following questions:

**Q 1.1** [4 points] What is the octal or string representation of the following permissions?

```
rw-rw-r--t    =  
r-S-wx--x    =  
rw-r-xr--    =  
r-Sr-sr-x    =  
432          =  
3532         =  
6713         =  
1530         =
```

**Q 1.2** [2 points] If the `umask` value for a user is `035`, what are the default file and directory permissions set for the user? Write the permissions and how they were calculated.

**Q 1.3** [2 points] If the default permissions given to directories that the user `xyz` creates are `rw-r-x---`, what are the default permissions set for the files created by the user? Write the permissions and how they were calculated.

**Q 1.4** Find all the executables that have **SUID** set. Hint: you can use the **find** command with the right parameters.

- (a) [2 points] Provide the command that you used to find these programmes.
- (b) [4 points] List all the programmes you found. For 3 of them (of your choice), provide a brief description why it needs to be a SUID programme.

## 2 Part 2 - Linux Access Control List (ACL)

Complete the lab “Linux Access Control List” and answer the questions highlighted in this document in the order they appear in the lab document. Please note that the questions below are dependent on the sequence of the lab instructions and must be followed and answered step by step as they appear in the Linux Access Control List lab document.

**Q 2.1** [4 points] Write the command(s) you used to add the users with their associated provided information.

**Q 2.2** [2 points] Login as user “ben” and write a command to append the line “This line is from ben” to `myfile.txt` file in the `cybr371`’s home directory (use absolute path). Write the command you used to append the line and explain the output (i.e. did you manage to append the line? Explain why the command was successful and/or why it failed).

**Q 2.3** [2 points] Login as user “david” now and write a command to add a line “This is from david” to `myfile.txt` file in `cybr371`’s home directory. (Write the command and explain why the operation is either successful or not).

**Q 2.4** [2 points] Login as the user `masood` and issue a command to read the content of the file `myfile.txt` in the `cybr371`’s home directory. Can the user `masood` read the file? Write the commands and explain the output of the command.

**Q 2.5** [3 points] after completion of step 12, Write a command to set an ACL to deny all access (read, write and execute) to `myfile.txt` for user `david`.

**Q 2.6** [3 points] Write a command to create an ACL entry for user `mary` with write and execute permissions only on the file `myfile.txt`.