

Program- BTech 3rd Semester
Course Code- CSET213
Year- 2024
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Type- Sp. Core-I
Course Name-Linux and Shell Programming
Semester- Odd
Batch- B9-B16 (Cyber Security)

Lab Assignment 3

Exp No	Name	CLO Achieved			Marks
		CO1	CO2	CO3	
1	Linux Commands-User Management	√			2

Objective: To learn Linux Commands related to Administering Users and Groups

Outcomes: Will be able to create and administer the users

Hands-on Learnings:

1. What three things must you do to manage user accounts? **(30 Minutes)**
 - a. **Create accounts: useradd**, common options are:
 - i. --create-home (-m): Adds a home directory (this is a default on some distributions)
 - ii. --shell (-s): Sets the user's preferred shell if it's different from /bin/bash
 - iii. --uid (-u): Specifies a particular user ID (UID)
 - iv. --comment (-c): Populates the comment field (usually with the user's full name enclosed in quotes)
 - v. Settings for the useradd command are stored in the /etc/defaults/useradd file.
 - vi. Also, don't forget to set a password for the account by using the passwd command.
 - b. **Modify accounts: usermod**, Standard options for usermod include:
 - i. --comment (-c): Modifies the comment field
 - ii. --home (-d): Modifies home directory information
 - iii. --expiredate (-d): Changes account-expiration settings
 - iv. --login (-l): Modifies the username
 - v. --lock (-L): Locks a user account
 - vi. --unlock (-U): Unlocks a user account
 - c. **Delete accounts (userdel) Common option are:**
 - i. --force (-f): Deletes the account (including mail and home directory), even if the user is still logged in
 - ii. --remove (-r): Deletes the account (including mail and home directory), but the user must be logged out
2. Learn following commands to display the user/system information: **(5 Minutes)**
 - a. whoami
 - b. id
 - c. uname
 - d. ps
 - e. top
 - f. df
 - g. du
 - h. free
 - i. kill
 - j. bg
 - k. fg

- l. uptime
 - m. w
 - n. finger
 - o. which
 - p. whereis
3. Learn following commands to display file contents and process strings: **(5 Minutes)**
 - a. cat
 - b. more
 - c. head
 - d. tail
 - e. echo
 - f. chmod
 - g. grep
4. Learn following commands to compress and archive the files and directories: **(5 Minutes)**
 - a. tar
 - b. zip
 - c. unzip
5. Learn following commands to display your network information: **(25 Minutes)**
 - a. hostname
 - b. ping
 - c. ifconfig
 - d. curl
 - e. wget
 - f. dig
 - g. traceroute

Commands Related to Administering Users and Groups

Command	Syntax	Purpose
<code>passwd</code>	<code>passwd</code> <code>[user-name]</code>	Manage user passwords.
<code>chage</code>	<code>chage -options</code>	Manage password settings.
<code>w</code>	<code>w</code>	Display current users on the system.
<code>who</code>	<code>who</code>	Display current users on the system.
<code>useradd</code>	<code>useradd</code> <code>-options</code> <code>argument</code>	Add a user.

Command	Syntax	Purpose
<code>usermod</code>	<code>usermod</code> <code>-options</code> <code>argument</code>	Modify a user.
<code>userdel</code>	<code>userdel</code> <code>[user-name]</code>	Delete a user.
<code>id</code>	<code>id [user-name]</code>	Gather and display account information.
<code>groupadd</code>	<code>groupadd</code> <code>[group-name]</code>	Create a new group.
<code>groupmod</code>	<code>groupmod</code> <code>-options</code> <code>argument</code>	Modify an existing group.
<code>groupdel</code>	<code>groupdel</code> <code>[group-name]</code>	Remove an existing group.
<code>su</code>	<code>su - [user-name]</code>	Switch user to the specified user or account name.
<code>sudo</code>	<code>sudo -options</code> <code>[command]</code>	Exercise delegated privileges.
<code>pkexec</code>	<code>pkexec program</code> <code>argument</code>	Allows an authorized user to execute an action.

Sample Problems:

1. Create a user named test1 with a home directory named /home/testuser.
2. Create a user named test2 with zsh as the default shell.
3. Create a user named test3 with "Temp User" in the comment field.
4. Rename the user test3 as test4
5. Remove the user test4.

Problems to be solved by students: (50 Minutes)

1. Create a new user account with the following attributes:
 - a. Username is harry.
 - b. Password is magic.
 - c. This user's home directory is defined as /home/school/harry/.
 - d. This new user is a member of the existing students group.
 - e. The /home/school/harry/binaries/ directory is part of the PATH variable.
2. Create a user account with username sysadmin with the following attributes:
 - a. Use a password of science.
 - b. This user's home directory is defined as /sysadmin/.
 - c. This sysadmin user is a member of the existing administrator group.
 - d. sysadmin has sudo privileges and will not be prompted for a password when using the sudo command.
 - e. The default shell for this user is zsh.

Submission Instructions:

1. Submission requires the screen shots of all the incurred steps to execute a shell script or a video showing the whole process.
2. All these files are in single zip folder.
3. Use the naming convention: Prog_CourseCode_RollNo_LabNo.docx (Example: BCA3rdSem_CBCA221_E21BCA002_Lab1.1)
4. Submission is through LMS only