

CS 497: Assignment 4

Abstract

Using your Ubuntu virtual machine, demonstrate the use and features of the EXT4 filesystem. Compare the EXT4 filesystem to ReiserFS.

Assignment

Using your Ubuntu virtual machine, complete the following tasks using the bash shell. All activities must be done using the Linux command prompt in the bash shell.

Provide a single document detailing the activity, including your process, methods, and results. All screenshots should be nicely resized and annotated. Your document should show what you did, how you did it, display the results, and explain what happened.

Include all of the commands used during your work in separate text file to be included with your submission.

Activity

- Attach a new virtual hard drive to VirtualBox.
- Partition the new drive.
- Install an XFS file system.
- Mount the new file system under /mnt.
- Configure the new file system to be mounted at system startup.
- Create and use a security group to control access to the new filesystem.
- Create a new user with username and password.
 - In addition to your account, this user will have full access to the new file system.
- Any other users will have no access to the new file system.
- Give the new user the ability to use sudo for ONLY the following:
 - Mount the new file system.
 - Unmount the new file system.
- Log into Ubuntu as one of the new user and demonstrate:
 - Mount the filesystem using sudo.
 - Attempt an unauthorized command using sudo.
 - Attempt to create a new file in the new file system.
 - Unmount the new filesystem.

Conclusion

In addition to your conclusion, add the following:

In addition to features demonstrated by following the activity, describe the features provided by the EXT4 filesystem. Explain how these features are used. Give a clear example.

Describe the features provided by the ReiserFS filesystem. Why caused development of this filesystem to end?

Select another commonly used filesystem available for use with Ubuntu. Describe the filesystem and the features provided by this filesystem. Explain how some of these features are used.

Deliverables

A document detailing your process, methods, and results. This includes annotated screenshots. Clearly detail your work in a reproducible way following the provided sample format.

Additionally, submit all text files created for this assignment. Attach these files to your submission. Do not zip, tar, or archive.

Additionally, submit a single text file with all of the commands used for this assignment. One command per line. This should be complete and organized in order of use.

Upload these files to Canvas before the deadline.