Scaler Companion   beta

Revision Notes: Advanced Linux Command Line Usage

These notes cover the essential concepts discussed in the class on advanced command-line operations in Linux, including file editing, archiving, compression, user management, and more.

Text Editors: Vim and Nano

Vim

- **Modes**: Vim has multiple modes:
  - **Insert Mode**: Activated by pressing `i`, allows modifying the text just like a regular notepad.
  - **Command Mode**: Used for executing commands.
    - `:wq` - Save and exit.
    - `:q!` - Quit without saving.
    - `:u` - Undo the last action.
    - `yy` - Yank (copy) the current line.
    - `p` - Paste after the cursor.
    - `dd` - Delete the current line.
  - **Navigation**: Use `h`, `j`, `k`, `l` to navigate left, down, up, and right respectively【6:10†transcript.txt】.

Nano

- Simpler than Vim, often pre-installed.
- **Basic Commands**:
  - `Ctrl + O` - Save the current buffer to disk.
  - `Ctrl + X` - Exit nano【6:3†transcript.txt】.

Stream Editor: Sed

- Replace text using `sed -i 's/old/new/g' filename` to replace all occurrences of 'old' with 'new'.
- Delete specific lines based on a pattern: `sed '/pattern/d' filename`.
- Extract specific lines such as the third line using: `sed -n '3p' filename` 【6:1†transcript.txt】.

Archiving and Compression

Archiving with Tar

- **Commands**:
  - Create a tar archive: `tar -cvf archive.tar folder/`
    - `c` for create, `v` for verbose output, and `f` is for the file name.
  - Extracting an archive: `tar -xvf archive.tar`
    - `x` for extract.
- **Analogy**: Tar is like a packing tape—it combines files into a single package without changing size 【6:0†transcript.txt】【6:5†transcript.txt】.

Compression with Gzip

- **Concept**: Reduces the size of files for efficient storage.
- **Commands**:
  - Compress: `gzip file.txt`
  - Decompress: `gunzip file.txt.gz`
- **Combined Archive and Compress**: `tar -czvf archive.tar.gz folder/`
  - Combines tar and gzip 【6:9†transcript.txt】.

File Management

Truncate

- **Purpose**: Reduces the size of a file, specifically cutting from the end.
- **Command**: `truncate -s 0 filename` sets file size to 0, effectively emptying it 【6:19†transcript.txt】.

- **Functions**:
  - `wc -l filename` - Count lines in a file.
  - `wc -w filename` - Count words in a file.
  - `wc -c filename` - Count characters in a file【6:19†transcript.txt】.

User Management

- **Basic Commands**:
  - `whoami` - Displays the current username.
  - `w` - Shows who is logged in and what they are doing 【6:13†handwritten.pdf】.

Other Topics

Process Management (To be covered next class)

- This will cover how to handle and manage processes within a Linux environment effectively.

Understanding Inodes

- **Concept**: Data structure containing metadata about a file. Includes permissions, ownership, and file type【6:14†transcript.txt】.

These notes provide an overview of the key command-line operations discussed in the class, which are foundational for anyone looking to refine their skills with Linux systems.