

# Project Phoenix – Linux File Management & Log Archiving

## Overview

This project demonstrates foundational Linux system administration skills through a series of structured tasks performed in a LabEx environment. The lab focuses on **file organization**, **configuration backups**, and **log archiving**, all of which are critical practices in real-world DevOps, system administration, and cybersecurity roles.

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## Project Objectives

- Organize project files using a standard directory structure
- Safely back up critical configuration files before modification
- Archive and clean up outdated log files using `tar` and `gzip`
- Preserve required logs while removing obsolete data

## Initial Setup

All tasks were performed from the following project root:

```
~/project/phoenix_project
```

The following directories were created to organize the project:

```
mkdir src config docs
```

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## File Organization

### Tasks Completed

- Moved application source code into `src`
- Moved configuration files into `config`
- Moved documentation into `docs`

## Commands Used

```
labex:project/ $ ls
logs  phoenix_project  shared_docs
labex:project/ $ cd ~/project/phoenix_project
labex:phoenix_project/ $ mkdir src config docs
labex:phoenix_project/ $ tree ~/project/phoenix_project
/home/labex/project/phoenix_project
├── config
├── config.json
├── docs
├── main_app.py
├── README.md
└── src

3 directories, 3 files
```

```
labex:project/ $ ls
logs  phoenix_project  shared_docs
labex:project/ $ cd ~/project/phoenix_project
labex:phoenix_project/ $ mkdir src config docs
labex:phoenix_project/ $ tree ~/project/phoenix_project
/home/labex/project/phoenix_project
├── config
├── config.json
├── docs
├── main_app.py
├── README.md
└── src

3 directories, 3 files
```

## Backing Up Critical Configuration Files

The `config.json` file contains essential settings for Project Phoenix. To prevent data loss or misconfiguration, a backup was created **before any changes were made**.

### Backup Command

```
cp config/config.json config/config.json.bak
```

### Verification

```
ls config/
```

```

labex:phoenix_project/ $ cd config/config.json config/config.json.bak
cd: string not in pwd: config/config.json
labex:phoenix_project/ $ cp config/config.json config/config.json.bak
labex:phoenix_project/ $ ls config
config.json  config.json.bak
labex:phoenix_project/ $

```

```

labex:project/ $ ls
logs  phoenix_project  shared_docs
labex:project/ $ mv shared_docs ~/project/phoenix_project/docs
labex:project/ $ ls
logs  phoenix_project
labex:project/ $ tree ~/project/phoenix_project/docs
/home/labex/project/phoenix_project/docs
├── README.md
└── shared_docs
    ├── api_spec.doc
    └── team_guidelines.txt

1 directory, 3 files
labex:project/ $ ls -l ~/project/phoenix_project/docs
total 4
-rw-rw-r-- 1 labex labex 31 Jan  9 23:32 README.md
drwxrwxr-x 2 labex labex 53 Jan  9 23:53 shared_docs
labex:project/ $ ls -l ~/project/phoenix_project/docs/shared_docs
total 0
-rw-rw-r-- 1 labex labex 0 Jan  9 23:32 api_spec.doc
-rw-rw-r-- 1 labex labex 0 Jan  9 23:32 team_guidelines.txt
labex:project/ $

```

Expected files:

- config.json
- config.json.bak

This ensures quick recovery if configuration changes introduce errors.



## Archiving and Removing Outdated Log Files

### Objective

The `~/project/logs` directory contained log files from multiple years. Log files from **2023** were no longer required for daily operations and needed to be archived and removed, while **2024 logs were preserved**.

```
labex:project/ $ ls
logs phoenix_project shared_docs
labex:project/ $ mv shared_docs ~/project/phoenix_project/docs
labex:project/ $ ls
logs phoenix_project
labex:project/ $ tree ~/project/phoenix_project/docs
/home/labex/project/phoenix_project/docs
├── README.md
└── shared_docs
    ├── api_spec.doc
    └── team_guidelines.txt

1 directory, 3 files
labex:project/ $ ls -l ~/project/phoenix_project/docs
total 4
-rw-rw-r-- 1 labex labex 31 Jan  9 23:32 README.md
drwxrwxr-x 2 labex labex 53 Jan  9 23:53 shared_docs
labex:project/ $ ls -l ~/project/phoenix_project/docs/shared_docs
total 0
-rw-rw-r-- 1 labex labex 0 Jan  9 23:32 api_spec.doc
-rw-rw-r-- 1 labex labex 0 Jan  9 23:32 team_guidelines.txt
labex:project/ $
```

## Skills Demonstrated

- Linux file and directory management (`mv`, `cp`, `ls`, `tree`)
- Safe configuration handling and backups
- Log lifecycle management
- Archiving and compression using `tar` and `gzip`
- Wildcard file selection
- Attention to operational safety and requirements