

Linux Practice: Secure Project Setup & Automation

Scenario:

You're a junior sysadmin on a development server. Your manager wants you to set up a secure, automated workspace for a project team — including directory structure, permissions, user collaboration, and a simple backup script.

Task Instructions:

1. Setup the project workspace

Create the following directory structure under your home directory:

```
/home/<yourusername>/secure_project/
    └── src/
        └── docs/
            └── backups/
                └── scripts/
```

2. Create and edit files

Inside **src/**: Create a file **main.sh** with:

```
#!/bin/bash
echo "Running project build..." date
echo "Build complete!"
```

Inside **docs/**: Create **README.txt** with three lines describing the project.

Inside **scripts/**: Create **backup.sh** that compresses **src/** and **docs/** into a tar.gz archive stored in **backups/** with filename *backup_<current_date>.tar.gz*. Display 'Backup completed successfully!'.

3. Permissions & ownership

Make both scripts executable.

Create two new users: **devuser** and **backupuser**.

devuser → full access to **src/** and **docs/**
backupuser → read-only to **src/** and **docs/**, write access to **backups/**
Others → no access to **secure_project/**

4. Automation

Schedule a cron job for **backupuser** to run **backup.sh** every day at 6 PM.

Example:

```
0 18 * * * /home/<yourusername>/secure_project/scripts/backup.sh
```

5. Verification

Switch users and test access:

As **devuser**: run **main.sh** and confirm output.
As **backupuser**: confirm you can read **src/docs** but only write to **backups/**.
As yourself: check **backups/** for the latest tar.gz file.

Completion Criteria:

Correct directory and file structure
Proper permissions and ownerships applied
Both users restricted to their intended access
Cron job correctly configured
Backup archive created successfully

Skills Practiced:

File system hierarchy & permissions User and group management Scripting (bash & tar) Cron scheduling Logical access control System administration fundamentals