



Título de la actividad: Tarea. Backup programado

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Unidad de Aprendizaje (UA): Sistemas Operativos

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Institución: Centro Universitario UAEM
Zumpango

Desarrollo paso a paso

1. Creación de carpeta de respaldo

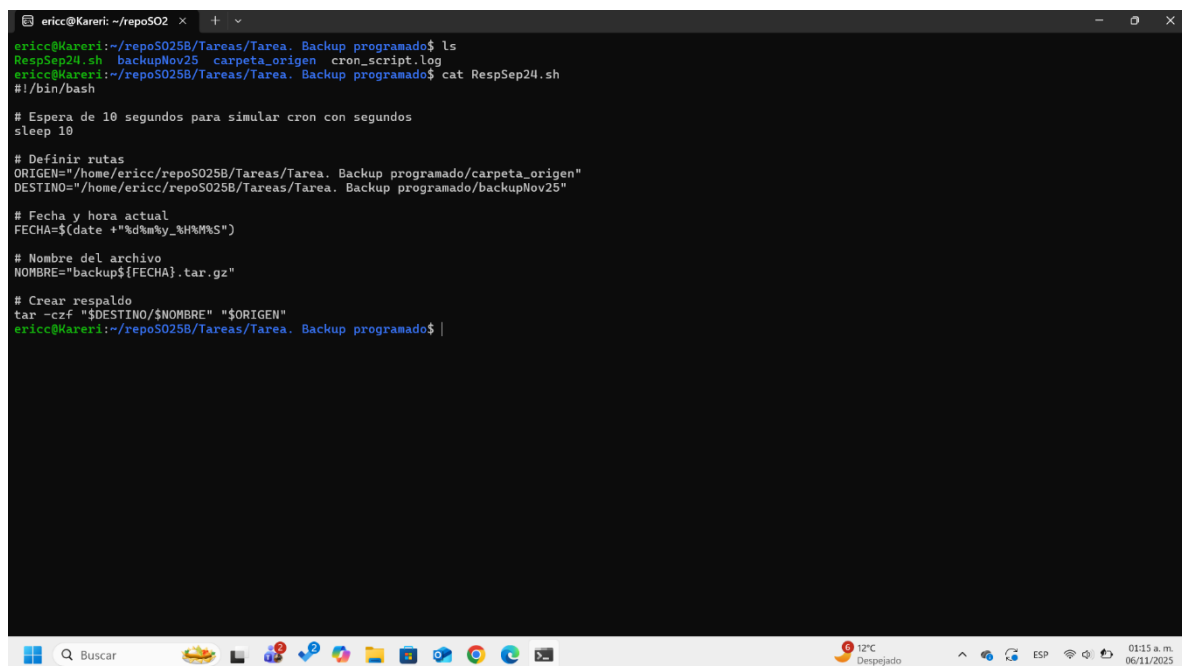
Se creó la carpeta backupNov25 en el escritorio del entorno de trabajo usando el siguiente comando:

mkdir ~/repoSO25B/Tareas/Tarea. Backup programado/backupNov25

Esta carpeta será el destino de todos los respaldos generados por el script.

2. Creación del script RespSep24.sh

Se creó el script en el escritorio con el siguiente contenido:

A screenshot of a terminal window titled 'ericc@Kareti: ~/repoSO2'. The terminal shows the execution of several commands to create and inspect the backup script. The script's content is displayed, including comments in Spanish and shell commands for setting paths, dates, and creating a tar backup. The terminal output shows the script being created, its permissions being checked, and its contents being displayed. The Windows taskbar is visible at the bottom with the date 06/11/2025 and time 01:15 a.m.

```
ericc@Kareti:~/repoSO2$ ls
RespSep24.sh backupNov25 carpeta_origen cron_script.log
ericc@Kareti:~/repoSO2$ cat RespSep24.sh
#!/bin/bash

# Espera de 10 segundos para simular cron con segundos
sleep 10

# Definir rutas
ORIGEN="/home/ericc/repoSO25B/Tareas/Tarea. Backup programado/carpeta_origen"
DESTINO="/home/ericc/repoSO25B/Tareas/Tarea. Backup programado/backupNov25"

# Fecha y hora actual
FECHA=$(date +"%d%m%y_%H%M%S")

# Nombre del archivo
NOMBRE="backup${FECHA}.tar.gz"

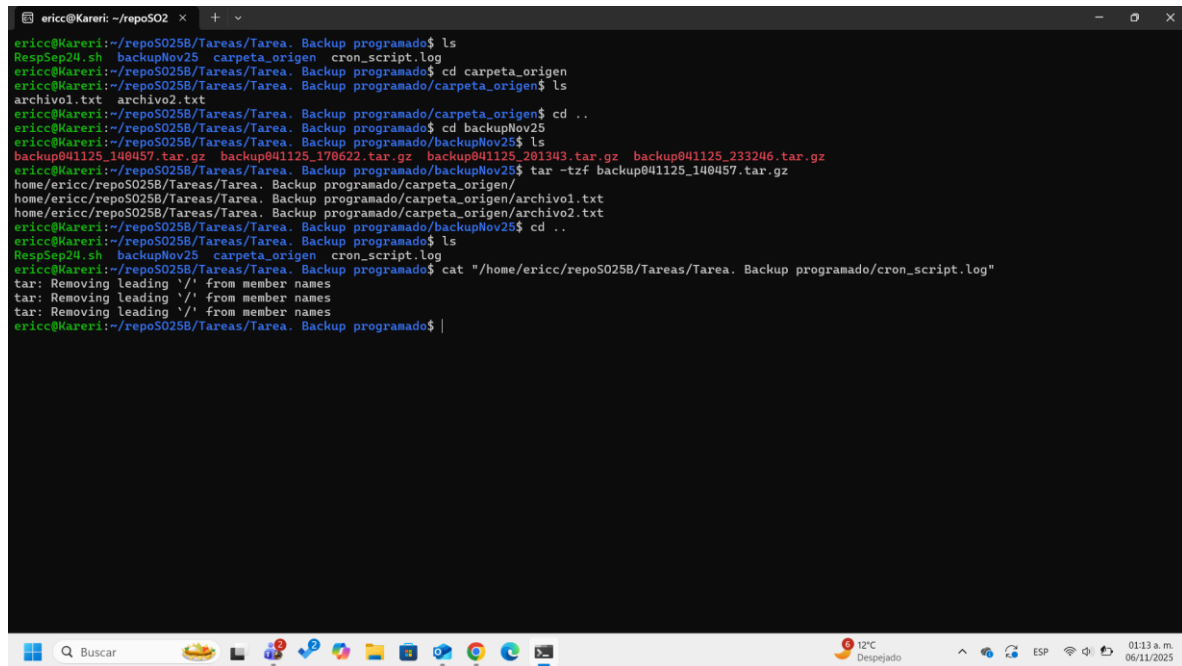
# Crear respaldo
tar -czf "$DESTINO/$NOMBRE" "$ORIGEN"
ericc@Kareti:~/repoSO25B/Tareas/Tarea. Backup programado$
```

3. Prueba manual del script

Se ejecutó el script manualmente para validar su funcionamiento:

bash RespSep24.sh

Se verificó que se generó un archivo .tar.gz dentro de backupNov25 con nombre en formato backupDDMMYY_HHMMSS, y que contiene los archivos de carpeta_origen.



```
ericc@Mareri: ~/repoS0258/Tareas/Tarea. Backup programado$ ls
RespSep24.sh backupNov25 carpeta_origen cron_script.log
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado$ cd carpeta_origen
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado/carpeta_origen$ ls
archivo1.txt archivo2.txt
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado/carpeta_origen$ cd ..
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado$ cd backupNov25
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado/backupNov25$ ls
backup041125_140457.tar.gz backup041125_170622.tar.gz backup041125_201343.tar.gz backup041125_233246.tar.gz
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado/backupNov25$ tar -tzf backup041125_140457.tar.gz
home/ericc/repoS0258/Tareas/Tarea. Backup programado/carpeta_origen/
home/ericc/repoS0258/Tareas/Tarea. Backup programado/carpeta_origen/archivo1.txt
home/ericc/repoS0258/Tareas/Tarea. Backup programado/carpeta_origen/archivo2.txt
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado/backupNov25$ cd ..
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado$ ls
RespSep24.sh backupNov25 carpeta_origen cron_script.log
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado$ cat "/home/ericc/repoS0258/Tareas/Tarea. Backup programado/cron_script.log"
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
ericc@Mareri:~/repoS0258/Tareas/Tarea. Backup programado$ |
```

4. Programación automática con crontab

Se configuró el cron para ejecutar el script cada 3 horas con 5 minutos durante un día completo, usando valores concretos para minuto, hora, día, mes y día de semana:

cron

```
ericc@Kareti: ~/repoS02
RespSep24.sh backupNov25 carpeta_origen cron_script.log
ericc@Wareri:~/repoS025B/Tareas/Tarea. Backup programado$ cat "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log"
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
ericc@Wareri:~/repoS025B/Tareas/Tarea. Backup programado$ crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow   command
5 17 4 11 * "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/RespSep24.sh" >> "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log"
2>&1
5 20 4 11 * "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/RespSep24.sh" >> "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log"
2>&1
5 23 4 11 * "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/RespSep24.sh" >> "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log"
2>&1
5 2 5 11 * "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/RespSep24.sh" >> "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log" 2
>&1
5 5 5 11 * "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/RespSep24.sh" >> "/home/ericc/repoS025B/Tareas/Tarea. Backup programado/cron_script.log" 2
>&1
ericc@Wareri:~/repoS025B/Tareas/Tarea. Backup programado$ |
```

5. Verificación de respaldos generados

Se verificó que los respaldos se fueron creando automáticamente en la carpeta backupNov25 con nombres como:

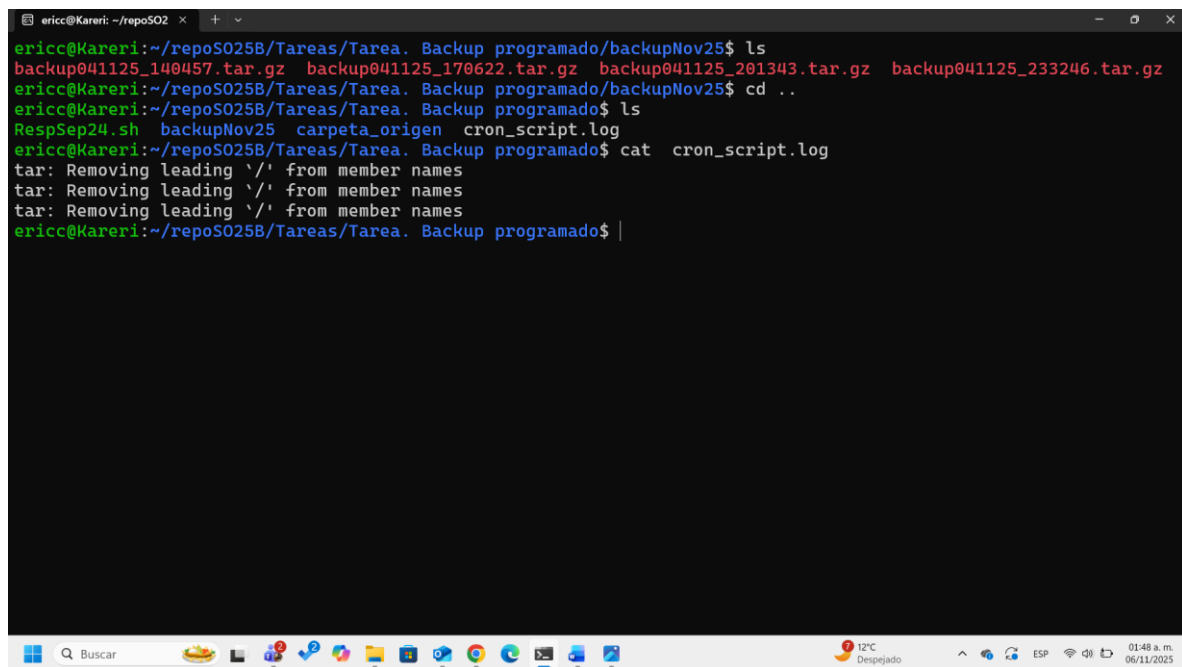
backup041125_170622.tar.gz

backup041125_201343.tar.gz

backup041125_233246.tar.gz

Y que el log contiene evidencia de ejecución:

cat cron_script.log



```
ericc@Kareri: ~/repoS025B/Tareas/Tarea. Backup programado/backupNov25$ ls
backup041125_140457.tar.gz backup041125_170622.tar.gz backup041125_201343.tar.gz backup041125_233246.tar.gz
ericc@Kareri:~/repoS025B/Tareas/Tarea. Backup programado/backupNov25$ cd ..
ericc@Kareri:~/repoS025B/Tareas/Tarea. Backup programado$ ls
RespSep24.sh backupNov25 carpeta_origen cron_script.log
ericc@Kareri:~/repoS025B/Tareas/Tarea. Backup programado$ cat cron_script.log
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
tar: Removing leading '/' from member names
ericc@Kareri:~/repoS025B/Tareas/Tarea. Backup programado$ |
```

Conclusión

La tarea permitió implementar un respaldo automatizado mediante un script Bash y su programación con cron, cumpliendo con los criterios de trazabilidad, formato de nombre, almacenamiento ordenado y registro en log. Se verificó que los respaldos se generan correctamente en los horarios establecidos, y que el sistema funciona de forma reproducible y auditable. Esta práctica fortalece la gestión operativa en sistemas Linux y responde a estándares básicos de administración de respaldos.

Referencias

- [1] GeeksforGeeks, "How to Automate Tasks with Cron Jobs in Linux?", Jul. 2025. [Online]. Available: <https://www.geeksforgeeks.org/linux-unix/how-to-automate-tasks-with-cron-jobs-in-linux/>
- [2] OpenGenus, "Automated Backup in Linux using Shell Scripting and Crontab Scheduler," [Online]. Available: <https://iq.opengenus.org/automated-backup-in-linux-using-shell-scripting-and-crontab-scheduler/>
- [3] ServerAvatar, "Cronjob in Linux: A Complete Guide to Task Automation," [Online]. Available: <https://serveravatar.com/cronjob-in-linux-guide/>