

Pregunta 1

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```
root@ubuntu: /home/ivan  GNU nano 6.2  mi_script.sh *
#!/bin/bash
# Archivo de log
LOG_FILE="/home/ivan/logs/monitoreo_sistema.log"

# Crear el directorio de logs si no existe
mkdir -p "$(dirname "$LOG_FILE")"

# Iniciar monitoreo en bucle infinito
while true; do
    FECHA=$(date +%Y-%m-%d %H:%M:%S)
    CPU_USAGE=$(top -bn1 | grep "Cpu(s)" | awk '{print $2 + $4}') # % de uso de CPU
    MEM_USAGE=$(free -m | awk '/Mem:/ {printf "%.2f", $3/$2 * 100}') # % de memoria usada
    DISK_USAGE=$(df -h / | awk 'NR==2 {print $5}') # % de disco usado en root

    # Guardar datos en el log en formato JSON
    echo "{\"fecha\": \"$FECHA\", \"cpu\": \"$CPU_USAGE\", \"memoria\": \"$MEM_USAGE\", \"disco\": \"$DISK_USAGE\"}" >> "$LOG_FILE"

    # Esperar 10 segundos antes de la próxima medición
    sleep 10
done
```

```
root@ubuntu: /home/ivan  X + v
root@ubuntu:/home/ivan# sudo chmod +x /home/ivan/mi_script.sh
root@ubuntu:/home/ivan# |
```

```
root@ubuntu: /home/ivan  X + v
GNU nano 6.2
[Unit]
Description=Servicio de monitoreo del sistema
After=network.target

[Service]
ExecStart=/home/ivan/mi_script.sh
Restart=always
User=ivan
WorkingDirectory=/home/ivan
StandardOutput=append:/home/ivan/logs/monitoreo_sistema.log
StandardError=append:/home/ivan/logs/monitoreo_sistema.log
TTYPath=/dev/null
StandardInput=null

[Install]
WantedBy=multi-user.target
```

```
root@ubuntu: /home/ivan  X + v
root@ubuntu:/home/ivan# sudo systemctl daemon-reload
root@ubuntu:/home/ivan# sudo systemctl enable monitoreo.service
root@ubuntu:/home/ivan# sudo systemctl start monitoreo.service
root@ubuntu:/home/ivan# |
```

```
root@ubuntu:/home/ivan# sudo systemctl daemon-reload
root@ubuntu:/home/ivan# sudo systemctl restart monitoreo.service
root@ubuntu:/home/ivan# sudo systemctl status monitoreo.service
* monitoreo.service - Servicio de monitoreo del sistema
   Loaded: loaded (/etc/systemd/system/monitoreo.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2025-03-04 09:37:05 CET; 8s ago
     Main PID: 6326 (mi_script.sh)
       Tasks: 2 (limit: 4493)
      Memory: 1.0M
         CPU: 704ms
    CGroup: /system.slice/monitoreo.service
            |-6326 /bin/bash /home/ivan/mi_script.sh
            `--6361 sleep 10

mar 04 09:37:05 ubuntu systemd[1]: Started Servicio de monitoreo del sistema.
root@ubuntu:/home/ivan# |
```

```
root@ubuntu:/home/ivan/logs# tail -f /home/ivan/logs/monitoreo_sistema.log
{ "fecha": "2025-03-04 09:44:15", "cpu": "12%", "memoria": "37.02%", "disco": "6%" }
{ "fecha": "2025-03-04 09:44:25", "cpu": "10%", "memoria": "36.99%", "disco": "6%" }
{ "fecha": "2025-03-04 09:44:36", "cpu": "21%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:44:46", "cpu": "9%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:44:56", "cpu": "3%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:07", "cpu": "41%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:17", "cpu": "22%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:28", "cpu": "33%", "memoria": "37.04%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:38", "cpu": "30%", "memoria": "37.02%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:49", "cpu": "6%", "memoria": "37.02%", "disco": "6%" }
{ "fecha": "2025-03-04 09:45:59", "cpu": "24%", "memoria": "37.02%", "disco": "6%" }
```