**Ambiente utilizado:** 2 máquinas virtuales con Linux Alpine 3.19.0, 512 M de Ram y 8GB de Disco (cada una), en Virtual box, utilice la configuración de Red "Host-only Adapter", para que las máquinas pudieran tener comunicación entre sí.

```
cs-lab-01:~/scripts$ cat /etc/os-release
NAME="Alpine Linux"
ID=alpine
VERSION_ID=3.19.0
PRETTY_NAME="Alpine Linux v3.19"
HOME_URL="https://alpinelinux.org/"
BUG_REPORT_URL="https://gitlab.alpinelinux.org/alpine/aports/-/issues"
cs-lab-01:~/scripts$ 
```
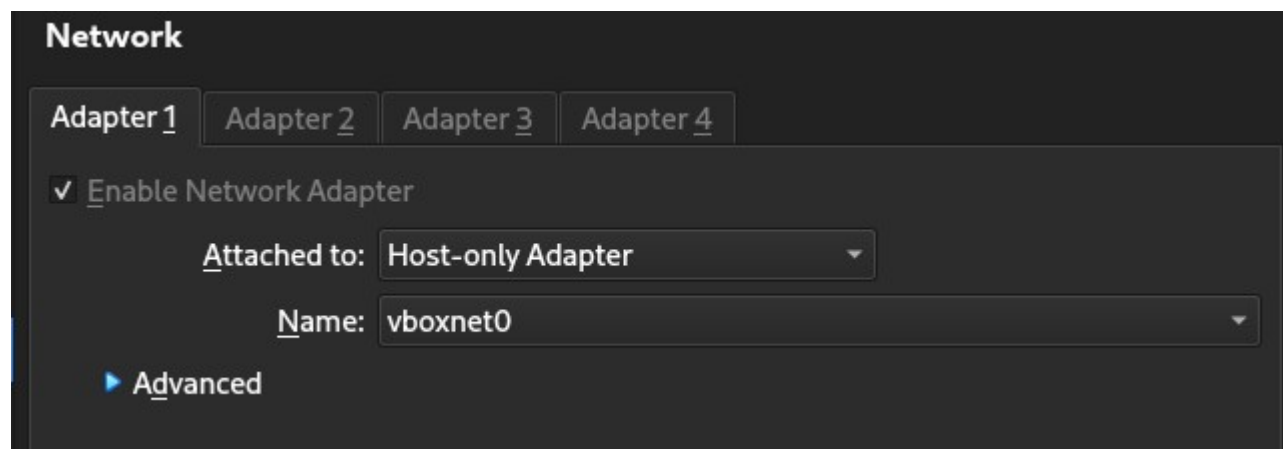

Software utilizado:

ASH (Almquist shell), shell de Unix, incluida en Alpine.
RSYNC – Herramienta que optimiza las transferencias y ofrece soporte para protocolos de cifrado (no incluida con Alpine, instalada desde los repositorios oficiales)

Pre-Acondicionamiento:

Las máquinas virtuales deben de tener comunicación entre sí, en mi caso, yo setee una IP estatica para cada una de las Vms.

Genere una clave RSA de ssh para poder conectarme de manera "passwordless", del servidor 1 al servidor 2. Y así ahorrarme el hecho de tener que estar typeando el password en cada uno de los usos de rsync.

```
cs-lab-01:~#
cs-lab-01:~# ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Created directory '/root/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:VHCjb5FMykyjhXbY+hwE/FdszGENijAvoH5dqZelq1A root@cs-lab-01
The key's randomart image is:
+---[RSA 3072]----+
|     ..+==.=+++   |
|    . .=X+@ =* .  |
|   .  .o=@ *o     |
|  .    ..=o=..    |
|   . . EoSoo      |
|    . . .oo       |
|     .   .        |
|     . .          |
|       .          |
+----[SHA256]-----+
cs-lab-01:~# []
```

```
cs-lab-01:~# ssh-copy-id csbackup@cs-lab-02
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
The authenticity of host 'cs-lab-02 (192.168.59.102)' can't be established.
ED25519 key fingerprint is SHA256:r0x5wsOEKektFenZVmN5gJyuaBpNYkuqX+ptkEyNyjo.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
expr: warning: '^ERROR: ': using '^' as the first character
of a basic regular expression is not portable; it is ignored
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ignoring bad CNAME "cs-lab-02.." for host "cs-lab-02": domain name "cs-lab-02.." contains consecutive separators
csbackup@cs-lab-02's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'csbackup@cs-lab-02'"
and check to make sure that only the key(s) you wanted were added.
```

Uso del script:

El script se encuentra automatizado para correr a las 00:00 del servidor, todos los días (utilice crontab)

```
cs-lab-01:~/scripts$ crontab -l
0        0        *        *        *        /home/csuser/scripts/backup_utility.sh
cs-lab-01:~/scripts$ []
```

En mis pruebas, inclui el script "dummy.sh", para generar un fichero de 25mb de datos random.

```
cs-lab-01:~/scripts$ ./backup_utility.sh
tar: removing leading '../' from member names
ignoring bad CNAME "cs-lab-02.." for host "cs-lab-02": domain name "cs-lab-02.." contains consecutive separators
sending incremental file list
info_respaldar_20240115_154623.tar.gz

sent 26,224,685 bytes  received 35 bytes  17,483,146.67 bytes/sec
total size is 26,218,608  speedup is 1.00
backup completo
cs-lab-01:~/scripts$ []
```

El script deposita el archivo compreso en el servidor 2.

```
cs-lab-02:~/backup$ pwd
/home/csbackup/backup
cs-lab-02:~/backup$ ls -lhart
total 50M
-rw-r--r--    1 csbackup csbackup   25.0M Jan 15 15:21 info_respaldar_20240115_152123.tar.gz
drwxr-sr-x    4 csbackup csbackup    4.0K Jan 15 15:26 ..
-rw-r--r--    1 csbackup csbackup   25.0M Jan 15 15:46 info_respaldar_20240115_154623.tar.gz
drwxr-sr-x    2 csbackup csbackup    4.0K Jan 15 15:46 .
cs-lab-02:~/backup$ []
```

Posibles mejoras:

Incluir una rutina de borrado de ficheros en el servidor 1. No la inclui, debido a que no mencionaron si se debia preservar la copia o eliminarla.

Incluir una rutina de revisión de uso de disco en el servidor 2, y lanzar alertas si llega a un umbral de uso (~80% sería lo recomendado)