

Emmanuel Bolaños Ocampo, A00309828

Seleccione 5 retos de la página <https://cmdchallenge.com> y presente la solución a cada uno de ellos a través de un ejemplo práctico en CentOS7. Presente capturas de pantalla relevantes como evidencias de lo realizado.

Reto 1) Imprimir en la consola.

```
[root@localhost ~]# echo "Hola mundo"
Hola mundo
[root@localhost ~]# _
```

Reto 2) Indicar tu directorio de trabajo.

```
[root@localhost ~]# pwd
/root
```

Reto 3) Listar los archivos en el directorio actual.

```
[root@localhost ~]# ls
anaconda-ks.cfg
```

Reto 4) Borrar todos los archivos en el directorio actual y sus subdirectorios asociados.

```
[root@localhost directorioPrueba]# ls
archivoPrueba.txt  imagen.gif
[root@localhost directorioPrueba]# find . -delete
[root@localhost directorioPrueba]# ls
[root@localhost directorioPrueba]# _
```

Reto 5) Imprimir las últimas líneas del archivo.

```
[root@localhost ~]# tail -5 anaconda-ks.cfg
%anaconda
%policy root --minlen=6 --minquality=50 --notstrict --nochanges --notempty
%policy user --minlen=6 --minquality=50 --notstrict --nochanges --notempty
%policy luks --minlen=6 --minquality=50 --notstrict --nochanges --notempty
%end
[root@localhost ~]# _
```

hello_world/	extract_ip_addresses/
current_working_directory/	delete_files/
list_files/	count_files/
list_files_adv/	simple_sort/
nested_dirs/	count_string_in_line/
print_file_contents/	split_on_a_char/
last_lines/	print_number_sequence/

Realice un script que a partir de un listado con no menos de dos direcciones ip, descargue en forma remota un libro del proyecto <https://www.gutenberg.org/> en el directorio /tmp de cada equipo. El usuario operativos con contraseñas operativos debe existir en las equipos. Presente capturas de pantalla relevantes como evidencias del funcionamiento.

Captura de pantalla asociada a la descarga del libro.

```
Petición HTTP enviada, esperando respuesta... 200 OK
Longitud: 317983 (311K) [text/plain]
Grabando a: "/tmp/libro-emmanuel"

100%[=====>] 317.983      224KB/s   en 1,4s

2017-03-05 16:03:29 (224 KB/s) - "/tmp/libro-emmanuel" guardado [317983/317983]

[operativos@localhost tmp]$ ls
ks-script-gCfc59 libro-emmanuel pruebaOrdenamiento yum.log
[operativos@localhost tmp]$
```

Captura asociada a la descarga remota de 2 libros utilizando un script. En el primer recuadro amarillo se puede ver el script utilizado. En el segundo y tercer recuadro amarillo se puede ver el resultado de la descarga de ambos libros.

```
[operativos@localhost tmp]$ vi script.sh
[operativos@localhost tmp]$ cat script.sh
scp operativos@192.168.104.13:/tmp/libro /tmp/libroAmigo1
scp operativos@192.168.104.18:/tmp/text-gutenberg /tmp/libroDaniel
[operativos@localhost tmp]$ ./script.sh
The authenticity of host '192.168.104.13 (192.168.104.13)' can't be established.
ECDSA key fingerprint is 02:37:45:27:c5:35:84:da:20:cd:01:68:3b:ad:8b:db.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.104.13' (ECDSA) to the list of known hosts.
operativos@192.168.104.13's password:
libro 100% 268KB 268.2KB/s 00:00
The authenticity of host '192.168.104.18 (192.168.104.18)' can't be established.
ECDSA key fingerprint is bd:b5:8f:a6:0b:11:98:93:cf:95:74:11:a0:b5:6a:b4.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.104.18' (ECDSA) to the list of known hosts.
operativos@192.168.104.18's password:
text-gutenberg 100% 76KB 75.7KB/s 00:00
[operativos@localhost tmp]$
```

Captura donde se puede evidenciar las últimas 5 páginas de los 2 libros descargados remotamente

```
operativos@localhost/tmp
[operativos@localhost tmp]$ ls
ks-script-gCfc59 libroAmigo1 libroDaniel libro-emmanuel mv pruebaOrdenamiento script.sh yum.log
[operativos@localhost tmp]$ tail -10 libroAmigo1
edition.

Most people start at our Web site which has the main PG search
facility: www.gutenberg.org

This Web site includes information about Project Gutenberg-tm,
including how to make donations to the Project Gutenberg Literary
Archive Foundation, how to help produce our new eBooks, and how to
subscribe to our email newsletter to hear about new eBooks.

[operativos@localhost tmp]$ tail -10 libroDaniel

Most people start at our Web site which has the main PG search facility:

http://www.gutenberg.org

This Web site includes information about Project Gutenberg-tm,
including how to make donations to the Project Gutenberg Literary
Archive Foundation, how to help produce our new eBooks, and how to
subscribe to our email newsletter to hear about new eBooks.
[operativos@localhost tmp]$
```

Cree un contenedor de debían en CentOS7 empleando LXC. Presente el listado de los comandos empleados y capturas de pantalla relevantes como evidencias del funcionamiento.

Captura asociada a la descarga de las dependencias necesarias y la comprobación del estado requerido-> activo.

```
Instalado:
  lxc-templates.x86_64 0:1.0.9-1.el7

Dependencia(s) instalada(s):
  libseccomp.x86_64 0:2.3.1-2.el7          lxc-libs.x86_64 0:1.0.9-1.el7          rsync.x86_64 0:3.0.9-17.el7

¡Listo!
[root@localhost tmp]# systemctl status lxc.service
● lxc.service - LXC Container Initialization and Autoboot Code
   Loaded: loaded (/usr/lib/systemd/system/lxc.service; disabled; vendor preset: disabled)
   Active: inactive (dead)
[root@localhost tmp]# systemctl start lxc.service
[root@localhost tmp]# systemctl start libvirtd
[root@localhost tmp]# systemctl status lxc.service
● lxc.service - LXC Container Initialization and Autoboot Code
   Loaded: loaded (/usr/lib/systemd/system/lxc.service; disabled; vendor preset: disabled)
   Active: active (exited) since dom 2017-03-05 16:57:30 COT; 41s ago
     Process: 3628 ExecStart=/usr/libexec/lxc/lxc-autostart-helper start (code=exited, status=0/SUCCESS)
     Process: 3622 ExecStartPre=/usr/libexec/lxc/lxc-devsetup (code=exited, status=0/SUCCESS)
    Main PID: 3628 (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/lxc.service

mar 05 16:56:59 localhost.localdomain systemd[1]: Starting LXC Container Initialization and Autoboot Code...
mar 05 16:56:59 localhost.localdomain lxc-devsetup[3622]: Creating /dev/.lxc
mar 05 16:56:59 localhost.localdomain lxc-devsetup[3622]: /dev is devtmpfs
mar 05 16:56:59 localhost.localdomain lxc-devsetup[3622]: Creating /dev/.lxc/user
mar 05 16:57:30 localhost.localdomain lxc-autostart-helper[3628]: Starting LXC autoboot containers: [ OK ]
mar 05 16:57:30 localhost.localdomain systemd[1]: Started LXC Container Initialization and Autoboot Code.
[root@localhost tmp]#
```

Captura asociada para comprobar la configuración.

```
[root@localhost tmp]# lxc-checkconfig
Kernel configuration not found at /proc/config.gz; searching...
Kernel configuration found at /boot/config-3.10.0-514.el7.x86_64

--- Namespaces ---
Namespaces: enabled
Utsname namespace: enabled
Ipc namespace: enabled
Pid namespace: enabled
User namespace: enabled
Network namespace: enabled
Multiple /dev/pts instances: enabled

--- Control groups ---
Cgroup: enabled
Cgroup clone_children flag: enabled
Cgroup device: enabled
Cgroup sched: enabled
Cgroup cpu account: enabled
Cgroup memory controller: enabled
Cgroup cpuset: enabled

--- Misc ---
Veth pair device: enabled
Macvlan: enabled
Vlan: enabled
Bridges: enabled
Advanced netfilter: enabled
CONFIG_NF_NAT_IPV4: enabled
CONFIG_NF_NAT_IPV6: enabled
CONFIG_IP_NF_TARGET_MASQUERADE: enabled
CONFIG_IP6_NF_TARGET_MASQUERADE: enabled
CONFIG_NETFILTER_XT_TARGET_CHECKSUM: enabled

--- Checkpoint/Restore ---
checkpoint restore: enabled
CONFIG_FHANDLE: enabled
CONFIG_EVENTFD: enabled
CONFIG_EPOLL: enabled
CONFIG_UNIX_DIAG: enabled
CONFIG_INET_DIAG: enabled
CONFIG_PACKET_DIAG: enabled
CONFIG_NETLINK_DIAG: enabled
File capabilities: enabled

Note : Before booting a new kernel, you can check its configuration
usage : CONFIG=/path/to/config /usr/bin/lxc-checkconfig
```

Captura asociada que permite listar las plantillas de contenedores disponibles.

```
[root@localhost tmp]# ls -alh /usr/share/lxc/templates/
total 344K
drwxr-xr-x. 2 root root 4,0K mar  5 16:52 .
drwxr-xr-x. 6 root root  85 mar  5 16:52 ..
-rwxr-xr-x. 1 root root 11K dic  3 14:09 lxc-alpine
-rwxr-xr-x. 1 root root 14K dic  3 14:09 lxc-altlinux
-rwxr-xr-x. 1 root root 11K dic  3 14:09 lxc-archlinux
-rwxr-xr-x. 1 root root 9,5K dic  3 14:09 lxc-busybox
-rwxr-xr-x. 1 root root 29K dic  3 14:09 lxc-centos
-rwxr-xr-x. 1 root root 11K dic  3 14:09 lxc-cirros
-rwxr-xr-x. 1 root root 18K dic  3 14:09 lxc-debian
-rwxr-xr-x. 1 root root 18K dic  3 14:09 lxc-download
-rwxr-xr-x. 1 root root 49K dic  3 14:09 lxc-fedora
-rwxr-xr-x. 1 root root 28K dic  3 14:09 lxc-gentoo
-rwxr-xr-x. 1 root root 14K dic  3 14:09 lxc-openmandriva
-rwxr-xr-x. 1 root root 14K dic  3 14:09 lxc-opensuse
-rwxr-xr-x. 1 root root 35K dic  3 14:09 lxc-oracle
-rwxr-xr-x. 1 root root 12K dic  3 14:09 lxc-plamo
-rwxr-xr-x. 1 root root 6,7K dic  3 14:09 lxc-sshd
-rwxr-xr-x. 1 root root 24K dic  3 14:09 lxc-ubuntu
-rwxr-xr-x. 1 root root 12K dic  3 14:09 lxc-ubuntu-cloud
[root@localhost tmp]#
```

Captura asociada a la activación del contenedor debían, me faltó tomarle captura al comando de creación **lxc-create -n contenedorDebian -t debian**.

```
[root@localhost tmp]# lxc-start -n contenedorDebian -d
[root@localhost tmp]# lxc-ls --active
bash: lxc-ls: no se encontró la orden
[root@localhost tmp]# lxc-console -n contenedorDebian

Connected to tty 1
Type <Ctrl+a q> to exit the console, <Ctrl+a Ctrl+a> to enter Ctrl+a itself

Debian GNU/Linux 8 contenedorDebian tty1

contenedorDebian login: root
Password:
Linux contenedorDebian 3.10.0-514.el7.x86_64 #1 SMP Tue Nov 22 16:42:41 UTC 2016 x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@contenedorDebian:~# cat /etc/issue.net
Debian GNU/Linux 8
root@contenedorDebian:~#
```

Bibliografía.

https://cmdchallenge.com/#/last_lines

<http://www.tecmint.com/install-create-run-lxc-linux-containers-on-centos/>