

Evaluación B – GONZALO OSCO HERNANDEZ

SEGUNDA EVALUACIÓN CURSO DE VIRTUALIZACION DE DATA CENTERS

Se tiene un entorno donde se tiene 3 servidores físicos (A, B, C), en cada uno se tiene instalado LXC, por lo que se solicita lo siguiente:

1. Que desde el servidor A, se pueda administrar contenedores en B y C.
2. Crear 2 contenedores tanto en B como en C
3. Personalizar un profile y asociarlo a 1 contendor en B y C
4. Convertir este contendor personalizado de B y C en un nuevo contenedor
5. Eliminar 1 contendor en B y C respectivamente.

RESP 1

Instalamos LXD en nuestra máquina virtual denominada **vm-debian10**, es importante actualizar es instalar las siguientes dependencias en particular para **debian10**.

```
root@debian:~# apt update
root@debian:~# apt install snapd
root@debian:~# snap install core
root@debian:~# snap install lxd
```

En función a nuestra máquina virtual **vm-debian10**, clonamos tres máquinas virtuales desde la maquina anfitrión **SERVER-A, SERVER-B y SERVER-C**

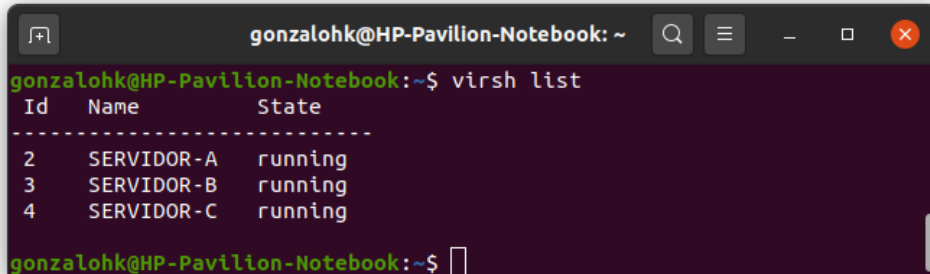
```
virt-clone --original vm-debian10 --name SERVIDOR-A --auto-clone
virt-clone --original vm-debian10 --name SERVIDOR-B --auto-clone
virt-clone --original vm-debian10 --name SERVIDOR-C --auto-clone
```



```
gonzalohk@HP-Pavilion-Notebook: ~
gonzalohk@HP-Pavilion-Notebook:~$ virt-clone --original vm-debian10 --name SERVIDOR-B --auto-clone
Allocating 'SERVIDOR-B.qcow2' | 2.0 GB 00:00:38
Clone 'SERVIDOR-B' created successfully.
gonzalohk@HP-Pavilion-Notebook:~$ virt-clone --original vm-debian10 --name SERVIDOR-C --auto-clone
Allocating 'SERVIDOR-C.qcow2' | 2.0 GB 00:00:04
Clone 'SERVIDOR-C' created successfully.
gonzalohk@HP-Pavilion-Notebook:~$ virt-clone --original vm-debian10 --name SERVIDOR-A --auto-clone
Allocating 'SERVIDOR-A.qcow2' | 2.0 GB 00:00:04
Clone 'SERVIDOR-A' created successfully.
gonzalohk@HP-Pavilion-Notebook:~$
```

Iniciamos **SERVER-A**, **SERVER-B** y **SERVER-C**

```
irsh start SERVIDOR-A
virsh start SERVIDOR-B
virsh start SERVIDOR-C
```



```
gonzalohk@HP-Pavilion-Notebook:~$ virsh list
Id      Name           State
-----
 2      SERVIDOR-A     running
 3      SERVIDOR-B     running
 4      SERVIDOR-C     running

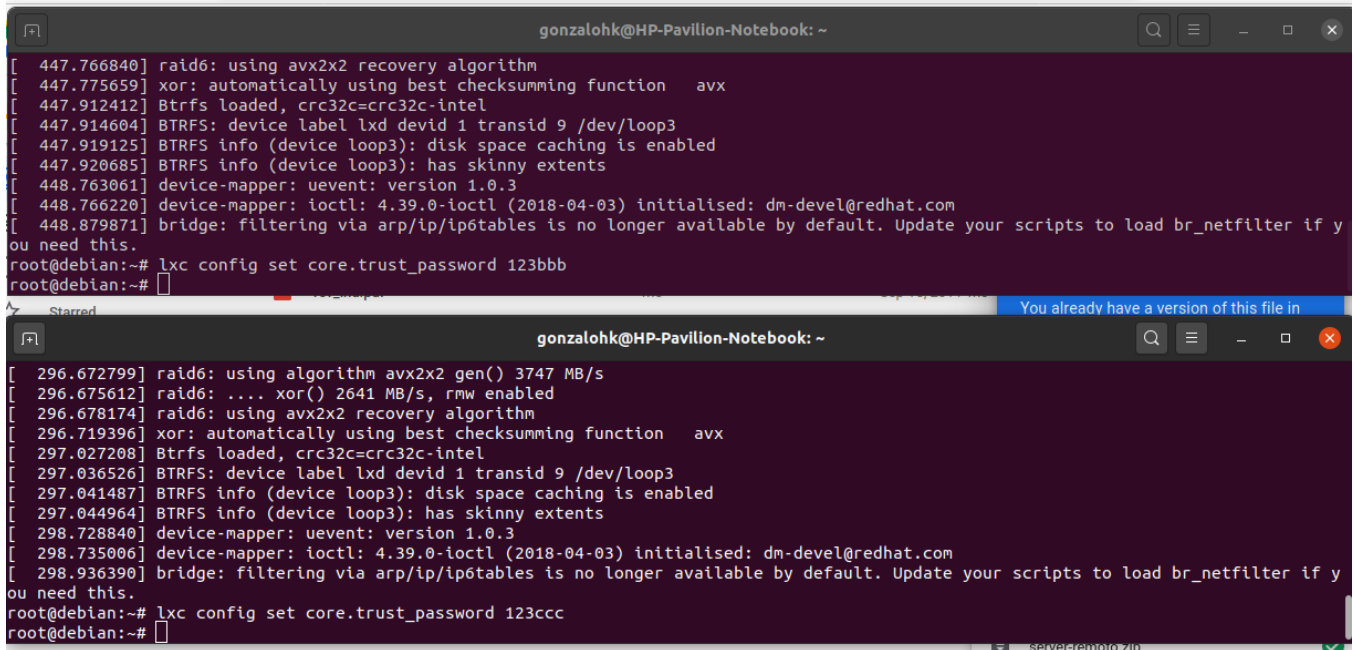
gonzalohk@HP-Pavilion-Notebook:~$
```

Establecemos el acceso remoto al **SERVIDOR-B** junto a su password

```
lxc config set core.https_address "[::]:8443"
lxc config set core.trust_password 123bbb
```

Establecemos el acceso remoto al **SERVIDOR-C** junto a su password

```
lxc config set core.https_address "[::]:8443"
lxc config set core.trust_password 123ccc
```



```
gonzalohk@HP-Pavilion-Notebook:~$
[ 447.766840] raid6: using avx2x2 recovery algorithm
[ 447.775659] xor: automatically using best checksumming function   avx
[ 447.912412] Btrfs loaded, crc32c=crc32c-intel
[ 447.914604] BTRFS: device label lxd devid 1 transid 9 /dev/loop3
[ 447.919125] BTRFS info (device loop3): disk space caching is enabled
[ 447.920685] BTRFS info (device loop3): has skinny extents
[ 448.763061] device-mapper: uevent: version 1.0.3
[ 448.766220] device-mapper: ioctl: 4.39.0-ioctl (2018-04-03) initialised: dm-devel@redhat.com
[ 448.879871] bridge: filtering via arp/ip/ip6tables is no longer available by default. Update your scripts to load br_netfilter if you need this.
root@debian:~# lxc config set core.trust_password 123bbb
root@debian:~#

gonzalohk@HP-Pavilion-Notebook:~$
[ 296.672799] raid6: using algorithm avx2x2 gen() 3747 MB/s
[ 296.675612] raid6: .... xor() 2641 MB/s, rmw enabled
[ 296.678174] raid6: using avx2x2 recovery algorithm
[ 296.719396] xor: automatically using best checksumming function   avx
[ 297.027208] Btrfs loaded, crc32c=crc32c-intel
[ 297.036526] BTRFS: device label lxd devid 1 transid 9 /dev/loop3
[ 297.041487] BTRFS info (device loop3): disk space caching is enabled
[ 297.044964] BTRFS info (device loop3): has skinny extents
[ 298.728840] device-mapper: uevent: version 1.0.3
[ 298.735006] device-mapper: ioctl: 4.39.0-ioctl (2018-04-03) initialised: dm-devel@redhat.com
[ 298.936390] bridge: filtering via arp/ip/ip6tables is no longer available by default. Update your scripts to load br_netfilter if you need this.
root@debian:~# lxc config set core.trust_password 123ccc
root@debian:~#
```

Hacemos un listado de accesos remotos en el **SERVER-A** para verificar.

```
gonzalo@HP-Pavilion-Notebook: ~  
debian login: root  
root@debian:~# lxc remote list  
+-----+-----+-----+-----+-----+-----+  
| NAME | URL | PROTOCOL | AUTH TYPE | PUBLIC | STATIC |  
+-----+-----+-----+-----+-----+-----+  
| images | https://images.linuxcontainers.org | simplestreams | none | YES | NO |  
+-----+-----+-----+-----+-----+-----+  
| local (default) | unix:// | lxd | file access | NO | YES |  
+-----+-----+-----+-----+-----+-----+  
| ubuntu | https://cloud-images.ubuntu.com/releases | simplestreams | none | YES | YES |  
+-----+-----+-----+-----+-----+-----+  
| ubuntu-daily | https://cloud-images.ubuntu.com/daily | simplestreams | none | YES | YES |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~#
```

En el **SERVER-A**, creamos los accesos remotos y listamos para verificar.

```
lxc remote add SB-REMOTO 192.168.122.175  
lxc remote add SA-REMOTO 192.168.122.84  
lxc remote list
```

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc remote list  
+-----+-----+-----+-----+-----+-----+  
| NAME | URL | PROTOCOL | AUTH TYPE | PUBLIC | STATIC |  
+-----+-----+-----+-----+-----+-----+  
| SB-REMOTO | https://192.168.122.175:8443 | lxd | tls | NO | NO |  
+-----+-----+-----+-----+-----+-----+  
| SC-REMOTO | https://192.168.122.84:8443 | lxd | tls | NO | NO |  
+-----+-----+-----+-----+-----+-----+  
| images | https://images.linuxcontainers.org | simplestreams | none | YES | NO |  
+-----+-----+-----+-----+-----+-----+  
| local (default) | unix:// | lxd | file access | NO | YES |  
+-----+-----+-----+-----+-----+-----+  
| ubuntu | https://cloud-images.ubuntu.com/releases | simplestreams | none | YES | YES |  
+-----+-----+-----+-----+-----+-----+  
| ubuntu-daily | https://cloud-images.ubuntu.com/daily | simplestreams | none | YES | YES |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~#
```

RESP 2

Creamos dos contenedores en el **SERVER-B** denominados **sb-01-webserver** y **sb-02-mailserver**

```
lxc launch images:alpine/3.12 SB-REMOTO:sb-01-webserver  
lxc launch images:alpine/3.12 SB-REMOTO:sb-02-mailserver
```

Además dos contenedores en el **SERVER-C** denominados **sc-01-phpserver** y **sc-02-pgadminserver**

```
lxc launch images:alpine/3.12 SC-REMOTO:sc-01-phpserver  
lxc launch images:alpine/3.12 SC-REMOTO:sc-02-pgadminserver
```

```
gonzalohk@HP-Pavilion-Notebook: ~  
root@debian:~# ^C  
root@debian:~# lxc launch images:alpine/3.12 SB-REMOTO:sb-01-webserver  
Creating sb-01-webserver  
Starting sb-01-webserver  
root@debian:~# lxc launch images:alpine/3.12 SB-REMOTO:sb-02-mailserver  
Creating sb-02-mailserver  
Starting sb-02-mailserver  
root@debian:~# ^C  
root@debian:~# ^C  
root@debian:~# lxc launch images:alpine/3.12 SC-REMOTO:sc-01-phpserver  
Creating sc-01-phpserver  
Starting sc-01-phpserver  
root@debian:~# lxc launch images:alpine/3.12 SC-REMOTO:sc-02-pgadminserver  
Creating sc-02-pgadminserver  
Starting sc-02-pgadminserver  
root@debian:~#
```

RESP 3

Creamos un profile en el **SERVER-A** denominados **generico-webserver-profile**, copiamos en las máquinas virtuales para no tener problemas más adelante al asignar profiles y copiar contenedores.

```
lxc profile create generico-webserver-profile  
lxc profile set generico-webserver-profile limits.cpu=1  
lxc profile set generico-webserver-profile limits.memory=512MB  
lxc profile set generico-webserver-profile limits.memory.swap=true  
lxc profile device add generico-webserver-profile root disk path=/ pool=lxid
```

```
gonzalohk@HP-Pavilion-Notebook: ~  
root@debian:~# lxc profile show generico-webserver-profile  
config:  
  limits.cpu: "1"  
  limits.memory: 512MB  
  limits.memory.swap: "true"  
description: ""  
devices: {}  
name: generico-webserver-profile  
used_by: []  
root@debian:~#
```

Desde el **SERVER-A** asignamos el profile **generico-webserver-profile** a los contenedores sb-01-webserver y sb-01-phpserver.

```
lxc profile assign SB-REMOTO:sb-01-webserver generico-webserver-profile  
lxc profile assign SC-REMOTO:sc-01-phpserver generico-webserver-profile
```

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc profile assign SB-REMOTO:sb-01-webserver generico-webserver-profile  
Profiles generico-webserver-profile applied to sb-01-webserver  
root@debian:~# lxc profile assign SC-REMOTO:sc-01-phpserver generico-webserver-profile  
Profiles generico-webserver-profile applied to sc-01-phpserver  
root@debian:~#
```

Verificamos si los cambios fueron aplicados, contando la cantidad de cpus disponibles para los contenedores.

```
lxc exec SB-REMOTO:sb-01-webserver -- cat /proc/cpuinfo | grep proc  
lxc exec SC-REMOTO:sc-01-phpserver -- cat /proc/cpuinfo | grep proc
```

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc exec SB-REMOTO:sb-01-webserver -- cat /proc/cpuinfo | grep proc  
processor : 0  
root@debian:~# lxc exec SC-REMOTO:sc-01-phpserver -- cat /proc/cpuinfo | grep proc  
processor : 0  
root@debian:~#
```

RESP 4

Creamos snapshots desde el **SERVER-A** para los contenedores denominados **sb-01-webserver** y **sc-01-phpserver**.

```
lxc snapshot SB-REMOTO:sb-01-webserver snap-ready  
lxc snapshot SC-REMOTO:sc-01-phpserver snap-ready
```

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc snapshot SB-REMOTO:sb-01-webserver snap-ready  
root@debian:~# lxc snapshot SC-REMOTO:sc-01-phpserver snap-ready  
root@debian:~#
```

Creamos dos nuevos contenedores denominados **template-webserver** y **template-phpserver** a partir de los anteriores snapshots.

```
lxc copy SB-REMOTO:sb-01-webserver/snap-ready SB-REMOTO:template-webserver  
lxc copy SC-REMOTO:sc-01-phpserver/snap-ready SC-REMOTO:template-phpserver
```

Verificamos.

```
lxc list SB-REMOTO:  
lxc list SC-REMOTO:
```

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc list SB-REMOTO:  
+-----+-----+-----+-----+-----+-----+  
| NAME | STATE | IPV4 | IPV6 | TYPE | SNAPSHOTS |  
+-----+-----+-----+-----+-----+-----+  
| sb-01-webserver | RUNNING | | | CONTAINER | 1 |  
+-----+-----+-----+-----+-----+-----+  
| sb-02-mailserver | RUNNING | 10.10.241.251 (eth0) | fd42:6794:89a3:3639:216:3eff:fe1a:fcc9 (eth0) | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
| template-webserver | STOPPED | | | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~# lxc list SC-REMOTO:  
+-----+-----+-----+-----+-----+-----+  
| NAME | STATE | IPV4 | IPV6 | TYPE | SNAPSHOTS |  
+-----+-----+-----+-----+-----+-----+  
| sc-01-phpserver | RUNNING | | | CONTAINER | 1 |  
+-----+-----+-----+-----+-----+-----+  
| sc-02-pgadminserver | RUNNING | 10.10.241.47 (eth0) | fd42:6794:89a3:3639:216:3eff:fe13:12c3 (eth0) | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
| template-phpserver | STOPPED | | | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~#
```

RESP 5

Desde el **SERVER-A**, eliminamos los contenedores **sb-02-mailserver** y **sc-01-phpserver**, pero primero los detenemos.

```
lxc stop SB-REMOTO:sb-02-mailserver  
lxc stop SC-REMOTO:sc-01-phpserver
```

Eliminamos.

```
lxc delete SB-REMOTO:sb-02-mailserver  
lxc delete SC-REMOTO:sc-01-phpserver
```

Verificamos.

```
gonzalo@HP-Pavilion-Notebook: ~  
root@debian:~# lxc delete SB-REMOTO:sb-02-mailserver  
Error: The instance is currently running, stop it first or pass --force  
root@debian:~# lxc stop SB-REMOTO:sb-02-mailserver  
root@debian:~# lxc stop SC-REMOTO:sc-01-phpserver  
root@debian:~# lxc delete SB-REMOTO:sb-02-mailserver  
root@debian:~# lxc delete SC-REMOTO:sc-01-phpserver  
root@debian:~# lxc list SB-REMOTO:  
+-----+-----+-----+-----+-----+-----+  
| NAME | STATE | IPV4 | IPV6 | TYPE | SNAPSHOTS |  
+-----+-----+-----+-----+-----+-----+  
| sb-01-webserver | RUNNING | | | CONTAINER | 1 |  
+-----+-----+-----+-----+-----+-----+  
| template-webserver | STOPPED | | | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~# lxc list SC-REMOTO:  
+-----+-----+-----+-----+-----+-----+  
| NAME | STATE | IPV4 | IPV6 | TYPE | SNAPSHOTS |  
+-----+-----+-----+-----+-----+-----+  
| sc-02-pgadminserver | RUNNING | 10.10.241.47 (eth0) | fd42:6794:89a3:3639:216:3eff:fe13:12c3 (eth0) | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
| template-phpserver | STOPPED | | | CONTAINER | 0 |  
+-----+-----+-----+-----+-----+-----+  
root@debian:~#
```