

Last login: Fri Apr 26 23:06:31 2024 from 10.0.2.2

svlight@gb-linux:~\$ cd home

svlight@gb-linux:~/home\$ mkdir newroot

svlight@gb-linux:~/home\$ sudo chroot newroot/ /bin/bash

[sudo] password for svlight:

chroot: failed to run command '/bin/bash': No such file or directory

svlight@gb-linux:~/home\$ mkdir newroot/bin

svlight@gb-linux:~/home\$ cp /bin/bash newroot/bin

svlight@gb-linux:~/home\$ ldd /bin/bash

linux-vdso.so.1 (0x00007fffc0d9eb000)

libtinfo.so.6 => /lib/x86_64-linux-gnu/libtinfo.so.6 (0x0000769821962000)

libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x0000769821600000)

/lib64/ld-linux-x86-64.so.2 (0x0000769821b05000)

svlight@gb-linux:~/home\$ mkdir newroot/lib

svlight@gb-linux:~/home\$ mkdir newroot/lib64

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libtinfo.so.6 newroot/lib/

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libc.so.6 newroot/lib/

svlight@gb-linux:~/home\$ cp /lib64/ld-linux-x86-64.so.2 newroot/lib64/

svlight@gb-linux:~/home\$ sudo chroot newroot/ /bin/bash

bash-5.1# exit

exit

svlight@gb-linux:~/home\$ whereis ls

ls: /usr/bin/ls /usr/share/man/man1/ls.1.gz

svlight@gb-linux:~/home\$ mkdir newroot/usr

svlight@gb-linux:~/home\$ mkdir newroot/usr/bin

svlight@gb-linux:~/home\$ cp /usr/bin/ls newroot/usr/bin/

svlight@gb-linux:~/home\$ ldd /usr/bin/ls

linux-vdso.so.1 (0x00007ffcadf7d000)

libselinux.so.1 => /lib/x86_64-linux-gnu/libselinux.so.1 (0x00007f0de2b51000)

libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007f0de2800000)

libpcre2-8.so.0 => /lib/x86_64-linux-gnu/libpcre2-8.so.0 (0x00007f0de2aba000)

/lib64/ld-linux-x86-64.so.2 (0x00007f0de2bb1000)

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libselinux.so.1 newroot/lib/

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libc.so.6 newroot/lib

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libpcre2-8.so.0 newroot/lib/

svlight@gb-linux:~/home\$ cp /lib/x86_64-linux-gnu/libc.so.6 newroot/lib/

svlight@gb-linux:~/home\$ cp /lib64/ld-linux-x86-64.so.2 newroot/lib64/

```
svlight@gb-linux:~/home$ sudo chroot newroot/ /bin/bash
```

```
bash-5.1# ls -l
```

```
total 16
```

```
drwxrwxr-x  2 1000 1000 4096 May 22 05:21 bin
```

```
drwxrwxr-x  2 1000 1000 4096 May 22 05:29 lib
```

```
drwxrwxr-x  2 1000 1000 4096 May 22 05:25 lib64
```

```
drwxrwxr-x  3 1000 1000 4096 May 22 05:27 usr
```

```
bash-5.1#
```

```
svlight@gb-linux:~/home$ sudo ip netns add testns123
svlight@gb-linux:~/home$ sudo ip netsns list
Object "netsns" is unknown, try "ip help".
svlight@gb-linux:~/home$ sudo ip netns list
testns123
svlight@gb-linux:~/home$ sudo ip netns exec testns123 bash
root@gb-linux:/home/svlight/home# ip a
1: lo: <LOOPBACK> mtu 65536 qdisc noop state DOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
root@gb-linux:/home/svlight/home# exit
exit
svlight@gb-linux:~/home$ sudo ip link add veth00 type veth peer name veth1
svlight@gb-linux:~/home$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:c5:b4:79 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84100sec preferred_lft 84100sec
    inet6 fe80::12bb:9fa9:4f2e:8e64/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:2c:fb:50:1e brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
4: veth1@veth00: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether da:c2:77:39:34:85 brd ff:ff:ff:ff:ff:ff
5: veth00@veth1: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether a6:77:31:9e:60:b1 brd ff:ff:ff:ff:ff:ff
svlight@gb-linux:~/home$ sudo ip netns exec testns123 bash
root@gb-linux:/home/svlight/home# ip a
1: lo: <LOOPBACK> mtu 65536 qdisc noop state DOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
root@gb-linux:/home/svlight/home# exit
exit
svlight@gb-linux:~/home$ sudo ip link set veth1 netns testns123
svlight@gb-linux:~/home$ sudo ip netns exec testns123 bash
root@gb-linux:/home/svlight/home# ip a
1: lo: <LOOPBACK> mtu 65536 qdisc noop state DOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
4: veth1@if5: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether da:c2:77:39:34:85 brd ff:ff:ff:ff:ff:ff link-netnsid 0
root@gb-linux:/home/svlight/home# exit
exit
```



```

svlight@gb-linux:~/home$ sudo ip addr add 10.0.0.1/24 dev veth0
Cannot find device "veth0"
svlight@gb-linux:~/home$ sudo ip addr add 10.0.0.1/24 dev veth00
svlight@gb-linux:~/home$ sudo ip link set dev veth00 up
svlight@gb-linux:~/home$ sudo ip netns exec testns123 bash
root@gb-linux:/home/svlight/home# ip addr add 10.0.0.2/24 dev veth1
root@gb-linux:/home/svlight/home# ip a
1: lo: <LOOPBACK> mtu 65536 qdisc noop state DOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
4: veth1@if5: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether da:c2:77:39:34:85 brd ff:ff:ff:ff:ff:ff link-netnsid 0
    inet 10.0.0.2/24 scope global veth1
        valid_lft forever preferred_lft forever
root@gb-linux:/home/svlight/home# exit
exit
svlight@gb-linux:~/home$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:c5:b4:79 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 83608sec preferred_lft 83608sec
    inet6 fe80::12bb:9fa9:4f2e:8e64/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:2c:fb:50:1e brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
5: veth00@if4: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state LOWERLAYERDOWN group default qlen 1000
    link/ether a6:77:31:9e:60:b1 brd ff:ff:ff:ff:ff:ff link-netns testns123
    inet 10.0.0.1/24 scope global veth00
        valid_lft forever preferred_lft forever
svlight@gb-linux:~/home$ ping 10.0.0.2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
From 10.0.0.1 icmp_seq=1 Destination Host Unreachable
From 10.0.0.1 icmp_seq=2 Destination Host Unreachable
From 10.0.0.1 icmp_seq=3 Destination Host Unreachable
From 10.0.0.1 icmp_seq=4 Destination Host Unreachable
From 10.0.0.1 icmp_seq=5 Destination Host Unreachable
From 10.0.0.1 icmp_seq=6 Destination Host Unreachable
^C
--- 10.0.0.2 ping statistics ---
7 packets transmitted, 0 received, +6 errors, 100% packet loss, time 6131ms
pipe 3
svlight@gb-linux:~/home$ sudo ip netns exec testns123 bash
root@gb-linux:/home/svlight/home# ping 10.0.0.1
ping: connect: Network is unreachable

```

```
svlight@gb-linux:~/home$ sudo unshare --net /bin/bash
```

```
root@gb-linux:/home/svlight/home# ip a
```

```
1: lo: <LOOPBACK> mtu 65536 qdisc noop state DOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
```

```
root@gb-linux:/home/svlight/home# ls -l /proc/$$/ns
```

```
total 0
```

```
lrwxrwxrwx 1 root root 0 мая 22 09:05 cgroup -> 'cgroup:[4026531835]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 ipc -> 'ipc:[4026531839]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 mnt -> 'mnt:[4026531841]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 net -> 'net:[4026532386]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 pid -> 'pid:[4026531836]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 pid_for_children -> 'pid:[4026531836]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 time -> 'time:[4026531834]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 time_for_children -> 'time:[4026531834]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 user -> 'user:[4026531837]'  
lrwxrwxrwx 1 root root 0 мая 22 09:05 uts -> 'uts:[4026531838]'
```

```
root@gb-linux:/home/svlight/home# exit
```

```
exit
```

```
svlight@gb-linux:~/home$ ls -l /proc/$$/ns
```

```
total 0
```

```
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 cgroup -> 'cgroup:[4026531835]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 ipc -> 'ipc:[4026531839]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 mnt -> 'mnt:[4026531841]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 net -> 'net:[4026531840]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 pid -> 'pid:[4026531836]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 pid_for_children -> 'pid:[4026531836]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 time -> 'time:[4026531834]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 time_for_children -> 'time:[4026531834]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 user -> 'user:[4026531837]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 uts -> 'uts:[4026531838]'
```

```
svlight@gb-linux:~/home$ sudo unshare --pid --fork --mount-proc /bin/bash
```

```
root@gb-linux:/home/svlight/home# top
```

```
top - 09:09:35 up 1:01, 3 users, load average: 0,02, 0,05, 0,07
```

```
Tasks: 2 total, 1 running, 1 sleeping, 0 stopped, 0 zombie
```

```
%Cpu(s): 0,0 us, 0,0 sy, 0,0 ni, 95,5 id, 0,0 wa, 0,0 hi, 4,5 si, 0,0 st
```

```
MiB Mem : 1958,5 total, 122,8 free, 955,8 used, 879,9 buff/cache
```

```
MiB Swap: 2140,0 total, 1825,5 free, 314,5 used. 814,2 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
8	root	20	0	12,7m	4,0m	3,4m	R	16,7	0,2	0:00.01	top
1	root	20	0	10,0m	4,1m	3,6m	S	0,0	0,2	0:00.00	bash

```
svlight@gb-linux:~/home$ ls -l /proc/$$/ns
```

```
total 0
```

```
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 cgroup -> 'cgroup:[4026531835]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 ipc -> 'ipc:[4026531839]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 mnt -> 'mnt:[4026531841]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 net -> 'net:[4026531840]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 pid -> 'pid:[4026531836]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 pid_for_children -> 'pid:[4026531836]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 time -> 'time:[4026531834]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 time_for_children -> 'time:[4026531834]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 user -> 'user:[4026531837]'  
lrwxrwxrwx 1 svlight svlight 0 мая 22 09:06 uts -> 'uts:[4026531838]'
```

```
svlight@gb-linux:~/home$ sudo unshare --pid --fork --mount-proc /bin/bash
```

```
root@gb-linux:/home/svlight/home# ls -l /proc/$$/ns
```

```
total 0
```

```
lrwxrwxrwx 1 root root 0 мая 22 09:11 cgroup -> 'cgroup:[4026531835]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 ipc -> 'ipc:[4026531839]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 mnt -> 'mnt:[4026532386]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 net -> 'net:[4026531840]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 pid -> 'pid:[4026532387]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 pid_for_children -> 'pid:[4026532387]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 time -> 'time:[4026531834]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 time_for_children -> 'time:[4026531834]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 user -> 'user:[4026531837]'  
lrwxrwxrwx 1 root root 0 мая 22 09:11 uts -> 'uts:[4026531838]'
```

```
root@gb-linux:/home/svlight/home#
```