1 Процедура chroot:

```
root@db-linux:/home/db#
root@db-linux:/home/db# mkdir testfolder
root@db-linux:/home/db# mkdir testfolder/bin
root@db-linux:/home/db# cp /bin/bash testfolder/bin
root@db-linux:/home/db# mkdir testfolder/lib
root@db-linux:/home/db# mkdir testfolder/lib64
root@db-linux:/home/db# ldd /bin/bash
        linux-vdso.so.1 (0x00007ffdf7383000)
        libtinfo.so.6 => /lib/x86_64-linux-gnu/libtinfo.so.6 (0x00007f304511a000)
        libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007f3044e00000)
        /lib64/ld-linux-x86-64.so.2 (0x00007f30452bd000)
root@db-linux:/home/db# ldd /bin/ls
        linux-vdso.so.1 (0x00007ffcbd1f1000)
        libselinux.so.1 => /lib/x86_64-linux-gnu/libselinux.so.1 (0x00007fbcc93bf000)
        libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007fbcc9000000)
        libpcre2-8.so.0 => /lib/x86_64-linux-gnu/libpcre2-8.so.0 (0x00007fbcc9328000)
        /lib64/ld-linux-x86-64.so.2 (0x00007fbcc941f000)
root@db-linux:/home/db# cp /lib/x86_64-linux-gnu/libtinfo.so.6 testfolder/lib
root@db-linux:/home/db# cp /lib/x86_64-linux-gnu/libc.so.6 testfolder/lib
root@db-linux:/home/db# cp /lib64/ld-linux-x86-64.so.2 testfolder/lib64/
root@db-linux:/home/db# chroot testfolder /bin/bash
bash-5.1#
```

Решение рроблемы с ls :

```
root@db-linux:/home/db# chroot testfolder/
bash-5.1# ls
bash: ls: command not found
bash-5.1# ldd /bin/ls
bash: ldd: command not found
bash-5.1# exit
exit
root@db-linux:/home/db# ldd /bin/ls
        linux-vdso.so.1 (0x00007ffc3eb57000)
        libselinux.so.1 => /lib/x86_64-linux-gnu/libselinux.so.1 (0x00007f66852a8000)
        libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007f6685000000)
        libpcre2-8.so.0 => /lib/x86_64-linux-gnu/libpcre2-8.so.0 (0x00007f6684f69000)
        /lib64/ld-linux-x86-64.so.2 (0x00007f6685308000)
root@db-linux:/home/db# cp /bin/ls testfolder/bin/
root@db-linux:/home/db# cp /lib/x86_64-linux-gnu/libselinux.so.1 testfolder/lib/
root@db-linux:/home/db# cp /lib/x86_64-linux-gnu/libpcre2-8.so.0 testfolder/lib/
root@db-linux:/home/db# chroot testfolder/
bash-5.1# ls
bin  lib  lib64
bash-5.1#
```

2. Сетевая изоляция.

```
root@db-linux:/home/db# 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 100
    link/ether 08:00:27:72:5f:ca 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 85384sec preferred_lft 85384sec
    inet6 fe80::51ac:eb30:8c6b:a2e8/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: br-083289fac41a: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group defa
    link/ether 02:42:2f:7a:70:57 brd ff:ff:ff:ff:ff:ff
    inet 172.18.0.1/16 brd 172.18.255.255 scope global br-083289fac41a
       valid_lft forever preferred_lft forever
4: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:a1:19:3e:4e 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
root@db-linux:/home/db#
root@db-linux:/home/db# ip netns list
root@db-linux:/home/db# ip netns add testns
root@db-linux:/home/db# ip netns list
testns
root@db-linux:/home/db# ip netns exec testns bash
root@db-linux:/home/db# 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@db-linux:/home/db#
```

Выход:

```
root@db-linux:/home/db# exit
exit
root@db-linux:/home/db# 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 08:00:27:72:5f:ca 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 84723sec preferred_lft 84723sec
    inet6 fe80::51ac:eb30:8c6b:a2e8/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: br-083289fac41a: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:2f:7a:70:57 brd ff:ff:ff:ff:ff:ff
    inet 172.18.0.1/16 brd 172.18.255.255 scope global br-083289fac41a
       valid_lft forever preferred_lft forever
4: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:a1:19:3e:4e 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
root@db-linux:/home/db#
```

3 Используем unshare:

Ограничиваем сеть:

```
root@db-linux:/home/db# unshare --net /bin/bash
root@db-linux:/home/db# 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@db-linux:/home/db#
```

Ограничиваем также сеть, процессы, память, дерево процессов

```
root@db-linux:/home/db# exit
exit
root@db-linux:/home/db# unshare --net --pid --fork --mount-proc /bin/bash
root@db-linux:/home/db# 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@db-linux:/home/db#
root@db-linux:/home/db# ls
C     Desktop    Downloads  file2_plus  GB              Music     shared  Templates  testfolder
ddd   docker     dz         file3       iptables.rules  Pictures  snap    test       test_ln_dir
ddd2  Documents  dz1        file4_plus  less8           Public    sudo    test3      Videos
root@db-linux:/home/db# ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.2  10240  4328 pts/1    S    10:20   0:00 /bin/bash
root           9  0.0  0.0  12676  1564 pts/1    R+   10:22   0:00 ps aux
root@db-linux:/home/db#
```