

```
user@uservm:~$ chroot newroot /bin/bash
chroot: не удалось сменить корневой каталог на 'newroot': Операция не позволена
user@uservm:~$ sudo chroot newroot /bin/bash
[sudo] пароль для user:
chroot: failed to run command '/bin/bash': Not a directory
user@uservm:~$
user@uservm:~$
user@uservm:~$
user@uservm:~$ mkdir gb
user@uservm:~$ mkdir gb/bin
user@uservm:~$ cp /bin/bash gb/bin
user@uservm:~$ sudo chroot gb /bin/bash
chroot: failed to run command '/bin/bash': No such file or directory
user@uservm:~$ ldd /bin/bash
        linux-vdso.so.1 (0x00007ffd92963000)
        libtinfo.so.6 => /lib/x86_64-linux-gnu/libtinfo.so.6 (0x00007f94aa73a000)
        libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007f94aa400000)
        /lib64/ld-linux-x86-64.so.2 (0x00007f94aa8dc000)
user@uservm:~$ mkdir gb/lib
user@uservm:~$ mkdir gb/lib64
user@uservm:~$ cp /lib/x86_64-linux-gnu/libtinfo.so.6 gb/lib
user@uservm:~$ cp /lib/x86_64-linux-gnu/libc.so.6 gb/lib
user@uservm:~$ cp /lib64/ld-linux-x86-64.so.2 gb/lib64
user@uservm:~$ sudo chroot gb /bin/bash
bash-5.1#
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/lib64/ld-linux-x86-64.so.2 (0x00007f94aa8dc000)
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```
user@uservm:~$ mkdir gb/lib
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```
user@uservm:~$ mkdir gb/lib64
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```
user@uservm:~$ cp /lib/x86_64-linux-gnu/libtinfo.so.6 gb/lib
```

```
user@uservm:~$ cp /lib/x86_64-linux-gnu/libc.so.6 gb/lib
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user@uservm:~$ cp /lib64/ld-linux-x86-64.so.2 gb/lib64
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```
user@uservm:~$ sudo chroot gb /bin/bash
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bash-5.1# exit
```

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exit
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user@userv
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m:~$ whereis ls
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ls: /usr/bin/ls /usr/share/man/man1/ls.1.gz
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user@uservm:~$ mkdir ./gb/usr
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```
user@uservm:~$ mkdir ./gb/usr/bin
```

```
user@uservm:~$ cp /usr/bin/ls ./gb/usr/bin
```

```
user@uservm:~$ ldd /usr/bin/ls
```

```
linux-vdso.so.1 (0x00007ffc35eda000)
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```
libselinux.so.1 => /lib/x86_64-linux-gnu/libselinux.so.1 (0x00007fc5f42d0000)
```

```
libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007fc5f4000000)
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```
libpcre2-8.so.0 => /lib/x86_64-linux-gnu/libpcre2-8.so.0 (0x00007fc5f4239000)
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```
/lib64/ld-linux-x86-64.so.2 (0x00007fc5f432f000)
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```
user@uservm:~$ cp /usr/bin/ls ./gb/usr/bin/
```

```
user@uservm:~$ cp /lib/x86_64-linux-gnu/libselinux.so.1 ./gb/lib/
```

```
user@uservm:~$ cp /lib/x86_64-linux-gnu/libc.so.6 ./gb/lib/
```

```
user@uservm:~$ cp /lib/x86_64-linux-gnu/libpcre2-8.so.0 ./gb/lib/
```

```
user@uservm:~$ cp /lib64/ld-linux-x86-64.so.2 ./gb/lib64/
```

```
user@uservm:~$ sudo chroot gb /bin/bash
```

```
[sudo] пароль для user:
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```
bash-5.1# ls -l
```

```
total 16
```

```
drwxrwxr-x 2 1000 1000 4096 Jun 22 11:09 bin
```

```
drwxrwxr-x 2 1000 1000 4096 Jun 22 11:29 lib
```

```
drwxrwxr-x 2 1000 1000 4096 Jun 22 11:12 lib64
```

```
drwxrwxr-x 3 1000 1000 4096 Jun 22 11:24 usr
```

```
bash-5.1#
```


root@uservm: /home/user

```
vattu_etc forever pretended_etc forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:c6:05:77 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 79118sec preferred_lft 79118sec
    inet6 fe80::7d40:57d:b364:af6a/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
user@uservm:~$ sudo ip netns add test1
[sudo] пароль для user:
user@uservm:~$ sudo ip netns exec test1 bash
root@uservm:/home/user# 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@uservm:/home/user# 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
3: veth1@if4: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether f2:7e:0b:ad:69:95 brd ff:ff:ff:ff:ff:ff link-netnsid 0
root@uservm:/home/user# sudo ip addr add 10.0.0.2/24 dev veth1
root@uservm:/home/user# sudo ip link set dev veth1 up
root@uservm:/home/user# 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
3: veth1@if4: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether f2:7e:0b:ad:69:95 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
    inet6 fe80::f07e:bff:fead:6995/64 scope link
        valid_lft forever preferred_lft forever
root@uservm:/home/user# ping 10.0.0.1
PING 10.0.0.1 (10.0.0.1) 56(84) bytes of data.
64 bytes from 10.0.0.1: icmp_seq=1 ttl=64 time=0.101 ms
64 bytes from 10.0.0.1: icmp_seq=2 ttl=64 time=0.121 ms
64 bytes from 10.0.0.1: icmp_seq=3 ttl=64 time=0.074 ms
```



```
user@uservm:~$ sudo ip link set veth1 netns test1
```


user@uservm: ~



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link/ether f2:7e:0b:ad:69:95 brd ff:ff:ff:ff:ff:ff
4: veth0@veth1: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN group default qlen 1000
link/ether 9a:89:82:cc:1d:d3 brd ff:ff:ff:ff:ff:ff
user@uservm:~$ sudo ip link set veth1 netns test1
user@uservm:~$ sudo ip addr add 10.0.0.1/24 dev veth0
user@uservm:~$ sudo ip link set dev veth0 up
user@uservm:~$ 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:c6:05:77 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 77755sec preferred_lft 77755sec
inet6 fe80::7d40:57d:b364:af6a/64 scope link noprefixroute
valid_lft forever preferred_lft forever
4: veth0@if3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state LOWERLAYERDOWN group default qlen 1000
link/ether 9a:89:82:cc:1d:d3 brd ff:ff:ff:ff:ff:ff link-netns test1
inet 10.0.0.1/24 scope global veth0
valid_lft forever preferred_lft forever
user@uservm:~$ ping 10.0.0.2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=0.043 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.114 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=0.113 ms
^C
--- 10.0.0.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2058ms
rtt min/avg/max/mdev = 0.043/0.090/0.114/0.033 ms
user@uservm:~$
```