

Обновление

```
root@db-linux:/home/db# apt update
Hit:1 http://ru.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://ru.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:4 http://ru.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:5 http://ru.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [440 kB]
Get:6 http://ru.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [777 kB]
```

Установка утилит

```
root@db-linux:/home/db#
root@db-linux:/home/db# sudo apt install lxc-utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer r
  dbconfig-common dbconfig-mysql icc-profiles-free javascript-common li
  libis-iquery-mousewheel libis-iquery-timepicker libis-iquery-ui libis
```

lxs не установлен

```
root@db-linux:/home/db# lxs storage list
Command 'lxs' not found, did you mean:
  command 'lxc' from snap lxd (5.15-002fa0f)
  command 'lxd' from snap lxd (5.15-002fa0f)
  command 'lxi' from snap lxi-tools (2.5)
  command 'les' from deb atm-tools (1:2.5.1-4build2)
  command 'lxd' from deb lxd-installer (1)
  command 'lrs' from deb lrslib (0.71a-1)
  command 'ls' from deb coreutils (8.32-4.1ubuntu1)
  command 'lxsu' from deb lxqt-sudo (0.17.0-0ubuntu1)
  command 'lxc' from deb lxd-installer (1)
  command 'lxi' from deb lxi-tools (2.1-1)
  command 'lvs' from deb lvm2 (2.03.11-2.1ubuntu4)
See 'snap info <snapname>' for additional versions.
root@db-linux:/home/db#
```

lxc не установлен, устанавливаем:

```
root@db-linux:/home/db# lxc network list
Command 'lxc' not found, but can be installed with:
snap install lxd # version 5.15-002fa0f, or
apt install lxd-installer # version 1
See 'snap info lxd' for additional versions.
root@db-linux:/home/db# snap install lxd
lxd 5.15-002fa0f from Canonical✓ installed
root@db-linux:/home/db#
```

Вывод списков

```

root@db-linux:/home/db# lxc network list
If this is your first time running LXD on this machine, you should also run: lxd init
To start your first container, try: lxc launch ubuntu:22.04
Or for a virtual machine: lxc launch ubuntu:22.04 --vm

```

NAME	TYPE	MANAGED	IPV4	IPV6	DESCRIPTION	USED BY	STATE
br-083289fac41a	bridge	NO				0	
docker0	bridge	NO				0	
enp0s3	physical	NO				0	
lxcbr0	bridge	NO				0	

```

root@db-linux:/home/db#

```

```

root@db-linux:/home/db# lxc storage list

```

NAME	DRIVER	SOURCE	DESCRIPTION	USED BY	STATE
------	--------	--------	-------------	---------	-------

```

root@db-linux:/home/db# d_

```

Проверка сети:

```

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_code1 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 83214sec preferred_lft 83214sec
    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 qlen 1000
    link/ether 02:42:8a:8d:71:7b 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 qlen 1000
    link/ether 02:42:8a:8d:71:7b 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: vxbr0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default qlen 1000
    link/ether 00:16:3e:00:00:00 brd ff:ff:ff:ff:ff:ff
    inet 10.0.3.1/24 brd 10.0.3.255 scope global vxbr0
        valid_lft forever preferred_lft forever
root@db-linux:/home/db#

```

Создание контейнера:

```

root@db-linux:/home/db# lxc-create -n test123 -t ubuntu

```

Получил ошибку типа:

```

sudo lxc-create -t download -n ubuntu

```

```

lxc-create: No such file or directory - bad template: ubuntu

```

```

lxc-create: bad template: ubuntu

```

Решение:

```
sudo apt-get install lxc-templates
```

В итоге контейнер создался:

```
##  
# The default user is 'ubuntu' with password 'ubuntu'!  
# Use the 'sudo' command to run tasks as root in the container.  
##  
  
root@db-linux:/home/db#
```

Запуск, подключение и проверка памяти

```
root@db-linux:/home/db# lxc-start -n test123  
root@db-linux:/home/db# lxc-attach -n test123  
lxc-attach: test123: attach.c: get_attach_context: 405 Connection refused - Failed to get init pid  
lxc-attach: test123: attach.c: lxc_attach: 1469 Connection refused - Failed to get attach context  
root@db-linux:/home/db# lxc-attach -n test123  
root@test123:/# free -m  
              total        used        free      shared  buff/cache   available  
Mem:           1951          26       1898           0           25        1924  
Swap:              0              0              0  
root@test123:/# _
```

Выход и останов:

```
root@test123:/# exit  
exit  
root@db-linux:/home/db# lxc-stop -n test123  
root@db-linux:/home/db# _
```


Ограничиваем память:

```
root@db-linux:/home/db# mcedit /var/lib/lxc/test123/config
```

```
# Common configuration
lxc.include = /usr/share/lxc/config/ubuntu.common.conf

# Container specific configuration
lxc.rootfs.path = dir:/var/lib/lxc/test123/rootfs
lxc.uts.name = test123
lxc.arch = amd64

# Network configuration
lxc.net.0.type = veth
lxc.net.0.link = lxcbr0
lxc.net.0.flags = up
lxc.net.0.hwaddr = 00:16:3e:4b:b0:09

# Memory limit
lxc.cgroup2.memory.max = 256M
```

Повторный запуск и проверка памяти:

```
root@db-linux:/home/db# lxc-start -n test123
root@db-linux:/home/db# lxc-attach -n test123
root@test123:/# free -m
              total        used        free      shared  buff/cache   available
Mem:           256          26         229           0           0          229
Swap:            0            0            0
```

Автозапуск

```
root@db-linux:/home/db# mcedit /var/lib/lxc/test123/config
```

```
# Memory limit
lxc.cgroup2.memory.max = 256M

#Autostart
lxc.start.auto = 1
lxc.start.delay = 5_
```

Рестарт и подключение к контейнеру без запуска.

Видно, что он уже запущен.

```
root@db-linux:/home/db# Connection to localhost closed by remote host.  
Connection to localhost closed.
```

```
C:\Users\CSTGONTAA>ssh -p 8022 db@localhost
```

```
db@localhost's password:
```

```
Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.19.0-35-generic x86_64)
```

```
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage
```

```
409 updates can be applied immediately.
```

```
150 of these updates are standard security updates.
```

```
To see these additional updates run: apt list --upgradable
```

```
Last login: Fri Jul  7 07:50:19 2023 from 10.0.2.2
```

```
db@db-linux:~$ sudo su
```

```
[sudo] password for db:
```

```
root@db-linux:/home/db#
```

```
root@db-linux:/home/db# lxc-attach -n test123
```

```
root@test123:/# _
```

Логирование

```
lxc.log.level = 0
```

```
lxc.log.file = /var/lib/lxc/test123/test_log
```



```
root@db-linux:/home/db# cat /var/lib/lxc/test123/test_log
lxc test123 20230707155414.762 DEBUG commands - commands.c:lxc_cmd_rsp_rcv_fds:147 - Command "get_init_pid" received
lxc test123 20230707155414.762 TRACE commands - commands.c:lxc_cmd:520 - Opened new command socket connection fd 3
lxc test123 20230707155414.762 DEBUG commands - commands.c:lxc_cmd_rsp_rcv_fds:147 - Command "get_state" received
lxc test123 20230707155414.762 TRACE commands - commands.c:lxc_cmd:520 - Opened new command socket connection fd 3
lxc test123 20230707155414.762 DEBUG commands - commands.c:lxc_cmd_get_state:1062 - Container "test123" is in "RUNNING" state
lxc test123 20230707155414.762 DEBUG commands - commands.c:lxc_cmd_rsp_rcv_fds:147 - Command "get_state" received
lxc test123 20230707155414.762 TRACE commands - commands.c:lxc_cmd:520 - Opened new command socket connection fd 3
lxc test123 20230707155414.762 DEBUG commands - commands.c:lxc_cmd_get_state:1062 - Container "test123" is in "RUNNING" state
```