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Институт цифрового образования
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ДИСЦИПЛИНА:
«Распределенные системы»
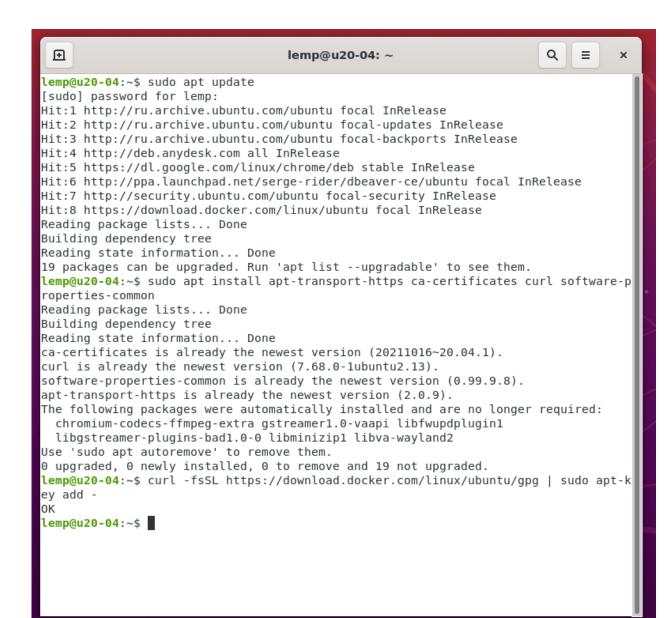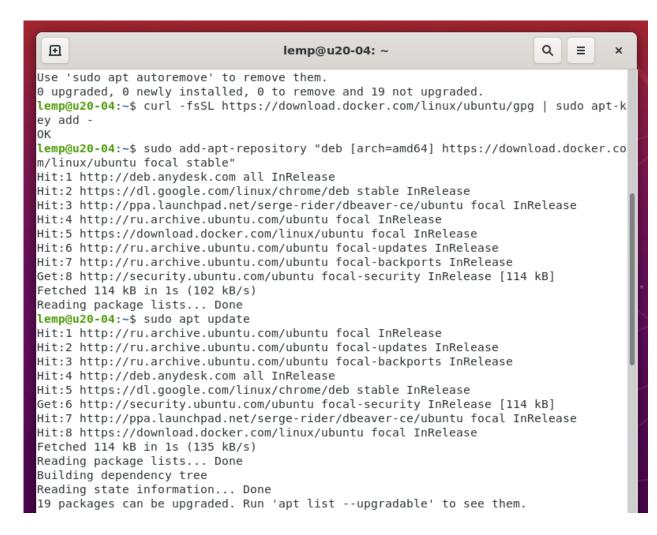
Отчет по практической работе №3

Тема:

«Семинар 3. Message queue. RabbitMQ»

Выполнил:
группа: Дьяченко А. Н. ТП-191
Проверил: Босенко Т.М.

Москва
2022

```
lemp@u20-04:~$ sudo apt update
[sudo] password for lemp:
Hit:1 http://ru.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://ru.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://ru.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 http://deb.anydesk.com all InRelease
Hit:5 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:6 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:8 https://download.docker.com/linux/ubuntu focal InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
19 packages can be upgraded. Run 'apt list --upgradable' to see them.
lemp@u20-04:~$ sudo apt install apt-transport-https ca-certificates curl software-p
roperties-common
Reading package lists... Done
Building dependency tree
Reading state information... Done
ca-certificates is already the newest version (20211016~20.04.1).
curl is already the newest version (7.68.0-1ubuntu2.13).
software-properties-common is already the newest version (0.99.9.8).
apt-transport-https is already the newest version (2.0.9).
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libfwupdplugin1
  libgstreamer-plugins-bad1.0-0 libminizip1 libva-wayland2
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 19 not upgraded.
lemp@u20-04:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-k
ey add -
OK
lemp@u20-04:~$
```

```
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 19 not upgraded.
lemp@u20-04:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-k
ey add -
OK
lemp@u20-04:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.co
m/linux/ubuntu focal stable"
Hit:1 http://deb.anydesk.com all InRelease
Hit:2 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:3 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease
Hit:4 http://ru.archive.ubuntu.com/ubuntu focal InRelease
Hit:5 https://download.docker.com/linux/ubuntu focal InRelease
Hit:6 http://ru.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:7 http://ru.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:8 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Fetched 114 kB in 1s (102 kB/s)
Reading package lists... Done
lemp@u20-04:~$ sudo apt update
Hit:1 http://ru.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://ru.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://ru.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 http://deb.anydesk.com all InRelease
Hit:5 https://dl.google.com/linux/chrome/deb stable InRelease
Get:6 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:7 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease
Hit:8 https://download.docker.com/linux/ubuntu focal InRelease
Fetched 114 kB in 1s (135 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
19 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

```
lemp@u20-04:~$ apt-cache policy docker-ce
docker-ce:
  Installed: 5:20.10.17~3-0~ubuntu-focal
  Candidate: 5:20.10.18~3-0~ubuntu-focal
  Version table:
     5:20.10.18~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
 *** 5:20.10.17~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
        100 /var/lib/dpkg/status
     5:20.10.16~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.15~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.14~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.13~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.12~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.11~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.10~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.9~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.8~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.7~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.6~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.5~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.4~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
     5:20.10.3-3-0~ubuntu-focal 500
```

```
Setting up docker-ce (5:20.10.18~3-0~ubuntu-focal) ...
Processing triggers for systemd (245.4-4ubuntu3.17) ...
lemp@u20-04:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
     Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: e>
     Active: active (running) since Tue 2022-09-27 09:26:48 MSK; 44s ago
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
   Main PID: 73038 (dockerd)
      Tasks: 8
     Memory: 30.3M
     CGroup: /system.slice/docker.service
             └─73038 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/contai>

сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.035774094+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.035814595+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.035830395+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.036067499+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.302013773+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.344242068+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.377715618+03:00" >
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.377762319+03:00" >
сен 27 09:26:48 u20-04 systemd[1]: Started Docker Application Container Engine.
сен 27 09:26:48 u20-04 dockerd[73038]: time="2022-09-27T09:26:48.414037116+03:00" >
lines 1-21/21 (END)
```

```
lemp@u20-04:~$ sudo apt install docker-ce
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libfwupdplugin1
  libgstreamer-plugins-bad1.0-0 libminizip1 libva-wayland2
Use 'sudo apt autoremove' to remove them.
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following packages will be upgraded:
  docker-ce
1 upgraded, 0 newly installed, 0 to remove and 18 not upgraded.
Need to get 20,4 MB of archives.
After this operation, 12,4 MB disk space will be freed.
Get:1 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64 5
:20.10.18~3-0~ubuntu-focal [20,4 MB]
Fetched 20,4 MB in 7s (2 990 kB/s)
(Reading database ... 185825 files and directories currently installed.)
Preparing to unpack .../docker-ce_5%3a20.10.18~3-0~ubuntu-focal_amd64.deb ...
Unpacking docker-ce (5:20.10.18~3-0~ubuntu-focal) over (5:20.10.17~3-0~ubuntu-focal
) ...
Setting up docker-ce (5:20.10.18~3-0~ubuntu-focal) ...
Processing triggers for systemd (245.4-4ubuntu3.17) ...
lemp@u20-04:~$ sudo curl -L "https://github.com/docker/compose/releases/download/1.
25.0/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
    0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100 16.2M  100 16.2M    0     0  19.5M      0 --:--:-- --:--:-- --:--:-- 19.5M
lemp@u20-04:~$ █
```

```
lemp@u20-04:~$ sudo chmod +x /usr/local/bin/docker-compose
lemp@u20-04:~$ docker-compose --version
docker-compose version 1.25.0, build 0a186604
lemp@u20-04:~$ docker-compose ps
ERROR:
        Can't find a suitable configuration file in this directory or any
        parent. Are you in the right directory?

        Supported filenames: docker-compose.yml, docker-compose.yaml

lemp@u20-04:~$ █
```
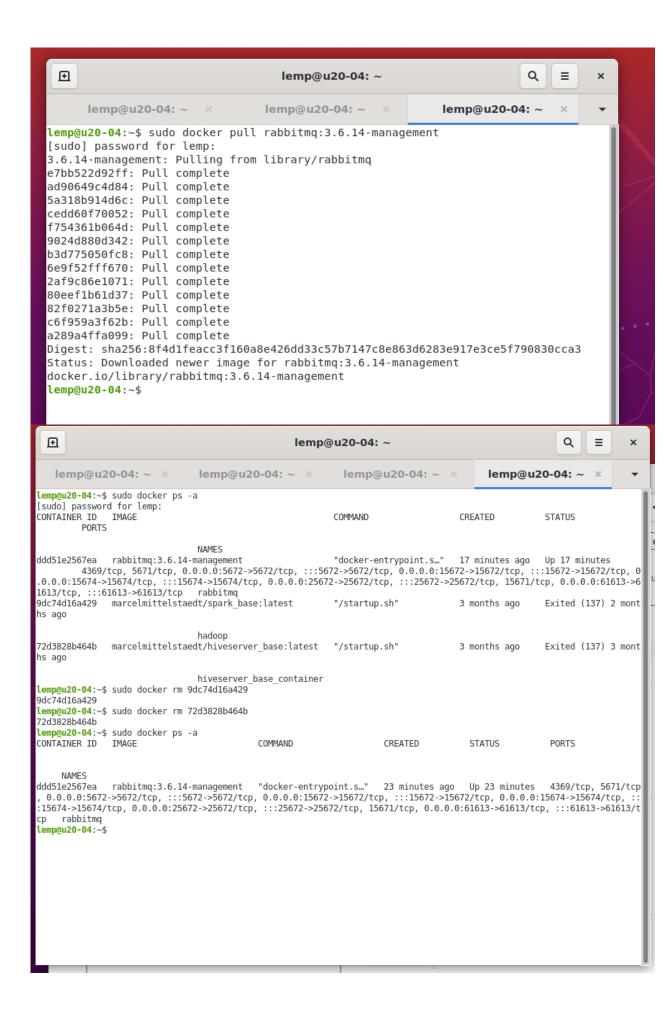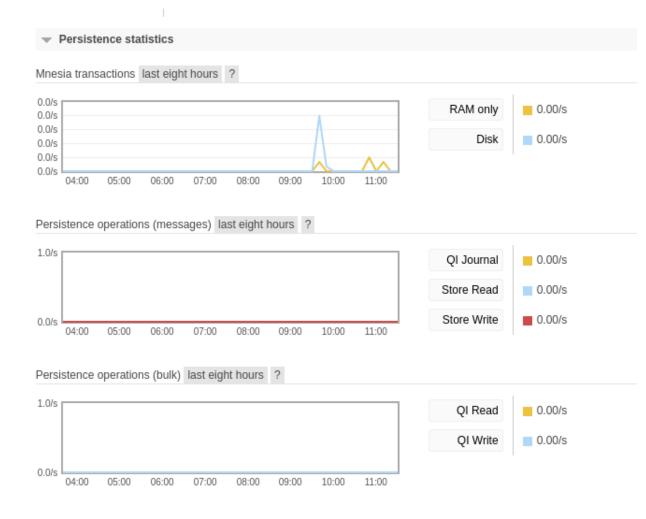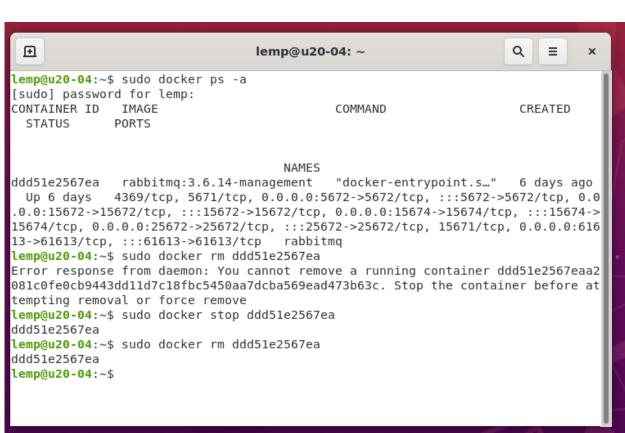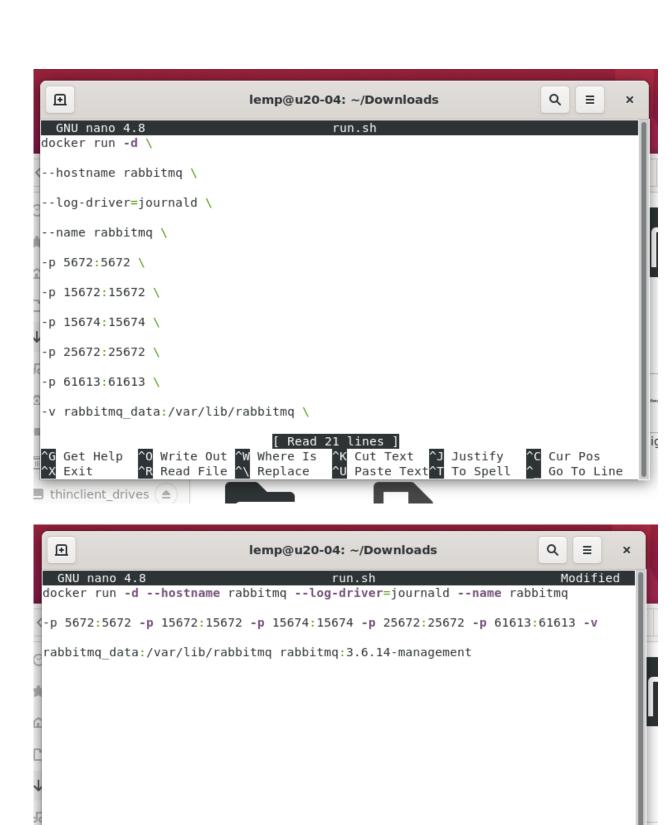
```
lemp@u20-04:~$ sudo docker pull rabbitmq:3.6.14-management
[sudo] password for lemp:
3.6.14-management: Pulling from library/rabbitmq
e7bb522d92ff: Pull complete
ad90649c4d84: Pull complete
5a318b914d6c: Pull complete
cedd60f70052: Pull complete
f754361b064d: Pull complete
9024d880d342: Pull complete
b3d775050fc8: Pull complete
6e9f52fff670: Pull complete
2af9c86e1071: Pull complete
80eef1b61d37: Pull complete
82f0271a3b5e: Pull complete
c6f959a3f62b: Pull complete
a289a4ffa099: Pull complete
Digest: sha256:8f4d1feacc3f160a8e426dd33c57b7147c8e863d6283e917e3ce5f790830cca3
Status: Downloaded newer image for rabbitmq:3.6.14-management
docker.io/library/rabbitmq:3.6.14-management
lemp@u20-04:~$
```

```
lemp@u20-04:~$ sudo docker ps -a
[sudo] password for lemp:
CONTAINER ID   IMAGE                                         COMMAND              CREATED         STATUS
        PORTS
                              NAMES
ddd51e2567ea   rabbitmq:3.6.14-management                    "docker-entrypoint.s…"   17 minutes ago   Up 17 minutes
        4369/tcp, 5671/tcp, 0.0.0.0:5672->5672/tcp, :::5672->5672/tcp, 0.0.0.0:15672->15672/tcp, :::15672->15672/tcp, 0
.0.0.0:15674->15674/tcp, :::15674->15674/tcp, 0.0.0.0:25672->25672/tcp, :::25672->25672/tcp, 15671/tcp, 0.0.0.0:61613->6
1613/tcp, :::61613->61613/tcp    rabbitmq
9dc74d16a429   marcelmittelstaedt/spark_base:latest          "/startup.sh"        3 months ago    Exited (137) 2 mont
hs ago
                              hadoop
72d3828b464b   marcelmittelstaedt/hiveserver_base:latest     "/startup.sh"        3 months ago    Exited (137) 3 mont
hs ago
                              hiveserver_base_container
lemp@u20-04:~$ sudo docker rm 9dc74d16a429
9dc74d16a429
lemp@u20-04:~$ sudo docker rm 72d3828b464b
72d3828b464b
lemp@u20-04:~$ sudo docker ps -a
CONTAINER ID   IMAGE                          COMMAND              CREATED         STATUS          PORTS

      NAMES
ddd51e2567ea   rabbitmq:3.6.14-management     "docker-entrypoint.s…"   23 minutes ago   Up 23 minutes    4369/tcp, 5671/tcp
, 0.0.0.0:5672->5672/tcp, :::5672->5672/tcp, 0.0.0.0:15672->15672/tcp, :::15672->15672/tcp, 0.0.0.0:15674->15674/tcp, ::
:15674->15674/tcp, 0.0.0.0:25672->25672/tcp, :::25672->25672/tcp, 15671/tcp, 0.0.0.0:61613->61613/tcp, :::61613->t
cp    rabbitmq
lemp@u20-04:~$
```

```
lemp@u20-04:~$ sudo docker pull rabbitmq:3.6.14-management
[sudo] password for lemp:
3.6.14-management: Pulling from library/rabbitmq
e7bb522d92ff: Pull complete
ad90649c4d84: Pull complete
5a318b914d6c: Pull complete
cedd60f70052: Pull complete
f754361b064d: Pull complete
9024d880d342: Pull complete
b3d775050fc8: Pull complete
6e9f52fff670: Pull complete
2af9c86e1071: Pull complete
80eef1b61d37: Pull complete
82f0271a3b5e: Pull complete
c6f959a3f62b: Pull complete
a289a4ffa099: Pull complete
Digest: sha256:8f4d1feacc3f160a8e426dd33c57b7147c8e863d6283e917e3ce5f790830cca3
Status: Downloaded newer image for rabbitmq:3.6.14-management
docker.io/library/rabbitmq:3.6.14-management
lemp@u20-04:~$ sudo docker volume create rabbitmq_data
rabbitmq_data
lemp@u20-04:~$ sudo docker run -d --hostname rabbitmq --log-driver=journald --name rabbitmq -p 5672:5672 -p 15672:15672
-p 15674:15674 -p 25672:25672 -p 61613:61613 -v rabbitmq_data:/var/lib/rabbitmq rabbitmq:3.6.14-management
ddd51e2567eaa2081c0fe0cb9443dd11d7c18fbc5450aa7dcba569ead473b63c
lemp@u20-04:~$ sudo docker container inspect rabbitmq
[
    {
        "Id": "ddd51e2567eaa2081c0fe0cb9443dd11d7c18fbc5450aa7dcba569ead473b63c",
        "Created": "2022-09-27T06:47:03.825800991Z",
        "Path": "docker-entrypoint.sh",
        "Args": [
```

▼ **I/O statistics**

I/O operations last eight hours ?

	Read	■ 0.00/s		Sync	■ 0.00/s
	Write	■ 0.00/s		File handle reopen	■ 0.00/s
	Seek	■ 0.00/s		File handle open attempt	■ 0.00/s

I/O data rates last eight hours

| | Read | ■ 0B/s |
| | Write | ■ 0B/s |

I/O average time per operation last eight hours

	Read	■ 0.03ms		Sync	■ 0.00ms
	Write	■ 0.00ms		File handle open attempt	■ 0.04ms
	Seek	■ 0.00ms			

▶ **Cluster links**

Persistence statistics

Mnesia transactions last eight hours ?

RAM only	■ 0.00/s
Disk	■ 0.00/s

Y-axis: 0.0/s (×6), X-axis: 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00

Persistence operations (messages) last eight hours ?

QI Journal	■ 0.00/s
Store Read	■ 0.00/s
Store Write	■ 0.00/s

Y-axis: 1.0/s … 0.0/s, X-axis: 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00

Persistence operations (bulk) last eight hours ?

QI Read	■ 0.00/s
QI Write	■ 0.00/s

Y-axis: 1.0/s … 0.0/s, X-axis: 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00

lemp@u20-04: ~

```
lemp@u20-04:~$ sudo docker ps -a
[sudo] password for lemp:
CONTAINER ID    IMAGE                   COMMAND                 CREATED
  STATUS        PORTS


                            NAMES
ddd51e2567ea    rabbitmq:3.6.14-management    "docker-entrypoint.s…"   6 days ago
  Up 6 days    4369/tcp, 5671/tcp, 0.0.0.0:5672->5672/tcp, :::5672->5672/tcp, 0.0
.0.0:15672->15672/tcp, :::15672->15672/tcp, 0.0.0.0:15674->15674/tcp, :::15674->
15674/tcp, 0.0.0.0:25672->25672/tcp, :::25672->25672/tcp, 15671/tcp, 0.0.0.0:616
13->61613/tcp, :::61613->61613/tcp    rabbitmq
lemp@u20-04:~$ sudo docker rm ddd51e2567ea
Error response from daemon: You cannot remove a running container ddd51e2567eaa2
081c0fe0cb9443dd11d7c18fbc5450aa7dcba569ead473b63c. Stop the container before at
tempting removal or force remove
lemp@u20-04:~$ sudo docker stop ddd51e2567ea
ddd51e2567ea
lemp@u20-04:~$ sudo docker rm ddd51e2567ea
ddd51e2567ea
lemp@u20-04:~$
```

```
  GNU nano 4.8                        run.sh

docker run -d \

--hostname rabbitmq \

--log-driver=journald \

--name rabbitmq \

-p 5672:5672 \

-p 15672:15672 \

-p 15674:15674 \

-p 25672:25672 \

-p 61613:61613 \

-v rabbitmq_data:/var/lib/rabbitmq \

                        [ Read 21 lines ]
^G Get Help    ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos
^X Exit        ^R Read File   ^\ Replace    ^U Paste Text ^T To Spell   ^  Go To Line
```

```
  GNU nano 4.8                        run.sh                        Modified

docker run -d --hostname rabbitmq --log-driver=journald --name rabbitmq

-p 5672:5672 -p 15672:15672 -p 15674:15674 -p 25672:25672 -p 61613:61613 -v

rabbitmq_data:/var/lib/rabbitmq rabbitmq:3.6.14-management

^G Get Help    ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos
^X Exit        ^R Read File   ^\ Replace    ^U Paste Text ^T To Spell   ^  Go To Line
```

```
lemp@u20-04:~/Downloads$ sudo chmod +x run.sh
lemp@u20-04:~/Downloads$ ./run.sh
"docker run" requires at least 1 argument.
See 'docker run --help'.

Usage:  docker run [OPTIONS] IMAGE [COMMAND] [ARG...]

Run a command in a new container
./run.sh: line 3: --hostname: command not found
./run.sh: line 6: --log-driver=journald: command not found
./run.sh: line 7: --name: command not found
./run.sh: line 9: -p: command not found
./run.sh: line 11: -p: command not found
./run.sh: line 13: -p: command not found
./run.sh: line 15: -p: command not found
./run.sh: line 17: -p: command not found
./run.sh: line 19: -v: command not found
./run.sh: line 21: rabbitmq:3.6.14-management: command not found
lemp@u20-04:~/Downloads$ sudo nano run.sh
lemp@u20-04:~/Downloads$
```

thinclient_drives ⏏

```
lemp@u20-04:~/Downloads$ docker volume create rabbitmq_data
rabbitmq_data
lemp@u20-04:~/Downloads$ sudo nano run.sh
lemp@u20-04:~/Downloads$ ./run.sh
b32dc87ca4e6ced16f8075230a2e7bde7b268857dc89ea511ed294e536d03fdb
lemp@u20-04:~/Downloads$ sudo docker ps
CONTAINER ID    IMAGE                      COMMAND               CREATED          STATUS
         PORTS

                                                                                  NAMES
b32dc87ca4e6    rabbitmq:3.6.14-management    "docker-entrypoint.s…"    19 seconds ago    Up 18 s
econds    4369/tcp, 5671/tcp, 0.0.0.0:5672->5672/tcp, :::5672->5672/tcp, 0.0.0.0:15672->15672/
tcp, :::15672->15672/tcp, 0.0.0.0:15674->15674/tcp, :::15674->15674/tcp, 0.0.0.0:25672->25672
/tcp, :::25672->25672/tcp, 15671/tcp, 0.0.0.0:61613->61613/tcp, :::61613->61613/tcp    rabbitm
q
lemp@u20-04:~/Downloads$
```

thinclient_drives ⏏

emen ✕ +

secure | 172.17.0.2:15672

RabbitMQ™

Username: guest

Password: •••••

Login

▼ I/O statistics

I/O operations last eight hours ?

Read	■	0.00/s
Write	■	0.00/s
Seek	■	0.00/s

I/O data rates last eight hours

Read	■	0B/s
Write	■	0B/s

I/O average time per operation last eight hours

Queued messages last ten minutes ?

Ready	■	0
Unacked	■	0
Total	■	0

Message rates last ten minutes ?

Publish	■	0.00/s		Deliver (auto ack)	■	0.00/s
Publisher confirm	■	0.00/s		Consumer ack	■	0.00/s
Deliver (manual ack)	■	0.00/s		Redelivered	■	0.00/s

Get (manual ack)	■	0.00/s	Disk read	■	0.00/s
Get (auto ack)	■	0.00/s	Disk write	■	0.00/s