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ДИСЦИПЛИНА: «Распределенные системы»

Отчет по семинарскому занятию № 3

Тема:

«Message queue, RabbitMQ и Kafka»

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Москва
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Способ 2.

Терминал 1

```
lemp@u20-03: ~  
lemp@u20-03:~$ 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://security.ubuntu.com/ubuntu focal-security InRelease  
Hit:7 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease  
Hit:8 https://download.docker.com/linux/ubuntu focal InRelease  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
62 packages can be upgraded. Run 'apt list --upgradable' to see them.  
lemp@u20-03:~$  
  
lemp@u20-03:~$ sudo apt install apt-transport-https ca-certificates curl software-properties-common  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
  
lemp@u20-03:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add  
OK  
  
lemp@u20-03:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"  
Hit:1 http://deb.anydesk.com all InRelease  
Hit:2 https://dl.google.com/linux/chrome/deb stable InRelease  
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]  
Hit:4 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease  
Hit:5 https://download.docker.com/linux/ubuntu focal InRelease  
Hit:6 http://ru.archive.ubuntu.com/ubuntu focal InRelease  
Hit:7 http://ru.archive.ubuntu.com/ubuntu focal-updates InRelease  
Hit:8 http://ru.archive.ubuntu.com/ubuntu focal-backports InRelease  
Fetched 114 kB in 3s (33,9 kB/s)  
Reading package lists... Done  
  
lemp@u20-03:~$ apt-cache policy docker-ce  
docker-ce:  
  Installed: 5:20.10.16~3-0~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  
*** 5:20.10.16~3-0~ubuntu-focal 500
```

```

lemp@u20-03:~$ 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 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

```

```

lemp@u20-03:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2022-09-27 09:26:21 MSK; 56s ago
   TriggeredBy: ● docker.socket

```

Терминал 2

```

lemp@u20-03:~$ 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
[sudo] password for lemp:

```

% Total	% Received	% Xferd	Average Speed	Time	Time	Time	Current
			Dload Upload	Total	Spent	Left	Speed
0	0	0	0	0	0	0	0
100	16.2M	100	16.2M	0	0	15.6M	0
				0:00:01	0:00:01	--:--:--	46.8M

```

lemp@u20-03:~$ sudo chmod +x /usr/local/bin/docker-compose

```

```

lemp@u20-03:~$ docker-compose --version
docker-compose version 1.25.0, build 0a186604

```

```

lemp@u20-03:~$ 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

Терминал 3

```

lemp@u20-03:~$ 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@u20-03:~$ sudo docker volume create rabbitmq_data
rabbitmq_data _
```

```
lemp@u20-03:~$ 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
4f78ad92698d0dc3e3eb3ba63bc1cc4f5c5994269be8b1d48a116a319c7e498f
```

```
lemp@u20-03:~$ sudo docker container inspect rabbitmq
```

```
"Gateway": "172.17.0.1",
"IPAddress": "172.17.0.2",
```



Username:

Password:

Login



3.6.14 Erlang 19.2.1

Overview Connections Channels Exchanges Queues Admin

Overview

Totals

Queued messages last minute ?

Currently idle

Message rates last minute ?

Currently idle

Global counts ?

Connections: 0 Channels: 0 Exchanges: 8 Queues: 0 Consumers: 0

Nodes

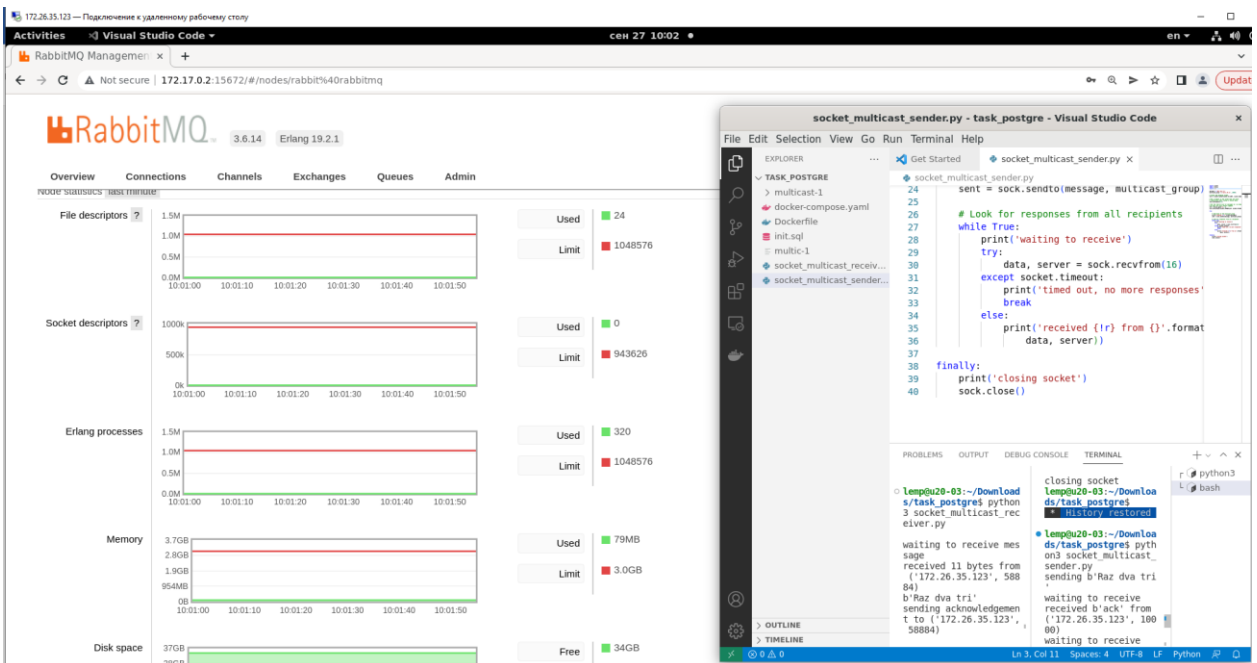
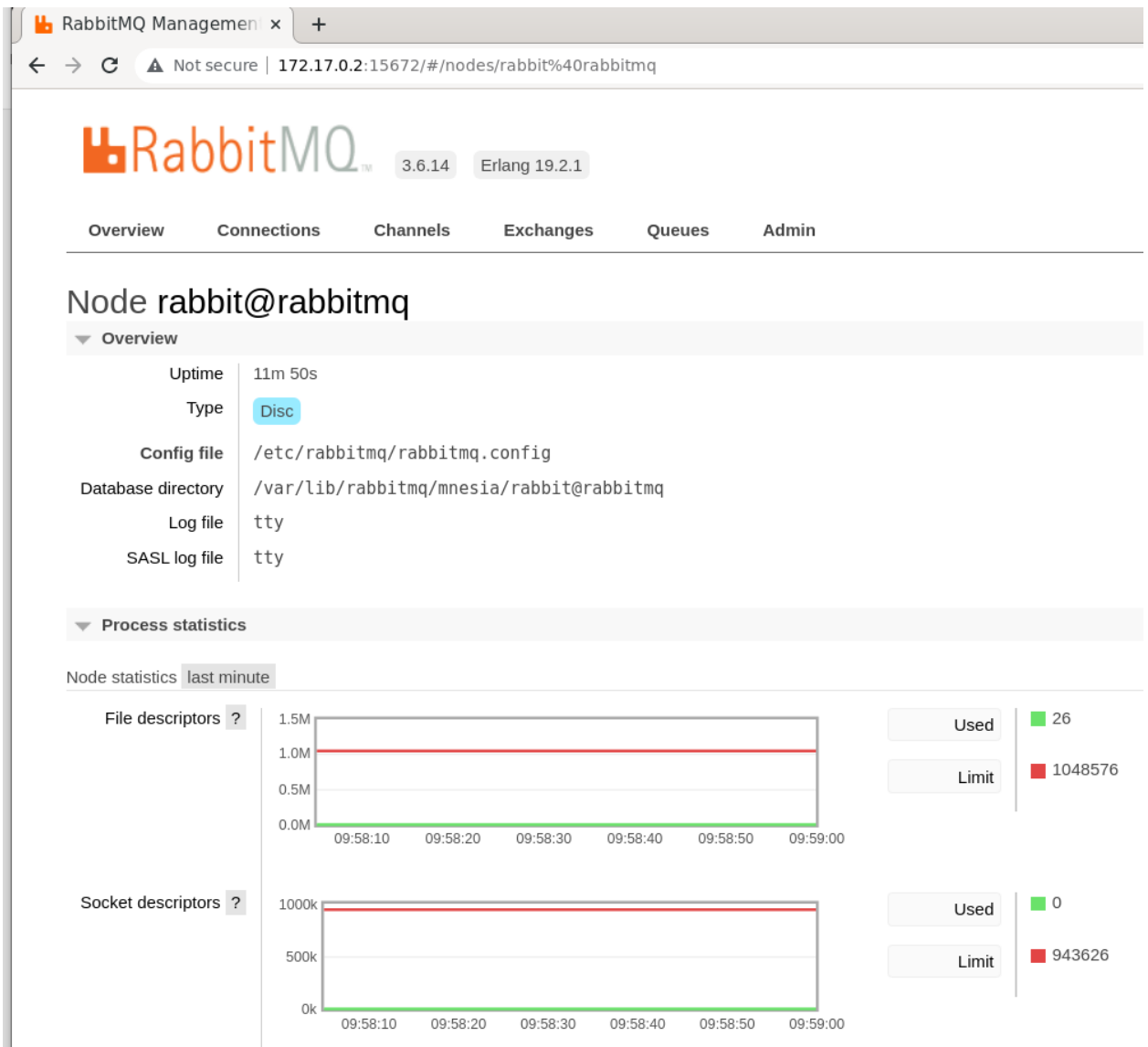
Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory	Disk space	Uptime	Info	Reset stats	+/-
rabbit@rabbitmq	26 1048576 available	0 943626 available	322 1048576 available	76MB 3.0GB high watermark	34GB 48MB low watermark	6m 54s	basic disc 1	This node All nodes	

Ports and contexts

Export definitions

Import definitions

HTTP API Server Docs Tutorials Community Support Community Slack Commercial Support Plugins GitHub Changelog



Терминал 4

```

lemp@u20-03:~$ sudo docker ps -a
[sudo] password for lemp:
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS
4f78ad92698d   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->61613/tcp, :::61613->61613/tcp rabbitmq
58e3f78acf08   marcelmittelstaedt/hive_base:latest "/startup.sh"           2 months ago   Exited (255) 3 weeks ago 0.0.0.0:8088->8088/tcp, :::8088->8088/tcp, 0.0.0.0:9864->9864/tcp, :::9864->9864/tcp, 0.0.0.0:9870->9870/tcp, :::9870->9870/tcp
22f309c71e12   task_postgre_postgres             "docker-entrypoint.s..." 3 months ago   Exited (255) 3 weeks ago 0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
b0f16b2388d6   marcelmittelstaedt/spark_base:latest "/startup.sh"           3 months ago   Exited (137) 3 months ago
5bee067fa9ea   marcelmittelstaedt/hiveserver_base:latest "/startup.sh"           3 months ago   Exited (255) 3 months ago 0.0.0.0:8088->8088/tcp, :::8088->8088/tcp, 0.0.0.0:9000->9000/tcp, :::9000->9000/tcp, 0.0.0.0:9864->9864/tcp, :::9864->9864/tcp, 0.0.0.0:9870->9870/tcp, :::9870->9870/tcp, 0.0.0.0:10000->10000/tcp, :::10000->10000/tcp

```

```

lemp@u20-03:~$ sudo docker stop ^C
lemp@u20-03:~$ sudo docker stop 22f309c71e12
22f309c71e12
lemp@u20-03:~$ sudo docker rm 22f309c71e12
22f309c71e12
lemp@u20-03:~$ sudo docker rm b0f16b2388d6
b0f16b2388d6
lemp@u20-03:~$ sudo docker rm ^C
lemp@u20-03:~$ sudo docker rm 5bee067fa9ea
5bee067fa9ea

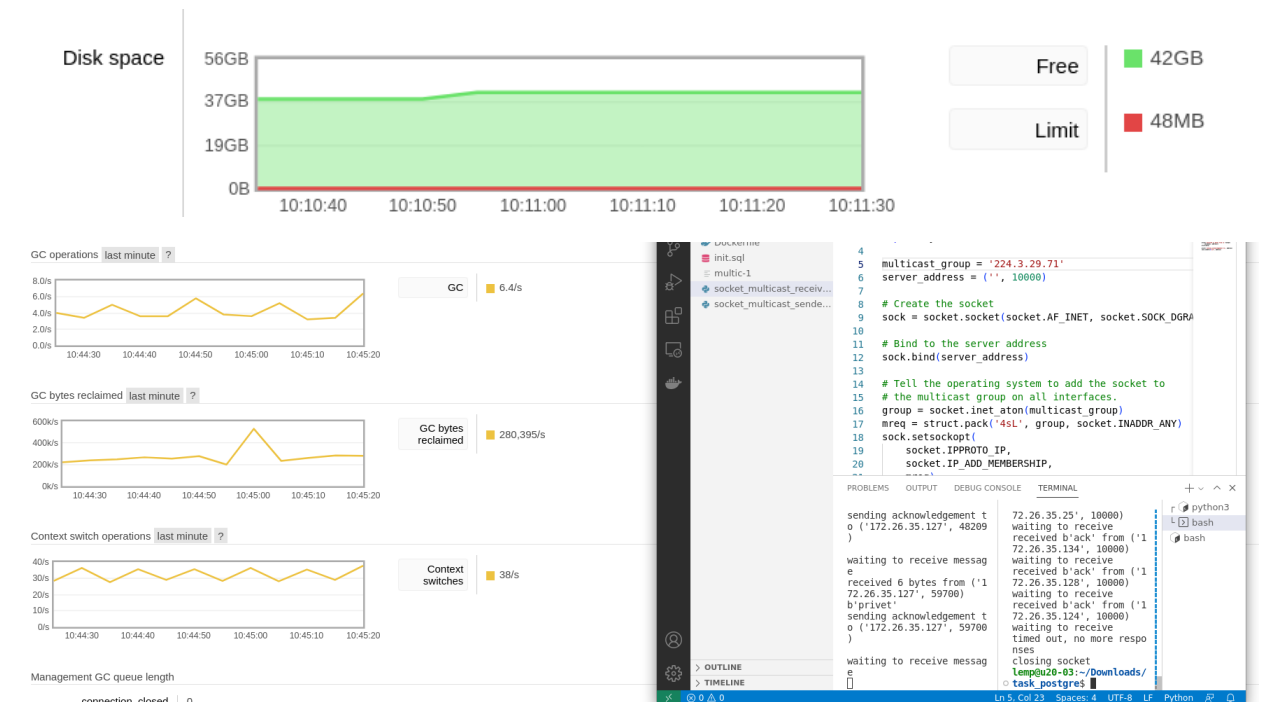
```

```

lemp@u20-03:~$ sudo docker ps -a
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS
4f78ad92698d   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->61613/tcp rabbitmq
68e3f78acf08   marcelmittelstaedt/hive_base:latest "/startup.sh"           2 months ago   Exited (255) 3 weeks ago 0.0.0.0:8088->8088/tcp, :::8088->8088/tcp, 0.0.0.0:9864->9864/tcp, :::9864->9864/tcp, 0.0.0.0:9870->9870/tcp, :::9870->9870/tcp
lemp@u20-03:~$ sudo docker rm 68e3f78acf08
68e3f78acf08

```

Освободилось место на диске:

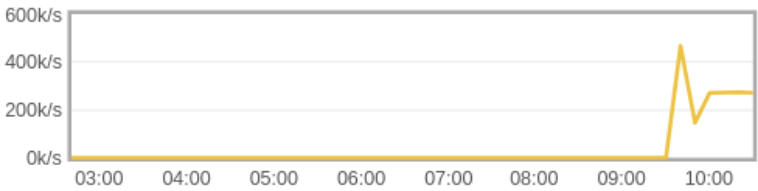


GC operations last eight hours ?



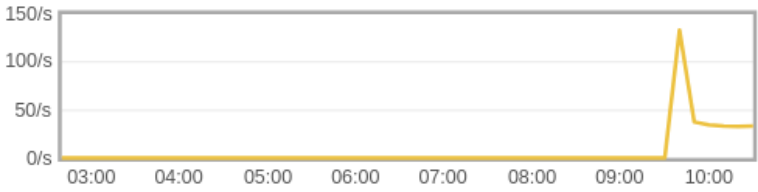
GC 4.7/s

GC bytes reclaimed last eight hours ?



GC bytes reclaimed 270,470/s

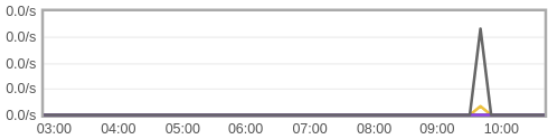
Context switch operations last eight hours ?



Context switches 33/s

I/O statistics

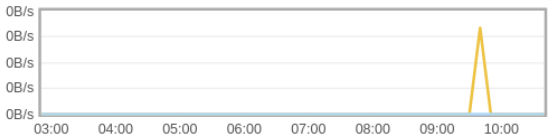
I/O operations last eight hours ?



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

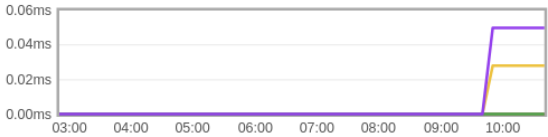
Sync 0.00/s
File handle reopen 0.00/s
File handle open attempt 0.00/s

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
Write 0.00ms
Seek 0.00ms

Sync 0.00ms
File handle open attempt 0.05ms

Способ 1.

Терминал 1.

```
lemp@u20-03: ~  
lemp@u20-03:~$ sudo docker ps -a  
[sudo] password for lemp:  
CONTAINER ID   IMAGE                                COMMAND                  CREATED  
STATUS        PORTS  
NAMES  
4f78ad92698d   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, 0.0.0.0:61613->61613/tcp, :::61613->61613/tcp   rabbitmq  
lemp@u20-03:~$ sudo docker stop 4f78ad92698d  
4f78ad92698d  
lemp@u20-03:~$ sudo docker rm 4f78ad92698d  
4f78ad92698d  
lemp@u20-03:~$ sudo docker ps -a  
CONTAINER ID   IMAGE                                COMMAND                  CREATED   STATUS    PORTS     NAMES  
lemp@u20-03:~$
```

```
lemp@u20-03:~$ mkdir RabbitMQ-1  
lemp@u20-03:~$ cd RabbitMQ-1  
lemp@u20-03:~/RabbitMQ-1$ touch run.sh  
lemp@u20-03:~/RabbitMQ-1$ ls  
run.sh  
lemp@u20-03:~/RabbitMQ-1$
```

```
lemp@u20-03:~/RabbitMQ-1$ sudo chmod +x run.sh  
lemp@u20-03:~/RabbitMQ-1$ nano run.sh
```



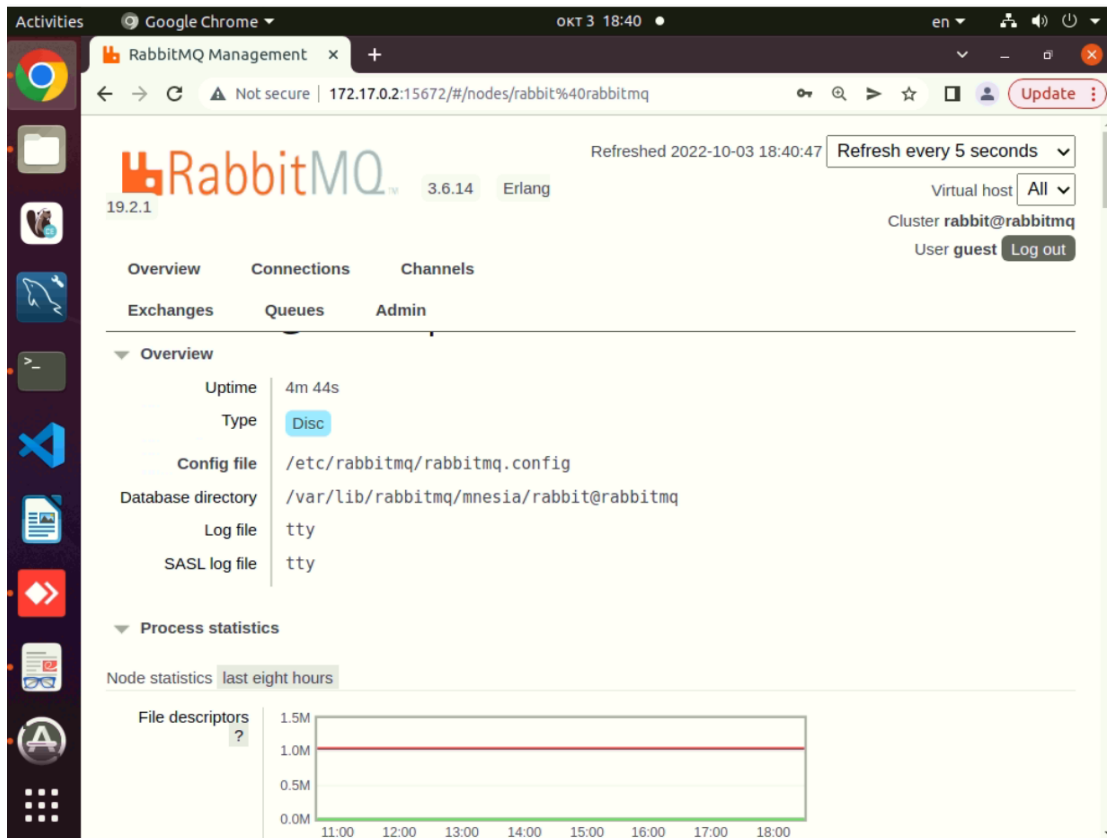
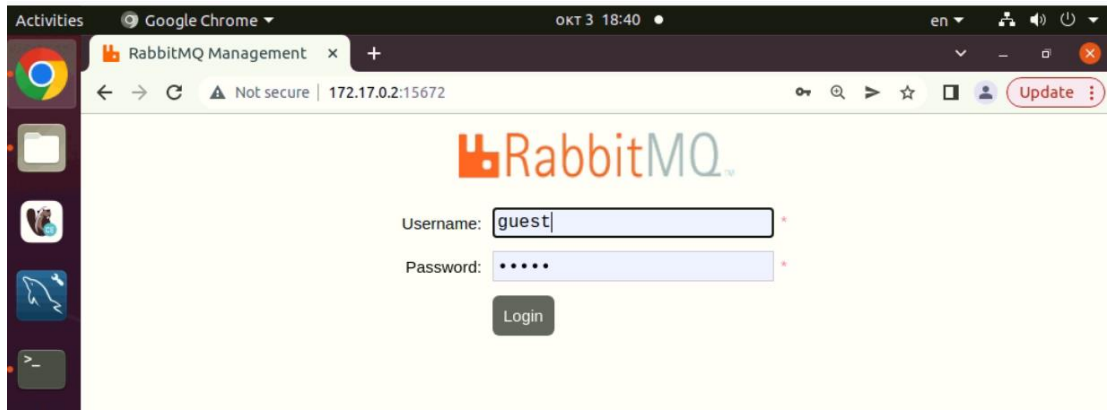
```
Onpe, lemp@u20-03: ~/RabbitMQ-1
GNU nano 4.8 run.sh Modified
docker run -d \
--hostname rabbitmq \
--log-driver=journald \
--name rabbitmq \
-p 5672:5672 \
--h-p 15672:15672 \
--p 15674:15674 \
--lo-p 25672:25672 \
-p 61613:61613 \
--na-v rabbitmq_data:/var/lib/rabbitmq \
-rabbitmq:3.6.14-management \
-p 5
-p 1
-p 1
-p 2
-p 6
-v
^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
rab
```

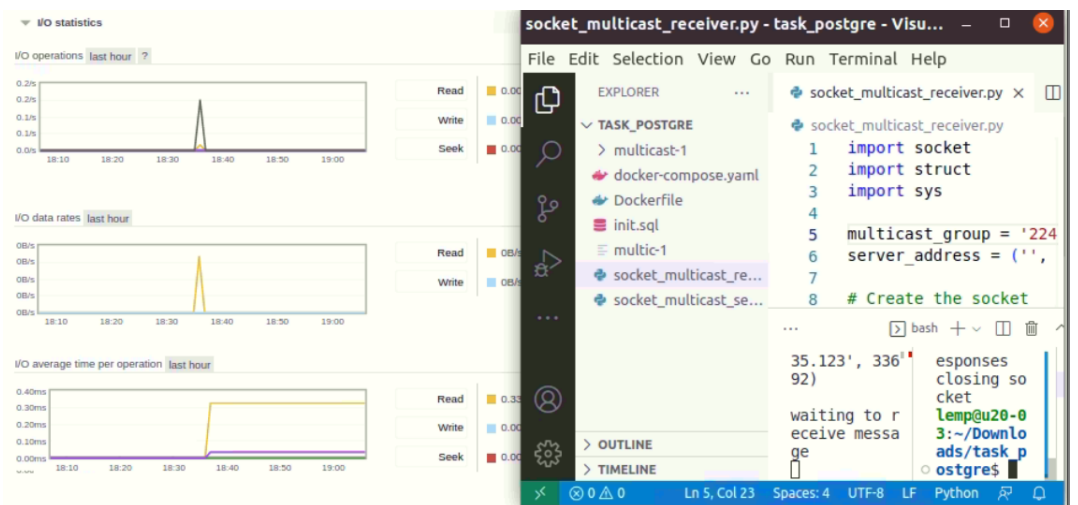
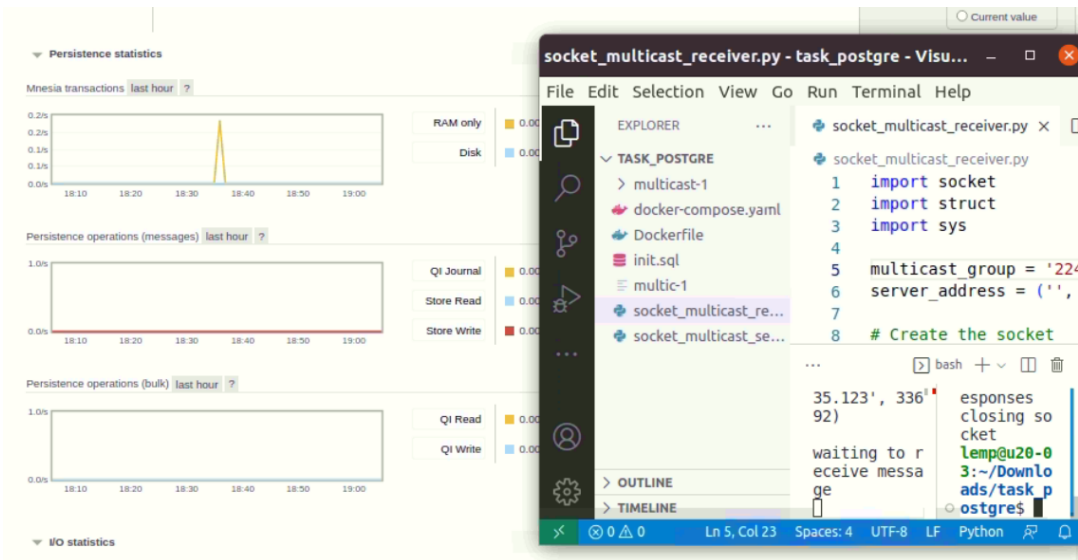
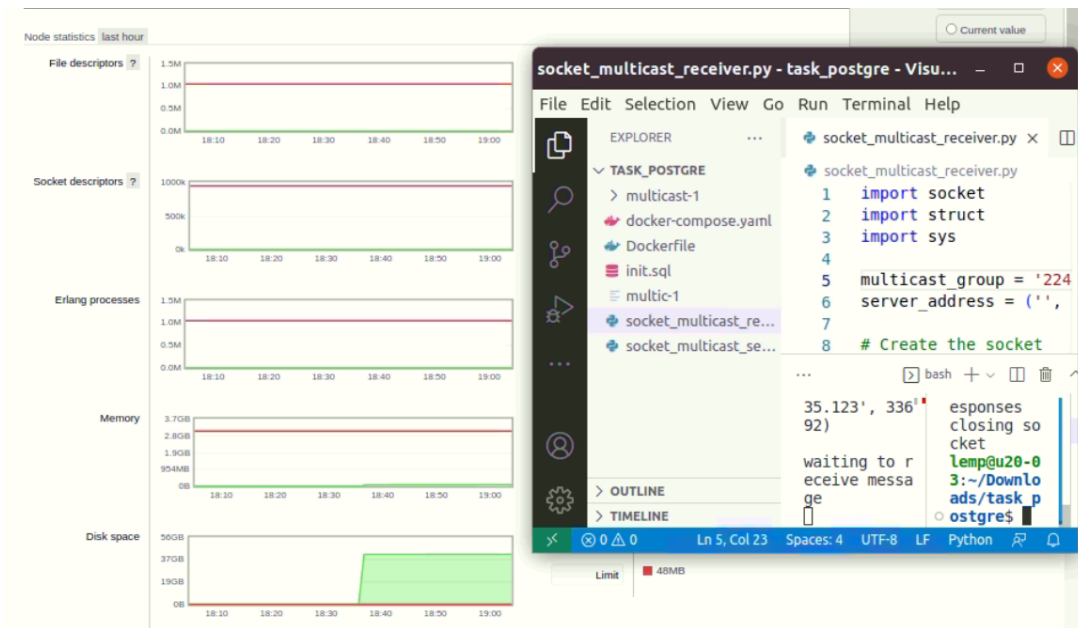
Терминал 2.

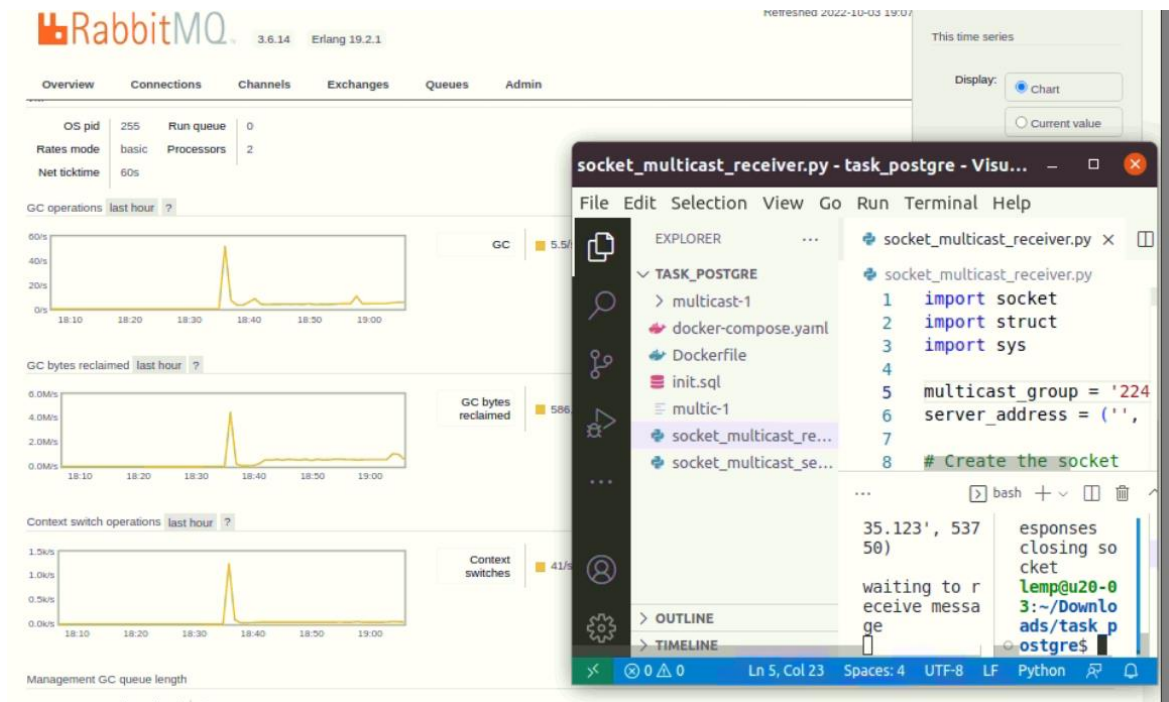
```
lemp@u20-03: ~/RabbitMQ-1
lemp@u20-03: ~/RabbitMQ-1 x lemp@u20-03: ~/RabbitMQ-1 x
lemp@u20-03:~/RabbitMQ-1$ sudo sh run.sh
[sudo] password for lemp:
a3809560ca89c699768ade060caac42ae89c5b4e8ebec9070ded6a884aa00d9
lemp@u20-03:~/RabbitMQ-1$ sudo docker volume create rabbitmq_data
rabbitmq_data
lemp@u20-03:~/RabbitMQ-1$
```

```
lemp@u20-03:~/RabbitMQ-1$ sudo docker container inspect rabbitmq
```

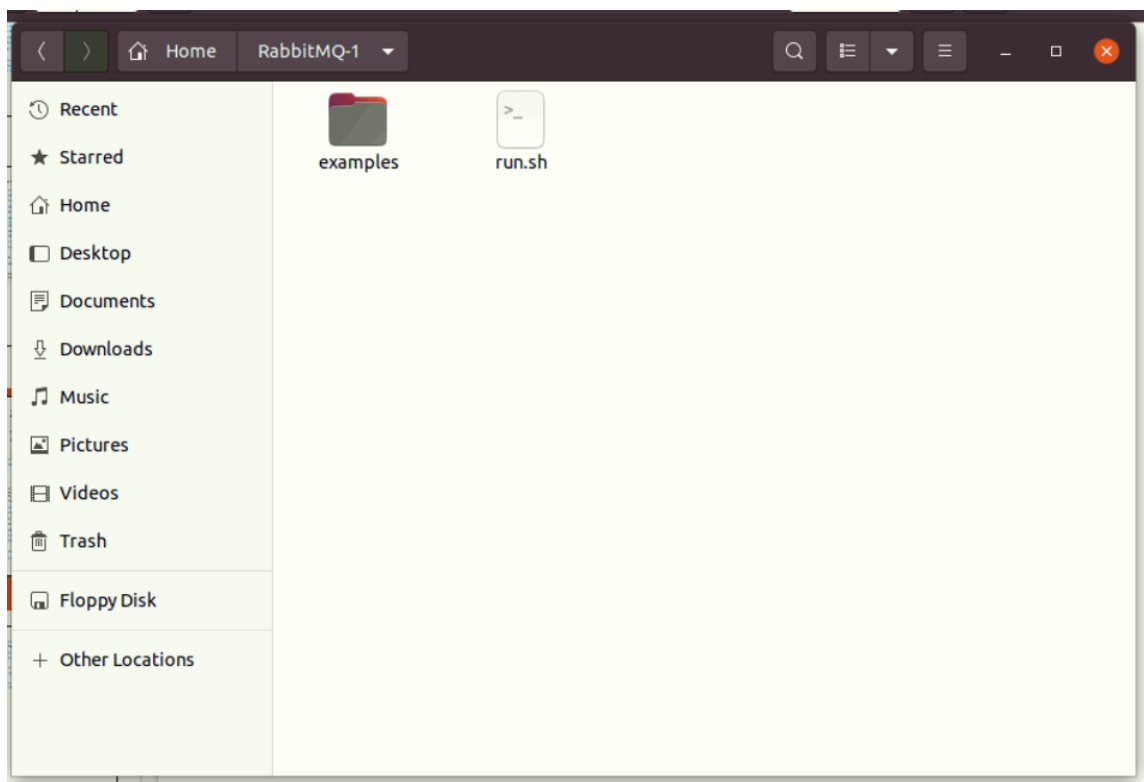
```
"EndpointID": "7c2ae0c613d0ec5.
c62bdbbc2c49",
"Gateway": "172.17.0.1",
"GlobalIPv6Address": "",
"GlobalIPv6PrefixLen": 0,
"IPAddress": "172.17.0.2",
"IPPrefixLen": 16,
```







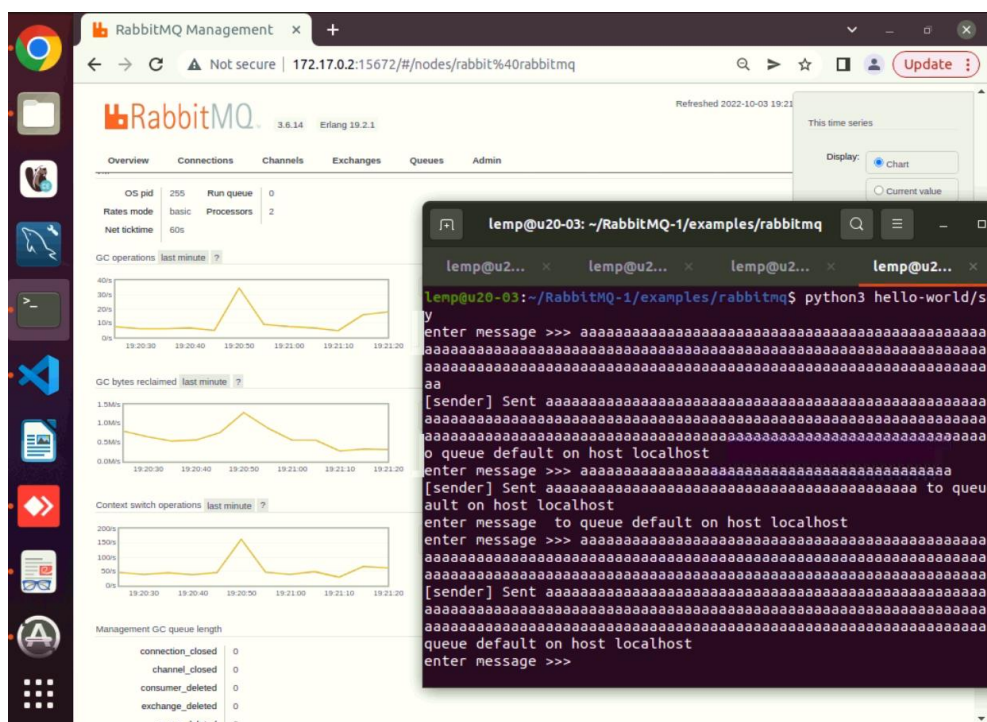
Терминал 3.



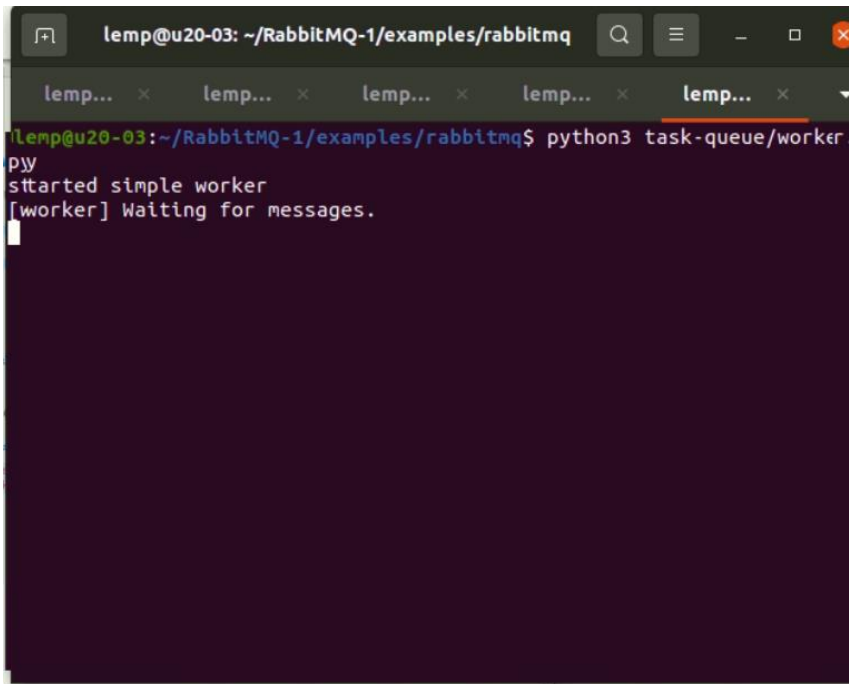
```
lemp@u20-03: ~/RabbitMQ-1/examples
lemp@u20-03: ~/... x lemp@u20-03: ~/... x lemp@u20-03: ~/... x
lemp@u20-03:~/RabbitMQ-1$ cd examples
lemp@u20-03:~/RabbitMQ-1/examples$ python3 --version
Python 3.8.10
lemp@u20-03:~/RabbitMQ-1/examples$ sudo apt -y install python3-pip
[sudo] password for lemp:
```

```
lemp@u20-03:~/RabbitMQ-1/examples/rabbitmq$ python3 hello-world/recieve.py
started simple reciever
[producer] Waiting for messages.
```

Терминал 4.

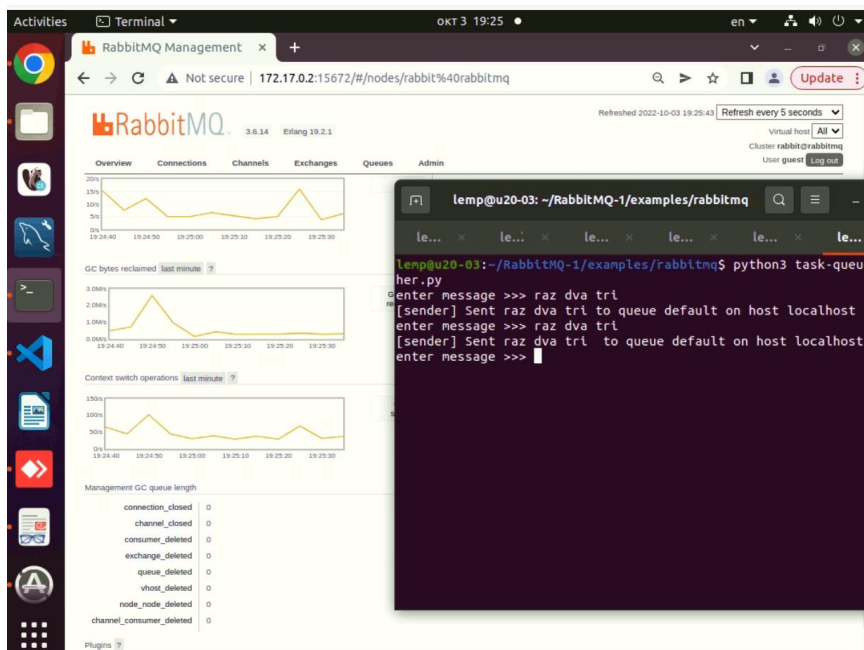


Терминал 5.



```
lemp@u20-03: ~/RabbitMQ-1/examples/rabbitmq
lemp... x lemp... x lemp... x lemp... x lemp... x
lemp@u20-03:~/RabbitMQ-1/examples/rabbitmq$ python3 task-queue/worker.py
started simple worker
[worker] Waiting for messages.
```

Терминал 6



The screenshot displays a terminal window and a web browser side-by-side. The terminal window, titled "lemp@u20-03: ~/RabbitMQ-1/examples/rabbitmq", shows the execution of a Python script that starts a simple worker. The web browser, titled "RabbitMQ Management", shows the RabbitMQ Management interface. The interface includes a navigation bar with tabs for Overview, Connections, Channels, Exchanges, Queues, and Admin. The Overview tab is selected, showing several graphs: "GC bytes reclaimed last minute", "Context switch operations last minute", and "Management GC queue length". The "Management GC queue length" graph shows a table with the following data:

Management GC queue length	
connection_closed	0
channel_closed	0
consumer_deleted	0
exchange_deleted	0
queue_deleted	0
vhost_deleted	0
node_node_deleted	0
channel_consumer_deleted	0

The terminal window shows the following output:

```
lemp@u20-03:~/RabbitMQ-1/examples/rabbitmq$ python3 task-queue/worker.py
started simple worker
[worker] Waiting for messages.
```

The web browser shows the RabbitMQ Management interface with the following details:

- Version: 3.6.14, Erlang 19.2.1
- Refreshed: 2022-10-03 19:25:43
- Refresh every 5 seconds
- Virtual host: All
- Cluster: rabbit@rabbitmq
- User: guest
- Log out