

Feladat 02.26

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Mikrotik

```
[admin@MikroTik] > ip/firewall/nat/print
Flags: X - disabled, I - invalid; D - dynamic
0 chain=srcnat action=masquerade out-interface=ether1

1 chain=dstnat action=dst-nat to-addresses=192.168.26.111 to-ports=22
  protocol=tcp in-interface=ether3 dst-port=2226 log=no log-prefix=""

2 chain=dstnat action=dst-nat to-addresses=192.168.26.111 to-ports=8080
  protocol=tcp in-interface=ether3 dst-port=8080 log=no log-prefix=""

3 chain=dstnat action=dst-nat to-addresses=192.168.26.111 to-ports=80
  protocol=tcp in-interface=ether3 dst-port=8081 log=no log-prefix=""

4 chain=dstnat action=dst-nat to-addresses=192.168.26.110 to-ports=22
  protocol=tcp in-interface=ether3 dst-port=2227 log=no log-prefix=""

5 chain=dstnat action=dst-nat to-addresses=192.168.26.108 to-ports=22
  protocol=tcp in-interface=ether3 dst-port=2228 log=no log-prefix=""
[admin@MikroTik] >
```

1. ábra Firewall

Manager Docker

IP cím

```
root@manager:/home/user# 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 noprefixroute
        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 08:00:27:0d:57:4a brd ff:ff:ff:ff:ff:ff
    inet 192.168.26.111/24 brd 192.168.26.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe0d:574a/64 scope link
        valid_lft forever preferred_lft forever
```

2. ábra Manager docker IP címe

```
root@manager:/home/user# docker node ls
ID                HOSTNAME    STATUS    AVAILABILITY    MANAGER STATUS    ENGINE VERSION
gs817h4tmqp6mk7mai5tbivrp * manager     Ready     Active           Leader             27.3.1

root@manager:~# docker node ls
ID                HOSTNAME    STATUS    AVAILABILITY    MANAGER STATUS
gs817h4tmqp6mk7mai5tbivrp * manager     Ready     Active           Leader
27.3.1
jo9e0m3uswljzww3mlnounsfl worker1     Ready     Active
28.0.0
2i7rt950lnl7cfuabr9ypsddx worker2     Ready     Active
28.0.0
```

3. ábra Docker nodes a worker csatlakoztatása előtt és után

Docker Token

```
docker swarm join-token worker
```

```
root@manager:/home/user# docker swarm join-token worker
To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-0bz63qv336o2rr3ts7cde33a0do393p3x109h4s7eiy6wmlmfr-0mlczqc3iu76y0exca0r33ecw 192.168.26.111:2377

root@manager:/home/user#
```

4. ábra Docker swarm worker csatlakoztatási parancs

```
docker swarm join-token manager
```

```
root@manager:/home/user# docker swarm join-token manager
To add a manager to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-0bz63qv336o2rr3ts7cde33a0do393p3x109h4s7eiy6wmlmfr-76xukzdybkv9j94euzxy7vna2 192.168.26.111:2377

root@manager:/home/user#
```

5. ábra Docker swarm manager csatlakoztatási parancs

Docker Service

```
root@manager:~# docker service create --name web_app --replicas 1 --publish 80:80 nginxdemos/hello
ablhz8jk74pawltgi5dk5rqri
overall progress: 1 out of 1 tasks
1/1: running [=====>]
verify: Service ablhz8jk74pawltgi5dk5rqri converged
root@manager:~#

root@manager:~# docker service create \
  --name=visualizer \
  --publish=8080:8080/tcp \
  --constraint=node.role==manager \
  --mount=type=bind,src=/var/run/docker.sock,dst=/var/run/docker.sock \
  dockersamples/visualizer
qdqs9hh242s2dnqbca24h3ur8
overall progress: 1 out of 1 tasks
1/1: running [=====>]
verify: Service qdqs9hh242s2dnqbca24h3ur8 converged
root@manager:~#
```

6. ábra Docker service készítés

```
root@manager:~# docker service ls
ID            NAME          MODE          REPLICAS  IMAGE                                  PORTS
qdqs9hh242s2  visualizer    replicated    1/1        dockersamples/visualizer:latest      *:8080->8080/tcp
ablhz8jk74pa  web_app      replicated    1/1        nginxdemos/hello:latest              *:80->80/tcp
root@manager:~#
```

7. ábra Docker services

```
root@manager:~# docker service scale web_app=3
web_app scaled to 3
overall progress: 3 out of 3 tasks
1/3: running [=====>]
2/3: running [=====>]
3/3: running [=====>]
verify: Service web_app converged
root@manager:~# docker service ls
ID            NAME          MODE          REPLICAS  IMAGE                                  PORTS
qdqs9hh242s2  visualizer    replicated    1/1        dockersamples/visualizer:latest      *:8080->8080/tcp
ablhz8jk74pa  web_app      replicated    3/3        nginxdemos/hello:latest              *:80->80/tcp
root@manager:~#
```

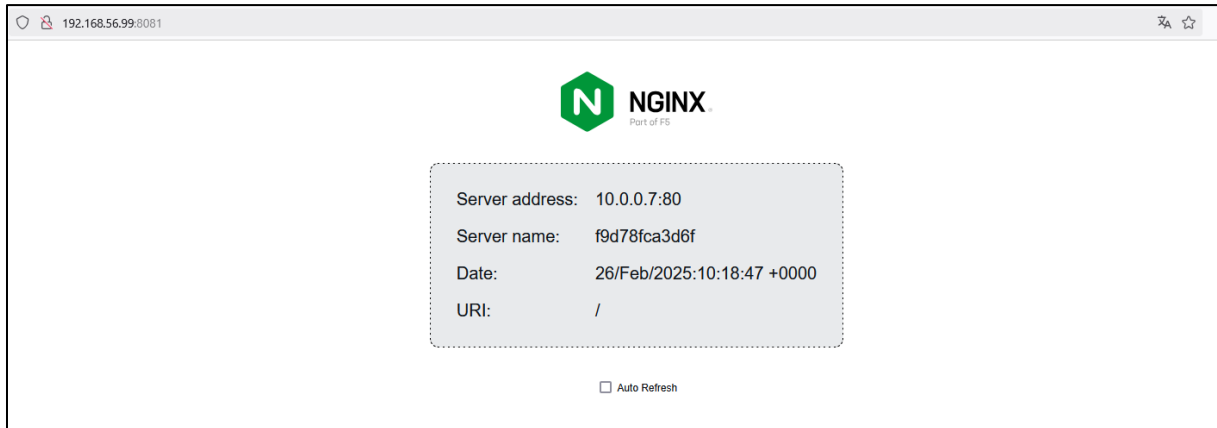
8. ábra Docker service scale

```

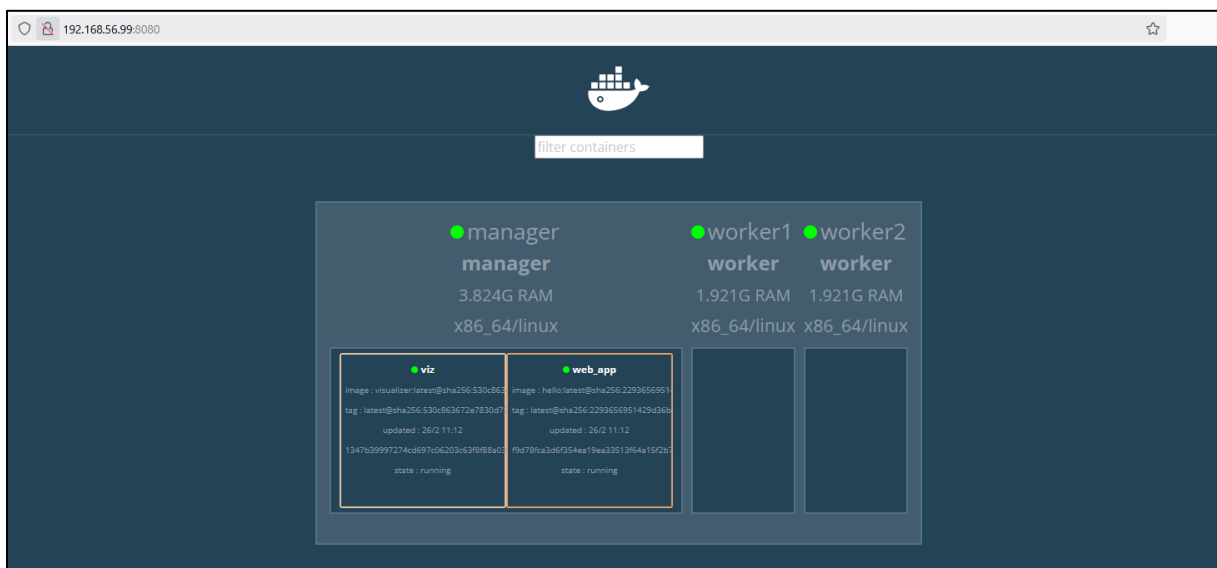
root@manager:~# docker service ps web_app
ID                NAME        IMAGE                NODE        DESIRED STATE   CURRENT STATE           |
mhhpltee5wit     web_app.1   nginxdemos/hello:latest  manager    Running         Running 13 minutes ago |
669iaqlvdyz0     web_app.2   nginxdemos/hello:latest  worker2    Running         Running 7 minutes ago  |
5cf9xgqgsziz     web_app.3   nginxdemos/hello:latest  worker1    Running         Running 7 minutes ago  |
root@manager:~#

```

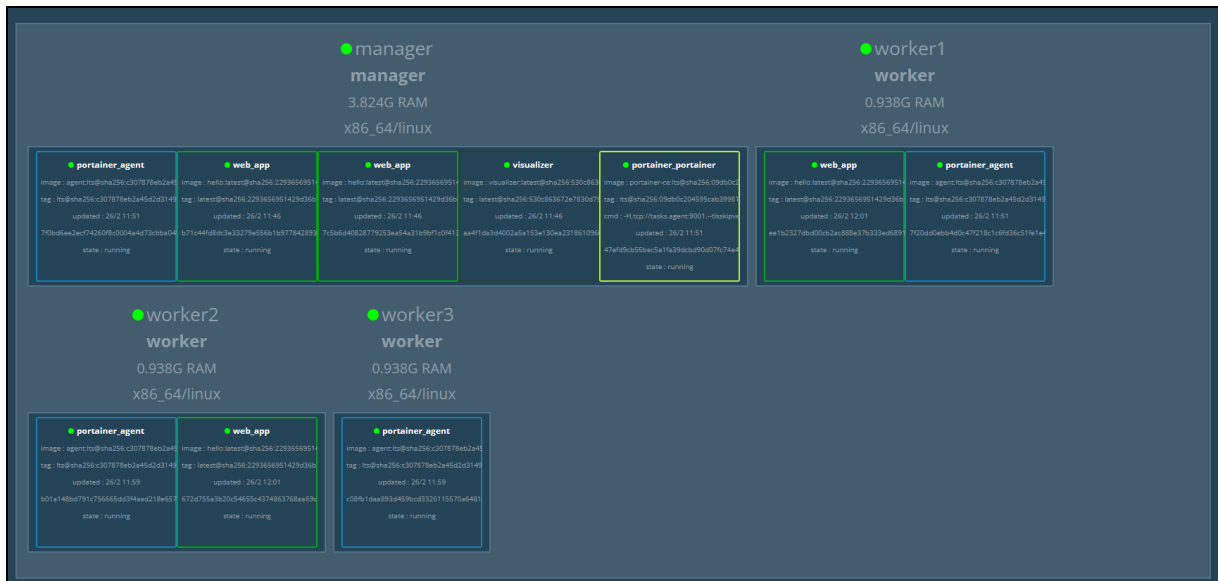
9. ábra Docker swarm web_app



10. ábra Docker NGINX weblap



11. ábra Docker swarm manger visualizer



12. ábra Docker vizualizer scale után

Portainer Swarm

```
root@manager:~# curl -L https://downloads.portainer.io/ce-lts/portainer-agent-stack.yml -o portainer-agent-stack.yml
% Total % Received % Xferd Average Speed Time Time Current
Dload Upload Total Spent Left Speed
100 785 100 785 0 0 3217 0 --:--:-- --:--:-- --:--:-- 3230
root@manager:~# docker stack deploy -c portainer-agent-stack.yml portainer
Since --detach=false was not specified, tasks will be created in the background.
In a future release, --detach=false will become the default.
Updating service portainer_agent (id: qy9rc0fl7cdmnebdqgdq379b7)
Updating service portainer_portainer (id: 4ux3rmcggqlx50smzd3ypde0uk)
root@manager:~#
```

13. ábra Portainer telepítése

Nodes							
Name	Role	CPU	Memory	Engine	IP Address	Status	Availability
worker2	worker	1	1 GB	28.0.0	192.168.26.108	ready	active
manager	manager	2	4.1 GB	27.3.1	192.168.26.111	ready	active
worker1	worker	1	1 GB	28.0.0	192.168.26.110	ready	active
worker3	worker	1	1 GB	28.0.0	192.168.26.107	ready	active

14. ábra Docker portainer swarm

Services					
Name	Stack	Image	Scheduling Mode	Published Ports	
portainer_agent	portainer	portainer/agent:its	global 4 / 4	-	
portainer_portainer	portainer	portainer/portainer-ce:its	replicated 1 / 1	Scale	
visualizer	-	dockersamples/visualizer:latest	replicated 1 / 1	Scale	
web_app	-	nginxdemos/hello:latest	replicated 4 / 4	Scale	

15. ábra Docker portainer swarm services

Worker1 Docker

IP cím

```
root@worker1:~# 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 noprefixroute
        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:f5:d0:7b brd ff:ff:ff:ff:ff:ff
    inet 192.168.26.110/24 brd 192.168.26.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fef5:d07b/64 scope link
        valid_lft forever preferred_lft forever
```

Worker csatlakozás

```
docker swarm join --token TOKEN managerIP:2377
```

```
root@worker1:~# docker swarm join --token SWM
This node joined a swarm as a worker.
root@worker1:~#
```

16. ábra Docker worker1 csatlakoztatása

Worker2 Docker

IP cím

```
root@worker2:~# 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 noprefixroute
        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:d3:97:08 brd ff:ff:ff:ff:ff:ff
    inet 192.168.26.108/24 brd 192.168.26.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fed3:9708/64 scope link
        valid_lft forever preferred_lft forever
```

Worker csatlakoztatás

```
docker swarm join --token TOKEN managerIP:2377
```

```
root@worker2:~# docker swarm join --token SWM
This node joined a swarm as a worker.
root@worker2:~#
```

17. ábra Docker worker2 csatlakoztatása