Praca domowa PaaS - Docker

Filip Matysiak

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.
```
#############################################################
[node1] (local) root@192.168.0.23 ~
$ docker network

Usage:  docker network COMMAND

Manage networks

Commands:
  connect     Connect a container to a network
  create      Create a network
  disconnect  Disconnect a container from a network
  inspect     Display detailed information on one or more networks
  ls          List networks
  prune       Remove all unused networks
  rm          Remove one or more networks

Run 'docker network COMMAND --help' for more information on a command.
[node1] (local) root@192.168.0.23 ~
$ 
```
```
#############################################################
#                     WARNING!!!!                         #
# This is a sandbox environment. Using personal credentials #
# is HIGHLY! discouraged. Any consequences of doing so are  #
# completely the user's responsibilites.                  #
#                                                         #
# The PWD team.                                           #
#############################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

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```
Manage networks

Commands:
  connect     Connect a container to a network
  create      Create a network
  disconnect  Disconnect a container from a network
  inspect     Display detailed information on one or more networks
  ls          List networks
  prune       Remove all unused networks
  rm          Remove one or more networks

Run 'docker network COMMAND --help' for more information on a command.
[node1] (local) root@192.168.0.23 ~
$ docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
1b1b81dd3457        bridge              bridge              local
d3292d8d6288        host                host                local
c7396394b19a        none                null                local
[node1] (local) root@192.168.0.23 ~
$
```

```
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# The PWD team.                                                #
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[node2] (local) root@192.168.0.22 ~
$
```

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```
$ docker network inspect bridge
[
    {
        "Name": "bridge",
        "Id": "1b1b81dd34570baafb04cf53d56038187eccc647d003db8c4ba1e89f4e02cde6",
        "Created": "2018-12-01T14:58:02.521464548Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "172.17.0.0/16"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
```

```
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################################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

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```
]
[node1] (local) root@192.168.0.23 ~
$ docker info
Containers: 0
 Running: 0
 Paused: 0
 Stopped: 0
Images: 0
Server Version: 18.06.1-ce
Storage Driver: overlay2
 Backing Filesystem: xfs
 Supports d_type: true
 Native Overlay Diff: true
Logging Driver: json-file
Cgroup Driver: cgroupfs
Plugins:
 Volume: local
 Network: bridge host ipvlan macvlan null overlay
 Log: awslogs fluentd gcplogs gelf journald json-file logentries splunk syslog
Swarm: inactive
```

```
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```
 EventsListeners: 0
Registry: https://index.docker.io/v1/
Labels:
Experimental: true
Insecure Registries:
 127.0.0.1
 127.0.0.0/8
Live Restore Enabled: false

WARNING: No swap limit support
WARNING: bridge-nf-call-iptables is disabled
WARNING: bridge-nf-call-ip6tables is disabled
[node1] (local) root@192.168.0.23 ~
$ docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
1b1b81dd3457        bridge              bridge              local
d3292d8d6288        host                host                local
c7396394b19a        none                null                local
[node1] (local) root@192.168.0.23 ~
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```
$ docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
1b1b81dd3457        bridge              bridge              local
d3292d8d6288        host                host                local
c7396394b19a        none                null                local
[node1] (local) root@192.168.0.23 ~
$ apt-get install bridge-utils
bash: apt-get: command not found
[node1] (local) root@192.168.0.23 ~
$ sudo apt-get install bridge-utils
/usr/local/bin/sudo: line 5: exec: apt-get: not found
[node1] (local) root@192.168.0.23 ~
$ apk update
fetch http://dl-cdn.alpinelinux.org/alpine/v3.8/main/x86_64/APKINDEX.tar.gz
fetch http://dl-cdn.alpinelinux.org/alpine/v3.8/community/x86_64/APKINDEX.tar.gz
v3.8.1-115-ge3ed6b4e31 [http://dl-cdn.alpinelinux.org/alpine/v3.8/main]
v3.8.1-112-g45bdd0edfb [http://dl-cdn.alpinelinux.org/alpine/v3.8/community]
OK: 9555 distinct packages available
[node1] (local) root@192.168.0.23 ~
$ 
```

```
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c7396394b19a            none                null                local
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$ sudo apt-get install bridge-utils
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[node1] (local) root@192.168.0.23 ~
$ apk update
fetch http://dl-cdn.alpinelinux.org/alpine/v3.8/main/x86_64/APKINDEX.tar.gz
fetch http://dl-cdn.alpinelinux.org/alpine/v3.8/community/x86_64/APKINDEX.tar.gz
v3.8.1-115-ge3ed6b4e31 [http://dl-cdn.alpinelinux.org/alpine/v3.8/main]
v3.8.1-112-g45bdd0edfb [http://dl-cdn.alpinelinux.org/alpine/v3.8/community]
OK: 9555 distinct packages available
[node1] (local) root@192.168.0.23 ~
$ apk add bridge
(1/1) Installing bridge (1.5-r3)
OK: 302 MiB in 111 packages
[node1] (local) root@192.168.0.23 ~
$ 
```

```
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[node2] (local) root@192.168.0.22 ~
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```
[node1] (local) root@192.168.0.23 ~
$ sudo apt-get install bridge-utils
/usr/local/bin/sudo: line 5: exec: apt-get: not found
[node1] (local) root@192.168.0.23 ~
$ apk update
fetch http://dl-cdn.alpinelinux.org/alpine/v3.8/main/x86_64/APKINDEX.tar.gz
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OK: 9555 distinct packages available
[node1] (local) root@192.168.0.23 ~
$ apk add bridge
(1/1) Installing bridge (1.5-r3)
OK: 302 MiB in 111 packages
[node1] (local) root@192.168.0.23 ~
$ brctl show
bridge name       bridge id              STP enabled     interfaces
docker0           8000.0242b83d4fe3      no
[node1] (local) root@192.168.0.23 ~
$ 
```

```
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################################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

```
[node1] (local) root@192.168.0.23 ~
$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
    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
2: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN
    link/ether 02:42:b8:3d:4f:e3 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
70451: eth1@if70452: <BROADCAST,MULTICAST,UP,LOWER_UP,M-DOWN> mtu 1500 qdisc noqueue state UP
    link/ether 02:42:ac:13:00:0a brd ff:ff:ff:ff:ff:ff
    inet 172.19.0.10/16 scope global eth1
       valid_lft forever preferred_lft forever
70455: eth0@if70456: <BROADCAST,MULTICAST,UP,LOWER_UP,M-DOWN> mtu 1500 qdisc noqueue state UP
    link/ether fa:e8:4d:bf:39:4b brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.23/23 scope global eth0
       valid_lft forever preferred_lft forever
[node1] (local) root@192.168.0.23 ~
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[node2] (local) root@192.168.0.22 ~
$ 
```

```
    link/ether 02:42:ac:13:00:0a brd ff:ff:ff:ff:ff:ff
    inet 172.19.0.10/16 scope global eth1
       valid_lft forever preferred_lft forever
70455: eth0@if70456: <BROADCAST,MULTICAST,UP,LOWER_UP,M-DOWN> mtu 1500 qdisc noqueue state UP
    link/ether fa:e8:4d:bf:39:4b brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.23/23 scope global eth0
       valid_lft forever preferred_lft forever
[node1] (local) root@192.168.0.23 ~
$ docker run -dt ubuntu sleep infinity
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
32802c0cfa4d: Pull complete
da1315cffa03: Pull complete
fa83472a3562: Pull complete
f85999a86bef: Pull complete
Digest: sha256:6d0e0c26489e33f5a6f0020edface2727db9489744ecc9b4f50c7fa671f23c49
Status: Downloaded newer image for ubuntu:latest
9d0ec8af251624c90fc4d824f16cbe4e9c8b812c68bddc07208c330bf5c2a68e
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    link/ether fa:e8:4d:bf:39:4b brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.23/23 scope global eth0
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[node1] (local) root@192.168.0.23 ~
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[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE              COMMAND             CREATED            STATUS            PORTS             NAMES
9d0ec8af2516        ubuntu             "sleep infinity"    15 seconds ago     Up 13 seconds                       kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$ 
```

```
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Status: Downloaded newer image for ubuntu:latest
9d0ec8af251624c90fc4d824f16cbe4e9c8b812c68bddc07208c330bf5c2a68e
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE          COMMAND             CREATED           STATUS             PORTS           NAMES
9d0ec8af2516        ubuntu         "sleep infinity"    15 seconds ago    Up 13 seconds                      kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$ brctl show
bridge name        bridge id              STP enabled      interfaces
docker0            8000.0242b83d4fe3      no               vethae7bc39
[node1] (local) root@192.168.0.23 ~
$ []
```

```
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################################################################
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$ []
```

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```
            "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {
        "9d0ec8af251624c90fc4d824f16cbe4e9c8b812c68bddc07208c330bf5c2a68e": {
            "Name": "kind_ramanujan",
            "EndpointID": "543a843e5fb1beef2801e72d8e5f44167f06f99d4b8353e83ffbf359acee16cb",
            "MacAddress": "02:42:ac:11:00:02",
            "IPv4Address": "172.17.0.2/16",
            "IPv6Address": ""
        }
    },
    "Options": {
        "com.docker.network.bridge.default_bridge": "true",
        "com.docker.network.bridge.enable_icc": "true",
        "com.docker.network.bridge.enable_ip_masquerade": "true",
        "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
        "com.docker.network.bridge.name": "docker0",
        "com.docker.network.driver.mtu": "1500"
    },
```

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```

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```
            "com.docker.network.bridge.name": "docker0",
            "com.docker.network.driver.mtu": "1500"
        },
        "Labels": {}
    }
]
[node1] (local) root@192.168.0.23 ~
$ ping -c5 172.17.0.2
PING 172.17.0.2 (172.17.0.2): 56 data bytes
64 bytes from 172.17.0.2: seq=0 ttl=64 time=0.210 ms
64 bytes from 172.17.0.2: seq=1 ttl=64 time=0.105 ms
64 bytes from 172.17.0.2: seq=2 ttl=64 time=0.079 ms
64 bytes from 172.17.0.2: seq=3 ttl=64 time=0.104 ms
64 bytes from 172.17.0.2: seq=4 ttl=64 time=0.072 ms

--- 172.17.0.2 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.072/0.114/0.210 ms
[node1] (local) root@192.168.0.23 ~
$
```

```
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##################################################################
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
]
[node1] (local) root@192.168.0.23 ~
$ ping -c5 172.17.0.2
PING 172.17.0.2 (172.17.0.2): 56 data bytes
64 bytes from 172.17.0.2: seq=0 ttl=64 time=0.210 ms
64 bytes from 172.17.0.2: seq=1 ttl=64 time=0.105 ms
64 bytes from 172.17.0.2: seq=2 ttl=64 time=0.079 ms
64 bytes from 172.17.0.2: seq=3 ttl=64 time=0.104 ms
64 bytes from 172.17.0.2: seq=4 ttl=64 time=0.072 ms

--- 172.17.0.2 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.072/0.114/0.210 ms
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE              COMMAND            CREATED            STATUS             PORTS              NAMES
9d0ec8af2516        ubuntu             "sleep infinity"   4 minutes ago      Up 4 minutes                          kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$ docker exec -it kind_ramanujan /bin/bash
root@9d0ec8af2516:/#
```

```
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[node2] (local) root@192.168.0.22 ~
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```

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```
Preparing to unpack .../libpam-cap_1%3a2.25-1.2_amd64.deb ...
Unpacking libpam-cap:amd64 (1:2.25-1.2) ...
Setting up libcap2:amd64 (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Setting up libidn11:amd64 (1.33-2.1ubuntu1) ...
Setting up iputils-ping (3:20161105-1ubuntu2) ...
Setting up libpam-cap:amd64 (1:2.25-1.2) ...
debconf: unable to initialize frontend: Dialog
debconf: (No usable dialog-like program is installed, so the dialog based frontend cannot be used. at /usr/share/perl5/Debconf/FrontEnd
/Dialog.pm line 76.)
debconf: falling back to frontend: Readline
debconf: unable to initialize frontend: Readline
debconf: (Can't locate Term/ReadLine.pm in @INC (you may need to install the Term::ReadLine module) (@INC contains: /etc/perl /usr/loca
l/lib/x86_64-linux-gnu/perl/5.26.1 /usr/local/share/perl/5.26.1 /usr/lib/x86_64-linux-gnu/perl5/5.26 /usr/share/perl5 /usr/lib/x86_64-l
inux-gnu/perl/5.26 /usr/share/perl/5.26 /usr/local/lib/site_perl /usr/lib/x86_64-linux-gnu/perl-base) at /usr/share/perl5/Debconf/Front
End/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@9d0ec8af2516:/# 
```

```
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```
debconf: unable to initialize frontend: Readline
debconf: (Can't locate Term/ReadLine.pm in @INC (you may need to install the Term::ReadLine module) (@INC contains: /etc/perl /usr/loca
l/lib/x86_64-linux-gnu/perl/5.26.1 /usr/local/share/perl/5.26.1 /usr/lib/x86_64-linux-gnu/perl5/5.26 /usr/share/perl5 /usr/lib/x86_64-l
inux-gnu/perl/5.26 /usr/share/perl/5.26 /usr/local/lib/site_perl /usr/lib/x86_64-linux-gnu/perl-base) at /usr/share/perl5/Debconf/Front
End/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@9d0ec8af2516:/# ping -c5 www.github.com
PING github.com (192.30.253.112) 56(84) bytes of data.
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=1 ttl=50 time=2.18 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=2 ttl=50 time=2.18 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=3 ttl=50 time=2.10 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=4 ttl=50 time=2.23 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=5 ttl=50 time=2.19 ms

--- github.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 2.101/2.179/2.236/0.073 ms
root@9d0ec8af2516:/#
```

```
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################################################################
[node2] (local) root@192.168.0.22 ~
$
```

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```
inux-gnu/perl/5.26 /usr/share/perl/5.26 /usr/local/lib/site_perl /usr/lib/x86_64-linux-gnu/perl-base) at /usr/share/perl5/Debconf/Front
End/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@9d0ec8af2516:/# ping -c5 www.github.com
PING github.com (192.30.253.112) 56(84) bytes of data.
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=1 ttl=50 time=2.18 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=2 ttl=50 time=2.18 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=3 ttl=50 time=2.10 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=4 ttl=50 time=2.23 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=5 ttl=50 time=2.19 ms

--- github.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 2.101/2.179/2.236/0.073 ms
root@9d0ec8af2516:/# exit
exit
[node1] (local) root@192.168.0.23 ~
$
```

```
##############################################################
#                      WARNING!!!!                          #
# This is a sandbox environment. Using personal credentials #
# is HIGHLY! discouraged. Any consequences of doing so are  #
# completely the user's responsibilites.                    #
#                                                           #
# The PWD team.                                             #
##############################################################
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=2 ttl=50 time=2.18 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=3 ttl=50 time=2.10 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=4 ttl=50 time=2.23 ms
64 bytes from lb-192-30-253-112-iad.github.com (192.30.253.112): icmp_seq=5 ttl=50 time=2.19 ms

--- github.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 2.101/2.179/2.236/0.073 ms
root@9d0ec8af2516:/# exit
exit
[node1] (local) root@192.168.0.23 ~
$ docker
docker                  docker-containerd-ctr    docker-init          docker-proxy         dockerd-entrypoint.sh
docker-compose          docker-containerd-shim   docker-machine       docker-runc
docker-containerd       docker-entrypoint.sh     docker-prompt        dockerd
[node1] (local) root@192.168.0.23 ~
$ docker stop kind_ramanujan
kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$
```

```
###############################################################
#                     WARNING!!!!                            #
# This is a sandbox environment. Using personal credentials  #
# is HIGHLY! discouraged. Any consequences of doing so are   #
# completely the user's responsibilites.                     #
#                                                            #
# The PWD team.                                              #
###############################################################
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[node1] (local) root@192.168.0.23 ~
$ docker
docker                    docker-containerd-ctr      docker-init              docker-proxy              dockerd-entrypoint.sh
docker-compose            docker-containerd-shim     docker-machine           docker-runc
docker-containerd         docker-entrypoint.sh       docker-prompt            dockerd
[node1] (local) root@192.168.0.23 ~
$ docker stop kind_ramanujan
kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$ docker run --name web1 -d -p 8080:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
a5a6f2f73cd8: Pull complete
1ba02017c4b2: Pull complete
33b176c904de: Pull complete
Digest: sha256:5d32f60db294b5deb55d078cd4feb410ad88e6fe77500c87d3970eca97f54dba
Status: Downloaded newer image for nginx:latest
ebfb29b94a476e514b5d8051af3df5adcc45659e1648a208033988cea2fd0d4a
[node1] (local) root@192.168.0.23 ~
$ []
```

```
#################################################################
#                       WARNING!!!!                            #
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#                                                              #
# The PWD team.                                                #
#################################################################
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
docker-containerd          docker-entrypoint.sh     docker-prompt          dockerd
[node1] (local) root@192.168.0.23 ~
$ docker stop kind_ramanujan
kind_ramanujan
[node1] (local) root@192.168.0.23 ~
$ docker run --name web1 -d -p 8080:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
a5a6f2f73cd8: Pull complete
1ba02017c4b2: Pull complete
33b176c904de: Pull complete
Digest: sha256:5d32f60db294b5deb55d078cd4feb410ad88e6fe77500c87d3970eca97f54dba
Status: Downloaded newer image for nginx:latest
ebfb29b94a476e514b5d8051af3df5adcc45659e1648a208033988cea2fd0d4a
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE             COMMAND              CREATED           STATUS            PORTS                       NAMES
ebfb29b94a47        nginx             "nginx -g 'daemon of…"   22 seconds ago    Up 20 seconds     0.0.0.0:8080->80/tcp        web1
[node1] (local) root@192.168.0.23 ~
$ 
```

```
###############################################################
#                    WARNING!!!!                              #
# This is a sandbox environment. Using personal credentials   #
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#                                                             #
# The PWD team.                                               #
###############################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
[node1] (local) root@192.168.0.23 ~
$ 
```

```
###############################################################
#                       WARNING!!!!                          #
# This is a sandbox environment. Using personal credentials  #
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# completely the user's responsibilites.                     #
#                                                            #
# The PWD team.                                               #
###############################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
[node1] (local) root@192.168.0.23 ~
$ docker swarm init --advertise-addr $(hostname -i)
Swarm initialized: current node (yztx4umh9gsusybbnfye7ktgy) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

[node1] (local) root@192.168.0.23 ~
$ 
```

```
############################################################
#                     WARNING!!!!                         #
# This is a sandbox environment. Using personal credentials  #
# is HIGHLY! discouraged. Any consequences of doing so are   #
# completely the user's responsibilites.                  #
#                                                         #
# The PWD team.                                           #
############################################################
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
[node1] (local) root@192.168.0.23 ~
$ docker swarm init --advertise-addr $(hostname -i)
Swarm initialized: current node (yztx4umh9gsusybbnfye7ktgy) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

[node1] (local) root@192.168.0.23 ~
$ []
```

```
################################################################
#                       WARNING!!!!                          #
# This is a sandbox environment. Using personal credentials  #
# is HIGHLY! discouraged. Any consequences of doing so are   #
# completely the user's responsibilites.                     #
#                                                             #
# The PWD team.                                               #
################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
<p><em>Thank you for using nginx.</em></p>
</body>
</html>
[node1] (local) root@192.168.0.23 ~
$ docker swarm init --advertise-addr $(hostname -i)
Swarm initialized: current node (yztx4umh9gsusybbnfye7ktgy) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

[node1] (local) root@192.168.0.23 ~
$ docker node ls
ID                          HOSTNAME    STATUS    AVAILABILITY    MANAGER STATUS    ENGINE VERSION
yztx4umh9gsusybbnfye7ktgy * node1       Ready     Active          Leader            18.06.1-ce
pfgvk8r6wc1fea107gp2vdavj   node2       Ready     Active                            18.06.1-ce
[node1] (local) root@192.168.0.23 ~
$ []
```

```
###################################################################
#                    WARNING!!!!                    #
# This is a sandbox environment. Using personal credentials    #
# is HIGHLY! discouraged. Any consequences of doing so are     #
# completely the user's responsibilites.                       #
#                                                              #
# The PWD team.                                                #
###################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[node1] (local) root@192.168.0.23 ~
$ docker swarm init --advertise-addr $(hostname -i)
Swarm initialized: current node (yztx4umh9gsusybbnfye7ktgy) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

[node1] (local) root@192.168.0.23 ~
$ docker node ls
ID                            HOSTNAME            STATUS              AVAILABILITY        MANAGER STATUS      ENGINE VERSION
yztx4umh9gsusybbnfye7ktgy *   node1               Ready               Active              Leader              18.06.1-ce
pfgvk8r6wc1fea107gp2vdavj     node2               Ready               Active                                  18.06.1-ce
[node1] (local) root@192.168.0.23 ~
$ docker network create -d overlay overnet
odh7w9zvxyxynpwzk5a3cl6hp
[node1] (local) root@192.168.0.23 ~
$ 
```

```
###################################################################
#                      WARNING!!!!                                #
# This is a sandbox environment. Using personal credentials       #
# is HIGHLY! discouraged. Any consequences of doing so are         #
# completely the user's responsibilites.                          #
#                                                                 #
# The PWD team.                                                    #
###################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[node1] (local) root@192.168.0.23 ~
$ docker node ls
ID                          HOSTNAME        STATUS      AVAILABILITY    MANAGER STATUS    ENGINE VERSION
yztx4umh9gsusybbnfye7ktgy * node1           Ready       Active          Leader            18.06.1-ce
pfgvk8r6wc1fea107gp2vdavj   node2           Ready       Active                            18.06.1-ce
[node1] (local) root@192.168.0.23 ~
$ docker network create -d overlay overnet
odh7w9zvxyxynpwzk5a3cl6hp
[node1] (local) root@192.168.0.23 ~
$ docker network ls
NETWORK ID          NAME                DRIVER          SCOPE
1b1b81dd3457        bridge              bridge          local
4acf9f670eb8        docker_gwbridge     bridge          local
d3292d8d6288        host                host            local
j00w58lqv699        ingress             overlay         swarm
c7396394b19a        none                null            local
odh7w9zvxyxy        overnet             overlay         swarm
[node1] (local) root@192.168.0.23 ~
$ 
```

```
################################################################
#                     WARNING!!!!                              #
# This is a sandbox environment. Using personal credentials    #
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#                                                              #
# The PWD team.                                                #
################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[
    {
        "Name": "overnet",
        "Id": "odh7w9zvxyxynpwzk5a3cl6hp",
        "Created": "2018-12-01T15:23:37.361815295Z",
        "Scope": "swarm",
        "Driver": "overlay",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "10.0.0.0/24",
                    "Gateway": "10.0.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
```

```
##################################################################
#                      WARNING!!!!                               #
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# completely the user's responsibilites.                         #
#                                                                #
# The PWD team.                                                  #
##################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
        "ConfigOnly": false,
        "Containers": null,
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": null
    }
]
[node1] (local) root@192.168.0.23 ~
$ docker service create --name myservice \
> --network overnet \
> --replicas 2 \
> ubuntu sleep infinity
i15vmh8ei57ctcatdmgxh25ov
overall progress: 2 out of 2 tasks
1/2: running   [==================================================>]
2/2: running   [==================================================>]
verify: Service converged
[node1] (local) root@192.168.0.23 ~
$ 
```

```
###################################################################
#                      WARNING!!!!                                #
# This is a sandbox environment. Using personal credentials       #
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# completely the user's responsibilites.                          #
#                                                                 #
# The PWD team.                                                   #
###################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
        },
        "Labels": null
    }
]
[node1] (local) root@192.168.0.23 ~
$ docker service create --name myservice \
> --network overnet \
> --replicas 2 \
> ubuntu sleep infinity
i15vmh8ei57ctcatdmgxh25ov
overall progress: 2 out of 2 tasks
1/2: running   [==================================================>]
2/2: running   [==================================================>]
verify: Service converged
[node1] (local) root@192.168.0.23 ~
$ docker service ls
ID              NAME            MODE            REPLICAS        IMAGE           PORTS
i15vmh8ei57c    myservice       replicated      2/2             ubuntu:latest
[node1] (local) root@192.168.0.23 ~
$ []
```

```
###################################################################
#                     WARNING!!!!                                 #
# This is a sandbox environment. Using personal credentials       #
# is HIGHLY! discouraged. Any consequences of doing so are        #
# completely the user's responsibilites.                          #
#                                                                 #
# The PWD team.                                                   #
###################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
> ubuntu sleep infinity
i15vmh8ei57ctcatdmgxh25ov
overall progress: 2 out of 2 tasks
1/2: running   [==================================================>]
2/2: running   [==================================================>]
verify: Service converged
[node1] (local) root@192.168.0.23 ~
$ docker service ls
ID                NAME            MODE          REPLICAS      IMAGE             PORTS
i15vmh8ei57c      myservice       replicated    2/2           ubuntu:latest
[node1] (local) root@192.168.0.23 ~
$ docker service ps myservice
ID                NAME            IMAGE           NODE         DESIRED STATE     CURRENT STATE              ERROR
         PORTS
jrbu3f20p9g7      myservice.1     ubuntu:latest   node2        Running           Running about a minute ago

s8vxqd3u6jz0      myservice.2     ubuntu:latest   node1        Running           Running about a minute ago

[node1] (local) root@192.168.0.23 ~
$ 
```

```
#####################################################################
#                    WARNING!!!!                    #
# This is a sandbox environment. Using personal credentials    #
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# completely the user's responsibilites.                        #
#                                                                #
# The PWD team.                                                  #
#####################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
> ubuntu sleep infinity
i15vmh8ei57ctcatdmgxh25ov
overall progress: 2 out of 2 tasks
1/2: running   [==================================================>]
2/2: running   [==================================================>]
verify: Service converged
[node1] (local) root@192.168.0.23 ~
$ docker service ls
ID                 NAME            MODE          REPLICAS        IMAGE              PORTS
i15vmh8ei57c       myservice       replicated    2/2             ubuntu:latest
[node1] (local) root@192.168.0.23 ~
$ docker service ps myservice
ID                 NAME            IMAGE           NODE           DESIRED STATE     CURRENT STATE              ERROR
                   PORTS
jrbu3f20p9g7       myservice.1     ubuntu:latest   node2          Running           Running about a minute ago
s8vxqd3u6jz0       myservice.2     ubuntu:latest   node1          Running           Running about a minute ago
[node1] (local) root@192.168.0.23 ~
$ []
```

```
# This is a sandbox environment. Using personal credentials    #
# is HIGHLY! discouraged. Any consequences of doing so are      #
# completely the user's responsibilites.                       #
#                                                               #
# The PWD team.                                                 #
#################################################################
[node2] (local) root@192.168.0.22 ~
$ docker swarm join --token SWMTKN-1-4i3vbo8ujqkcs6oedbonjps3qn9pe8csqas5nb08w4p03y1hev-d5o9uswamy4j0ogh7noeuzxgn 192.168.0.23:2377
This node joined a swarm as a worker.
[node2] (local) root@192.168.0.22 ~
$ docker network ls
NETWORK ID         NAME            DRIVER          SCOPE
aa5fa02823f6       bridge          bridge          local
6d71aa8c9d36       docker_gwbridge bridge          local
61c2eb4a464c       host            host            local
j00w58lqv699       ingress         overlay         swarm
f81dfb58bc6c       none            null            local
odh7w9zvxyxy       overnet         overlay         swarm
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
> ubuntu sleep infinity
i15vmh8ei57ctcatdmgxh25ov
overall progress: 2 out of 2 tasks
1/2: running   [==================================================>]
2/2: running   [==================================================>]
verify: Service converged
[node1] (local) root@192.168.0.23 ~
$ docker service ls
ID                NAME            MODE            REPLICAS        IMAGE               PORTS
i15vmh8ei57c      myservice       replicated      2/2             ubuntu:latest
[node1] (local) root@192.168.0.23 ~
$ docker service ps myservice
ID                NAME            IMAGE            NODE           DESIRED STATE      CURRENT STATE                  ERROR
                  PORTS
jrbu3f20p9g7      myservice.1     ubuntu:latest    node2          Running            Running about a minute ago

s8vxqd3u6jz0      myservice.2     ubuntu:latest    node1          Running            Running about a minute ago

[node1] (local) root@192.168.0.23 ~
$ []
```

```
f81dfb58bc6c          none            null            local
odh7w9zvxyxy          overnet         overlay         swarm
[node2] (local) root@192.168.0.22 ~
$ docker network inspect overnet
[
    {
        "Name": "overnet",
        "Id": "odh7w9zvxyxynpwzk5a3cl6hp",
        "Created": "2018-12-01T15:26:24.363121748Z",
        "Scope": "swarm",
        "Driver": "overlay",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "10.0.0.0/24",
                    "Gateway": "10.0.0.1"
                }
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[node1] (local) root@192.168.0.23 ~
$ docker service ls
ID                 NAME          MODE          REPLICAS       IMAGE              PORTS
i15vmh8ei57c       myservice     replicated    2/2            ubuntu:latest
[node1] (local) root@192.168.0.23 ~
$ docker service ps myservice
ID                 NAME          IMAGE          NODE           DESIRED STATE      CURRENT STATE            ERROR
                   PORTS
jrbu3f20p9g7       myservice.1   ubuntu:latest  node2          Running            Running about a minute ago

s8vxqd3u6jz0       myservice.2   ubuntu:latest  node1          Running            Running about a minute ago

[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID       IMAGE          COMMAND              CREATED          STATUS             PORTS              NAMES
ae4d2de346e8       ubuntu:latest  "sleep infinity"     2 minutes ago    Up 2 minutes                          myservi
ce.2.s8vxqd3u6jz03yh2m3vue1ppq
ebfb29b94a47       nginx          "nginx -g 'daemon of…"  11 minutes ago  Up 11 minutes     0.0.0.0:8080->80/tcp  web1
[node1] (local) root@192.168.0.23 ~
$ 
```

```
        }
    },
    "Options": {
        "com.docker.network.driver.overlay.vxlanid_list": "4097"
    },
    "Labels": {},
    "Peers": [
        {
            "Name": "a703b9c51ac6",
            "IP": "192.168.0.22"
        },
        {
            "Name": "e4ee7ed8eb14",
            "IP": "192.168.0.23"
        }
    ]
  }
]
[node2] (local) root@192.168.0.22 ~
$ 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE              COMMAND                 CREATED          STATUS             PORTS
NAMES
ae4d2de346e8        ubuntu:latest      "sleep infinity"        4 minutes ago    Up 4 minutes
myservice.2.s8vxqd3u6jz03yh2m3vue1ppq
ebfb29b94a47        nginx              "nginx -g 'daemon of…"  13 minutes ago   Up 13 minutes      0.0.0.0:8080->80/tcp
web1
[node1] (local) root@192.168.0.23 ~
$ docker exec -it
myservice.2.s8vxqd3u6jz03yh2m3vue1ppq   web1
[node1] (local) root@192.168.0.23 ~
$ docker exec -it myservice.2.s8vxqd3u6jz03yh2m3vue1ppq /bin/bash
root@ae4d2de346e8:/#
```

```
            }
        },
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": {},
        "Peers": [
            {
                "Name": "a703b9c51ac6",
                "IP": "192.168.0.22"
            },
            {
                "Name": "e4ee7ed8eb14",
                "IP": "192.168.0.23"
            }
        ]
    }
]
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
debconf: unable to initialize frontend: Readline
debconf: (Can't locate Term/ReadLine.pm in @INC (you may need to install the Term::ReadLine module) (@INC contains: /etc/perl /u
sr/local/lib/x86_64-linux-gnu/perl/5.26.1 /usr/local/share/perl/5.26.1 /usr/lib/x86_64-linux-gnu/perl5/5.26 /usr/share/perl5 /us
r/lib/x86_64-linux-gnu/perl/5.26 /usr/share/perl/5.26 /usr/local/lib/site_perl /usr/lib/x86_64-linux-gnu/perl-base) at /usr/shar
e/perl5/Debconf/FrontEnd/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@ae4d2de346e8:/# ping -c5 10.0.0.3
PING 10.0.0.3 (10.0.0.3) 56(84) bytes of data.
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=0.120 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=0.095 ms
64 bytes from 10.0.0.3: icmp_seq=3 ttl=64 time=0.072 ms
64 bytes from 10.0.0.3: icmp_seq=4 ttl=64 time=0.067 ms
64 bytes from 10.0.0.3: icmp_seq=5 ttl=64 time=0.090 ms

--- 10.0.0.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3997ms
rtt min/avg/max/mdev = 0.067/0.088/0.120/0.022 ms
root@ae4d2de346e8:/#
```

```
                }
        },
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": {},
        "Peers": [
            {
                "Name": "a703b9c51ac6",
                "IP": "192.168.0.22"
            },
            {
                "Name": "e4ee7ed8eb14",
                "IP": "192.168.0.23"
            }
        ]
    }
]
```

```
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
e/perl5/Debconf/FrontEnd/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@ae4d2de346e8:/# ping -c5 10.0.0.3
PING 10.0.0.3 (10.0.0.3) 56(84) bytes of data.
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=0.120 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=0.095 ms
64 bytes from 10.0.0.3: icmp_seq=3 ttl=64 time=0.072 ms
64 bytes from 10.0.0.3: icmp_seq=4 ttl=64 time=0.067 ms
64 bytes from 10.0.0.3: icmp_seq=5 ttl=64 time=0.090 ms

--- 10.0.0.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3997ms
rtt min/avg/max/mdev = 0.067/0.088/0.120/0.022 ms
root@ae4d2de346e8:/# cat /etc/resolv.conf
search 51ur3jppi0eupdptvsj42kdvgc.bx.internal.cloudapp.net
nameserver 127.0.0.11
options ndots:0
root@ae4d2de346e8:/#
```

```
            }
        },
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": {},
        "Peers": [
            {
                "Name": "a703b9c51ac6",
                "IP": "192.168.0.22"
            },
            {
                "Name": "e4ee7ed8eb14",
                "IP": "192.168.0.23"
            }
        ]
    }
]
[node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
--- 10.0.0.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3997ms
rtt min/avg/max/mdev = 0.067/0.088/0.120/0.022 ms
root@ae4d2de346e8:/# cat /etc/resolv.conf
search 51ur3jppi0eupdptvsj42kdvgc.bx.internal.cloudapp.net
nameserver 127.0.0.11
options ndots:0
root@ae4d2de346e8:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.126 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.075 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.105 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.096 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.073 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4003ms
rtt min/avg/max/mdev = 0.073/0.095/0.126/0.019 ms
root@ae4d2de346e8:/#
```

```
                }
        },
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": {},
        "Peers": [
            {
                "Name": "a703b9c51ac6",
                "IP": "192.168.0.22"
            },
            {
                "Name": "e4ee7ed8eb14",
                "IP": "192.168.0.23"
            }
        ]
    }
]
```

```
[node2] (local) root@192.168.0.22 ~
$
```

```
            },
            "EndpointSpec": {
                "Mode": "vip"
            }
        },
        "Endpoint": {
            "Spec": {
                "Mode": "vip"
            },
            "VirtualIPs": [
                {
                    "NetworkID": "odh7w9zvxyxynpwzk5a3cl6hp",
                    "Addr": "10.0.0.4/24"
                }
            ]
        }
    }
]
[node1] (local) root@192.168.0.23 ~
$ []
```

```
            }
        },
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": {},
        "Peers": [
            {
                "Name": "a703b9c51ac6",
                "IP": "192.168.0.22"
            },
            {
                "Name": "e4ee7ed8eb14",
                "IP": "192.168.0.23"
            }
        ]
    }
]
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
                },
                "EndpointSpec": {
                    "Mode": "vip"
                }
            },
            "Endpoint": {
                "Spec": {
                    "Mode": "vip"
                },
                "VirtualIPs": [
                    {
                        "NetworkID": "odh7w9zvxyxynpwzk5a3cl6hp",
                        "Addr": "10.0.0.4/24"
                    }
                ]
            }
        }
    }
]
[node1] (local) root@192.168.0.23 ~
$ 
```

```
                },
                {
                    "Name": "e4ee7ed8eb14",
                    "IP": "192.168.0.23"
                }
            ]
        }
    }
]
[node2] (local) root@192.168.0.22 ~
$ dock
docker                    docker-containerd-ctr    docker-init              docker-proxy             dockerd-entrypoint.sh
docker-compose            docker-containerd-shim   docker-machine           docker-runc
docker-containerd         docker-entrypoint.sh     docker-prompt            dockerd
[node2] (local) root@192.168.0.22 ~
$ docker exec myservice.1.jrbu3f20p9g7uzd00z8kjqvp4 -it /bin/bash
OCI runtime exec failed: exec failed: container_linux.go:348: starting container process caused "exec: \"-it\": executable file
not found in $PATH": unknown
[node2] (local) root@192.168.0.22 ~
$ docker exec -it myservice.1.jrbu3f20p9g7uzd00z8kjqvp4 /bin/bash
root@3dc75dbc7fc1:/#
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
                },
                "EndpointSpec": {
                    "Mode": "vip"
                }
            },
            "Endpoint": {
                "Spec": {
                    "Mode": "vip"
                },
                "VirtualIPs": [
                    {
                        "NetworkID": "odh7w9zvxyxynpwzk5a3cl6hp",
                        "Addr": "10.0.0.4/24"
                    }
                ]
            }
        }
    }
]
```

```
[node1] (local) root@192.168.0.23 ~
$ 
```

```
e/perl5/Debconf/FrontEnd/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/#
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
                    }
                },
                "Endpoint": {
                    "Spec": {
                        "Mode": "vip"
                    },
                    "VirtualIPs": [
                        {
                            "NetworkID": "odh7w9zvxyxynpwzk5a3cl6hp",
                            "Addr": "10.0.0.4/24"
                        }
                    ]
                }
            }
        }
]
[node1] (local) root@192.168.0.23 ~
$ docker service rm myservice
myservice
[node1] (local) root@192.168.0.23 ~
$ 
```

```
e/perl5/Debconf/FrontEnd/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/# 
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
          }
]
[node1] (local) root@192.168.0.23 ~
$ docker service rm myservice
myservice
[node1] (local) root@192.168.0.23 ~
$ docke
docker                  docker-containerd-ctr    docker-init            docker-proxy            dockerd-entrypoint.sh
docker-compose          docker-containerd-shim   docker-machine         docker-runc
docker-containerd       docker-entrypoint.sh     docker-prompt          dockerd
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
ae4d2de346e8        ubuntu:latest       "sleep infinity"    16 minutes ago      Up 16 minutes
myservice.2.s8vxqd3u6jz03yh2m3vue1ppq
ebfb29b94a47        nginx               "nginx -g 'daemon of…"  24 minutes ago      Up 24 minutes       0.0.0.0:8080->80/tcp
web1
[node1] (local) root@192.168.0.23 ~
$
```

```
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/# [node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
$ docker ps
CONTAINER ID          IMAGE                  COMMAND                CREATED           STATUS             PORTS
NAMES
ebfb29b94a47          nginx                  "nginx -g 'daemon of…" 26 minutes ago    Up 26 minutes      0.0.0.0:8080->80/tcp
web1
[node1] (local) root@192.168.0.23 ~
$ dock
docker                      docker-containerd-ctr   docker-init         docker-proxy        dockerd-entrypoint.sh
docker-compose              docker-containerd-shim  docker-machine      docker-runc
docker-containerd           docker-entrypoint.sh    docker-prompt       dockerd
[node1] (local) root@192.168.0.23 ~
$ docker service
create     inspect    logs     ls       ps       rm        rollback   scale     update
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$ docker swarm leave --force
Node left the swarm.
[node1] (local) root@192.168.0.23 ~
$
```

```
debconf: falling back to frontend: Teletype
Setting up libcap2-bin (1:2.25-1.2) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/# [node2] (local) root@192.168.0.22 ~
$
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
$ docker ps
CONTAINER ID        IMAGE                COMMAND                CREATED         STATUS              PORTS
NAMES
ebfb29b94a47        nginx                "nginx -g 'daemon of…"  26 minutes ago  Up 26 minutes       0.0.0.0:8080->80/tcp
web1
[node1] (local) root@192.168.0.23 ~
$ dock
docker                     docker-containerd-ctr    docker-init            docker-proxy             dockerd-entrypoint.sh
docker-compose             docker-containerd-shim   docker-machine         docker-runc
docker-containerd          docker-entrypoint.sh     docker-prompt          dockerd
[node1] (local) root@192.168.0.23 ~
$ docker service
create     inspect     logs      ls        ps        rm        rollback   scale     update
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$ docker swarm leave --force
Node left the swarm.
[node1] (local) root@192.168.0.23 ~
$ []
```

```
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/# [node2] (local) root@192.168.0.22 ~
$ docker swarm leave --force
Node left the swarm.
[node2] (local) root@192.168.0.22 ~
$ []
```

If the commandline doesn't appear in the terminal, make sure popups are enabled or try resizing the browser window.

```
docker                          docker-containerd-ctr    docker-init              docker-proxy             dockerd-entrypoint.sh
docker-compose                  docker-containerd-shim   docker-machine           docker-runc
docker-containerd               docker-entrypoint.sh     docker-prompt            dockerd
[node1] (local) root@192.168.0.23 ~
$ docker service
create     inspect    logs       ls         ps         rm         rollback   scale      update
[node1] (local) root@192.168.0.23 ~
$
[node1] (local) root@192.168.0.23 ~
$ docker swarm leave --force
Node left the swarm.
[node1] (local) root@192.168.0.23 ~
$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS                     NAMES
ebfb29b94a47        nginx               "nginx -g 'daemon of…"   30 minutes ago      Up 30 minutes       0.0.0.0:8080->80/tcp      web1
[node1] (local) root@192.168.0.23 ~
$ docker kill web1
web1
[node1] (local) root@192.168.0.23 ~
$
```

```
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/#
root@3dc75dbc7fc1:/# ping -c5 myservice
PING myservice (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=1 ttl=64 time=0.155 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=2 ttl=64 time=0.052 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=4 ttl=64 time=0.088 ms
64 bytes from 10.0.0.4 (10.0.0.4): icmp_seq=5 ttl=64 time=0.085 ms

--- myservice ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3999ms
rtt min/avg/max/mdev = 0.052/0.091/0.155/0.035 ms
root@3dc75dbc7fc1:/# [node2] (local) root@192.168.0.22 ~
$ docker swarm leave --force
Node left the swarm.
[node2] (local) root@192.168.0.22 ~
$
```