

NIS configuration on Ubuntu container:

Run server container:

```
docker run --name ub-srvr --privileged -it ubuntu /bin/bash
```

In another terminal, run client container:

```
docker run --name ub-clnt --privileged -it ubuntu /bin/bash
```

Server configuration:

```
apt-get update -y && apt-get install nano net-tools nis -y
```

```
nano /etc/default/nis
```

Here set:

```
NISSERVER=master
```

If instead you see:

```
NISMASTER=
```

Then set:

```
NISSERVER=true
```

```
#
# /etc/default/nis      Optional configuration settings for the NIS programs.
#
# Location of the master NIS password file (for yppasswdd).
# If you change this make sure it matches with /var/yp/Makefile.
YPPWDDIR=/etc
# Do we allow the user to use ypchsh and/or ypchfn ? The YPCHANGEOK
# fields are passed with -e to yppasswdd, see it's manpage.
# Possible values: "chsh", "chfn", "chsh,chfn"
YPCHANGEOK=chsh
# NIS master server.  If this is configured on a slave server then ypinit
# will be run each time NIS is started.
NISMASTER=true
# Additional options to be given to ypserv when it is started.
YPSERVARGS=
# Additional options to be given to ypbind when it is started.
YPBINDARGS=
"/etc/default/nis" 29L, 917B
```

Running [ifconfig](#) on server:

```
Selecting previously unselected package net-tools.  
(Reading database ... 8241 files and directories currently installed.)  
Preparing to unpack .../net-tools_2.10-0.1ubuntu4_amd64.deb ...  
Unpacking net-tools (2.10-0.1ubuntu4) ...  
Setting up net-tools (2.10-0.1ubuntu4) ...  
root@f2cd7e17e6c0:/var/yp# ifconfig  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 172.17.0.2 netmask 255.255.0.0 broadcast 172.17.255.255  
    ether 02:42:ac:11:00:02 txqueuelen 0 (Ethernet)  
    RX packets 21615 bytes 45928926 (45.9 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 11561 bytes 947133 (947.1 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0x10<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 92 bytes 7084 (7.0 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 92 bytes 7084 (7.0 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
root@f2cd7e17e6c0:/var/yp#
```

IP address: 172.17.0.2 with subnet mask 255.255.0.0
So network range is 172.17.0.0

Running [ifconfig](#) on client:

```
root@321cbaa2543e:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.17.0.3 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:ac:11:00:03 txqueuelen 0 (Ethernet)
    RX packets 19554 bytes 46162087 (46.1 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11529 bytes 972377 (972.3 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 100 bytes 6676 (6.6 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 100 bytes 6676 (6.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@321cbaa2543e:/#
```

IP address: 172.17.0.3 with subnet mask 255.255.0.0
So network range is 172.17.0.0

Open file:

[nano /etc/ypserv.securenets](#)

In this file, comment out last two lines:

[# 0.0.0.0 0.0.0.0](#)

[# ::/0](#)

Add the network range that you want to allow to access NIS:

```
#
#       One can use the word "host" instead of a netmask of
#       255.255.255.255. Only IP addresses are allowed in this
#       file, not hostnames.
#
# Always allow access for localhost, IPv4 and IPv6
255.0.0.0      127.0.0.0
host           ::1

# This lines gives access to everybody. PLEASE ADJUST!
# 0.0.0.0      0.0.0.0
# ::/0
255.255.0.0    172.17.0.0
~
~
~
~
~
"/etc/ypserv.securenets" 18L, 529B                                18,22-26    All
```

Both client and server are in same network so we just add:

255.255.0.0 172.17.0.0

On server, set hostname and domain. You can add anything but make sure it is unique otherwise there may be problems later on.

Run:

`hostname srvr`

`domainname master.nis`

Verify by running:

`hostname`

`domainname`

```
root@f2cd7e17e6c0:/var/yp# hostname
srvr
root@f2cd7e17e6c0:/var/yp# domainname
master.nis
root@f2cd7e17e6c0:/var/yp#
```

Open file:

`nano /etc/hosts`

There may be an entry like:

`172.17.0.2 16effbakdf`

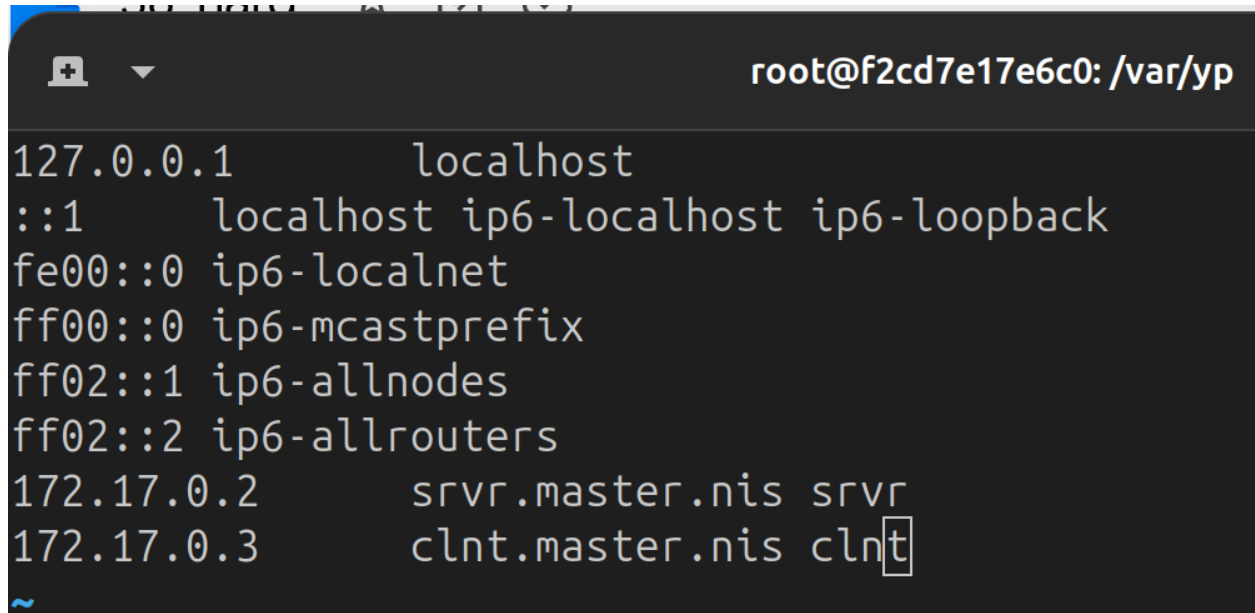
Just remove that and add two lines in the following format:

`<ip of server> <server hostname>.<domainname> <server hostname>`

`<ip of client> <client hostname>.<domainname> <client hostname>`

Set the hostname and domainname on client container the same way we did for server container.

`/etc/hosts:`

A terminal window screenshot showing the contents of the /etc/hosts file. The terminal title is 'root@f2cd7e17e6c0: /var/yp'. The file content is as follows:

```
127.0.0.1      localhost
::1           localhost ip6-localhost ip6-loopback
fe00::0       ip6-localnet
ff00::0       ip6-mcastprefix
ff02::1       ip6-allnodes
ff02::2       ip6-allrouters
172.17.0.2     srvr.master.nis srvr
172.17.0.3     clnt.master.nis clnt
```

Run commands:

`service rpcbind start`

`service ypserv start`

`service yppasswdd start`

`service ypxfrd start`

`/usr/lib/yp/ypinit -m`

```
root@f2cd7e17e6c0:/# /usr/lib/yp/ypinit -m

At this point, we have to construct a list of the hosts which will run NIS
servers.  srvr.master.nis is in the list of NIS server hosts.  Please continue to add
the names for the other hosts, one per line.  When you are done with the
list, type a <control D>.
    next host to add:  srvr.master.nis
    next host to add:
The current list of NIS servers looks like this:

srvr.master.nis

Is this correct? [y/n: y] y
We need a few minutes to build the databases...
Building /var/yp/master.nis/ypservers...
Running /var/yp/Makefile...
gmake[1]: Entering directory '/var/yp/master.nis'
Updating passwd.byname...
Updating passwd.byuid...
Updating group.byname...
```

Verify that host is correct, then press y.

Now add a new user:

```
useradd newuser
```

```
passwd newuser
```

Set a new password of your choice.

Add this user to group (optional, but mentioned in problem statement). You can google how to do this.

Now run:

```
cd /var/yp/
make
```

Client configuration:

```
apt-get update -y && apt-get install nano net-tools iputils-ping nis -y
```

```
nano /etc/yp.conf
```

Add one line in format:

```
domain <domainname> server <server ip>
```

Refer screenshot.

```
# See the manual page of ypbind for the syntax of this file.
#
# IMPORTANT: For the "ypserver", use IP addresses, or make sure that
#             the host is in /etc/hosts. This file is only interpreted
#             once, and if DNS isn't reachable yet the ypserver cannot
#             be resolved and ypbind won't ever bind to the server.
#
# ypserver ypserver.network.com
domain master.nis server 172.17.0.2
~
~
~
~
~
~
~
~
~
~
"/etc/yp.conf" 141 563B
```

nano /etc/nsswitch.conf
Make changes as shown:

```
# info libc Name Service Switch For information about this file.

passwd:      files nis
group:       files nis
shadow:      files nis
gshadow:     files

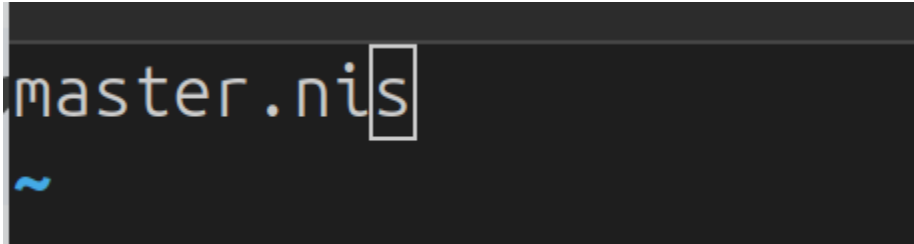
hosts:       files dns nis
networks:    files

protocols:   db files
services:    db files
ethers:      db files
rpc:         db files

netgroup:    nis
~
~
~
"/etc/nsswitch.conf" 20L, 510B                               12/29/2017 11:11:11 AM
```

`nano /etc/defaultdomain`

Add the domainname set (make sure it is same on both client and server)



`nano /etc/pam.d/common-session`

add to the end

`session optional pam_mkhomedir.so skel=/etc/skel umask=077`

Run:

`service rpcbind restart`

`service nscd restart`

`service ypbind restart`

Try pinging the server:

`ping <server hostname>.<domainname>`

```
root@321cbaa2543e:/# ping srvr.master.nis
PING srvr.master.nis (172.17.0.2) 56(84) bytes of data.
64 bytes from srvr.master.nis (172.17.0.2): icmp_seq=1 ttl=64 time=0.073 ms
64 bytes from srvr.master.nis (172.17.0.2): icmp_seq=2 ttl=64 time=0.109 ms
64 bytes from srvr.master.nis (172.17.0.2): icmp_seq=3 ttl=64 time=0.106 ms
64 bytes from srvr.master.nis (172.17.0.2): icmp_seq=4 ttl=64 time=0.106 ms
^C
```

Switch to newuser that you have created on server:

`su - newuser`

If new directory is created, you have configured it properly.

```
root@321cbaa2543e:/# su - newuser
Creating directory '/home/newuser'.
$ ls
$ exit
```