Configuration IP sous GNU/Linux

Configuration de l'adresse IP

```
user@machine1:~$ ls /sys/class/net
enp0s3   enp0s8   lo
user@machine1:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
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
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
    link/ether 08:00:27:a9:a9:62 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fea9:a962/64 scope link
       valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
    link/ether 08:00:27:34:f7:89 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.101/24 brd 192.168.56.255 scope global enp0s8
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe34:f789/64 scope link
       valid_lft forever preferred_lft forever
user@machine1:~$ ip addr show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
    link/ether 08:00:27:a9:a9:62 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fea9:a962/64 scope link
       valid_lft forever preferred_lft forever
user@machine1:~$ ip -4 addr show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
    inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
       valid_lft forever preferred_lft forever
user@machine1:~$ ip -o -4 addr show enp0s3
2: enp0s3    inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3\       valid_lft forever
preferred_lft forever
user@machine1:~$ ip -o -4 addr show enp0s3 | awk '{print $2 " " $4}'
```

```
enp0s3 192.168.1.10/24
user@machine1:~$ sudo ip addr add 192.168.1.100 dev enp0s3
user@machine1:~$ ip addr show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
   link/ether 08:00:27:a9:a9:62 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet 192.168.1.100/32 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:fea9:a962/64 scope link
      valid_lft forever preferred_lft forever
user@machine1:~$ sudo ip addr add 192.168.1.200/16 dev enp0s3
user@machine1:~$ ip addr show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
   link/ether 08:00:27:a9:a9:62 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet 192.168.1.100/32 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet 192.168.1.200/16 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:fea9:a962/64 scope link
      valid_lft forever preferred_lft forever
user@machine1:~$ sudo ip addr del 192.168.1.100/32 dev enp0s3
user@machine1:~$ sudo ip addr del 192.168.1.200/16 dev enp0s3
user@machine1:~$ ip addr show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
default qlen 1000
   link/ether 08:00:27:a9:a9:62 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.10/24 brd 192.168.1.255 scope global enp0s3
      valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:fea9:a962/64 scope link
      valid_lft forever preferred_lft forever
user@machine1:~$ sudo nano /etc/network/interfaces  #Valide sur Debian
      source /etc/network/interfaces.d/*
      # The loopback network interface
      auto lo
      iface lo inet loopback
user@machine1:~$ sudo vi /etc/sysconfig/network-scripts/ifcfg-lo  #Valide sur RedHat
      DEVICE=lo
      IPADDR=127.0.0.1
      NETMASK=255.0.0.0
      NETWORK=127.0.0.0
```

```
    BROADCAST=127.255.255.255
    ONBOOT=yes
    NAME=loopback
user@machine1:~$ sudo nano /etc/network/interfaces.d/enp0s3  #Valide sur Debian
    #Configuration statique
    allow-hotplug enp0s3
    iface enp0s3 inet static
    address 192.168.1.10
    netmask 255.255.255.0
user@machine1:~$ sudo vi /etc/sysconfig/network-scripts/ifcfg-enp0s3  #Valide sur RedHat
    #Configuration statique
    TYPE=Ethernet
    IPADDR=192.168.1.10
    NETMASK=255.255.255.0
    BROADCAST=192.168.1.255
    NAME=enp0s3
    DEVICE=enp0s3
    ONBOOT=yes
user@machine1:~$ sudo nano /etc/network/interfaces.d/enp0s3  #Valide sur Debian
    #Configuration dynamique
    allow-hotplug enp0s3
    iface enp0s3 inet dhcp
user@machine1:~$ sudo vi /etc/sysconfig/network-scripts/ifcfg-enp0s3  #Valide sur RedHat
    #Configuration dynamique
    TYPE=Ethernet
    BOOTPROTO=dhcp
    NAME=enp0s3
    DEVICE=enp0s3
    ONBOOT=yes
user@machine1:~$ sudo systemctl restart networking.service
```

Configuration de la table de routage

```
user@machine1:~$ ip route show
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ ip r
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ sudo ip addr add 192.168.2.20/16 dev enp0s3
user@machine1:~$ ip r
192.168.0.0/16 dev enp0s3 proto kernel scope link src 192.168.2.20
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ sudo ip addr del 192.168.2.20/16 dev enp0s3
```

user@machine1:~$ ip r
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ sudo ip route add **192.168.5.0/24 via 192.168.1.1**
user@machine1:~$ ip r
192.168.0.0/16 dev enp0s3 proto kernel scope link src 192.168.2.20
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.5.0/24 via 192.168.1.1 dev enp0s3
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ sudo ip route del **192.168.5.0/24 via 192.168.1.1**
user@machine1:~$ ip r
192.168.0.0/16 dev enp0s3 proto kernel scope link src 192.168.2.20
192.168.1.0/24 dev enp0s3 proto kernel scope link src 192.168.1.10
192.168.56.0/24 dev enp0s8 proto kernel scope link src 192.168.56.101
user@machine1:~$ sudo nano /etc/network/interfaces.d/enp0s3 **#Valide sur Debian**
allow-hotplug enp0s3
iface enp0s3 inet static
address 192.168.1.10
netmask 255.255.255.0
up ip route add 192.168.5.0/24 via 192.168.1.1
user@machine1:~$ sudo vi /etc/sysconfig/network-scripts/**route**-enp0s3 **#Valide sur RedHat**
192.168.5.0/24 via 192.168.1.1
root@machine1:~$ echo 1 > /proc/sys/net/ipv4/ip_forward
user@machine1:~$ sudo sysctl net.ipv4.ip_forward=1
user@machine1:~$ sudo nano /etc/sysctl.conf
net.ipv4.ip_forward=1

Configuration d'un serveur DHCP

Configuration côté serveur

```
#Installation du paquet dhcp-server sur Debian
user@machine1:~$ sudo apt-cache show *dhcp*server* | grep Package  #Recherche du nom exact
Package: isc-dhcp-server
Package: isc-dhcp-server-ldap
Package: kea-dhcp-ddns-server
Package: kea-dhcp4-server
Package: kea-dhcp6-server
Package: wide-dhcpv6-server
user@machine1:~$ sudo apt-get install isc-dhcp-server  #Installation à partir des dépôts
user@machine1:~$ sudo dpkg  -i  isc-dhcp-server_4.3.5-3_amd64.deb  #Installation par dpkg
#Installation du paquet dhcp-server sur RedHat
user@machine1:~$ yum search dhcp   #Recherche du nom exact
      Loaded plugins: fastestmirror
      base                                  | 3.6 kB     00:00
      extras                                | 3.4 kB     00:00
      updates                               | 3.4 kB     00:00
      (1/4): base/7/x86_64/group_gz         | 156 kB   00:03
      (2/4): extras/7/x86_64/primary_db     | 181 kB   00:04
      (3/4): updates/7/x86_64/primary_db    | 6.9 MB   01:04
      (4/4): base/7/x86_64/primary_db       | 5.7 MB   01:49
      Determining fastest mirrors
       * base: mirror.us.leaseweb.net
       * extras: mirror.us.leaseweb.net
       * updates: mirror.us.leaseweb.net
      ========================== N/S matched: dhcp ==========================
      dhcp-common.x86_64 : Common files used by ISC dhcp client and server
      dhcp-devel.i686 : Development headers and libraries for interfacing to the DHCP server
      dhcp-devel.x86_64 : Development headers and libraries for interfacing to the DHCP server
      dhcp-libs.x86_64 : Shared libraries used by ISC dhcp client and server
      dhcp-libs.i686 : Shared libraries used by ISC dhcp client and server
      dhclient.x86_64 : Provides the ISC DHCP client daemon and dhclient-script
      dhcp.x86_64 : Dynamic host configuration protocol software
      dnsmasq.x86_64 : A lightweight DHCP/caching DNS server
      dnsmasq-utils.x86_64 : Utilities for manipulating DHCP server leases
user@machine1:~$ yum install dhcp.x86_64  #Installation à partir des dépôts (.x86_64 pour 64b)
user@machine1:~$ rpm -i dhcp.x86_64.rpm  #Installation par rpm
#Configuration sur Debian
user@machine1:~$ sudo nano /etc/default/isc-dhcp-server
      # Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
      #DHCPDv4_CONF=/etc/dhcp/dhcpd.conf
      #DHCPDv6_CONF=/etc/dhcp/dhcpd6.conf
```

```
        # Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
        #DHCPDv4_PID=/var/run/dhcpd.pid
        #DHCPDv6_PID=/var/run/dhcpd6.pid
        # On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
        INTERFACESv4="enp0s3"
        INTERFACESv6=""
user@machine1:~$ sudo nano /etc/dhcp/dhcpd.conf
        option domain-name "example.org";
        option domain-name-servers ns1.example.org, ns2.example.org;
        default-lease-time 600;
        max-lease-time 7200;
        authoritative;
        subnet 192.168.1.0 netmask 255.255.255.0 {
                range 192.168.1.10  192.168.1.200;
                option domain-name-servers ns1.internal.example.org;
                option domain-name "internal.example.org";
                option routers 192.168.1.1,192.168.1.2;
                option broadcast-address 192.168.1.255;
                default-lease-time 600;
                max-lease-time 7200;
        }
        host machine1 {
                hardware ethernet 08:00:07:26:c0:a5;
                fixed-address 192.168.1.100;
        }
        host bbb {
                hardware ethernet 08:00:07:a7:15:ab;
                deny booting;
        }
user@machine1:~$ sudo systemctl restart isc-dhcp-server.service
#Configuration sur RedHat
user@machine1:~$ vi /etc/dhcp/dhcpd.conf
        option domain-name "example.org";
        option domain-name-servers ns1.example.org, ns2.example.org;
        default-lease-time 600;
        max-lease-time 7200;
        authoritative;
        subnet 192.168.1.0 netmask 255.255.255.0 {
                range 192.168.1.200  192.168.1.250;
                option domain-name-servers ns1.internal.example.org;
                option domain-name "internal.example.org";
                option routers 192.168.1.1,192.168.1.2;
                option broadcast-address 192.168.1.255;
                default-lease-time 600;
                max-lease-time 7200;
```

```
}
host machine1 {
        hardware ethernet 08:00:07:26:c0:a5;
        fixed-address 192.168.1.1;
}
host machine2 {
        hardware ethernet 08:00:07:a7:15:ab;
        deny booting;
}
user@machine1:~$ sudo /sbin/dhcpd
Internet Systems Consortium DHCP Server 4.2.5
Copyright 2004-2013 Internet Systems Consortium.
All rights reserved.
For info, please visit https://www.isc.org/software/dhcp/
Not searching LDAP since ldap-server, ldap-port and ldap-base-dn were not specified in the config
file
Wrote 0 leases to leases file.
Listening on LPF/enp0s9/08:00:27:12:b9:95/192.168.10.0/24
Sending on   LPF/enp0s9/08:00:27:12:b9:95/192.168.10.0/24
No subnet declaration for enp0s8 (192.168.56.105).
** Ignoring requests on enp0s8.  If this is not what
   you want, please write a subnet declaration
   in your dhcpd.conf file for the network segment
   to which interface enp0s8 is attached. **
No subnet declaration for enp0s3 (10.0.2.15).
** Ignoring requests on enp0s3.  If this is not what
   you want, please write a subnet declaration
   in your dhcpd.conf file for the network segment
   to which interface enp0s3 is attached. **
Sending on   Socket/fallback/fallback-net
user@machine1:~$ cat /var/lib/dhcpd/dhcpd.leases
server-duid "\000\001\000\001\"<[\266\010\000'\022\271\225";
lease 192.168.10.200 {
  starts 3 2018/03/14 22:17:41;
  ends 4 2018/03/15 10:17:41;
  cltt 3 2018/03/14 22:17:41;
  binding state active;
  next binding state free;
  rewind binding state free;
  hardware ethernet 08:00:27:f4:80:7e;
  client-hostname "client1";
}
```

Configuration côté client

```
user@machine1:~$ sudo nano /etc/network/interfaces.d/enp0s3  # Debian
    allow-hotplug enp0s3
    iface enp0s3 inet dhcp
user@machine1:~$ sudo vi /etc/sysconfig/network-scripts/ifcfg-enp0s3  # RedHat
    TYPE=Ethernet
    BOOTPROTO=dhcp
    NAME=enp0s3
    DEVICE=enp0s3
    ONBOOT=yes
user@machine1:~$ cat /var/lib/dhclient/dhclient.leases
    lease {
      interface "enp0s9";
      fixed-address 192.168.10.201;
      option subnet-mask 255.255.255.0;
      option dhcp-lease-time 43200;
      option dhcp-message-type 5;
      option dhcp-server-identifier 192.168.10.100;
      renew 4 2018/03/15 03:19:17;
      rebind 4 2018/03/15 09:01:49;
      expire 4 2018/03/15 10:31:49;
    }
```

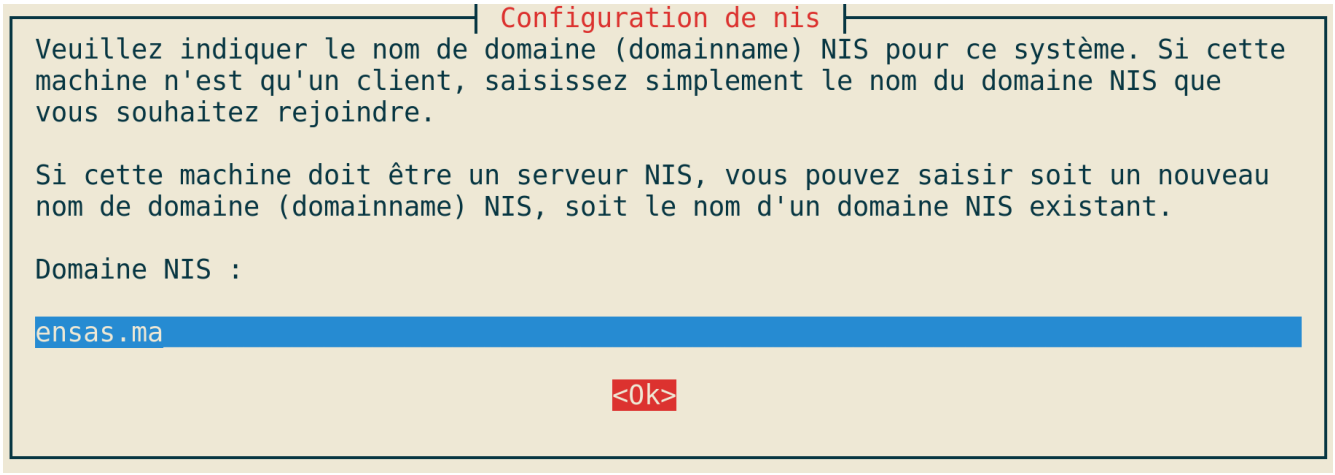
Configuration d'un agent relay

```
#Installation du paquet dhcp-relay sur Debian
user@machine1:~$ sudo apt-cache show "*dhcp*relay*" | grep Package  #Recherche du nom exact
Package: isc-dhcp-relay
Package: wide-dhcpv6-relay
user@machine1:~$ sudo apt-get install isc-dhcp-relay  #Installation à partir des dépôts
user@machine1:~$ sudo dpkg  -i  isc-dhcp-relay_4.3.5-3_amd64.deb  #Installation par dpkg
#Installation du paquet dhcp sur RedHat (dhcp fournit le serveur et le relay)
user@machine1:~$ yum install dhcp.x86_64  #Installation à partir des dépôts
user@machine1:~$ rpm -i dhcp.x86_64.rpm  #Installation par rpm
#Configuration sur Debian
user@machine1:~$ sudo nano /etc/default/isc-dhcp-relay
    SERVERS="192.168.10.100"  #Adresse du serveur DHCP
    INTERFACES="enp0s3  enp0s8"  #Interfaces d'écoutes
user@machine1:~$ sudo systemctl  restart  isc-dhcp-relay
#Configuration sur RedHat
user@machine1:~$ sudo vi /etc/sysconfig/dhcrelay
    DHCPSERVERS="192.168.10.100"  #Adresse du serveur DHCP
    INTERFACES="enp0s3  enp0s8"  #Interfaces d'écoutes
user@machine1:~$ sudo /sbin/dhcrelay
```

Authentification par NIS

Configuration côté serveur

```
user@nisserver:~$ ls /sys/class/net
enp0s3  enp0s8  lo
user@nisserver:~$ sudo nano /etc/network/interfaces.d/enp0s8
allow-hotplug enp0s8
iface enp0s8 inet static
address 192.168.10.10
netmask 255.255.255.0
user@nisserver:~$ ip -o -4 a show enp0s8 | awk {'print $2 " " $4'}
enp0s8 192.168.10.10/24
user@nisserver:~$ sudo apt-get install nis
```



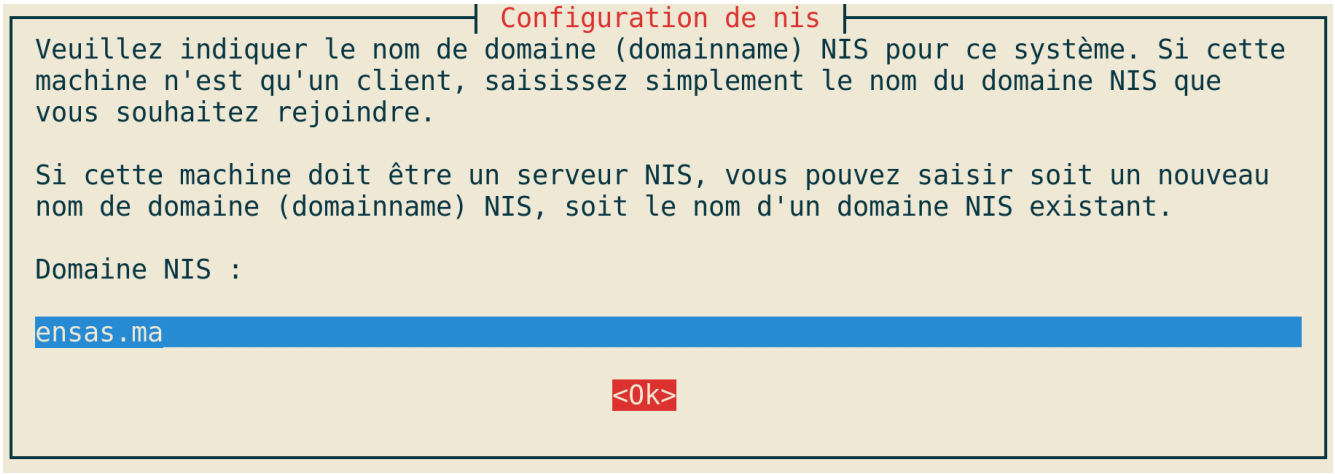

```
user@nisserver:~$ sudo nano /etc/default/nis
NISSERVER=master
NISCLIENT=false
user@nisserver:~$ sudo nano /etc/ypserv.securenets
255.0.0.0               127.0.0.0
255.255.255.0           192.168.10.0
user@nisserver:~$ sudo systemctl restart nis.service
user@nisserver:~$ sudo /usr/lib/yp/ypinit -m
At this point, we have to construct a list of the hosts which will run NIS
servers.  nisserver 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:  nisserver
        next host to add:
The current list of NIS servers looks like this:
nisserver
Is this correct?  [y/n: y]  y
We need a few minutes to build the databases...
```

Building /var/yp/ensas.ma/ypservers...
Running /var/yp/Makefile...
make[1] : on entre dans le répertoire « **/var/yp/ensas.ma** »
Updating passwd.byname...
Updating passwd.byuid...
Updating group.byname...
Updating group.bygid...
Updating hosts.byname...
Updating hosts.byaddr...
Updating rpc.byname...
Updating rpc.bynumber...
Updating services.byname...
Updating services.byservicename...
Updating netid.byname...
Updating protocols.bynumber...
Updating protocols.byname...
Updating netgroup...
Updating netgroup.byhost...
Updating netgroup.byuser...
Updating shadow.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
nisserver has been set up as a **NIS master server**.
Now you can run ypinit -s nisserver on all slave server.
user@nisserver:~$ cd /var/yp
user@nisserver:/var/yp$ sudo make
make[1] : on entre dans le répertoire « /var/yp/ensas.ma »
Updating netid.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
user@nisserver:~$ sudo **adduser user1**
Ajout de l'utilisateur « **user1** » ...
make : on entre dans le répertoire « /var/yp »
make[1] : on entre dans le répertoire « **/var/yp/ensas.ma** »
Updating netid.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
make : on quitte le répertoire « /var/yp »
Ajout du nouveau groupe « user1 » (1001) ...
make : on entre dans le répertoire « /var/yp »
make[1] : on entre dans le répertoire « /var/yp/ensas.ma »
Updating group.byname...
Updating group.bygid...
Updating netid.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
make : on quitte le répertoire « /var/yp »
Ajout du nouvel utilisateur « user1 » (1001) avec le groupe « user1 » ...
make : on entre dans le répertoire « /var/yp »

```
make[1] : on entre dans le répertoire « /var/yp/ensas.ma »
Updating passwd.byname...
Updating passwd.byuid...
Updating netid.byname...
Updating shadow.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
make : on quitte le répertoire « /var/yp »
Création du répertoire personnel « /home/user1 »...
Copie des fichiers depuis « /etc/skel »...
Entrez le nouveau mot de passe UNIX :
Retapez le nouveau mot de passe UNIX :
passwd: password updated successfully
Changing the user information for user1
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Cette information est-elle correcte ? [O/n]
user@nisserver:~$ sudo nano /etc/hosts
127.0.0.1               localhost
127.0.1.1               nisserver
192.168.10.20           nisclient
user@nisserver:~$ sudo make   # A exécuter après modification d'un fichier d'information.
make[1] : on entre dans le répertoire « /var/yp/ensas.ma »
Updating passwd.byname...
Updating passwd.byuid...
Updating netid.byname...
Updating shadow.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
```

Configuration côté client

```
user@nisclient:~$ ls /sys/class/net
enp0s3   enp0s8   lo
user@nisclient:~$ sudo nano /etc/network/interfaces.d/enp0s8
allow-hotplug enp0s8
iface enp0s8 inet static
address 192.168.10.20
netmask 255.255.255.0
user@nisclient:~$ ip -o -4 a show enp0s8 | awk {'print $2 " " $4'}
enp0s8 192.168.10.20/24
user@nisclient:~$ sudo apt-get install nis
```

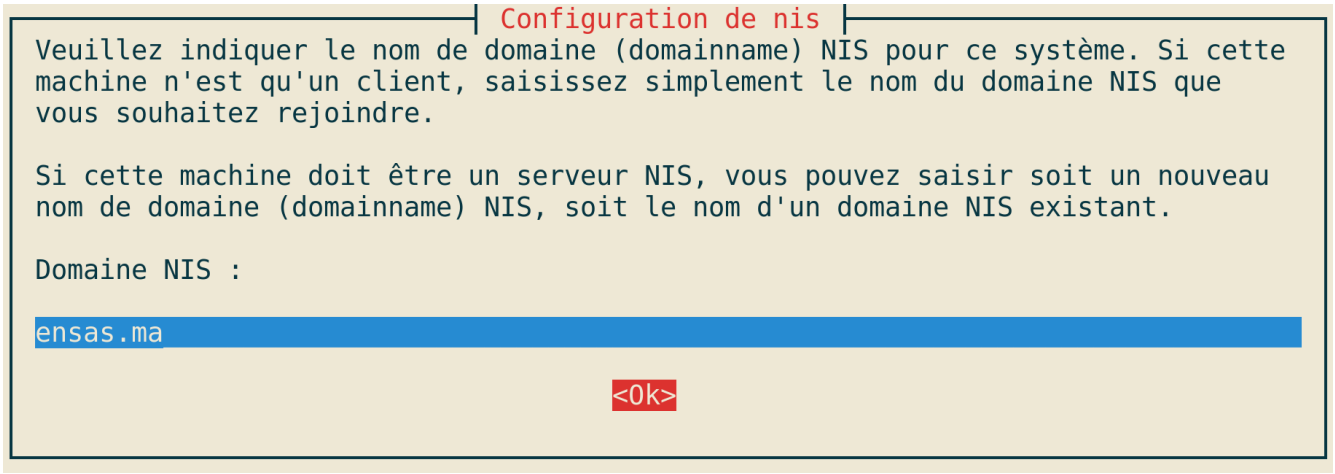


user@nisclient:~$ sudo nano /etc/default/nis
NISSERVER=**false**
NISCLIENT=**true**
user@nisclient:~$ domainname
ensas.ma
user@nisclient:~$ sudo nano /etc/yp.conf
ypserver 192.168.10.10
user@nisclient:~$ sudo nano /etc/nsswitch.conf
passwd: compat **nis**
group: compat **nis**
shadow: compat **nis**
gshadow: files **nis**
hosts: files dns **nis**
user@nisclient:~$ sudo systemctl restart nis.service
user@nisclient:~$ id user1
uid=1001(user1) gid=1001(user1) groupes=1001(user1)
user@nisclient:~$ su user1
user1@nisclient:/home/user$ cd
bash: cd: /home/user1: **Aucun fichier ou dossier** de ce type
user@nisclient:~$ ypcat passwd.byname
user1:x:1001:1001:,,,:/home/user1:/bin/bash
user:x:1000:1000:user,,,:/home/user:/bin/bash
user@nisclient:~$ ypcat hosts
127.0.1.1 nisserver
127.0.0.1 localhost
192.168.10.20 nisclient
user@nisclient:~$ ypwhich
192.168.10.10

Configuration d’un NIS esclave

user@nisslave:~$ ls /sys/class/net
enp0s3 **enp0s8** lo

user@nisslave:~$ sudo nano /etc/network/interfaces.d/enp0s8
allow-hotplug enp0s8
iface enp0s8 inet static
address **192.168.10.15**
netmask 255.255.255.0
user@nisslave:~$ ip -o -4 a show enp0s8 | awk {'print $2 " " $4'}
enp0s8 192.168.10.15/24
user@nisslave:~$ sudo apt-get install nis



user@nisslave:~$ sudo nano /etc/default/nis
NISSERVER=**slave**
NISCLIENT=**false**
user@nisslave:~$ sudo systemctl restart nis.service
user@nisslave:~$ sudo nano /etc/hosts
127.0.0.1 localhost
127.0.1.1 nisslave
192.168.10.10 nisserver
 # Côté serveur
user@nisserver:~$ sudo nano /var/yp/Makefile
NOPUSH=**false**
user@nisserver:~$ sudo nano /etc/hosts
127.0.0.1 localhost
127.0.1.1 nisserver
192.168.10.20 nisclient
192.168.10.15 nisslave
user@nisserver:~$ sudo /usr/lib/yp/ypinit -m
At this point, we have to construct a list of the hosts which will run NIS servers. nisserver 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: nisserver
next host to add: **nisslave**

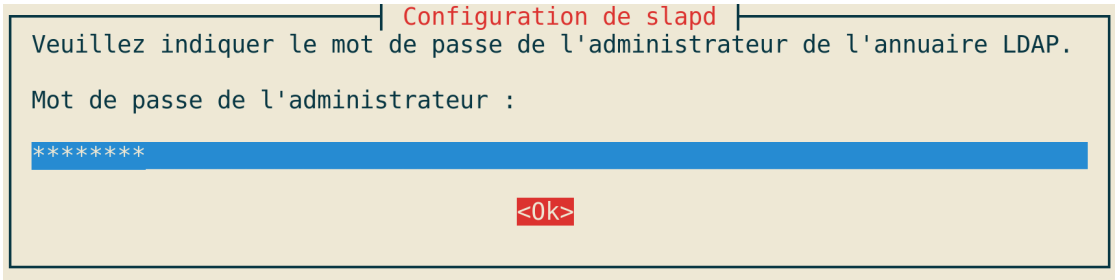
```
        next host to add:
The current list of NIS servers looks like this:
nisserver
nisslave
Is this correct?  [y/n: y]  y
We need a few minutes to build the databases...
Building /var/yp/ensas.ma/ypservers...
Running /var/yp/Makefile...
make[1] : on entre dans le répertoire « /var/yp/ensas.ma »
Updating passwd.byname...
Updating passwd.byuid...
Updating group.byname...
Updating group.bygid...
Updating hosts.byname...
Updating hosts.byaddr...
Updating rpc.byname...
Updating rpc.bynumber...
Updating services.byname...
Updating services.byservicename...
Updating netid.byname...
Updating protocols.bynumber...
Updating protocols.byname...
Updating netgroup...
Updating netgroup.byhost...
Updating netgroup.byuser...
Updating shadow.byname...
make[1] : on quitte le répertoire « /var/yp/ensas.ma »
nisserver has been set up as a NIS master server.
Now you can run ypinit -s nisserver on all slave server.
# On revient à l'esclave
user@nisslave:~$ ls /var/yp
binding  Makefile  nicknames
user@nisslave:~$ sudo /usr/lib/yp/ypinit -s  nisserver
We will need a few minutes to copy the data from 192.168.10.10.
Transferring ypservers...
Transferring protocols.bynumber...
Transferring rpc.bynumber...
Transferring group.byname...
Transferring passwd.byname...
Transferring shadow.byname...
Transferring passwd.byuid...
Transferring netgroup.byuser...
Transferring hosts.byname...
Transferring services.byname...
Transferring netid.byname...
```

```
Transferring protocols.byname...
Transferring netgroup...
Transferring hosts.byaddr...
Transferring rpc.byname...
Transferring group.bygid...
Transferring netgroup.byhost...
Transferring services.byservicename...
nisslave's NIS data base has been set up.
If there were warnings, please figure out what went wrong, and fix it.
At this point, make sure that /etc/passwd and /etc/group have
been edited so that when the NIS is activated, the data bases you
have just created will be used, instead of the /etc ASCII files.
user@nisslave:~$ ls /var/yp
binding  ensas.ma  Makefile  nicknames
user@nisclient:~$ nano /etc/yp.conf
ypserver 192.168.10.10
ypserver 192.168.10.15
user@nisclient:~$ sudo systemctl restart nis.service
```

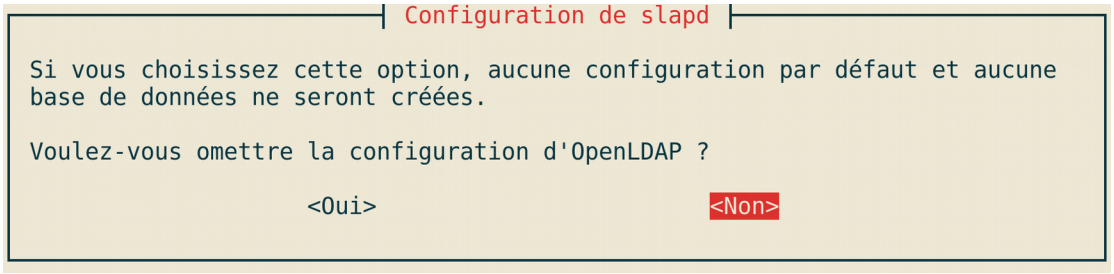
Authentification par LDAP

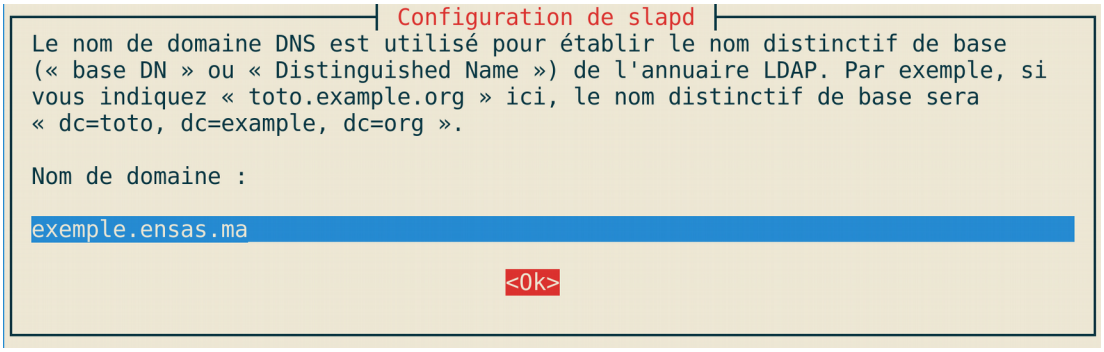
Configuration côté serveur

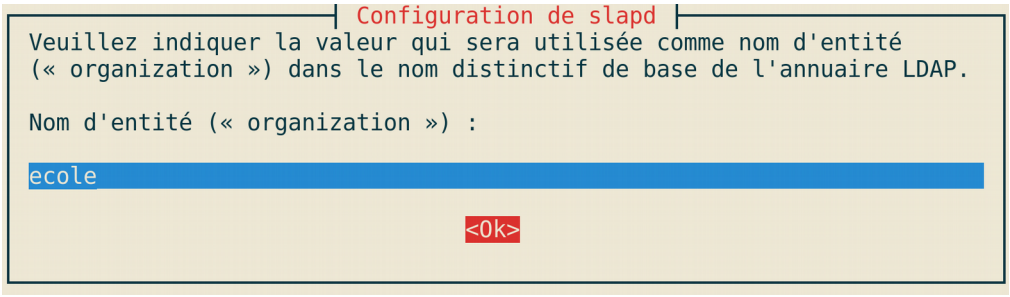
```
user@ldapserver:~$ ls /sys/class/net
enp0s3  enp0s8  lo
user@ldapserver:~$ sudo nano /etc/network/interfaces.d/enp0s8
allow-hotplug enp0s8
iface enp0s8 inet static
address 192.168.10.30
netmask 255.255.255.0
user@ldapserver:~$ ip -o -4 a show enp0s8 | awk {'print $2 " " $4'}
enp0s8 192.168.10.30/24
user@ldapserver:~$ sudo apt-get install slapd
```

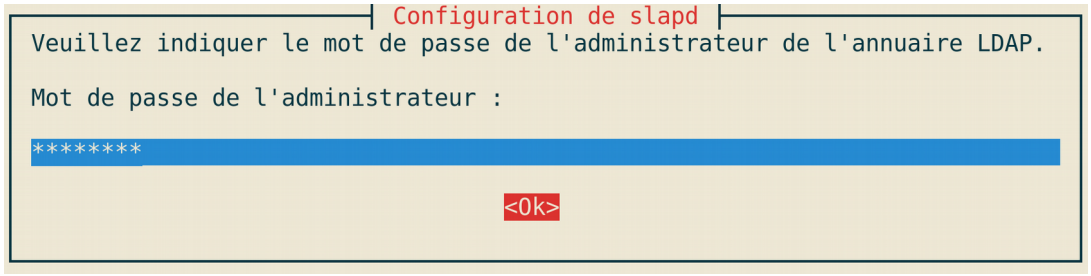


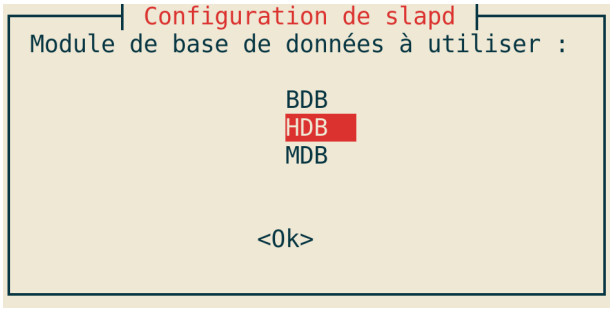

```
user@ldapserver:~$ sudo nano /etc/default/slapd
user@ldapserver:~$ sudo nano /etc/ldap/slapd.d/cn\=config.ldif
user@ldapserver:~$ sudo systemctl status slapd.service
user@ldapserver:~$ sudo dpkg-reconfigure slapd
```

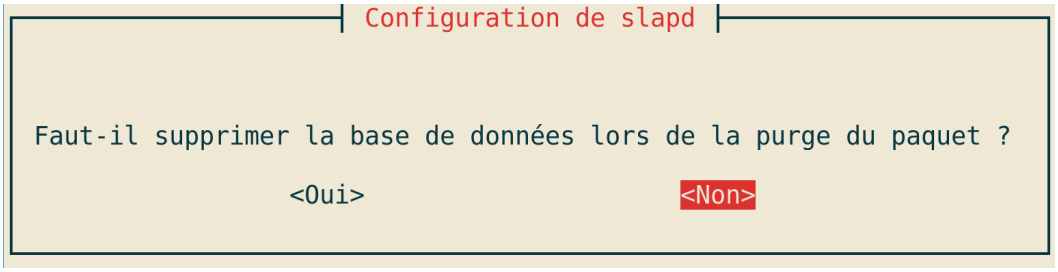


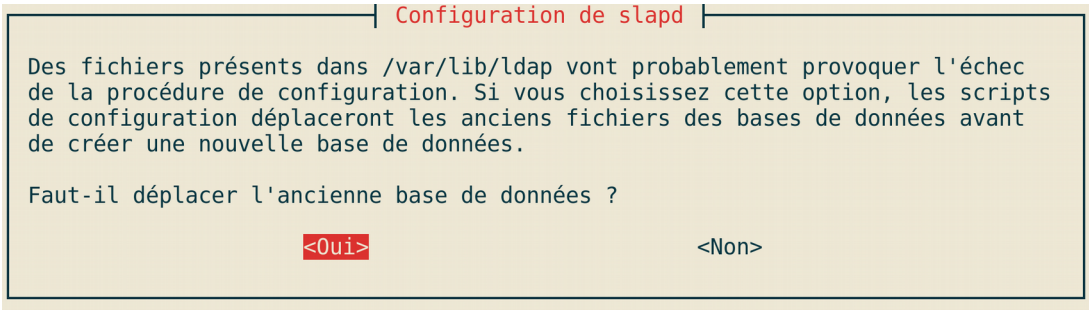












user@ldapserver:~$ sudo systemctl status slapd.service
user@ldapserver:~$ sudo systemctl start slapd.service

Configuration côté client

```
user@ldapclient:~$ ls /sys/class/net
enp0s3  enp0s8  lo
user@ldapclient:~$ sudo nano /etc/network/interfaces.d/enp0s8
allow-hotplug enp0s8
iface enp0s8 inet static
address 192.168.10.40
netmask 255.255.255.0
user@ldapclient:~$ ip -o -4 a show enp0s8 | awk {'print $2 " " $4'}
enp0s8 192.168.10.40/24
user@ldapclient:~$ sudo apt-get install ldap-utils
user@ldapclient:~$ ldapsearch -x -H ldap://192.168.10.30 -b dc=exemple,dc=ensas,dc=ma
# exemple.ensas.ma
dn: dc=exemple,dc=ensas,dc=ma
objectClass: top
objectClass: dcObject
objectClass: organization
o: ecole
dc: exemple
# admin, exemple.ensas.ma
dn: cn=admin,dc=exemple,dc=ensas,dc=ma
objectClass: simpleSecurityObject
objectClass: organizationalRole
cn: admin
description: LDAP administrator
# search result
search: 2
result: 0 Success
# numResponses: 3
# numEntries: 2
user@ldapclient:~$ sudo nano /etc/ldap/ldap.conf
BASE    dc=exemple,dc=ensas,dc=ma
URI     ldap://192.168.10.30
user@ldapclient:~$ ldapsearch  -x
# exemple.ensas.ma
dn: dc=exemple,dc=ensas,dc=ma
objectClass: top
objectClass: dcObject
objectClass: organization
o: ecole
dc: exemple
# admin, exemple.ensas.ma
dn: cn=admin,dc=exemple,dc=ensas,dc=ma
objectClass: simpleSecurityObject
objectClass: organizationalRole
```

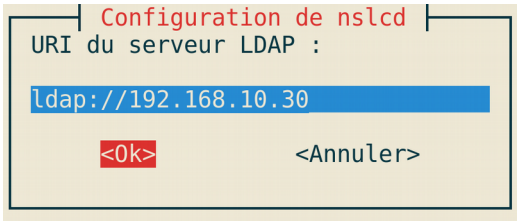
cn: admin
description: LDAP administrator
search result
search: 2
result: 0 Success
numResponses: 3
numEntries: 2

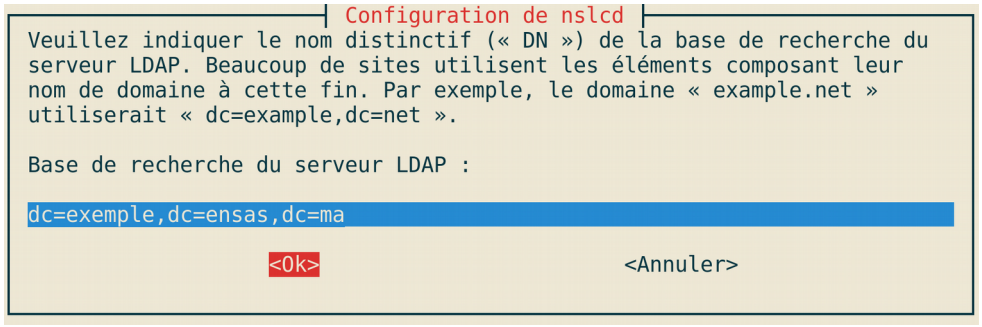
Authentification par LDAP (ce qui suit, est effectué sur un client LDAP)

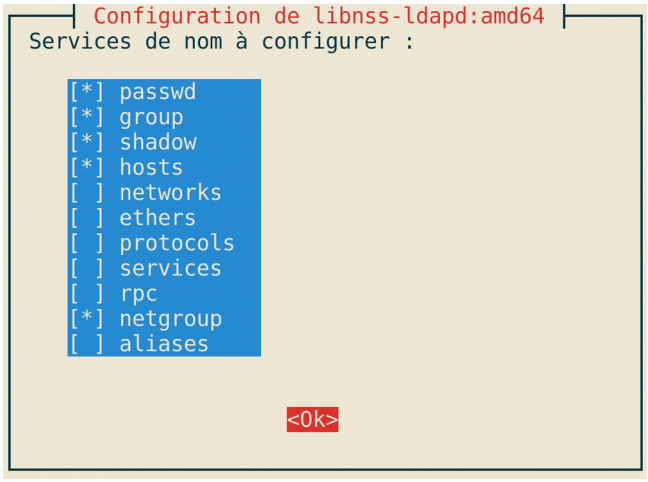
user@ldapclient:~$ nano User.ldif
dn: ou=User,dc=ensas,dc=ma
objectClass: organizationalUnit
ou: User
user@ldapclient:~$ nano Group.ldif
dn: ou=Group,dc=ensas,dc=ma
objectClass: organizationalUnit
ou: Group
user@ldapclient:~$ nano gtr4.ldif
dn: cn=gtr4,ou=Group,dc=ensas,dc=ma
objectClass: posixGroup
cn: gtr4
gidNumber: 10000
user@ldapclient:~$ nano ginf4.ldif
dn: cn=ginf4,ou=Group,dc=ensas,dc=ma
objectClass: posixGroup
cn: ginf4
gidNumber: 10001
user@ldapclient:~$ nano flane.ldif
dn: uid=flane,ou=User,dc=ensas,dc=ma
objectClass: inetOrgPerson
objectClass: posixAccount
objectClass: shadowAccount
uid: flane
sn: Flane ben Ilane
cn: Flane ben Ilane
uidNumber: 10001
gidNumber: 10000
userPassword:
loginShell: /bin/bash
homeDirectory: /var
user@ldapserver:~$ sudo slappasswd **# Exécuté sur le serveur pour générer un mot de passe**
New password: *****
Re-enter new password: *****
{SSHA}iNpwnOYoDW5DZ9xt+xJw/lLr69TyBT/S

```
user@ldapclient:~$ nano flane.ldif
dn: uid=flane,ou=User,dc=ensas,dc=ma
objectClass: inetOrgPerson
objectClass: posixAccount
objectClass: shadowAccount
uid: flane
sn: Flane ben Ilane
cn: Flane ben Ilane
uidNumber: 10001
gidNumber: 10000
userPassword: {SSHA}iNpwnOYoDW5DZ9xt+xJw/lLr69TyBT/S
loginShell: /bin/bash
homeDirectory: /var
user@ldapclient:~$ ldapadd  -cxWD  cn=admin,dc=exemple,dc=ensas,dc=ma  -f  entree1.ldif
Enter LDAP Password: *****
adding new entry "ou=User,dc=exemple,dc=ensas,dc=ma"
user@ldapclient:~$ ldapadd  -cxWD  cn=admin,dc=exemple,dc=ensas,dc=ma  -f  entree2.ldif
Enter LDAP Password: *****
adding new entry "ou=Group,dc=exemple,dc=ensas,dc=ma"
user@ldapclient:~$ ldapadd  -cxWD  cn=admin,dc=exemple,dc=ensas,dc=ma  -f  entree3.ldif
Enter LDAP Password: *****
adding new entry "cn=gtr4,ou=Group,dc=exemple,dc=ensas,dc=ma"
user@ldapclient:~$ ldapadd  -cxWD  cn=admin,dc=exemple,dc=ensas,dc=ma  -f  entree31.ldif
Enter LDAP Password: *****
adding new entry "cn=ginf4,ou=Group,dc=exemple,dc=ensas,dc=ma"
user@ldapclient:~$ ldapadd  -cxWD  cn=admin,dc=exemple,dc=ensas,dc=ma  -f  entree4.ldif
Enter LDAP Password: *****
adding new entry "uid=flane,ou=User,dc=exemple,dc=ensas,dc=ma"
user@ldapclient:~$ ldapsearch  -x  gidNumber=10000
# extended LDIF
#
# LDAPv3
# base <dc=exemple,dc=ensas,dc=ma> (default) with scope subtree
# filter: gidNumber=10000
# requesting: ALL
#
# gtr4, Group, exemple.ensas.ma
dn: cn=gtr4,ou=Group,dc=exemple,dc=ensas,dc=ma
objectClass: posixGroup
cn: gtr4
gidNumber: 10000
# flane, User, exemple.ensas.ma
dn: uid=flane,ou=User,dc=exemple,dc=ensas,dc=ma
objectClass: inetOrgPerson
objectClass: posixAccount
```

objectClass: shadowAccount
uid: flane
sn: Flane ben Ilane
cn: Flane ben Ilane
uidNumber: 10001
gidNumber: 10000
loginShell: /bin/bash
homeDirectory: /var
search result
search: 2
result: 0 Success
numResponses: 3
 # numEntries: 2
user@ldapclient:~$ sudo apt-get install libpam-ldapd







user@ldapclient:~$ reboot
user@ldapclient:~$ getent passwd flane

```
flane:x:10001:10000:Flane ben Ilane:/var:/bin/bash
user@ldapclient:~$ id flane
uid=10001(flane) gid=10000(gtr4) groupes=10000(gtr4)
user@ldapclient:~$ su flane
Mot de passe : *****
flane@ldapclient:/home/user$ cd
flane@ldapclient:~$ pwd
/var
```