

SOMMAIRE

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1. Installation du paquetage BIND

Pour installer le paquet BIND je tapes les commandes **apt-get update** et ensuite **apt -get intsall bind9**

```
root@DS1: ~# apt-get update
Atteint : 1 http://deb.debian.org/debian trixie InRelease
Réception de : 2 http://security.debian.org/debian-security trixie-security InRelease [43,4 kB]
Atteint : 3 http://deb.debian.org/debian trixie-updates InRelease
43,4 ko réceptionnés en 1s (29,2 ko/s)
Lecture des listes de paquets... Fait
root@DS1: ~# apt-get install bind9
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances... Fait
Lecture des informations d'état... Fait
bind9 est déjà la version la plus récente (1:9.20.15-1~deb13u1).
0 mis à jour, 0 nouvellement installés, 0 à enlever et 45 non mis à jour.
root@DS1: ~#_
```

Je démarre le service DNS avec la commande **systemctl start bind9**

```
root@DS1: ~# systemctl start bind9
root@DS1: ~#
```

avec la commande **nano /etc/named.conf** je regarde que les fichiers sont bien inclus dedans

```
GNU nano 8.4 /etc/bind/named.conf
// This is the primary configuration file for the BIND DNS server named.
//
// Please read /usr/share/doc/bind9/README.Debian for information on the
// structure of BIND configuration files in Debian, *BEFORE* you customize
// this configuration file.
//
// If you are just adding zones, please do that in /etc/bind/named.conf.local
include "/etc/bind/named.conf.options";
include "/etc/bind/named.conf.local";
include "/etc/bind/named.conf.root-hints";
```

je liste les fichiers qui se trouvent dans le dossier bind avec la commande **ls -l /etc/bind**

```
root@DS1: ~#ls -l /etc/bind
total 20
-rw-r--r-- 1 root bind 455 22 oct. 18:00 named.conf
-rw-r--r-- 1 root bind 42 22 oct. 18:00 named.conf.local
-rw-r--r-- 1 root bind 43 22 oct. 18:00 named.conf.options
-rw-r--r-- 1 root bind 116 22 oct. 18:00 named.conf.root-hints
-rw-r----- 1 bind bind 100 18 janv. 14:40 rndc.key
root@DS1: ~#
```

avec la commande **cd** je me déplace dans le répertoire bind et avec la commande **cp** je copie les fichiers pour les sauvegarder en cas de mauvaise manipulation

```
root@DS1: ~# cd /etc/bind
root@DS1: /etc/bind# cp named.conf named.conf.sauv
root@DS1: /etc/bind# cp named.conf.options named.conf.options.sauv
root@DS1: /etc/bind# cp named.conf.local named.conf.local.sauv
root@DS1: /etc/bind#
```

je vérifie l'état du service bind avec la commande **systemctl status bind9**

```
root@DS1: ~# systemctl status bind9
• named.service - BIND Domain Name Server
  Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: enabled)
  Active: active (running) since Thu 2026-01-15 15:05:40 CET; 10min ago
    Invocation: 69f1d63606284628a776f7f0f49ab9ad
      Docs: man:named(8)
   Main PID: 1016 (named)
    Status: "running"
     Tasks: 8 (limit: 2303)
  Memory: 30.7M (peak: 32.7M)
     CPU: 71ms
   CGroup: /system.slice/named.service
           └─1016 /usr/sbin/named -f -u bind

janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './DNSKEY/IN': 2001:500:2d::d#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './NS/IN': 2001:500:2d::d#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './DNSKEY/IN': 2001:500:12::d0d#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './NS/IN': 2001:500:12::d0d#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './DNSKEY/IN': 2001:500:a8::e#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './NS/IN': 2001:500:a8::e#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './DNSKEY/IN': 2001:7fd::1#53
janv. 15 15:05:40 DS1 named[1016]: network unreachable resolving './NS/IN': 2001:7fd::1#53
janv. 15 15:05:50 DS1 named[1016]: managed-keys-zone: Unable to fetch DNSKEY set '.': timed out
janv. 15 15:05:50 DS1 named[1016]: resolver priming query complete: timed out
root@DS1: ~#_
```

2.9. Zone de recherche directe et zone de recherche inversée

Je renseigne dans le fichier `named.conf.local` le nom des zones ainsi que les fichiers zones avec la commande **nano /etc/bind/named.conf.local**

```
GNU nano 8.4 /etc/bind/named.conf.local
//
// Do any local configuration here
//
zone "sio-exupery.local" IN {
    type master;
    file "db.sio-exupery.local";
    allow-update { none; };
};

zone "4.168.192.in-addr.arpa" IN {
    type master;
    file "rev.sio-exupery.local";
    allow-update { none; };
};
```

```
GNU nano 8.4 /etc/bind/named.conf.options
options {
    directory "/var/cache/bind";
};
```

2.10. Construction des fichiers de zone

Je créer le fichier `rev.sio-exupery.local` avec la commande **touch** et ensuite je complète le fichier avec la commande **nano**

```
GNU nano 8.4 /var/cache/bind/rev.sio-exupery.local *
; Fichier pour la résolution inverse
$TTL 86400
@ IN SOA DS1.sio-exupery.local. root.sio-exupery.local. (
    2026011301
    1w
    1d
    4w
    1w )
@ IN NS DS1.sio-exupery.local.
254 IN PTR DS1.sio-exupery.local.
1 IN PTR DD1.sio-exupery.local._
```

J'attribue aux 2 fichiers de zone au groupe bind

```
root@DS1: ~# chgrp bin /var/cache/bind/*
root@DS1: ~# chmod 664 /var/cache/bind/*
root@DS1: ~# _
```

Avec la commande **ls -l /var/cache/bind** je vérifie que les fichiers appartiennent bien au groupe bind

```
root@DS1: ~# ls -l /var/cache/bind
total 12
-rw-rw-r-- 1 root bind 0 15 janv. 15:27 db.sio-exupery.local
-rw-rw-r-- 1 bind bind 287 15 janv. 15:06 managed-keys.bind
-rw-rw-r-- 1 bind bind 1089 15 janv. 15:05 managed-keys.bind.jnl
-rw-rw-r-- 1 root bind 234 15 janv. 15:42 rev.sio-exupery.local
root@DS1: ~#
```

Je vérifie la même appartenance du groupe pour le répertoire

```
root@DS1: ~#ls -ld /var/cache/bind
drwxrwxr-x 2 root bind 4096 15 janv. 15:42 /var/cache/bind
root@DS1: #_
```

2.11. Démarrage et tests du service

Avec la commande **nano /etc/hosts** je modifie le fichier hosts

```
GNU nano 8.4 /etc/hosts *
127.0.0.1 localhost
192.168.4.254 DS1.sio-exupery.local DS1

# The following lines are desirable for IPv6 capable hosts
::1 localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

Je désactive les deux interfaces réseaux

```
root@DS1: ~#ifdown enp0s3
root@DS1: ~#ifdown enp0s8
root@DS1: ~#_
```

Je supprime le serveur DNS ROI

```
GNU nano 8.4 /etc/network/interfaces *
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
allow-hotplug enp0s3
auto enp0s3
iface enp0s3 inet static
address 172.17.101.218
netmask 255.255.0.0
network 172.17.0.0
gateway 172.17.250.3
broadcast 172.17.255.255
dns-nameservers 172.17.254.1

allow-hotplug enp0s8
iface enp0s8 inet static
address 192.168.4.254
netmask 255.255.255.0
network 192.168.4.0
broadcast 192.168.4.255
dns-search sio-exupery.local
dns-domain sio-exupery.local
dns-nameservers 192.168.4.254
# this is an autoconfigured ipv6 interface
#iface enp0s3 inet6 auto
```

Je réactive les deux interfaces avec la commande **ifup**

```
root@DS1: ~# ifup enp0s3
root@DS1: ~# ifup enp0s8
root@DS1: ~# _
```

Je relance le serveur

```
root@DS1: ~# systemctl restart bind9
root@DS1: ~# systemctl status bind9
• named.service - BIND Domain Name Server
  Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: enabled)
  Active: active (running) since Wed 2026-01-28 18:43:12 CET; 7s ago
  Invocation: 0a2d007ff56c4d19b0a5132d56df9099
  Docs: man:named(8)
  Main PID: 1074 (named)
  Status: "running"
  Tasks: 6 (limit: 2303)
  Memory: 20.4M (peak: 20.6M)
  CPU: 46ms
  CGroup: /system.slice/named.service
          └─1074 /usr/sbin/named -f -u bind

janv. 28 18:43:12 DS1 named[1074]: configuring command channel from '/etc/bind/rndc.key'
janv. 28 18:43:12 DS1 named[1074]: command channel listening on 127.0.0.1#953
janv. 28 18:43:12 DS1 named[1074]: configuring command channel from '/etc/bind/rndc.key'
janv. 28 18:43:12 DS1 named[1074]: command channel listening on ::1#953
janv. 28 18:43:12 DS1 named[1074]: zone 4.168.192.in-addr.arpa/IN: loaded serial 2026011401
janv. 28 18:43:12 DS1 systemd[1]: Started named.service - BIND Domain Name Server.
janv. 28 18:43:12 DS1 named[1074]: zone sio-exupery.local/IN: loaded serial 2026011401
janv. 28 18:43:12 DS1 named[1074]: all zones loaded
janv. 28 18:43:12 DS1 named[1074]: FIPS mode is disabled
janv. 28 18:43:12 DS1 named[1074]: running
root@DS1: ~#
```

Je constate que le service est bien lancé

```
janv. 18 15:13:33 DS1 named[1963]: command channel listening on 127.0.0.1#953
janv. 18 15:13:33 DS1 named[1963]: configuring command channel from '/etc/bind/rndc.key'
janv. 18 15:13:33 DS1 named[1963]: command channel listening on ::1#953
janv. 18 15:13:33 DS1 named[1963]: managed-keys-zone: loaded serial 15
janv. 18 15:13:33 DS1 named[1963]: zone 4.168.192.in-addr.arpa/IN: loaded serial 2026011301
janv. 18 15:13:33 DS1 named[1963]: zone sio-exupery.local/IN: loaded serial 2026011301
janv. 18 15:13:33 DS1 named[1963]: all zones loaded
janv. 18 15:13:33 DS1 named[1963]: FIPS mode is disabled
janv. 18 15:13:33 DS1 named[1963]: running
janv. 18 15:13:33 DS1 systemd[1]: Started named.service - BIND Domain Name Server.
```

Dersim Besiktas

Chapitre 2 - Serveur Debian DS1: installation du service DNS

```
root@DS1: /etc/bind#named-checkconf
root@DS1: /etc/bind#cd /var/cache/bind
root@DS1: /var/cache/bind#named-checkzone -d sio-exupery.local db.sio-exupery.local
loading "sio-exupery.local" from "db.sio-exupery.local" class "IN"
zone sio-exupery.local/IN: loaded serial 2026011401
OK
```

```
root@DS1: /var/cache/bind#named-checkzone -d 4.168.192.in-addr.arpa rev.sio-exupery.local
loading "4.168.192.in-addr.arpa" from "rev.sio-exupery.local" class "IN"
zone 4.168.192.in-addr.arpa/IN: loaded serial 2026011401
OK
```

Je constate également avec les test supplémentaires que le service est bien démarré

Je vérifie la présence du paquetage dnstutil à l'aide de la commande **grep**

```
root@DS1: /var/cache/bind#dpkg -l | grep -i dnstutil
ii bind9-dnstutil      1:9.20.15-1~deb13u1      amd64      Clients provided with BIND 9
root@DS1: /var/cache/bind#
```

Je saisis la commande **dig DD1.sio-exupery.local**

```
root@DS1: /var/cache/bind#dig DD1.sio-exupery.local
;<<> DiG 9.20.15-1~deb13u1-Debian <<> DD1.sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 47840
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; COOKIE: 78ec0cb0b5fb3af001000000696ceb51f002241e3040231b (good)
;; QUESTION SECTION:
;DD1.sio-exupery.local.      IN      A

;; ANSWER SECTION:
DD1.sio-exupery.local.  86400  IN      A      192.168.4.1

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sun Jan 18 15:16:49 CET 2026
;; MSG SIZE rcvd: 94

root@DS1: /var/cache/bind#
```

Je saisie la commande dig SOA sio.exupery.local

```
root@DS1: ~#dig SOA sio-exupery.local
;<<> DiG 9.20.15-1~deb13u1-Debian <<> SOA sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 54914
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: haf3a3ad3e2ffd330100000696ceb927ea0079bc2bcd0b1 (good)
;; QUESTION SECTION:
;sio-exupery.local.          IN      SOA

;; ANSWER SECTION:
sio-exupery.local.         86400  IN      SOA      DS1.sio-exupery.local. root.sio-exupery.local. 2025011301 604800 86400 2419200 604800

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sun Jan 18 15:17:54 CET 2026
;; MSG SIZE rcvd: 119

root@DS1: ~#
```

Je ssaisie la commande nslookup DS1

```
root@DS1: ~#nslookup DS1
Server:          192.168.4.254
Address:         192.168.4.254#53

Name:   DS1.sio-exupery.local
Address: 192.168.4.254

root@DS1: ~#
```

Je vérifie la résolution DNS interne en faisant un ping sur DS1 et DD1

```
root@DS1: ~#ping -c 2 DS1
PING DS1.sio-exupery.local (192.168.4.254) 56(84) bytes of data.
64 bytes from DS1.sio-exupery.local (192.168.4.254): icmp_seq=1 ttl=64 time=0.041 ms
64 bytes from DS1.sio-exupery.local (192.168.4.254): icmp_seq=2 ttl=64 time=0.073 ms

--- DS1.sio-exupery.local ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1017ms
rtt min/avg/max/mdev = 0.041/0.057/0.073/0.016 ms
root@DS1: ~#ping -c 2 DD1
PING DD1.sio-exupery.local (192.168.4.1) 56(84) bytes of data.
64 bytes from DD1.sio-exupery.local (192.168.4.1): icmp_seq=1 ttl=64 time=0.464 ms
64 bytes from DD1.sio-exupery.local (192.168.4.1): icmp_seq=2 ttl=64 time=0.522 ms

--- DD1.sio-exupery.local ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 0.464/0.493/0.522/0.029 ms
root@DS1: ~#_
```

2.12. Outils de test de résolution de noms

Je vérifie la présence du paquetage dnsutils

```
root@DS1: /var/cache/bind#dpkg -l | grep -i dnsutils
ii bind9-dnsutils 1:9.20.15-1~deb13u1 amd64 Clients provided with BIND 9
root@DS1: /var/cache/bind#dig DD1.sio-exupery.local
```

```
root@DS1: ~#dig DD1.sio-exupery.local
;<<> DiG 9.20.15-1~deb13u1-Debian <<> DD1.sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 55854
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; COOKIE: 71d352da8e047d0c010000006974b669480bfe774a35cfe3 (good)
;; QUESTION SECTION:
;DD1.sio-exupery.local.      IN      A

;; AUTHORITY SECTION:
sio-exupery.local.        86400  IN      SOA     DS1.sio-exupery.local. root.sio-exupery.local. 20260114

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 13:09:13 CET 2026
;; MSG SIZE rcvd: 123
```

Je saisis la commande dig SOA sio.exupery.local

```
root@DS1: ~#dig SOA sio-exupery.local
;<<> DiG 9.20.15-1~deb13u1-Debian <<> SOA sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 50590
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; COOKIE: 290b8c8eee82c522010000006974b742cba2638d65f72b1e (good)
;; QUESTION SECTION:
;sio-exupery.local.      IN      SOA

;; ANSWER SECTION:
sio-exupery.local.        86400  IN      SOA     DS1.sio-exupery.local. root.sio-exupery.local

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 13:12:50 CET 2026
;; MSG SIZE rcvd: 119
root@DS1: ~#
```

```
root@DS1: ~#nslookup DS1
Server:         192.168.4.254
Address:        192.168.4.254#53
Name:   DS1.sio-exupery.local
Address: 192.168.4.254
root@DS1: ~#
```

Je ping DS1

```
root@DS1: ~#ping -c 2 DS1
PING DS1.sio-exupery.local (192.168.4.254) 56(84) bytes of data:
64 bytes from DS1.sio-exupery.local (192.168.4.254): icmp_seq=1 ttl=64 time=0.076 ms
64 bytes from DS1.sio-exupery.local (192.168.4.254): icmp_seq=2 ttl=64 time=0.083 ms

--- DS1.sio-exupery.local ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1019ms
rtt min/avg/max/mdev = 0.076/0.079/0.083/0.003 ms
```

2.13. S'appuyer sur un DNS externe : la redirection

```
GNU nano 2.9.4
options {
    directory "/var/cache/bind";
    forward only;
    forwarders { 192.168.1.254; };
    allow-recursion { localnets; };
    allow-query { any; };
    dnssec-validation no;
};
```

```
GNU nano 8.4
// prime the server with knowledge of the root servers
//zone "." {
//    type hint;
//    file "/usr/share/dns/root.hints";
//};
```

Après avoir modifié je relance serveur et je regarde son status

```
root@DS1: ~#systemctl restart bind9
root@DS1: ~#systemctl status bind9
● named.service - BIND Domain Name Server
   Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: enabled)
   Active: active (running) since Sat 2026-01-24 13:20:52 CET; 9s ago
 Invocation: 8930d969ab174b06ae83f46ef76fad60
    Docs: man:named(8)
   Main PID: 1414 (named)
    Status: "running"
     Tasks: 6 (limit: 2303)
    Memory: 20.4M (peak: 20.9M)
       CPU: 15ms
    CGroup: /system.slice/named.service
           └─1414 /usr/sbin/named -f -u bind

Janv. 24 13:20:52 DS1 named[1414]: configuring command channel from '/etc/bind/rndc.key'
Janv. 24 13:20:52 DS1 named[1414]: command channel listening on 127.0.0.1#953
Janv. 24 13:20:52 DS1 named[1414]: configuring command channel from '/etc/bind/rndc.key'
Janv. 24 13:20:52 DS1 named[1414]: command channel listening on ::1#953
Janv. 24 13:20:52 DS1 named[1414]: zone 4.168.192.in-addr.arpa/IN: loaded serial 202601140
Janv. 24 13:20:52 DS1 named[1414]: zone sio-exupery.local/IN: loaded serial 2026011401
Janv. 24 13:20:52 DS1 named[1414]: all zones loaded
Janv. 24 13:20:52 DS1 named[1414]: FIPS mode is disabled
Janv. 24 13:20:52 DS1 systemd[1]: Started named.service - BIND Domain Name Server.
Janv. 24 13:20:52 DS1 named[1414]: running
root@DS1: ~#
```

je ping ac-nice.fr ainsi que dunod.com

```
root@DS1: ~#dig www.ac-nice.fr

; <<> DiG 9.20.15-1~deb13u1-Debian <<> www.ac-nice.fr
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25615
;; flags: qr rd ra; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 1232
; COOKIE: e0f5df98cbcd34d3010000006974b9560247a783c91bb4b9 (good)
;; QUESTION SECTION:
;www.ac-nice.fr.                IN      A

;; ANSWER SECTION:
www.ac-nice.fr.                1162    IN      CNAME   www.ac-nice.fr.cdn.cloudflare.net.
www.ac-nice.fr.cdn.cloudflare.net. 123    IN      A       141.101.90.106
www.ac-nice.fr.cdn.cloudflare.net. 123    IN      A       141.101.90.105
www.ac-nice.fr.cdn.cloudflare.net. 123    IN      A       141.101.90.104
www.ac-nice.fr.cdn.cloudflare.net. 123    IN      A       141.101.90.107

;; Query time: 28 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 13:21:42 CET 2026
;; MSG SIZE rcvd: 182

root@DS1: ~#_
```

```
root@DS1: ~#ping -c 3 www.dunod.com
PING www.dunod.com (51.144.190.143) 56(84) bytes of data:
64 bytes from 51.144.190.143: icmp_seq=1 ttl=108 time=31.0 ms
64 bytes from 51.144.190.143: icmp_seq=2 ttl=108 time=29.2 ms
64 bytes from 51.144.190.143: icmp_seq=3 ttl=108 time=28.7 ms

--- www.dunod.com ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2002ms
rtt min/avg/max/mdev = 28.733/29.639/31.011/0.986 ms
root@DS1: ~#
```

2.14. Test à partir du client Debian Desktop

```
GNU nano 8.4 /etc/hostname
DD1
```

```
GNU nano 8.4 /etc/hosts *
127.0.0.1    localhost
127.0.1.1    DD1.sio-exupery.local  DD1

# The following lines are desirable for IPv6 capable hosts
::1        localhost ip6-localhost ip6-loopback
ff02::1    ip6-allnodes
ff02::2    ip6-allrouters
```

Je mets le serveur DNS de DS1

The screenshot shows the network configuration interface for IPv4. The 'Méthode IPv4' section has 'Manuel' selected. The 'Adresses' table is as follows:

Adresse	Masque de réseau	Passerelle
192.168.4.1	255.255.255.0	192.168.4.254

The 'DNS' section has 'Automatique' checked, and the first field contains '192.168.4.254'.

Je vérifie la configuration réseau

```
sio@DD1:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:97:81:68 brd ff:ff:ff:ff:ff:ff
    altname enx080027978168
    inet 192.168.4.1/24 brd 192.168.4.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd17:625c:f037:2:5a17:5568:ab39:5c75/64 scope global temporary dynamic
        valid_lft 86391sec preferred_lft 14391sec
    inet6 fd17:625c:f037:2:a00:27ff:fe97:8168/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 86391sec preferred_lft 14391sec
    inet6 fe80::a00:27ff:fe97:8168/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
sio@DD1:~$
```

```
sio@DD1:~$ ip r
default via 192.168.4.254 dev enp0s3 proto static metric 100
192.168.4.0/24 dev enp0s3 proto kernel scope link src 192.168.4.1 metric 100
sio@DD1:~$
```

Je vérifie que dans le fichier resolv.conf l'adresse du serveur DNS DS1 est mentionné

```
sio@DD1:~$ cat /etc/resolv.conf
# Generated by NetworkManager
nameserver 192.168.4.254
sio@DD1:~$
```

Je saisis successivement les commandes dig SOA sio-exupery.local, dig DS1.sio-exupery.local puis dig www.dunod.com

```
;<<>> DiG 9.20.11-4-Debian <<>> SOA sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53616
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 648c7e8b48fe7f28010000006974c21cc7ab69ef18e63565 (good)
;; QUESTION SECTION:
;sio-exupery.local.          IN      SOA

;; ANSWER SECTION:
sio-exupery.local.         86400   IN      SOA     DS1.sio-exupery.local. root.sio-
exupery.local. 2026011401 604800 86400 2419200 604800

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 13:59:09 CET 2026
;; MSG SIZE rcvd: 119

sio@DD1:~$ █
```

```
;<<>> DiG 9.20.11-4-Debian <<>> DS1.sio-exupery.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 33651
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: de724bbe33cb46ac010000006974c257bc47cd7d7b4f02bc (good)
;; QUESTION SECTION:
;DS1.sio-exupery.local.    IN      A

;; ANSWER SECTION:
DS1.sio-exupery.local.    86400   IN      A       192.168.4.254

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 14:00:08 CET 2026
;; MSG SIZE rcvd: 94

sio@DD1:~$ █
```

```
sio@DD1:~$ dig www.dunod.com

; <<> DiG 9.20.11-4-Debian <<> www.dunod.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 40152
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: e39847933de49b80010000006974c282b5653df70dfe5713 (good)
;; QUESTION SECTION:
;www.dunod.com.                IN      A

;; ANSWER SECTION:
www.dunod.com.                8499   IN      A      51.144.190.143

;; Query time: 0 msec
;; SERVER: 192.168.4.254#53(192.168.4.254) (UDP)
;; WHEN: Sat Jan 24 14:00:51 CET 2026
;; MSG SIZE rcvd: 86

sio@DD1:~$ █
```

Je saisis la commande nslookup www.google.com

```
sio@DD1:~$ nslookup www.google.com
Server:          192.168.4.254
Address:         192.168.4.254#53

Non-authoritative answer:
Name:   www.google.com
Address: 172.217.18.228
Name:   www.google.com
Address: 2a00:1450:4006:802::2004

sio@DD1:~$
```

Je ping DS1

```
sio@DD1:~$ ping -c 2 DS1.sio-exupery.local
PING DS1.sio-exupery.local (192.168.4.254) 56(84) bytes of data.
64 bytes from _gateway (192.168.4.254): icmp_seq=1 ttl=64 time=0.520 ms
64 bytes from _gateway (192.168.4.254): icmp_seq=2 ttl=64 time=0.381 ms

--- DS1.sio-exupery.local ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1021ms
rtt min/avg/max/mdev = 0.381/0.450/0.520/0.069 ms
sio@DD1:~$ █
```

Je lance depuis firefox le site internet de l'Académie de Nice

