

# Chapitre 3 – Serveur Debian DS1: installation du service DHCP

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### 3.1. Serveur DS1

Installation du paquet `isc-dhcp-server` avec la commande `apt-get install` :

```
root@DS1: ~#apt-get install isc-dhcp-server
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances... Fait
Lecture des informations d'état... Fait
Les paquets supplémentaires suivants seront installés :
  isc-dhcp-common policycoreutils selinux-utils
Paquets suggérés :
  polkitd isc-dhcp-server-ldap ieee-data
Les NOUVEAUX paquets suivants seront installés :
  isc-dhcp-common isc-dhcp-server policycoreutils selinux-utils
0 mis à jour, 4 nouvellement installés, 0 à enlever et 45 non mis à jour.
Il est nécessaire de prendre 1 832 kB dans les archives.
Après cette opération, 8 002 ko d'espace disque supplémentaires seront utilisés.
Souhaitez-vous continuer ? [O/n] o
Réception de : 1 http://deb.debian.org/debian trixie/main amd64 isc-dhcp-common amd64 4.4.3-P1-8 [118 kB]
4% [1 isc-dhcp-common 85,9 kB/118 kB 73%]_
```

```
Job for isc-dhcp-server.service failed because the control process exited with error code.
See "systemctl status isc-dhcp-server.service" and "journalctl -xeu isc-dhcp-server.service" for details.
invoke-rc.d: initscript isc-dhcp-server, action "start" failed.
* isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
   Active: failed (Result: exit-code) since Thu 2026-01-22 15:45:44 CET; 65ms ago
  Invocation: 3a134b6f80244a8bbf4b894e5fe11fa1
     Docs: man:systemd-sysv-generator(8)
    Process: 1226 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=1/FAILURE)
   Mem peak: 2.4M
      CPU: 100ms

janv. 22 15:45:42 DS1 dhcpd[1238]: bugs on either our web page at www.isc.org or in the README file
janv. 22 15:45:42 DS1 dhcpd[1238]: before submitting a bug. These pages explain the proper
janv. 22 15:45:42 DS1 dhcpd[1238]: process and the information we find helpful for debugging.
janv. 22 15:45:42 DS1 dhcpd[1238]:
janv. 22 15:45:42 DS1 dhcpd[1238]: exiting.
janv. 22 15:45:44 DS1 isc-dhcp-server[1226]: Starting ISC DHCPv4 server: dhcpdcheck syslog for diagnostics. ... failed
janv. 22 15:45:44 DS1 isc-dhcp-server[1226]: failed!
janv. 22 15:45:44 DS1 systemd[1]: isc-dhcp-server.service: Control process exited, code=exited, status=1/FAILURE
janv. 22 15:45:44 DS1 systemd[1]: isc-dhcp-server.service: Failed with result 'exit-code'.
janv. 22 15:45:44 DS1 systemd[1]: Failed to start isc-dhcp-server.service - LSB: DHCP server.
Paramétrage de isc-dhcp-common (4.4.3-P1-8) ...
Traitement des actions différées (« triggers ») pour man-db (2.13.1-1) ...
root@DS1: ~#
root@DS1: ~#
```

Sauvegarde du fichier de configuration `/etc/dhcp/dhcpd.conf` :

```
root@DS1: ~#cp /etc/dhcp/dhcpd.conf /etc/dhcp/dhcpd.conf.sauv_
```

## Modification du fichier dhcpd.conf :

```
GNU nano 8.4 /etc/dhcp/
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# option definitions common to all supported networks...
option domain-name "sio-exupery.local";
option domain-name-servers 192.168.4.254;

default-lease-time 86400;
max-lease-time 604800;

# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

#subnet 10.152.187.0 netmask 255.255.255.0 {
#}

# This is a very basic subnet declaration.

subnet 192.168.4.0 netmask 255.255.255.0 {
# étendue de la plage DHCP
  range 192.168.4.11 192.168.4.100;
# passerelle
  option routers 192.168.4.254;
# masque de sous-réseau
  option subnet-mask 255.255.255.0;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
```

**Modification du fichier `/etc/default/isc-dhcp-server` sur la ligne interface pour indiquer la bonne interface réseau soit le réseau local :**

```
GNU nano 8.4 /etc/default/isc-dhcp-server
# Defaults for isc-dhcp-server (sourced by /etc/init.d/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

# Additional options to start dhcpd with.
# Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

# On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
# Separate multiple interfaces with spaces, e.g. "eth0 eth1".
INTERFACESv4=" enp0s8"
INTERFACESv6=""
```

**Lancement du service DHCP :**

```
root@DS1: ~#systemctl start isc-dhcp-server
root@DS1: ~#
```

**Vérification du bon démarrage du service :**

```
root@DS1: ~#systemctl status isc-dhcp-server
• isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
   Active: active (running) since Fri 2026-01-23 15:19:56 CET; 38s ago
  Invocation: 8d63bcf1d2ef4cbfb3b9ec9c3a1fdf37
     Docs: man:systemd-sysv-generator(8)
  Process: 1176 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
    Tasks: 1 (limit: 4723)
   Memory: 6.1M (peak: 10.2M)
      CPU: 116ms
  CGroup: /system.slice/isc-dhcp-server.service
          └─1087 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf

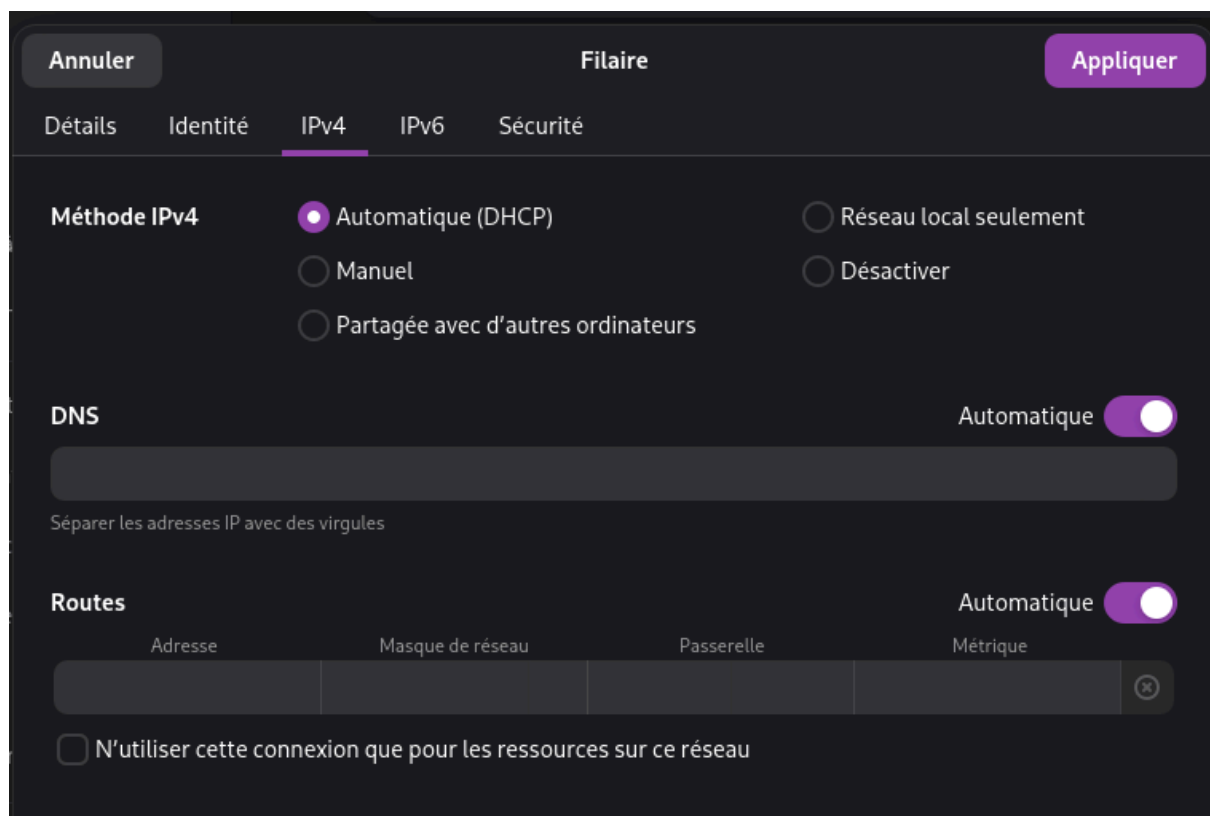
janv. 23 15:19:54 DS1 systemd[1]: Starting isc-dhcp-server.service - LSB: DHCP server...
janv. 23 15:19:54 DS1 isc-dhcp-server[1176]: Launching IPv4 server only.
janv. 23 15:19:54 DS1 isc-dhcp-server[1176]: Starting ISC DHCPv4 server: dhcpdignore stale pid file /var/run/dhcpd.pid
janv. 23 15:19:56 DS1 isc-dhcp-server[1176]: .
janv. 23 15:19:56 DS1 systemd[1]: Started isc-dhcp-server.service - LSB: DHCP server.
root@DS1: ~#
```

Lancement dans une autre console la commande `journalctl -f` pour vérifier la conformité de la configuration précédente :

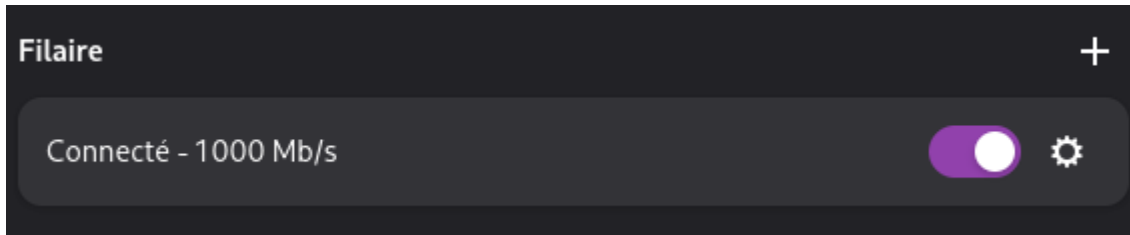
```
root@DS1: ~#journalctl -f
janv. 23 15:17:02 DS1 CRON[1164]: pam_unix(cron:session): session opened for user root(uid=0) by root(uid=0)
janv. 23 15:17:02 DS1 CRON[1166]: (root) CMD (cd / && run-parts --report /etc/cron.hourly)
janv. 23 15:17:02 DS1 CRON[1164]: pam_unix(cron:session): session closed for user root
janv. 23 15:19:54 DS1 systemd[1]: isc-dhcp-server.service: Found left-over process 1087 (dhcpd) in control group while
janv. 23 15:19:54 DS1 systemd[1]: isc-dhcp-server.service: This usually indicates unclean termination of a previous ru
janv. 23 15:19:54 DS1 systemd[1]: Starting isc-dhcp-server.service - LSB: DHCP server...
janv. 23 15:19:54 DS1 isc-dhcp-server[1176]: Launching IPv4 server only.
janv. 23 15:19:54 DS1 isc-dhcp-server[1176]: Starting ISC DHCPv4 server: dhcpdngore stale pid file /var/run/dhcpd.pid
janv. 23 15:19:56 DS1 isc-dhcp-server[1176]: .
janv. 23 15:19:56 DS1 systemd[1]: Started isc-dhcp-server.service - LSB: DHCP server.
^C
root@DS1: ~#
```

## 3.2. Client DD1

Configuration IP de DD1 devenue automatiquement en Sélectionnant les paramètres IPv4 :



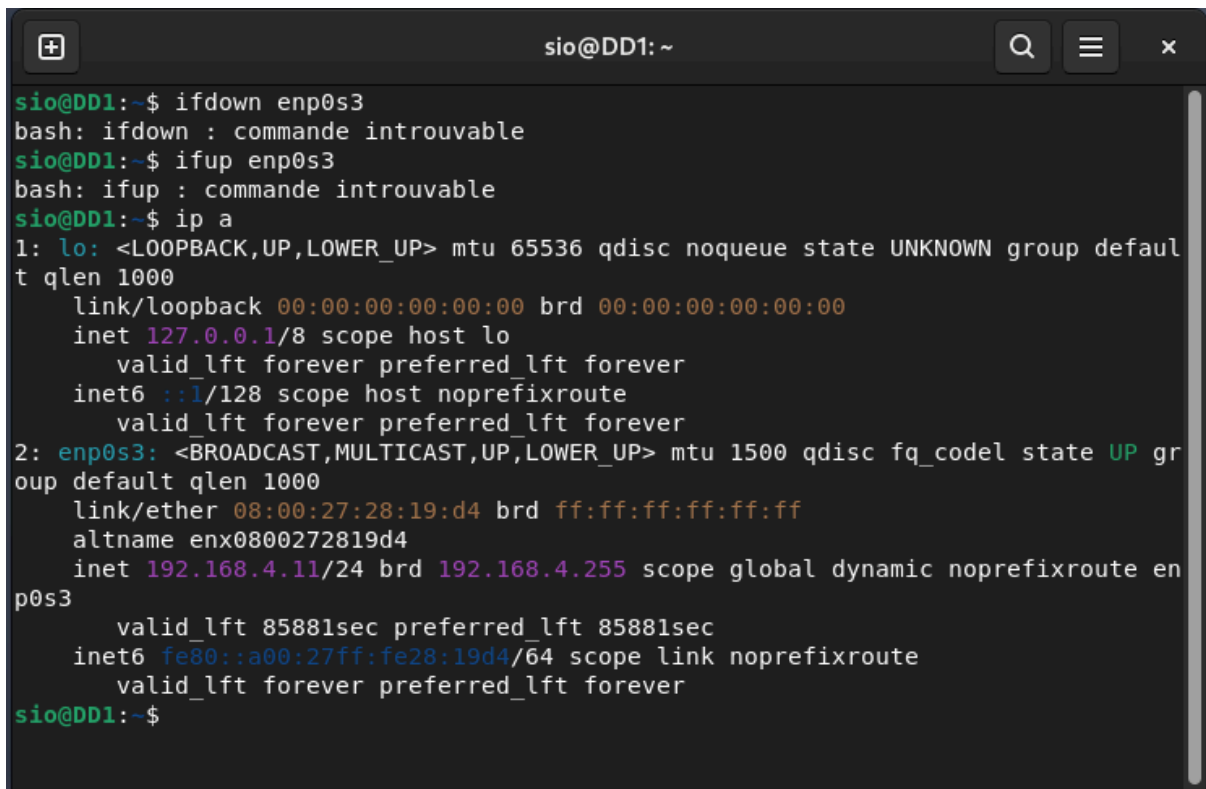
## Désactivation et réactivation de la carte réseau :



## Vérification du bon L'échange de trames DHCP du client la requête et la réponse :

```
root@DS1: ~#journalctl -f
janv. 29 15:17:36 DS1 dhcpcd[1028]: reuse_lease: lease age 123 (secs) under 25% threshold, reply with unaltered, exist
janv. 29 15:17:36 DS1 dhcpcd[1028]: DHCPREQUEST for 192.168.4.11 from 08:00:27:28:19:d4 (DD1) via enp0s8
janv. 29 15:17:36 DS1 dhcpcd[1028]: DHCPACK on 192.168.4.11 to 08:00:27:28:19:d4 (DD1) via enp0s8
janv. 29 15:20:14 DS1 systemd[1]: Starting systemd-tmpfiles-clean.service - Cleanup of Temporary Directories...
janv. 29 15:20:14 DS1 systemd-tmpfiles[1075]: /usr/lib/tmpfiles.d/legacy.conf:14: Duplicate line for path "/run/lock",
janv. 29 15:20:14 DS1 systemd[1]: systemd-tmpfiles-clean.service: Deactivated successfully.
janv. 29 15:20:14 DS1 systemd[1]: Finished systemd-tmpfiles-clean.service - Cleanup of Temporary Directories.
janv. 29 15:22:02 DS1 dhcpcd[1028]: reuse_lease: lease age 389 (secs) under 25% threshold, reply with unaltered, exist
janv. 29 15:22:02 DS1 dhcpcd[1028]: DHCPREQUEST for 192.168.4.11 from 08:00:27:28:19:d4 (DD1) via enp0s8
janv. 29 15:22:02 DS1 dhcpcd[1028]: DHCPACK on 192.168.4.11 to 08:00:27:28:19:d4 (DD1) via enp0s8
```

## Constat depuis DD1 de l'attribution de l'adresse IP avec la commande ip a :



```
sio@DD1: ~
sio@DD1:~$ ifdown enp0s3
bash: ifdown : commande introuvable
sio@DD1:~$ ifup enp0s3
bash: ifup : commande introuvable
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 08:00:27:28:19:d4 brd ff:ff:ff:ff:ff:ff
    altname enx0800272819d4
    inet 192.168.4.11/24 brd 192.168.4.255 scope global dynamic noprefixroute enp0s3
        valid_lft 85881sec preferred_lft 85881sec
    inet6 fe80::a00:27ff:fe28:19d4/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
sio@DD1:~$
```

## Vérification de l'attribution de la passerelle par défaut via ip r

```
sio@DD1: ~  
sio@DD1:~$ ip r  
default via 192.168.4.254 dev enp0s3 proto dhcp src 192.168.4.11 metric 100  
192.168.4.0/24 dev enp0s3 proto kernel scope link src 192.168.4.11 metric 100  
sio@DD1:~$
```

## Vérification de l'attribution du nom de la zone DNS et de l'adresse du serveur DNS :

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