

## Sommaire

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### 3.1. Serveur DS1

- Installer le paquetage 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 41 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

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 15:52:45 CET; 36ms ago
  Invocation: b99820cc7e3a4b61981ef8b25058439a
     Docs: man:systemd-sysv-generator(8)
   Process: 1728 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=1/FAILURE)
  Mem peak: 2.3M
     CPU: 29ms

janv. 22 15:52:43 DS1 dhcpd[1756]: bugs on either our web page at www.isc.org or in the README file
janv. 22 15:52:43 DS1 dhcpd[1756]: before submitting a bug. These pages explain the proper
janv. 22 15:52:43 DS1 dhcpd[1756]: process and the information we find helpful for debugging.
janv. 22 15:52:43 DS1 dhcpd[1756]:
janv. 22 15:52:43 DS1 dhcpd[1756]: exiting.
janv. 22 15:52:45 DS1 isc-dhcp-server[1728]: Starting ISC DHCPv4 server: dhcpdcheck syslog for diagnostics. ... failed
janv. 22 15:52:45 DS1 isc-dhcp-server[1728]: failed!
janv. 22 15:52:45 DS1 systemd[1]: isc-dhcp-server.service: Control process exited, code=exited, status=1/FAILURE
janv. 22 15:52:45 DS1 systemd[1]: isc-dhcp-server.service: Failed with result 'exit-code'.
janv. 22 15:52:45 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) ...

```

- Sauvegardez le fichier de configuration /etc/dhcp/dhcpd.conf :

```

root@DS1: ~#cp /etc/dhcp/dhcpd.conf /etc/dhcp/dhcpd.conf.sauv
root@DS1: ~#_

```

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

- Modifiez le fichier `dhcpd.conf` de la manière suivante :

```
# 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 {
    range 192.168.4.11 192.168.4.254;
    option subnet-mask 255.255.255.0;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
#subnet 10.254.239.32 netmask 255.255.255.224 {
#    range dynamic-bootp 10.254.239.40 10.254.239.60;
#    option broadcast-address 10.254.239.31;
#    option routers rtr-239-32-1.example.org;
#}
```

- Editez le fichier `/etc/default/isc-dhcp-server` et modifiez la ligne `INTERFACES` de façon à indiquer la bonne interface réseau, c'est-à-dire celle du côté du réseau local :

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

- Lancez le service DHCP :

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

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

- Vérifiez le 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 15:18:31 CET; 6min ago
 Invocation: 73c8766a370f4d07b7f52272a7f43253
    Docs: man:systemd-sysv-generator(8)
  Process: 1544 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
   Tasks: 1 (limit: 2317)
  Memory: 3.9M (peak: 5.9M)
     CPU: 49ms
   CGroup: /system.slice/isc-dhcp-server.service
           └─1556 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf enp0s8

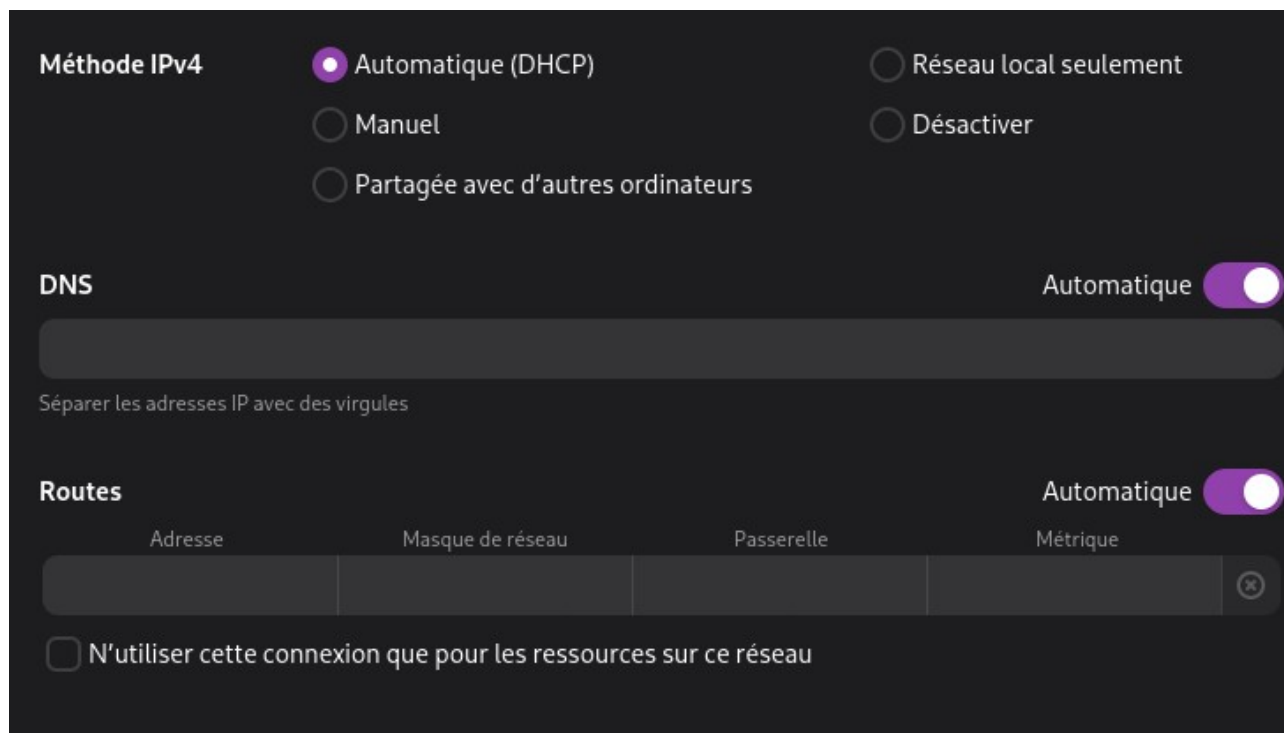
janv. 23 15:18:29 DS1 dhcpd[1553]: All rights reserved.
janv. 23 15:18:29 DS1 dhcpd[1553]: For info, please visit https://www.isc.org/software/dhcp/
janv. 23 15:18:29 DS1 dhcpd[1556]: Internet Systems Consortium DHCP Server 4.4.3-P1
janv. 23 15:18:29 DS1 dhcpd[1556]: Copyright 2004-2022 Internet Systems Consortium.
janv. 23 15:18:29 DS1 dhcpd[1556]: All rights reserved.
janv. 23 15:18:29 DS1 dhcpd[1556]: For info, please visit https://www.isc.org/software/dhcp/
janv. 23 15:18:29 DS1 dhcpd[1556]: Wrote 0 leases to leases file.
janv. 23 15:18:29 DS1 dhcpd[1556]: Server starting service.
janv. 23 15:18:31 DS1 isc-dhcp-server[1544]: Starting ISC DHCPv4 server: dhcpd.
janv. 23 15:18:31 DS1 systemd[1]: Started isc-dhcp-server.service - LSB: DHCP server.
root@DS1: ~#_
```

- Lancez dans une autre console la commande journalctl -f :

```
root@DS1: ~#journalctl -f
janv. 23 15:22:30 DS1 systemd[1]: logrotate.service: Deactivated successfully.
janv. 23 15:22:30 DS1 systemd[1]: Finished logrotate.service - Rotate log files.
janv. 23 15:26:03 DS1 systemd[1]: Started getty@tty2.service - Getty on tty2.
janv. 23 15:26:10 DS1 unix_chkpwd[1574]: password check failed for user (root)
janv. 23 15:26:10 DS1 login[1571]: pam_unix(login:auth): authentication failure; logname= uid=0 euid=0 tty=/dev/tty2
janv. 23 15:26:13 DS1 login[1571]: FAILED LOGIN 1 FROM tty2 FOR root, Authentication failure
janv. 23 15:26:22 DS1 login[1571]: pam_unix(login:session): session opened for user root(uid=0) by root(uid=0)
janv. 23 15:26:22 DS1 systemd-logind[686]: New session 4 of user root.
janv. 23 15:26:22 DS1 systemd[1]: Started session-4.scope - Session 4 of User root.
janv. 23 15:26:22 DS1 login[1571]: ROOT LOGIN ON tty2
```

## 3.2. Client DD1

- La configuration IP de la station Desktop DD1 sera désormais obtenue automatiquement (serveur DHCP DS1). Sélectionnez Automatique dans les paramètres IPv4 de la machine desktop :



- Revenez sur DS1 dans la deuxième console. L'échange de trames DHCP (DHCPDISCOVER ou demande du client, DHCPOFFER ou offre du serveur, DHCPREQUEST ou acceptation du client et DHCPACK ou délivrance du serveur) doit figurer dans le fichier log :

```

root@DS1: ~# journalctl -f
Janv. 23 15:22:30 DS1 systemd[1]: logrotate.service: Deactivated successfully.
Janv. 23 15:22:30 DS1 systemd[1]: Finished logrotate.service - Rotate log files.
Janv. 23 15:26:03 DS1 systemd[1]: Started getty@tty2.service - Getty on tty2.
Janv. 23 15:26:10 DS1 unix_chkpwd[1574]: password check failed for user (root)
Janv. 23 15:26:10 DS1 login[1571]: pam_unix(login:auth): authentication failure; logname= uid=0 euid=0 tty=/dev/tty2 r
Janv. 23 15:26:13 DS1 login[1571]: FAILED LOGIN 1 FROM tty2 FOR root, Authentication failure
Janv. 23 15:26:22 DS1 login[1571]: pam_unix(login:session): session opened for user root(uid=0) by root(uid=0)
Janv. 23 15:26:22 DS1 systemd-logind[686]: New session 4 of user root.
Janv. 23 15:26:22 DS1 systemd[1]: Started session-4.scope - Session 4 of User root.
Janv. 23 15:26:22 DS1 login[1571]: ROOT LOGIN ON tty2

Janv. 23 15:28:18 DS1 dhcpcd[1556]: DHCPREQUEST for 10.0.2.15 from 08:00:27:7a:4f:cb via enp0s8: wrong network.
Janv. 23 15:28:18 DS1 dhcpcd[1556]: DHCPNAK on 10.0.2.15 to 08:00:27:7a:4f:cb via enp0s8
Janv. 23 15:28:18 DS1 dhcpcd[1556]: DHCPDISCOVER from 08:00:27:7a:4f:cb via enp0s8
Janv. 23 15:28:19 DS1 dhcpcd[1556]: DHCPOFFER on 192.168.4.11 to 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPREQUEST for 10.0.2.15 from 08:00:27:7a:4f:cb via enp0s8: wrong network.
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPNAK on 10.0.2.15 to 08:00:27:7a:4f:cb via enp0s8
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPDISCOVER from 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPOFFER on 192.168.4.11 to 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPREQUEST for 192.168.4.11 (192.168.4.254) from 08:00:27:7a:4f:cb (DD1) via enp0s
Janv. 23 15:28:20 DS1 dhcpcd[1556]: DHCPACK on 192.168.4.11 to 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:37 DS1 dhcpcd[1556]: reuse_lease: lease age 17 (secs) under 25% threshold, reply with unaltered, existin
Janv. 23 15:28:37 DS1 dhcpcd[1556]: DHCPREQUEST for 192.168.4.11 from 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:37 DS1 dhcpcd[1556]: DHCPACK on 192.168.4.11 to 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:38 DS1 dhcpcd[1556]: reuse_lease: lease age 18 (secs) under 25% threshold, reply with unaltered, existin
Janv. 23 15:28:38 DS1 dhcpcd[1556]: DHCPREQUEST for 192.168.4.11 from 08:00:27:7a:4f:cb (DD1) via enp0s8
Janv. 23 15:28:38 DS1 dhcpcd[1556]: DHCPACK on 192.168.4.11 to 08:00:27:7a:4f:cb (DD1) via enp0s8

```

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

- Constatez depuis DD1 l'attribution de l'adresse IP avec la commande ip a :

```
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 grou
p default qlen 1000
    link/ether 08:00:27:7a:4f:cb brd ff:ff:ff:ff:ff:ff
    altname enx0800277a4fcb
    inet 192.168.4.11/24 brd 192.168.4.255 scope global dynamic noprefixroute enp0
s3
        valid_lft 85845sec preferred_lft 85845sec
    inet6 fe80::a00:27ff:fe7a:4fcb/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
sio@DD1:~$
```

- Vérifiez l'attribution de la passerelle par défaut :

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

### **3.3. DNS dynamique (DDNS)**