

DHCP

Instala un servidor DHCP nun Debian Server

Configuración ip server:

```
source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
allow-hotplug enp0s3
iface enp0s3 inet static
    address 172.16.16.1
    netmask 255.255.255.0
    gateway 172.16.16.100
```

Status de dhcp al instalar:

```
A configurar isc-dhcp-server (4.4.3-P1-2) ...
Generating /etc/default/isc-dhcp-server...
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 Mon 2024-04-15 10:38:33 CEST; 11ms ago
     Docs: man:systemd-sysv-generator(8)
   Process: 908 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=1/FAILURE)
      CPU: 17ms

Apr 15 10:38:31 debian dhcpd[920]: bugs on either our web page at www.isc.org or in the README file
Apr 15 10:38:31 debian dhcpd[920]: before submitting a bug. These pages explain the proper
Apr 15 10:38:31 debian dhcpd[920]: process and the information we find helpful for debugging.
Apr 15 10:38:31 debian dhcpd[920]:
Apr 15 10:38:31 debian dhcpd[920]: exiting.
Apr 15 10:38:33 debian isc-dhcp-server[908]: Starting ISC DHCPv4 server: dhcpdcheck syslog for diagnostics. ... failed!
Apr 15 10:38:33 debian isc-dhcp-server[908]: failed!
Apr 15 10:38:33 debian systemd[1]: isc-dhcp-server.service: Control process exited, code=exited, status=1/FAILURE
Apr 15 10:38:33 debian systemd[1]: isc-dhcp-server.service: Failed with result 'exit-code'.
Apr 15 10:38:33 debian systemd[1]: Failed to start isc-dhcp-server.service - LSB: DHCP server.
Processing triggers for man-db (2.11.2-2) ...
root@debian:~#
```

Monta unha infraestrutura na rede 172.16.X.0/24

- Rango entre 10 e 20
- ip server X.X.X.1
- gateway X.X.X.100
- dns X.X.X.254
- dominio si.local

Configuracion interfaz dhcp:

```
# Don't use options -cf or -pf
#OPTIONS=""

# On what interfaces should the DHCP server
# Separate multiple interfaces with spaces
INTERFACESv4="enp0s3"
INTERFACESv6=""
```

Configuracion dhcp:

```
#}

# A slightly different configuration for an internal subnet.
subnet 172.16.16.0 netmask 255.255.255.0 {
    range 172.16.16.10 172.16.16.20;
    option domain-name-servers 172.16.16.254;
    option domain-name "si.local";
    option routers 172.16.16.100;_
}

# Hosts which require special configuration options can be listed in
```

Nuevo status de dhcp:

```
root@debian:~# systemctl status isc-dhcp-server.service
● isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
   Active: active (running) since Mon 2024-04-15 10:46:59 CEST; 9s ago
     Docs: man:systemd-sysv-generator(8)
  Process: 1110 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
    Tasks: 1 (limit: 1099)
   Memory: 4.3M
      CPU: 28ms
   CGroup: /system.slice/isc-dhcp-server.service
           └─1122 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf enp0s3

Abr 15 10:46:57 debian systemd[1]: Starting isc-dhcp-server.service - LSB: DHCP server...
Abr 15 10:46:57 debian isc-dhcp-server[1110]: Launching IPv4 server only.
Abr 15 10:46:57 debian dhcpd[1122]: Wrote 0 leases to leases file.
Abr 15 10:46:57 debian dhcpd[1122]: Server starting service.
Abr 15 10:46:59 debian isc-dhcp-server[1110]: Starting ISC DHCPv4 server: dhcpd.
Abr 15 10:46:59 debian systemd[1]: Started isc-dhcp-server.service - LSB: DHCP server.
root@debian:~# _
```

Utiliza Wireshark para capturar a asignar DHCP

Desde windows, al hacer un renew:

```
C:\Users\wadmin>ipconfig /renew

Configuración IP de Windows

Adaptador de Ethernet Ethernet:

    Sufijo DNS específico para la conexión. . . : si.local
    Vínculo: dirección IPv6 local. . . : fe80::4111:b049:1ea1:fe3e%7
    Dirección IPv4. . . . . : 172.16.16.10
    Máscara de subred . . . . . : 255.255.255.0
    Puerta de enlace predeterminada . . . . . : 172.16.16.100

C:\Users\wadmin>_
```

Se capturan los paquetes desde wireshark:

25	32.478692	0.0.0.0	255.255.255.255	DHCP	342 DHCP Discover	- Transaction ID 0x11c0228a
39	33.480487	172.16.16.1	172.16.16.10	DHCP	342 DHCP Offer	- Transaction ID 0x11c0228a
40	33.481621	0.0.0.0	255.255.255.255	DHCP	370 DHCP Request	- Transaction ID 0x11c0228a
41	33.486621	172.16.16.1	172.16.16.10	DHCP	342 DHCP ACK	- Transaction ID 0x11c0228a

Crea reservas MAC para:

- Windows: X.X.X.15
- Ubuntu: X.X.X.17

Ip reservadas:

```
#host fantasia {
#   hardware ethernet 08:00:07:26:c0:a5;
#   fixed-address fantasia.example.com;
#}

host windows {
    hardware ethernet 08:00:27:32:09:bc;
    fixed-address 172.16.16.15;
}

host ubuntu {
    hardware ethernet 08:00:27:2d:57:22;
    fixed-address 172.16.16.17;
}

# You can declare a class of clients and then do address allocation
# based on that.  The example below shows a case where all clients
# in a certain class get addresses on the 10.17.224/24 subnet, and
# other clients get addresses on the 10.0.29/24 subnet.
```

Windows ipconfig:

```
C:\Users\wadmin>ipconfig /all
```

Configuración IP de Windows

```
Nombre de host. . . . . : DESKTOP-U3JKS6F
Sufijo DNS principal . . . . . :
Tipo de nodo. . . . . : híbrido
Enrutamiento IP habilitado. . . . : no
Proxy WINS habilitado . . . . . : no
Lista de búsqueda de sufijos DNS: si.local
```

Adaptador de Ethernet Ethernet:

```
Sufijo DNS específico para la conexión. . : si.local
Descripción . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
Dirección física. . . . . : 08-00-27-32-09-BC
DHCP habilitado . . . . . : sí
Configuración automática habilitada . . . : sí
Vínculo: dirección IPv6 local. . . : fe80::4111:b049:1ea1:fe3e%7(Preferido)
Dirección IPv4. . . . . : 172.16.16.15(Preferido)
Máscara de subred . . . . . : 255.255.255.0
Concesión obtenida. . . . . : lunes, 15 de abril de 2024 11:01:01
La concesión expira . . . . . : lunes, 15 de abril de 2024 11:11:00
Puerta de enlace predeterminada . . . . . : 172.16.16.100
Servidor DHCP . . . . . : 172.16.16.1
IAID DHCPv6 . . . . . : 101187623
DUID de cliente DHCPv6. . . . . : 00-01-00-01-2D-9D-85-FE-08-00-27-32-09-BC
Servidores DNS. . . . . : 172.16.16.254
NetBIOS sobre TCP/IP. . . . . : habilitado
```

Ubuntu ip a

```
valid_lft forever preferred_lft forever
alumno@alumno-VirtualBox:~$ 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
        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 08:00:27:2d:57:22 brd ff:ff:ff:ff:ff:ff
    inet 172.16.16.17/24 brd 172.16.16.255 scope global dynamic noprefixroute enp0s3
        valid_lft 598sec preferred_lft 598sec
    inet6 fe80::aa1d:69a9:a0fd:13c8/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
alumno@alumno-VirtualBox:~$
```