

PARTIE DHCP SERVER

Faire les prérequis d'installation :

Apt-get update & upgrade

Installer les paquets du serveur dhcp

apt-get install isc-dhcp-server

Après l'installation, les fichiers ci-dessous doivent apparaître :

```
root@DHCP:/etc/dhcp# ls
dhclient.conf  dhclient-enter-hooks.d  dhclient-exit-hooks.d  dhcpd.conf
root@DHCP:/etc/dhcp#
```

Changer le nom de la machine dans ***/etc/hostname***

```
GNU nano 2.2.6  Fichier : hostname
DHCP
```

Modifier l'interface dans le fichier qui se trouve dans ***/etc/network/interfaces***

```
allow-hotplug eth0
iface eth0 inet static
address 192.168.3.2/24
gateway 192.168.3.254
```

Faire un ***reboot*** pour relancer la machine !

Relancer le serveur DHCP :

```
root@DHCP:~# /etc/init.d/isc-dhcp-server restart
```

Vous allez apercevoir ce message d'erreur :

```
root@DHCP:~# /etc/init.d/isc-dhcp-server restart
[....] Restarting isc-dhcp-server (via systemctl): isc-dhcp-server.serviceJob fo
r isc-dhcp-server.service failed. See 'systemctl status isc-dhcp-server.service'
and 'journalctl -xn' for details.
Failed!
root@DHCP:~# journalctl -xn
-- Logs begin at mer. 2021-02-24 14:38:05 CET, end at mer. 2021-02-24 14:40:42 C
févr. 24 14:40:42 DHCP dhcpd[2498]: exiting.
févr. 24 14:40:42 DHCP systemd[1]: isc-dhcp-server.service: control process exit
févr. 24 14:40:42 DHCP systemd[1]: Failed to start LSB: DHCP server.
-- Subject: L'unité (unit) isc-dhcp-server.service a échoué
-- Defined-By: systemd
-- Support: http://lists.freedesktop.org/mailman/listinfo/systemd-devel
--
-- L'unité (unit) isc-dhcp-server.service a échoué, avec le résultat failed.
févr. 24 14:40:42 DHCP systemd[1]: Unit isc-dhcp-server.service entered failed s
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: If you think you have received thi
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: than a configuration issue please
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: bugs on either our web page at www
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: before submitting a bug. These pa
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: process and the information we fin
févr. 24 14:40:42 DHCP isc-dhcp-server[2492]: exiting.
lines 1-16/16 (END)
```

Se rendre dans le chemin ci-dessous et modifier le fichier *isc-dhcp-server* :

```
root@Dhcp:~# cat /etc/default/isc-dhcp-server
# Defaults for isc-dhcp-server initscript
# sourced by /etc/init.d/isc-dhcp-server
# installed at /etc/default/isc-dhcp-server by the maintainer scripts

#
# This is a POSIX shell fragment
#

# Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
DHCPD_CONF=/etc/dhcp/dhcpd.conf

# Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
DHCPD_PID=/var/run/dhcpd.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="eth0"
INTERFACESv6=""
```

indiquer l'interface réseau de notre machine

Dans le fichier de paramétrage du dhcp

Décommenter ces lignes et remplacer en fonction de la plage Ip qu'on souhaite attribuer :

```
subnet 192.168.3.0 netmask 255.255.255.0 {
range 192.168.3.10 192.168.3.30;
option domain-name-servers 8.8.8.8, 8.8.4.4;
option domain-name "csi.loc";
option routers 192.168.3.1;
option broadcast-address 192.168.3.255;
default-lease-time 600;
max-lease-time 7200;
authoritative;
}
```

Attention ne pas négliger les caractères spéciaux, en cas de problème exécuter la commande ci-dessous pour voir d'où vient le problème :

```
root@DHCP:~# /etc/init.d/isc-dhcp-server restart
[....] Restarting isc-dhcp-server (via systemctl): isc-dhcp-server.serviceJob fo
r isc-dhcp-server.service failed. See 'systemctl status isc-dhcp-server.service'
and 'journalctl -xn' for details.
failed!
root@DHCP:~# systemctl status isc-dhcp-server.service
● isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server)
   Active: failed (Result: exit-code) since mer. 2021-02-24 16:24:42 CET; 28s ag
o
   Process: 2718 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status
=1/FAILURE)

févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: ^
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: /etc/dhcp/dhcpd.conf line 112....
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: ^
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: Configuration file errors enc...g
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: If you think you have receive...r
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: than a configuration issue pl...g
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: bugs on either our web page a...e
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: before submitting a bug. The...r
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: process and the information w...
févr. 24 16:24:42 DHCP isc-dhcp-server[2718]: exiting.
Hint: Some lines were ellipsized, use -l to show in full.
root@DHCP:~# nano /etc/dhcp/dhcpd.conf
root@DHCP:~# nano /etc/dhcp/dhcpd.conf
root@DHCP:~# /etc/init.d/isc-dhcp-server restart
[ ok ] Restarting isc-dhcp-server (via systemctl): isc-dhcp-server.service.
root@DHCP:~#
```

Ensuite relancer le service après avoir rectifié la ligne de notre fichier

```
root@Dhcp:~# /etc/init.d/isc-dhcp-server restart
[ ok ] Restarting isc-dhcp-server (via systemctl): isc-dhcp-server.service.
```

Maintenant on peut voir que tout se passe bien après l'avoir relancé :

```
root@Dhcp:~# systemct status isc-dhcp-server
bash: systemct : commande introuvable
root@Dhcp:~# systemctl status isc-dhcp-server
● isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server)
   Active: active (running) since ven. 2021-03-05 19:29:06 CET; 28min ago
   Process: 527 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/isc-dhcp-server.service
           └─629 /usr/sbin/dhcpd -q -cf /etc/dhcp/dhcpd.conf -pf /var/run/dhcpd.pid

mars 05 19:29:03 Dhcp systemd[1]: Starting LSB: DHCP server...
mars 05 19:29:04 Dhcp dhcpd[619]: Internet Systems Consortium DHCP Server 4.3.1
mars 05 19:29:04 Dhcp dhcpd[619]: Copyright 2004-2014 Internet Systems Consortium.
mars 05 19:29:04 Dhcp dhcpd[619]: All rights reserved.
```

Test sur machine Client :

Configurer l'interface de cette façon l'interface du client :

```
GNU nano 2.2.6      Fichier : /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
allow-hotplug eth0
iface eth0 inet dhcp
```

Relancer la machine et vérifier qu'une Ip a bien été attribuée :

```
saidia@debian:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    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: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:b3:5d:09 brd ff:ff:ff:ff:ff:ff
    inet 192.168.3.10/24 brd 192.168.3.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:feb3:5d09/64 scope link tentative dadfailed
```

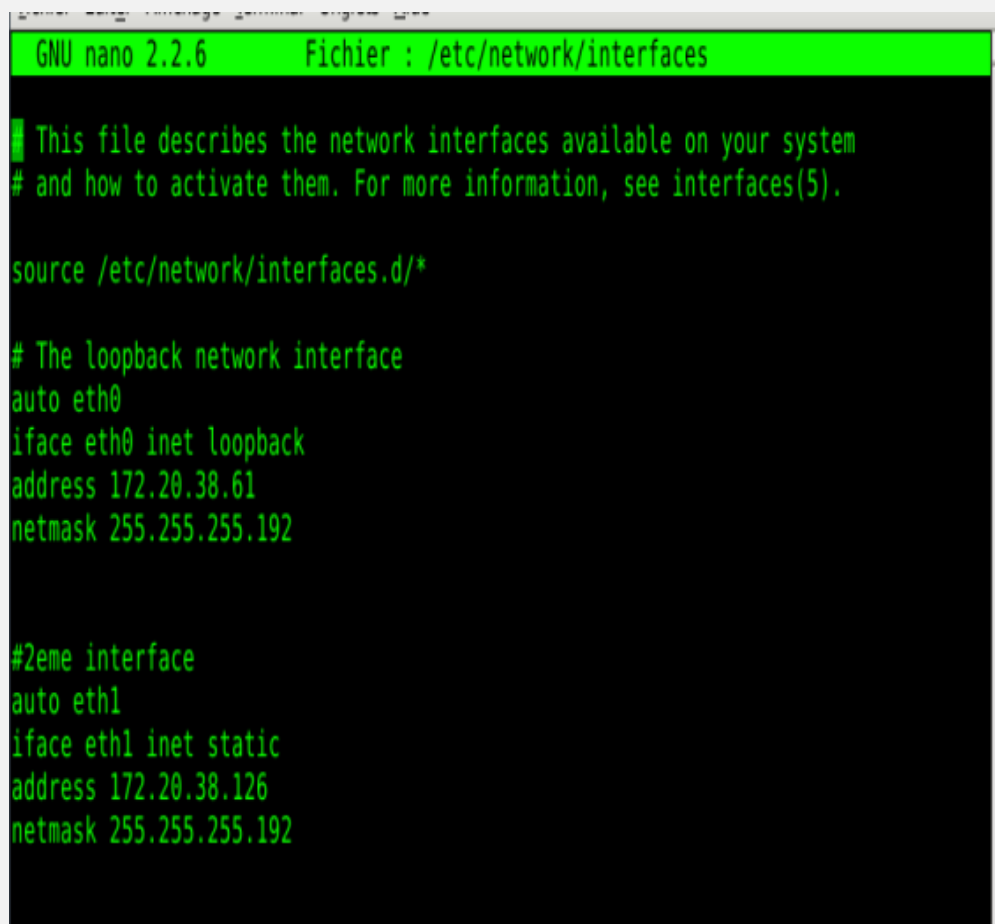
Parfait tout fonctionne à merveille !!! 😊

PARTIE RELAIS DHCP

Installer et indiquer l'adresse IP du serveur DHCP précédent :

```
root@debian:~# apt-get install isc-dhcp-relay
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances
Lecture des informations d'état... Fait
Les NOUVEAUX paquets suivants seront installés :
  isc-dhcp-relay
0 mis à jour, 1 nouvellement installés, 0 à enlever et 1 n
Il est nécessaire de prendre 198 ko dans les archives.
Après cette opération, 512 ko d'espace disque supplémentai
ATTENTION : les paquets suivants n'ont pas été authentifié
  isc-dhcp-relay
Faut-il installer ces paquets sans vérification ? [o/N]
```

Se rendre dans le fichier interfaces :



```
GNU nano 2.2.6      Fichier : /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 eth0
iface eth0 inet loopback
address 172.20.38.61
netmask 255.255.255.192

#2eme interface
auto eth1
iface eth1 inet static
address 172.20.38.126
netmask 255.255.255.192
```

Relancer l'interface internet :

```
root@RELAIS-DHCP:~# service networking restart
```

Décommenter cette commande dans le fichier */etc/sysctl.conf*

```
net.ipv4.ip_forward=1
```

Activer le routage

```
root@RELAIS-DHCP:~# sysctl -p /etc/sysctl.conf
net.ipv4.ip_forward = 1
net.ipv4.conf.all.log_martians = 1
```

Indiquer les interfaces de notre machine comme ci-dessous :

```
GNU nano 2.2.6      Fichier : /etc/default/isc-dhcp-relay

# Defaults for isc-dhcp-relay initscript
# sourced by /etc/init.d/isc-dhcp-relay
# installed at /etc/default/isc-dhcp-relay by the maintainer scripts

#
# This is a POSIX shell fragment
#

# What servers should the DHCP relay forward requests to?
SERVERS="192.168.3.2"

# On what interfaces should the DHCP relay (dhrelay) serve DHCP requests?
INTERFACES="eth0 eth1"

# Additional options that are passed to the DHCP relay daemon?
OPTIONS=""
```

Puis relancer le service isc-dhcp-relay :

```
root@RELAIS-DHCP:~# service isc-dhcp-relay restart
root@RELAIS-DHCP:~#
```

S'assurer du fonctionnement :

```
root@RELAIS-DHCP:~# systemctl status isc-dhcp-relay
● isc-dhcp-relay.service - LSB: DHCP relay
   Loaded: loaded (/etc/init.d/isc-dhcp-relay)
   Active: active (running) since ven. 2021-03-05 02:15:01 CET; 3s ago
     Process: 3117 ExecStop=/etc/init.d/isc-dhcp-relay stop (code=exited, status=0/SUCCESS)
     Process: 3120 ExecStart=/etc/init.d/isc-dhcp-relay start (code=exited, status=0/SUCCESS)
    CGroup: /system.slice/isc-dhcp-relay.service
            └─3124 /usr/sbin/dhcrelay -q -i eth0 -i eth0 172.20.38.1

mars 05 02:15:01 RELAIS-DHCP systemd[1]: Starting LSB: DHCP relay...
mars 05 02:15:01 RELAIS-DHCP systemd[1]: Started LSB: DHCP relay.
root@RELAIS-DHCP:~# service isc-dhcp-relay restart
root@RELAIS-DHCP:~# service isc-dhcp-relay stop
root@RELAIS-DHCP:~# service isc-dhcp-relay start
root@RELAIS-DHCP:~# systemctl status isc-dhcp-relay
● isc-dhcp-relay.service - LSB: DHCP relay
   Loaded: loaded (/etc/init.d/isc-dhcp-relay)
   Active: active (running) since ven. 2021-03-05 02:16:12 CET; 4s ago
     Process: 3158 ExecStop=/etc/init.d/isc-dhcp-relay stop (code=exited, status=0/SUCCESS)
     Process: 3182 ExecStart=/etc/init.d/isc-dhcp-relay start (code=exited, status=0/SUCCESS)
    CGroup: /system.slice/isc-dhcp-relay.service
            └─3185 /usr/sbin/dhcrelay -q -i eth0 -i eth0 172.20.38.1

mars 05 02:16:12 RELAIS-DHCP systemd[1]: Started LSB: DHCP relay.
root@RELAIS-DHCP:~# █
```

Se rendre sur le chemin ***nano /etc/sysctl.conf***

Décommenter cette ligne :

```
# Log martian packets
net.ipv4.conf.all.log_martians = 1
█
```

Activer le routage avec la commande ci-dessous :

```
root@RELAIS-DHCP:~# sysctl -p /etc/sysctl.conf
net.ipv4.conf.all.log_martians = 1
█
```

Supervision



Pour installer notre stratégie de supervision nous avons procédé de cette façon :

Prérequis :

```
apt-get install apache2 apt-get install build-essential unzip openssl-dev libgd2-xpm-dev xinetd apache2-utils
```

Utilisateur :

```
useraddnagios groupaddnagcmd usermod -a -G
```

```
nagcmdnagios&&usermod -a -G nagcmd www-data
```

Pour la décompression du fichier nous utilisons

```
tar -xvf nagios-4.*.tar.gz
```

Puis nous rentrons dans le fichier cd nagios-4.2.2/et nous effectuons ces commandes :

```
./configure --with-nagios-group=nagios --with-command-group=nagcmd make all
```

```
make
```

```
install
```

```
make
```

```
install-init
```

```
make
```

```
install-
```

```
config
```


make install-

commandmode

a2enmod a2enmod cgi

Copie du virtualhost avec l'attribution des permissions et son activation:

cpsample-config/httpd.conf/etc/apache2/sites-available/nagios4.conf

chmod 644 /etc/apache2/sites-available/nagios.conf a2ensite nagios.conf

Création du fichier passwd pour nagios:

htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

service apache2 start

Pour la décompression du fichier on installe des plugins :

tar -xvf nagios-plugins-2*.tar.gz

Pour la configuration et l'installation des Paquets:

cd nagios-plugins-2.*

***./configure --with-nagios-user=nagios --with-nagios-group=nagios
--with-***

openssl make

make install

Création du service nagiossystemd:

File: /etc/systemd/system/nagios.service

[Unit]

Description=Nagios

BindTo=network.target

[Install]

WantedBy=multi-user.target

[Service]

User=nagios

Group=nagios

Type=simple

ExecStart=/usr/local/nagios/bin/nagios /usr/local/nagios/etc/nagios.cfg

Pour finir on lance le service Nagios :

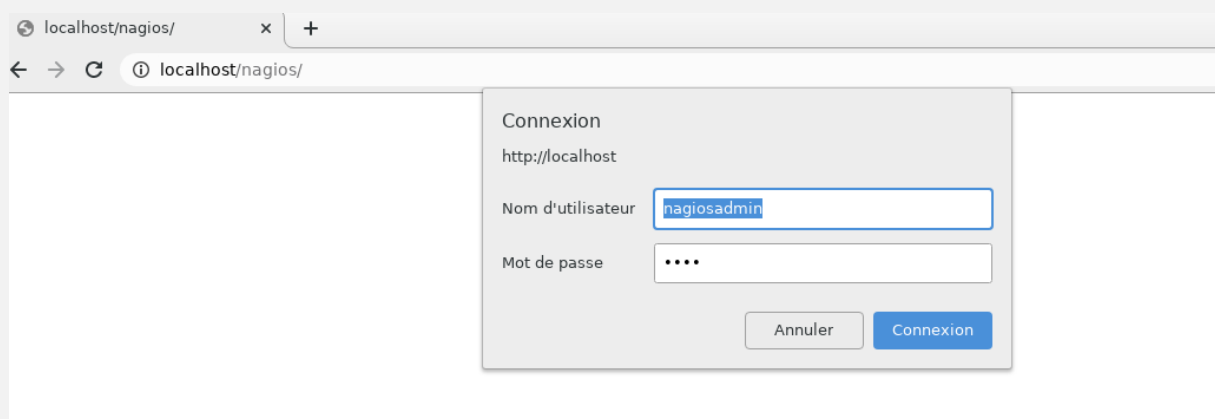
systemctl enable /etc/systemd/system/nagios.service systemctl start nagios

systemctl status nagios

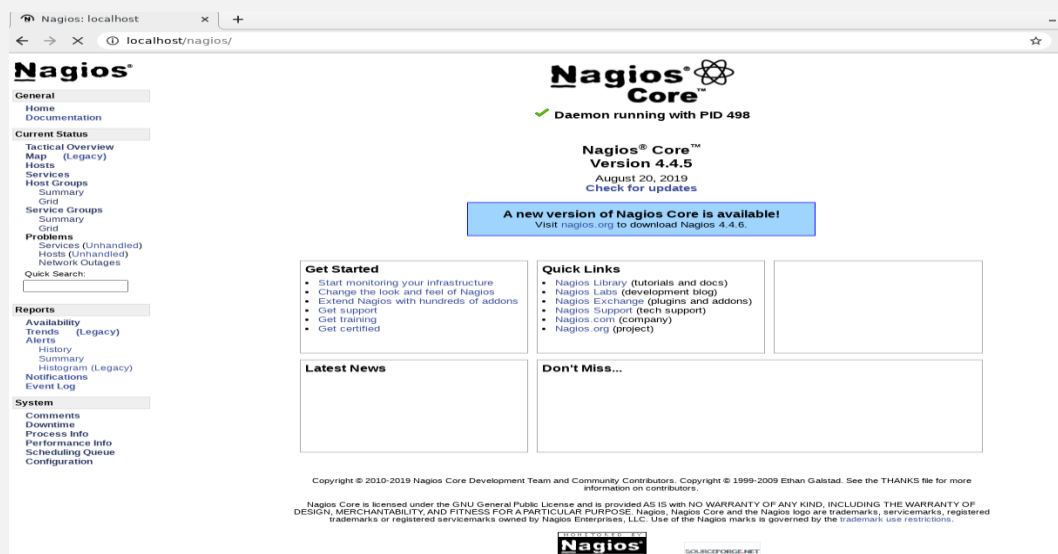
```
root@debnagios:~# service nagios status
nagios.service - LSB: Starts and stops the Nagios monitoring server
Loaded: loaded (/etc/init.d/nagios)
Active: active (running) since jeu. 2017-12-07 07:45:36 CET; 2 days ago
Process: 24210 ExecStop=/etc/init.d/nagios stop (code=exited, status=0/SUCCESS)
```

On se connecte à l'interface graphique. Nous devons utiliser notre adresse ip suivie de /nagios/ ce qui donne : " localhost/nagios/" puis nous devons renseigner le login et le mot de passe qui sont :

- login = nagiosadmin
- mdp = nagios



On sera alors dirigés sur cette page :



Maintenant il faut créer des fichiers afin de superviser notre serveur DHCP.

Pour cela nous avons copié le fichier *localhost.cfg* par exemple en le nommant comme on le souhaite.

/usr/local/nagios/etc/objects/deb3.cfg

```
#####  
# Define the dhcp server deb that we'll be monitoring  
define host {  
    use                linux-server                ; Inher  
    host_name          deb3                        ; The name we're  
    alias              localhost                    ; A longer name as  
    address             192.168.3.2                 ; IP ad  
}
```

On spécifie l'adresse du serveur et les différents services à superviser au choix :

```
# Define a service to "ping" the local machine.  
define service{  
    use                local-service                ; Name of service template to use  
    host_name          deb3  
    service_description PING  
    check_command       check_ping!100.0,20%!500.0,60%  
}  
  
# Define a service to check the disk space of the root partition  
# on the local machine. Warning if < 20% free, critical if  
# < 10% free space on partition.  
define service{  
    use                local-service                ; Name of service template to use  
    host_name          deb3  
    service_description Root Partition  
    check_command       check_local_disk!20%!10%!/br/>}  
  
# Define a service to check the number of currently logged in  
# users on the local machine. Warning if > 20 users, critical  
# if > 50 users.  
define service{  
    use                local-service                ; Name of service template to use
```

```

define service{
    use                local-service        ; Name of service template to use
    host_name          deb3
    service_description Total Processes
    check_command       check_local_procs!250!400!RSZDT
}

# Define a service to check the load on the local machine.

define service{
    use                local-service        ; Name of service template to use
    host_name          deb3
    service_description Current Load
    check_command       check_local_load!5.0,4.0,3.0!10.0,6.0,4.0
}

# Define a service to check the swap usage the local machine.
# Critical if less than 10% of swap is free, warning if less than 20% is free

define service{
    use                local-service        ; Name of service template to use
    host_name          deb3
    service_description Swap Usage
    check_command       check_local_swap!20!10
}

```

Il ne faut pas oublier d'ajouter les services manquants dans *commands.cfg*

```

define command{
    command_name       check_https
    command_line        $USER1$/check_http -H $HOSTADDRESS$ -S -p 443
}

```

-S étant SSL

-P étant le port, ici 443 pour HTTPS.

```

define command{
    command_name       check_dns
    command_line        $USER1$/check_dns -H www.ms3.fr -s $HOSTADDRESS$
}

```

Ce fichier nous permet de checker les services suivants : FTP, PING, SSH, DNS, HTTPS, HTTP...

```

define host{
    use                windows-server ; Inherit default values from a template
    host_name          winserver      ; The name we're giving to this host
    alias              My Windows Server ; A longer name associated with the host
    address             172.18.158.140 ; IP address of the host
}

```

```

define service{
    use                generic-service
    host_name          winserver
    service_description NSClient++ Version
    check_command       check_nt!CLIENTVERSION
}

# Create a service for monitoring the uptime of the server
# Change the host_name to match the name of the host you defined above

define service{
    use                generic-service
    host_name          winserver
    service_description Uptime
    check_command       check_nt!UPTIME
}

# Create a service for monitoring CPU load
# Change the host_name to match the name of the host you defined above

define service{
    use                generic-service
    host_name          winserver
    service_description CPU Load
    check_command       check_nt!CPULOAD!-l 5,80,90
}

```

```

define service{
    use                generic-service
    host_name          ad
    service_description Memory Usage
    check_command       check_nt!MEMUSE!-w 80 -c 90
}

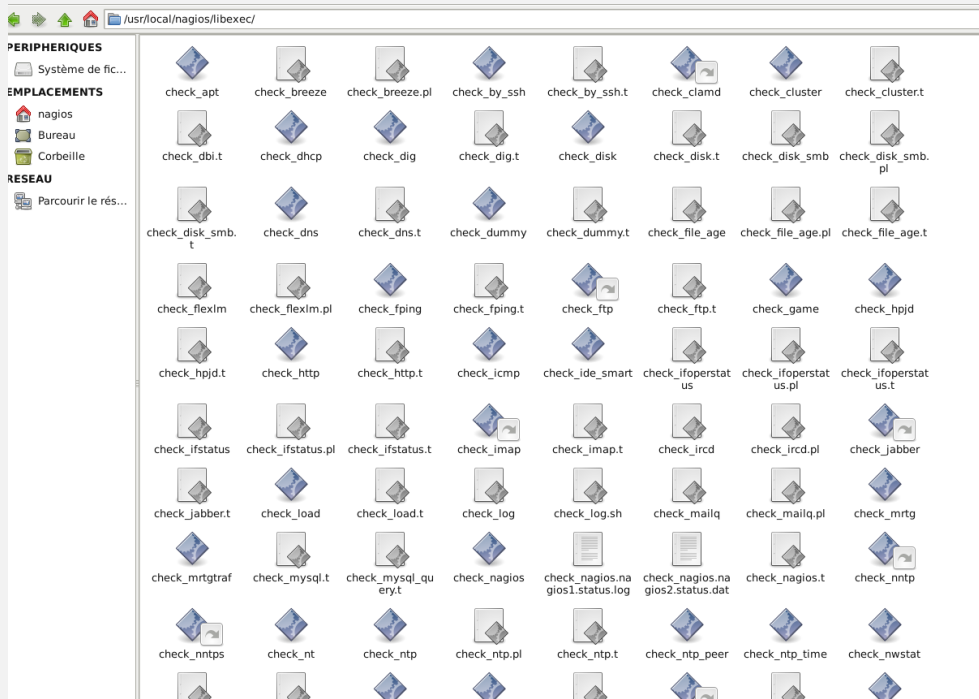
define service{
    use                generic-service
    host_name          ad
    service_description C:\ Drive Space
    check_command       check_nt!USEDISKSPACE!-l c -w 80 -c 90
}

define service{
    use                generic-service
    host_name          ad
    service_description Explorer
    check_command       check_nt!PROCSTATE!-d SHOWALL -l explorer.exe
}

```

Ne pas oublier de télécharger les plugins et de les mettre dans le chemin ci-dessous

(Vue de l'interface graphique):



Pour activer ces deux fichiers il faut aller dans

/usr/local/nagios/etc/nagios.cfg et ajouter le chemin des deux fichiers que l'on a configurés.

```
GNU nano 2.2.6          Fichier : nagios.cfg          Modi
cfg_file=/usr/local/nagios/etc/objects/timeperiods.cfg
cfg_file=/usr/local/nagios/etc/objects/templates.cfg

# Definitions for monitoring the local (Linux) host
cfg_file=/usr/local/nagios/etc/objects/localhost.cfg

# Definitions for monitoring a Windows machine
cfg_file=/usr/local/nagios/etc/objects/windows.cfg

# Definitions for monitoring a router/switch
cfg_file=/usr/local/nagios/etc/objects/switch.cfg
#cfg_file=/usr/local/nagios/etc/objects/router.cfg
cfg_file=/usr/local/nagios/etc/objects/deb3.cfg

# Definitions for monitoring a network printer
#cfg_file=/usr/local/nagios/etc/objects/printer.cfg

# You can also tell Nagios to process all config files (with a .cfg
```

Pour vérifier que nos fichiers sont bien configurés nous avons utilisé cette commande :

/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

On remarque qu'il n'y a pas d'erreurs, ensuite relancer nagios :

```
service nagios restart
```

```

● nagios.service - Nagios Core 4.4.5
   Loaded: loaded (/lib/systemd/system/nagios.service; enabled)
   Active: active (running) since ven. 2021-03-05 22:01:42 CET; 1min 36s ago
     Docs: https://www.nagios.org/documentation
   Process: 3130 ExecStopPost=/bin/rm -f /usr/local/nagios/var/rw/nagios.cmd (code=exited, status=0/SUCCESS)
   Process: 3128 ExecStop=/bin/kill -s TERM ${MAINPID} (code=exited, status=0/SUCCESS)
   Process: 3135 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Process: 3133 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Main PID: 3138 (nagios)
   CGroup: /system.slice/nagios.service
           └─3138 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
           └─3139 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var
           └─3140 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var

```

Nous vérifions sur l'interface graphique si la machine est fonctionnelle :

VIEW NOTIFICATIONS FOR THIS SERVICE 192.168.3.2

Service State Information

Current Status:	OK (for 0d 1h 19m 29s)
Status Information:	PING OK - Paquets perdus = 0%, RTA = 0.32 ms
Performance Data:	rta=0.319000ms;200.000000;600.000000;0.000000 pl=0%;20;60;0
Current Attempt:	1/3 (HARD state)
Last Check Time:	03-05-2021 22:01:14
Check Type:	ACTIVE
Check Latency / Duration:	0,000 / 4,000 seconds
Next Scheduled Check:	03-05-2021 22:06:14
Last State Change:	03-05-2021 20:44:52
Last Notification:	N/A (notification 0)
Is This Service Flapping?	NO (8,00% state change)
In Scheduled Downtime?	NO
Last Update:	03-05-2021 22:04:12 (0d 0h 0m 9s ago)

Active Checks: **ENABLED**
 Passive Checks: **ENABLED**
 Obsessing: **ENABLED**
 Notifications: **ENABLED**
 Event Handler: **ENABLED**
 Flap Detection: **ENABLED**

Service Comments

[Add a new comment](#) [Delete all comments](#)

Entry Time	Author	Comment	Comment ID	Persistent	Type	Expires	Actions
This service has no comments associated with it							

Mission accomplie !!! 😊