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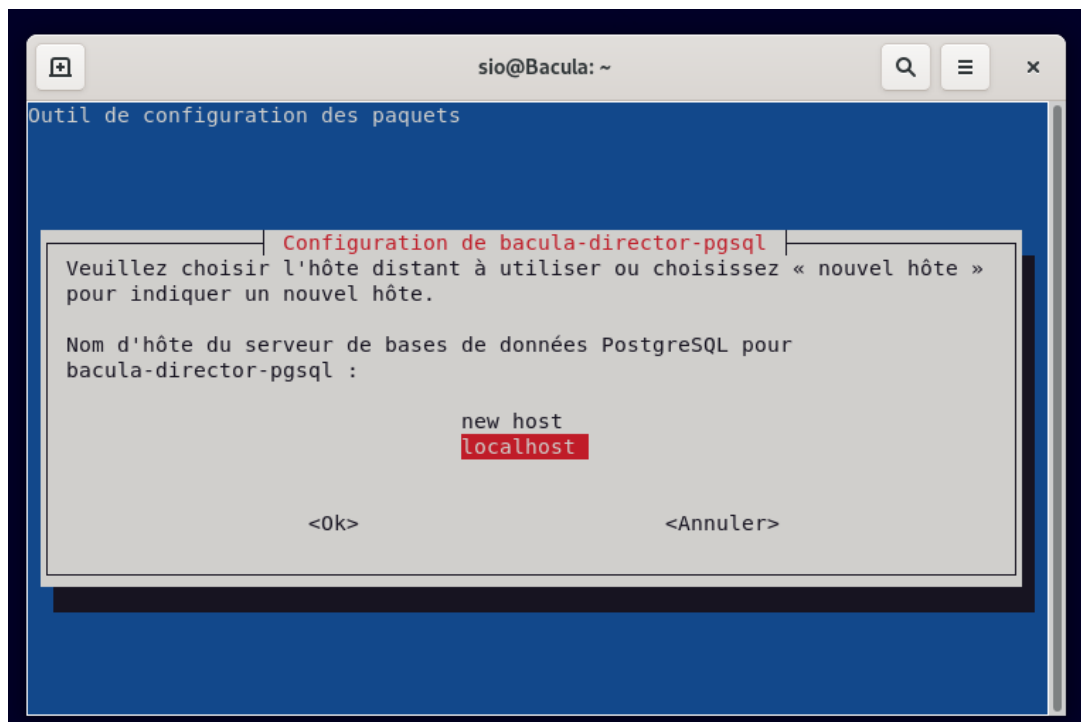
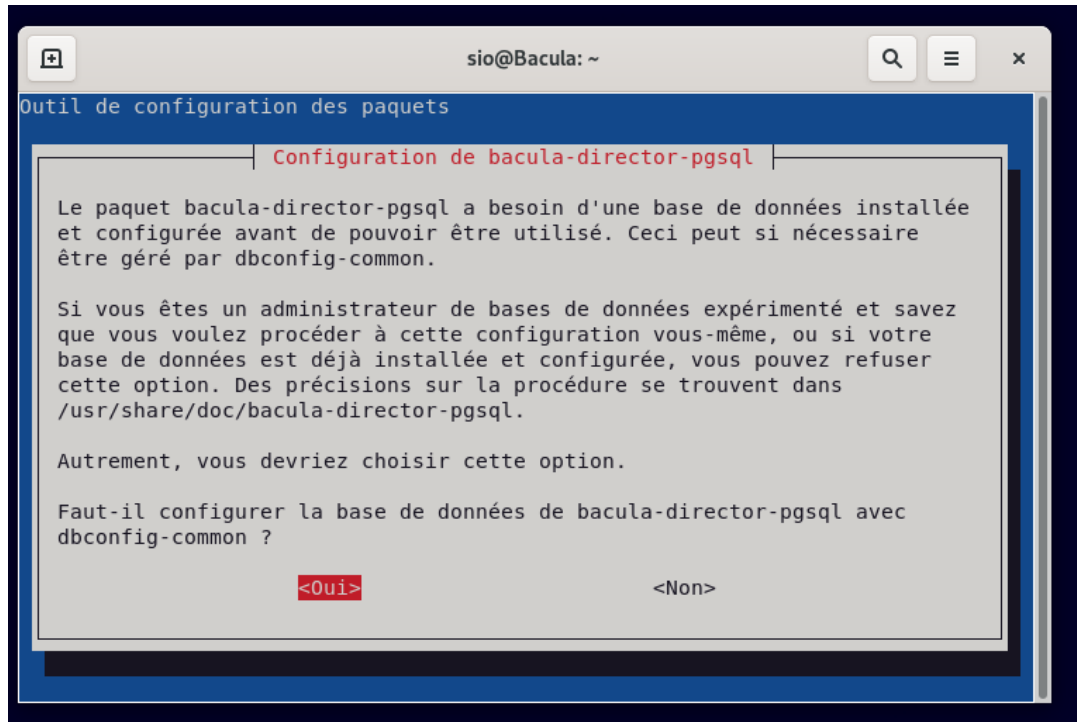
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## 2 – Installation du serveur de sauvegarde

```
root@Bacula:~# apt-get install bacula bacula-console-qt
```





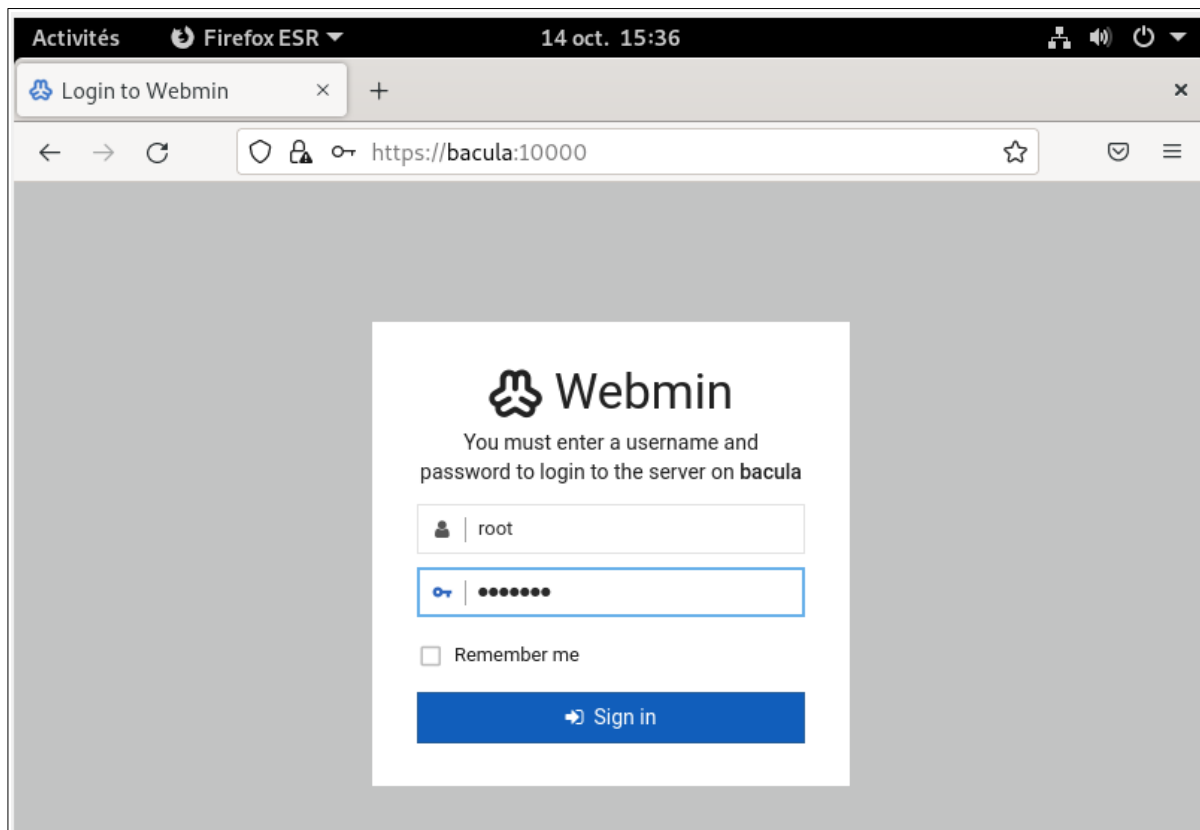
```
root@Bacula:~# apt-get install libnet-ssleay-perl libauthen-pam-perl libio-pty-perl apt-show-versions python
```

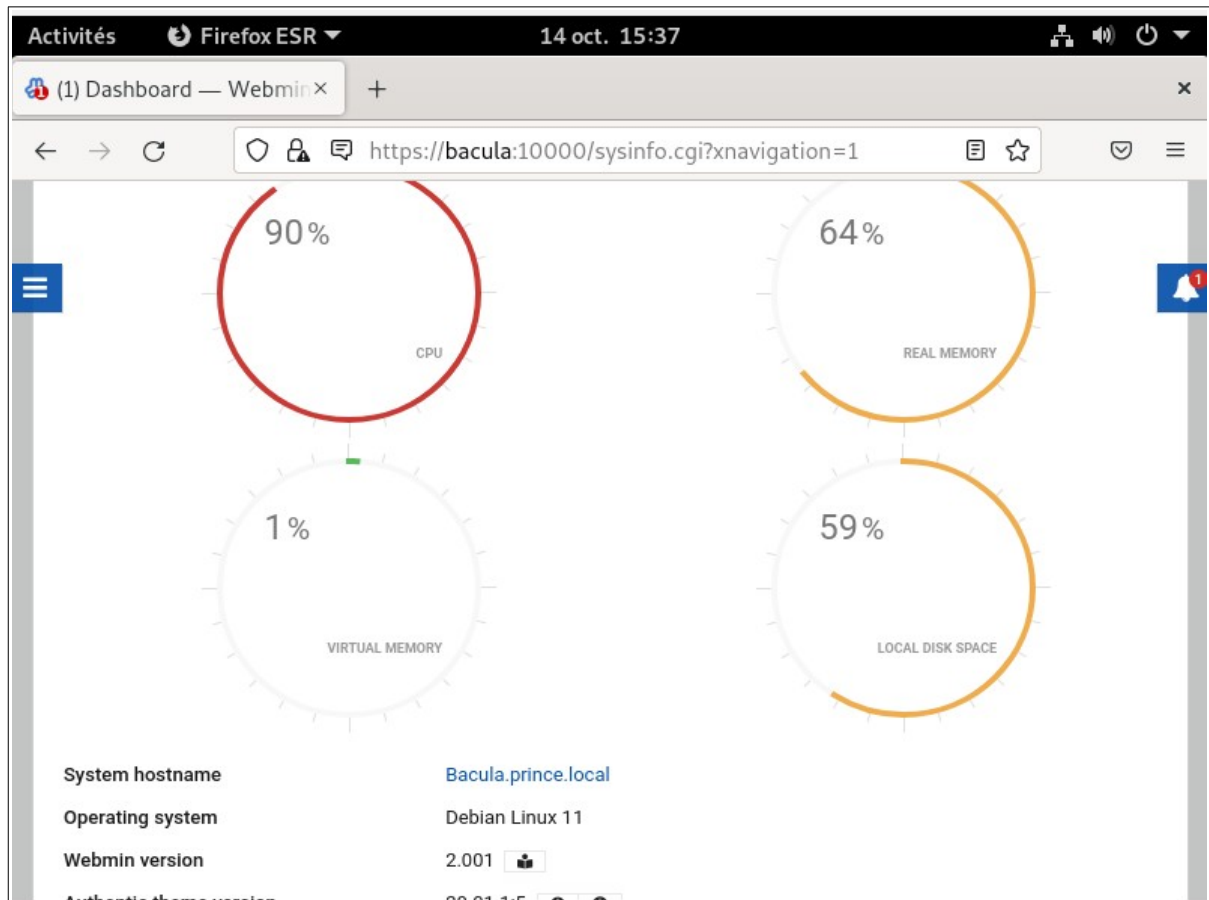
```
root@Bacula:~# wget https://sourceforge.net/projects/webadmin/files/webmin/2.001/webmin_2.001_all.deb/download
```

```
root@Bacula:~# dpkg --install download
Sélection du paquet webmin précédemment désélectionné.
(Lecture de la base de données... 143961 fichiers et répertoires déjà installés.)
Préparation du dépaquetage de download ...
Dépaquetage de webmin (2.001) ...
Paramétrage de webmin (2.001) ...
```

```
root@Bacula:~# apt-get install unzip
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances... Fait
Lecture des informations d'état... Fait
unzip est déjà la version la plus récente (6.0-26+deb11u1).
unzip passé en « installé manuellement ».
0 mis à jour, 0 nouvellement installés, 0 à enlever et 5 non mis à jour.
```

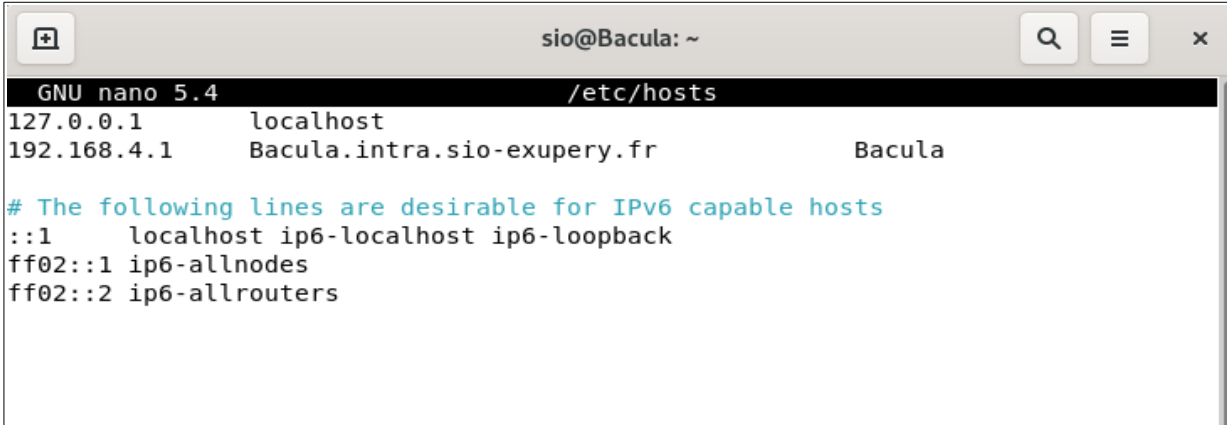
```
sio@Bacula: ~  
sio@Bacula:~$ su -  
Mot de passe :  
root@Bacula:~# ss -ln4  
Netid  State  Recv-Q  Send-Q   Local Address:Port  Peer Address:Port Process  
udp    UNCONN 0        0         0.0.0.0:58700      0.0.0.0:*  
udp    UNCONN 0        0         0.0.0.0:631        0.0.0.0:*  
udp    UNCONN 0        0         0.0.0.0:10000      0.0.0.0:*  
udp    UNCONN 0        0         0.0.0.0:5353       0.0.0.0:*  
tcp    LISTEN 0        50        127.0.0.1:9101     0.0.0.0:*  
tcp    LISTEN 0        50        127.0.0.1:9102     0.0.0.0:*  
tcp    LISTEN 0        50        127.0.0.1:9103     0.0.0.0:*  
tcp    LISTEN 0       4096         0.0.0.0:10000      0.0.0.0:*  
tcp    LISTEN 0       128        127.0.0.1:631      0.0.0.0:*  
tcp    LISTEN 0       244        127.0.0.1:5432     0.0.0.0:*  
tcp    LISTEN 0        20        127.0.0.1:25       0.0.0.0:*  
root@Bacula:~#
```





### 3 – Propriétés TCPIP de l'interface réseau du serveur

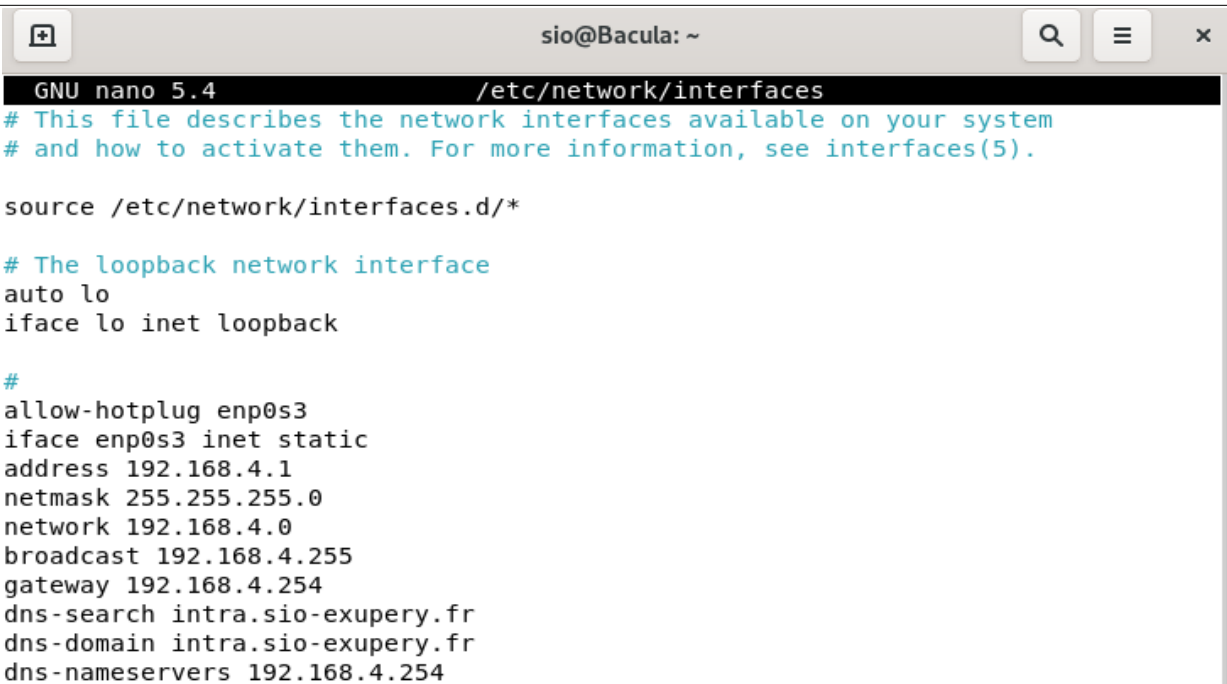
```
root@Bacula:~# apt-get install resolvconf
```



The screenshot shows a terminal window titled 'sio@Bacula: ~'. Inside, the GNU nano 5.4 text editor is open, editing the file /etc/hosts. The editor's status bar at the top shows 'GNU nano 5.4' on the left and '/etc/hosts' on the right. The content of the file is as follows:

```
127.0.0.1    localhost
192.168.4.1  Bacula.intra.sio-exupery.fr      Bacula

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



The screenshot shows a terminal window titled 'sio@Bacula: ~'. Inside, the GNU nano 5.4 text editor is open, editing the file /etc/network/interfaces. The editor's status bar at the top shows 'GNU nano 5.4' on the left and '/etc/network/interfaces' on the right. The content of the file is as follows:

```
# 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 enp0s3
iface enp0s3 inet static
address 192.168.4.1
netmask 255.255.255.0
network 192.168.4.0
broadcast 192.168.4.255
gateway 192.168.4.254
dns-search intra.sio-exupery.fr
dns-domain intra.sio-exupery.fr
dns-nameservers 192.168.4.254
```

```
root@Bacula:~# 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 pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:07:cb:a8 brd ff:ff:ff:ff:ff:ff
    inet 192.168.4.1/24 brd 192.168.4.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe07:cba8/64 scope link tentative
        valid_lft forever preferred_lft forever
```

```
root@Bacula:~# ip r
default via 192.168.4.254 dev enp0s3 onlink
192.168.4.0/24 dev enp0s3 proto kernel scope link src 192.168.4.1
```

```
root@Bacula:~# cat /etc/resolv.conf
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "resolvectl status" to see details about the actual nameservers.

nameserver 192.168.4.254
nameserver 172.17.254.1
nameserver 80.10.246.2
search intra.sio-exupery.fr prince.local
```

```
GNU nano 5.4 /var/cache/bind/db.intra.sio-exupery.fr *
$ORIGIN .
$TTL 86400      ; 1 day
intra.sio-exupery.fr IN SOA DS1.intra.sio-exupery.fr. root.intra.sio-exupery.fr. (
    2019020713 ; serial
    604800     ; refresh (1 week)
    86400      ; retry (1 day)
    2419200    ; expire (4 weeks)
    604800     ; minimum (1 week)
)
intra.sio-exupery.fr IN NS DS1.intra.sio-exupery.fr.
$ORIGIN intra.sio-exupery.fr.
DS1 IN A 192.168.4.254
DEB11Server IN A 192.168.4.1
```

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

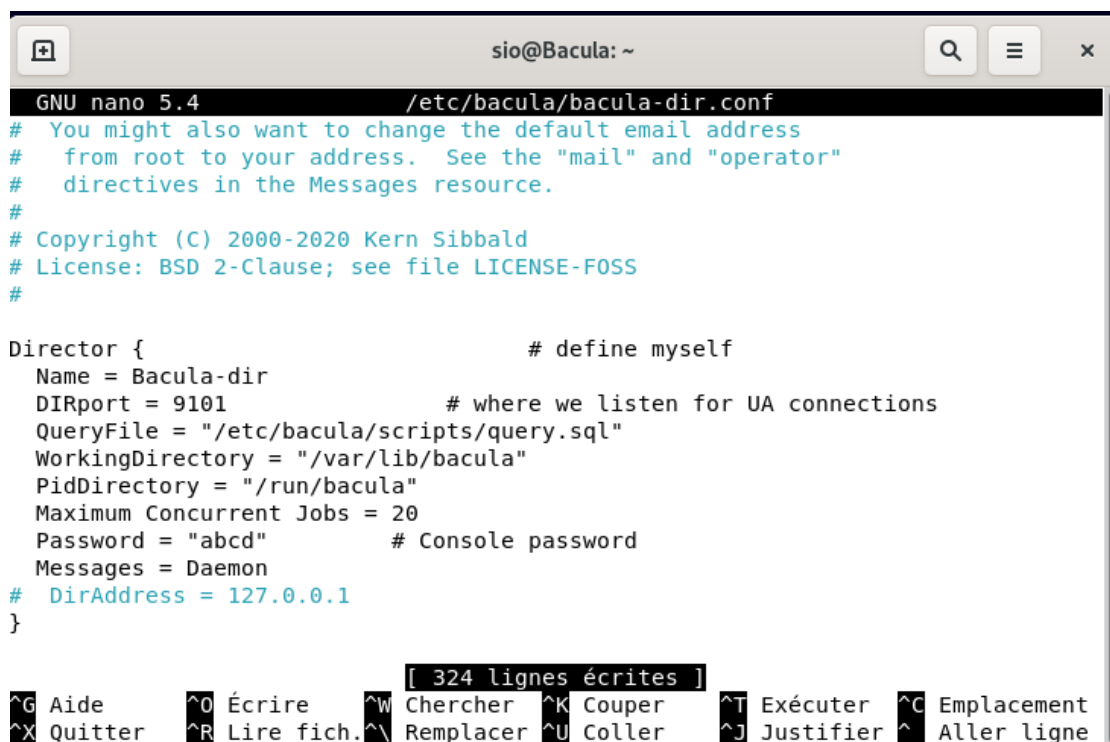
## 4 – Configuration de base du serveur

```
root@Bacula:~# mkdir /backup
root@Bacula:~# chown bacula /backup
```

```
root@Bacula:~# ss -ltnp | grep bacula
LISTEN 0      50          127.0.0.1:9101      0.0.0.0:*    users:(("bacula-dir",
pid=1255,fd=4))
LISTEN 0      50          127.0.0.1:9102      0.0.0.0:*    users:(("bacula-fd",p
id=541,fd=3))
LISTEN 0      50          127.0.0.1:9103      0.0.0.0:*    users:(("bacula-sd",p
id=542,fd=3))
```

```
root@Bacula:~# cat /etc/bacula/common_default_passwords
#
# This file has been autogenerated during package installation and
# holds defaults for new Bacula packages installed on this system. It
# is used only when you install a new Bacula package, and can be
# safely removed at any time.
```

```
DIRPASSWD=bo_fyncjpSI0ils8bGW5gkzbHGyS5Pz2c
DIRMPASSWD=MMdC0X8sF0ErJ-j0jgS6ltQI0b2YS0mLT
SDPASSWD=7k1wvW7GvCyR5zyz-5-pKcq_rlmyAx4Xj
SDMPASSWD=o68IdUNLLFRSlihflPAnnDJI0tKUb1FBs
FDPASSWD=Cz16Y4RiaztgKem0FKqJuwai4NLvhhu7p
FDMPASSWD=f 7SPliNE0pVnseDjocwRybfqKIrjAdRj
```



```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-dir.conf
# You might also want to change the default email address
# from root to your address. See the "mail" and "operator"
# directives in the Messages resource.
#
# Copyright (C) 2000-2020 Kern Sibbald
# License: BSD 2-Clause; see file LICENSE-FOSS
#

Director {                                # define myself
    Name = Bacula-dir
    DIRport = 9101                        # where we listen for UA connections
    QueryFile = "/etc/bacula/scripts/query.sql"
    WorkingDirectory = "/var/lib/bacula"
    PidDirectory = "/run/bacula"
    Maximum Concurrent Jobs = 20
    Password = "abcd"                    # Console password
    Messages = Daemon
#   DirAddress = 127.0.0.1
}

[ 324 lignes écrites ]
^G Aide      ^O Écrire    ^W Chercher  ^K Couper    ^T Exécuter  ^C Emplacement
^X Quitter   ^R Lire fich.^V Remplacer  ^U Coller    ^J Justifier ^_ Aller ligne
```



```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-dir.conf *
# and to the console
Messages {
  Name = Standard
#
# NOTE! If you send to two email or more email addresses, you will need
# to replace the %r in the from field (-f part) with a single valid
# email address in both the mailcommand and the operatorcommand.
# What this does is, it sets the email address that emails would display
# in the FROM field, which is by default the same email as they're being
# sent to. However, if you send email to more than one address, then
# you'll have to set the FROM address manually, to a single address.
# for example, a 'no-reply@mydomain.com', is better since that tends to
# tell (most) people that its coming from an automated source.
#
mailcommand = "/usr/sbin/bsmtp -h localhost -f \"\\(Bacula\\) \\<%r\\>\" -s \"Bac>
operatorcommand = "/usr/sbin/bsmtp -h localhost -f \"\\(Bacula\\) \\<%r\\>\" -s \">
mail = rodolphe@free.fr = all, !skipped
operator = root = mount
console = all, !skipped, !saved
^G Aide      ^O Écrire    ^W Chercher  ^K Couper    ^T Exécuter  ^C Emplacement
^X Quitter   ^R Lire fich.^N Remplacer  ^U Coller    ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-dir.conf *
#
# Message delivery for daemon messages (no job).
Messages {
  Name = Daemon
  mailcommand = "/usr/sbin/bsmtp -h localhost -f \"\\(Bacula\\) \\<%r\\>\" -s \"Bac>
  mail = rodolphe@free.fr = all, !skipped
  console = all, !skipped, !saved
  append = "/var/log/bacula/bacula.log" = all, !skipped
}
# Default pool definition
Pool {
  Name = Default
  Pool Type = Backup
  Recycle = yes # Bacula can automatically recycle Volumes
  AutoPrune = yes # Prune expired volumes
  Volume Retention = 365 days # one year
  Maximum Volume Bytes = 50G # Limit Volume size to something reasonable>
  Maximum Volumes = 100 # Limit number of Volumes in Pool
^G Aide      ^O Écrire    ^W Chercher  ^K Couper    ^T Exécuter  ^C Emplacement
^X Quitter   ^R Lire fich.^N Remplacer  ^U Coller    ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-dir.conf *
# Catalog = MyCatalog
# Password = "Cz16Y4RiaztgKem0FKqJuwai4NLvhhu7p2" # password for FileDa
# File Retention = 60 days # 60 days
# Job Retention = 6 months # six months
# AutoPrune = yes # Prune expired Jobs/Files
#}

# Definition of file Virtual Autochanger device
Autochanger {
  Name = File1
# Do not use "localhost" here
  Address = 192.168.4.1 # N.B. Use a fully qualified name here
  SDPort = 9103
  Password = "abcd"
  Device = FileChgr1
  Media Type = File1
  Maximum Concurrent Jobs = 10 # run up to 10 jobs a the same time
  Autochanger = File1 # point to ourself
}

^G Aide ^O Écrire ^W Chercher ^K Couper ^T Exécuter ^C Emplacement
^X Quitter ^R Lire fich. ^\ Remplacer ^U Coller ^J Justifier ^_ Aller ligne
```

```
root@Bacula:~# bacula-dir -t
root@Bacula:~# systemctl restart bacula-director
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf *
# resource. If you change the Name and/or the
# "Media Type" in the Device resource, please ensure
# that dird.conf has corresponding changes.
#
#
# Copyright (C) 2000-2020 Kern Sibbald
# License: BSD 2-Clause; see file LICENSE-FOSS
#

Storage { # definition of myself
  Name = Bacula-sd
  SDPort = 9103 # Director's port
  WorkingDirectory = "/var/lib/bacula"
  Pid Directory = "/run/bacula"
  Plugin Directory = "/usr/lib/bacula"
  Maximum Concurrent Jobs = 20
# SDAddress = 127.0.0.1
}

#

^G Aide ^O Écrire ^W Chercher ^K Couper ^T Exécuter ^C Emplacement
^X Quitter ^R Lire fich. ^\ Remplacer ^U Coller ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-dir.conf
# from root to your address. See the "mail" and "operator"
# directives in the Messages resource.
#
# Copyright (C) 2000-2020 Kern Sibbald
# License: BSD 2-Clause; see file LICENSE-FOSS
#
Director {                                # define myself
    Name = Bacula-dir
    DIRport = 9101                        # where we listen for UA connections
    QueryFile = "/etc/bacula/scripts/query.sql"
    WorkingDirectory = "/var/lib/bacula"
    PidDirectory = "/run/bacula"
    Maximum Concurrent Jobs = 20
    Password = "abcd"                    # Console password
    Messages = Daemon
# DirAddress = 127.0.0.1
}

JobDefs {

^G Aide      ^O Écrire   ^W Chercher ^K Couper   ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller   ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf

#
# List Directors who are permitted to contact Storage daemon
#
Director {
    Name = Bacula-dir
    Password = "abcd"
}

#
# Restricted Director, used by tray-monitor to get the
# status of the storage daemon
#
Director {
    Name = Bacula-mon
    Password = "o68IdUNLlFRSlihfLPAnnDJI0tKUb1FBs"
    Monitor = yes
}

#
[ 335 lignes écrites ]
^G Aide      ^O Écrire   ^W Chercher ^K Couper   ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller   ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf
Name = FileChgr1
Device = FileChgr1-Dev1, FileChgr1-Dev2
Changer Command = ""
Changer Device = /dev/null
}

Device {
  Name = FileChgr1-Dev1
  Media Type = File1
  Archive Device = /backup
  LabelMedia = yes;                # lets Bacula label unlabeled media
  Random Access = Yes;
  AutomaticMount = yes;            # when device opened, read it
  RemovableMedia = no;
  AlwaysOpen = no;
  Maximum Concurrent Jobs = 5
}

Device {
  Name = FileChgr1-Dev2
  [ 335 lignes écrites ]
^G Aide      ^O Écrire   ^W Chercher ^K Couper   ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller   ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf *
# same Name and MediaType.
#
#
# Define a Virtual autochanger
#
Autochanger {
  Name = FileChgr1
  Device = FileChgr1-Dev1,
  #, FileChgr1-Dev2
  Changer Command = ""
  Changer Device = /dev/null
}

Device {
  Name = FileChgr1-Dev1
  Media Type = File1
  Archive Device = /backup
  LabelMedia = yes;                # lets Bacula label unlabeled media
  Random Access = Yes;

^G Aide      ^O Écrire   ^W Chercher ^K Couper   ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller   ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf *
AutomaticMount = yes;          # when device opened, read it
RemovableMedia = no;
AlwaysOpen = no;
Maximum Concurrent Jobs = 5
}

#Device {
# Name = FileChgr1-Dev2
# Media Type = File1
# Archive Device = /nonexistant/path/to/file/archive/dir
# LabelMedia = yes;           # lets Bacula label unlabeled media
# Random Access = Yes;
# AutomaticMount = yes;      # when device opened, read it
# RemovableMedia = no;
# AlwaysOpen = no;
# Maximum Concurrent Jobs = 5
#}

#
# Define a second Virtual autochanger

^G Aide      ^O Écrire   ^W Chercher ^K Couper    ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller    ^J Justifier ^_ Aller ligne
```

```
sio@Bacula: ~
GNU nano 5.4 /etc/bacula/bacula-sd.conf *

Device {
    Name = FileChgr1-Dev2
    Media Type = File1
    Archive Device = /nonexistant/path/to/file/archive/dir
    LabelMedia = yes;           # lets Bacula label unlabeled media
    Random Access = Yes;
    AutomaticMount = yes;      # when device opened, read it
    RemovableMedia = no;
    AlwaysOpen = no;
    Maximum Concurrent Jobs = 5
}

    Define a second Virtual autochanger

Autochanger {
    Name = FileChgr2
    Device = FileChgr2-Dev1, FileChgr2-Dev2
    Changer Command = ""
}

^G Aide      ^O Écrire   ^W Chercher ^K Couper    ^T Exécuter ^C Emplacement
^X Quitter   ^R Lire fich.^_ Remplacer ^U Coller    ^J Justifier ^_ Aller ligne
```

```
#Device {
# Name = FileChgr2-Dev1
# Media Type = File2
# Archive Device = /nonexistant/path/to/file/archive/dir
# LabelMedia = yes;           # lets Bacula label unlabeled media
# Random Access = Yes;
# AutomaticMount = yes;      # when device opened, read it
# RemovableMedia = no;
# AlwaysOpen = no;
# Maximum Concurrent Jobs = 5
#}
```

```
root@Bacula:~# bacula-sd -t
root@Bacula:~# systemctl restart bacula-sd
```

```
root@Bacula:~# ss -ltnp | grep bacula
LISTEN 0      50          0.0.0.0:9101      0.0.0.0:*        users:(("bacula-dir",
pid=2296,fd=4))
LISTEN 0      50          127.0.0.1:9102   0.0.0.0:*        users:(("bacula-fd",p
id=541,fd=3))
LISTEN 0      50          0.0.0.0:9103    0.0.0.0:*        users:(("bacula-sd",p
id=2421,fd=3))
```

sio@Bacula: ~

GNU nano 5.4 /etc/bacula/bconsole.conf

```
#
# Bacula User Agent (or Console) Configuration File
#
# Copyright (C) 2000-2020 Kern Sibbald
# License: BSD 2-Clause; see file LICENSE-FOSS
#

Director {
  Name = Bacula-dir
  DIRport = 9101
  address = localhost
  Password = "abcd"
}
```

[ 13 lignes écrites ]

^G Aide

^O Écrire

^W Chercher

^K Couper

^T Exécuter

^C Emplacement

^X Quitter

^R Lire fich.

^\_ Remplacer

^U Coller

^J Justifier

^\_ Aller ligne

```
root@Bacula:~# bconsole
Connecting to Director localhost:9101
1000 OK: 103 Bacula-dir Version: 9.6.7 (10 December 2020)
Enter a period to cancel a command.
*
```

```
*help label
```

Command	Description
=====	=====
label	Label a tape

```
Arguments:
```

```
storage=<storage> volume=<vol> pool=<pool> slot=<slot> drive=<nb> barcod  
es
```

```
When at a prompt, entering a period cancels the command.
```

```
*label
```

```
Automatically selected Catalog: MyCatalog
```

```
Using Catalog "MyCatalog"
```

```
The defined Storage resources are:
```

```
1: File1
```

```
2: File2
```

```
Select Storage resource (1-2): 1
```

```
Connecting to Storage daemon File1 at 192.168.4.1:9103 ...
```

```
Enter new Volume name: Vol1
```

```
Enter slot (0 or Enter for none): 0
```

```
Defined Pools:
```

```
1: Default
```

```
2: File
```

```
3: Scratch
```

```
Select the Pool (1-3): 2
```

```
Connecting to Storage daemon File1 at 192.168.4.1:9103 ...
```

```
Sending label command for Volume "Vol1" Slot 0 ...
```

```
3000 OK label. VolBytes=212 VolABytes=0 VolType=1 Volume="Vol1" Device="FileChgr  
1-Dev1" (/backup)
```

```
Catalog record for Volume "Vol1", Slot 0 successfully created.
```

```
Requesting to mount FileChgr1 ...
```

```
3906 File device ""FileChgr1-Dev1" (/backup)" is always mounted.
```

```
■
```