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Declaration

I certify that this report does not incorporate without acknowledgement, any material previously submitted for a degree or diploma in any university, and to the best of my knowledge and belief it does not contain any material previously published or written by another person, except where due reference is made in text.

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1. Nagios Monitoring Setup on CentOs and Fedora

```
[root@csa-server:~]# yum update
Loaded plugins: fastestmirror
Determining fastest mirrors
 * base: centos.mirror.net.in
 * extras: centos.mirror.net.in
 * updates: centos.mirror.net.in
base                                         | 3.6 kB  00:00:00
extras                                        | 2.9 kB  00:00:00
updates                                       | 2.9 kB  00:00:00
-
```

Figure 1.1: Update the CentOS Server

```
[root@csa-server:~]# yum install -y httpd httpd-tools php gcc glibc glibc-common gd gd-devel make net-snmp
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.mirror.net.in
 * extras: centos.mirror.net.in
 * updates: centos.mirror.net.in
```

Figure 1.2: Install httpd-tools, PHP, GCC Compiler

```
[root@csa-server:~]# useradd nagios
[root@csa-server:~]# groupadd nagcmd
[root@csa-server:~]# 

[root@csa-server:~]# usermod -aG nagcmd nagios
[root@csa-server:~]# usermod -aG nagcmd apache
[root@csa-server:~]#
```

Figure 1.3: Create Nagios User and Group and Add Nagios user and Apache user to the group.

```
[root@csa-server:~]# mkdir nagios
[root@csa-server:~]# cd nagios
[root@csa-server:~/nagios]# pwd
/root/nagios
[root@csa-server:~/nagios]#
```

Figure 1.4: Create a Directory

```
[root@csa-server:~/nagios]$ cd nagios
[root@csa-server:~/nagios]$ wget https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.1.tar.gz
--2024-04-22 00:44:15-- https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.1.tar.gz
Resolving assets.nagios.com (assets.nagios.com)... 45.79.49.120, 2600:3c00::f03c:92ff:fef7:45ce
Connecting to assets.nagios.com (assets.nagios.com)!45.79.49.120:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11540195 (11M) [application/x-gzip]
Saving to: 'nagios-4.5.1.tar.gz'

100%[=====] 11,540,195   627KB/s   in 27s

2024-04-22 00:44:43 (421 KB/s) - 'nagios-4.5.1.tar.gz' saved [11540195/11540195]

[root@csa-server:~/nagios]$ ls
nagios-4.5.1.tar.gz
[root@csa-server:~/nagios]$
```

Figure 1.5: Download Nagios 4.5.1

```
[root@csa-server:~/nagios]$ wget https://nagios-plugins.org/download/nagios-plugins-2.4.9.tar.gz
--2024-04-22 00:46:52-- https://nagios-plugins.org/download/nagios-plugins-2.4.9.tar.gz
Resolving nagios-plugins.org (nagios-plugins.org)... 45.56.123.251
Connecting to nagios-plugins.org (nagios-plugins.org)!45.56.123.251:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2754403 (2.6M) [application/x-gzip]
Saving to: 'nagios-plugins-2.4.9.tar.gz'

100%[=====] 2,754,403   167KB/s   in 16s

2024-04-22 00:47:10 (164 KB/s) - 'nagios-plugins-2.4.9.tar.gz' saved [2754403/2754403]

[root@csa-server:~/nagios]$ ls
nagios-4.5.1.tar.gz  nagios-plugins-2.4.9.tar.gz
[root@csa-server:~/nagios]$ _
```

Figure 1.6: Download Nagios Plugins 2.4.9

```
[root@csa-server:~/nagios]$ tar -xvf nagios-4.5.1.tar.gz
```

```
[root@csa-server:~/nagios]$ tar -xvf nagios-plugins-2.4.9.tar.gz _
```

Figure 1.7: Extract Downloaded Files

```

[root@csa-server:~/nagios]$ ls
nagios-4.5.1 nagios-4.5.1.tar.gz nagios-plugins-2.4.9 nagios-plugins-2.4.9.tar.gz
[root@csa-server:~/nagios]$ cd nagios-4.5.1
[root@csa-server:~/nagios/nagios-4.5.1]$ ls
aclocal.m4      configure      html      LICENSE      README.md      t-tap
autoconf-macros configure.ac  include   Makefile.in  sample-config update-version
base           contrib       indent-all.sh  make-tarball  startup      UPGRADING
cgi            CONTRIBUTING.md indent.sh    mkschedule  subst.in    worker
Changelog      debian       INSTALLING   module      t          xdata
common         docs        install-sh   nagios.spec  tap
config.guess   doxy.conf   LEGAL      nagios.sysconfig test
config.sub     functions   lib       pkginfo.in  THANKS
[root@csa-server:~/nagios/nagios-4.5.1]$ cd
[root@csa-server:~/]$ cd nagios
[root@csa-server:~/nagios]$ cd nagios-plugins-2.4.9
[root@csa-server:~/nagios/nagios-plugins-2.4.9]$ ls
ABOUT-NLS      CODING      gl      mkinstalldirs      pkg      REQUIREMENTS
acinclude.m4    config.h.in  INSTALL  nagios-plugins.spec  plugins SUPPORT
ACKNOWLEDGEMENTS config_test  LEGAL   nagios-plugins.spec.in  plugins-root  tap
aclocal.m4      config      lib      NEWS      plugins-scripts  test.pl.in
AUTHORS        config.ac   m4      NPTest.pm  po      THANKS
build-aux      COPYING     Makefile.am  NP-VERSION-GEM  README      tools
ChangeLog      FAQ        Makefile.in  perlmod      release
[root@csa-server:~/nagios/nagios-plugins-2.4.9]$
```

Figure 1.8: Contents of Nagios Folder

```

[root@csa-server:~] $ cd nagios
[root@csa-server:~/nagios] $ cd nagios-4.5.1
[root@csa-server:~/nagios/nagios-4.5.1] $ ./configure --with-command-group=nagcmd
checking for a BSD-compatible install... /bin/install -c
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether make sets $(MAKE)... yes

*** Configuration summary for nagios 4.5.1 2024-02-28 ***:

General Options:
-----
  Nagios executable: nagios
  Nagios user/group: nagios,nagios
  Command user/group: nagios,nagcmd
    Event Broker: yes
  Install ${prefix}: /usr/local/nagios
  Install ${includedir}: /usr/local/nagios/include/nagios
    Lock file: /run/nagios.lock
  Check result directory: /usr/local/nagios/var/spool/checkresults
    Init directory: /lib/systemd/system
  Apache conf.d directory: /etc/httpd/conf.d
    Mail program: /sbin/sendmail
    Host OS: linux-gnu
  IOBroker Method: epoll

Web Interface Options:
-----
  HTML URL: http://localhost/nagios/
  CGI URL: http://localhost/nagios/cgi-bin/
Traceroute (used by WAP):

```

Figure 1.9: Configure Nagios 4.5.1 and Configuration Summary

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make all
cd ./base && make
make[1]: Entering directory `/root/nagios/nagios-4.5.1/base'
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o nagios.o ./nagios.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o broker.o broker.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o nebmods.o nebmods.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o ../common/shared.o ../common/shared.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o query-handler.o query-handler.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o workers.o workers.c
gcc -Wall -I.. -I./lib -I./include -I./include -I.. -g -O2 -I/usr/include/krb5 -DHAVE_CON
FIG_H -DNSCORE -c -o checks.o checks.c
-
^C
```

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make install
```

Figure 1.10: install all the binaries with make all and make install commands

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make install-init
/bin/install -c -m 755 -d -o root -g root /lib/systemd/system
/bin/install -c -m 755 -o root -g root startup/default-service /lib/systemd/system/nagios.service
[root@csa-server:~/nagios/nagios-4.5.1]$
```

Figure 1.11: Install the init script for Nagios.

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make install-commandmode
/bin/install -c -m 775 -o nagios -g nagcmd -d /usr/local/nagios/var/rw
chmod g+s /usr/local/nagios/var/rw

*** External command directory configured ***

[root@csa-server:~/nagios/nagios-4.5.1]$ _
```

Figure 1.12: Install Commandmode.

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make install-config  
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc  
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc/objects  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/nagios.cfg /usr/local/nagios/etc/nagios.  
cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/cgi.cfg /usr/local/nagios/etc/cgi.cfg  
/bin/install -c -b -m 660 -o nagios -g nagios sample-config/resource.cfg /usr/local/nagios/etc/resou  
rce.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/templates.cfg /usr/local/  
nagios/etc/objects/templates.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/commands.cfg /usr/local/  
nagios/etc/objects/commands.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/contacts.cfg /usr/local/  
nagios/etc/objects/contacts.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/timeperiods.cfg /usr/loc  
al/nagios/etc/objects/timeperiods.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/  
nagios/etc/objects/localhost.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/windows.cfg /usr/local/n  
agios/etc/objects/windows.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/printer.cfg /usr/local/n  
agios/etc/objects/printer.cfg  
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/na  
gios/etc/objects/switch.cfg  
  
*** Config files installed ***
```

Figure 1.13: Install Sample Config Files

```
[root@csa-server:~/nagios/nagios-4.5.1]$ make install-webconf  
/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.conf  
if [ 0 -eq 1 ]; then \  
    ln -s /etc/httpd/conf.d/nagios.conf /etc/apache2/sites-enabled/nagios.conf; \  
fi  
  
*** Nagios/Apache conf file installed ***
```

Figure 1.14: configure Web Interface for Nagios

```
[root@csa-server:~/nagios/nagios-4.5.1]$ sudo vi /usr/local/nagios/etc/objects/contacts.cfg

# CONTACTS.CFG - SAMPLE CONTACT/CONTACTGROUP DEFINITIONS
#
#
# NOTES: This config file provides you with some example contact and contact
# group definitions that you can reference in host and service
# definitions.
#
# You don't need to keep these definitions in a separate file from your
# other object definitions. This has been done just to make things
# easier to understand.
#
#####
#####

#####
#
# CONTACTS
#
#####

# Just one contact defined by default - the Nagios admin (that's you)
# This contact definition inherits a lot of default values from the
# 'generic-contact' template which is defined elsewhere.

define contact {
    contact_name      nagiosadmin          ; Short name of user
    use               generic-contact       ; Inherit default values from generic-contact te
    mplate (defined above)
    alias             Nagios Admin         ; Full name of user
    email             IT22360328@my.sliit.lk ; <***** CHANGE THIS TO YOUR EMAIL ADDRESS *****
}
}
```

Figure 1.15: Customized Contacts Config

```
[root@csa-server:~/nagios/nagios-4.5.1]$ sudo htpasswd -s -c /usr/local/nagios/etc/htpasswd.users na
giosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[root@csa-server:~/nagios/nagios-4.5.1]$ _
```

Figure 1.16: Set the password for Nagios web login.

```
[root@csa-server:~/nagios]$ cd nagios-plugins-2.4.9
[root@csa-server:~/nagios-plugins-2.4.9]$ ./configure --with-nagios-user=nagios --with-nagios
-group=nagcmd
```

Figure 1.17: Configure the Nagios plugin.

```
[root@csa-server:~/nagios/nagios-plugins-2.4.9]$ make_
[output]
[root@csa-server:~/nagios/nagios-plugins-2.4.9]$ make install_
[output]
```

Figure 1.18: Make Nagios Plugins

```
[root@csa-server:~]${ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

Website: https://www.nagios.org
Reading configuration data...
  Read main config file okay...
  Read object config files okay...

Running pre-flight check on configuration data...

Checking objects...
  Checked 8 services.
  Checked 1 hosts.
  Checked 1 host groups.
  Checked 0 service groups.
  Checked 1 contacts.
  Checked 1 contact groups.
  Checked 24 commands.
  Checked 5 time periods.
  Checked 0 host escalations.
  Checked 0 service escalations.
Checking for circular paths...
  Checked 1 hosts
  Checked 0 service dependencies
  Checked 0 host dependencies
  Checked 5 timeperiods
Checking global event handlers...
Checking obsessive compulsive processor commands...
Checking misc settings...

Total Warnings: 0
Total Errors:  0

Things look okay - No serious problems were detected during the pre-flight check
```

Figure 1.19: Verify Nagios Configuration

```
[root@csa-server:~]$/ systemctl start nagios.service
[root@csa-server:~]$/ systemctl enable nagios.service
Created symlink from /etc/systemd/system/multi-user.target.wants/nagios.service to /usr/lib/systemd/
system/nagios.service.
[root@csa-server:~]$/ systemctl status nagios.service
● nagios.service - Nagios Core 4.5.1
   Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; vendor preset: disabled)
     Active: active (running) since Mon 2024-04-22 01:18:09 EDT; 20s ago
       Docs: https://www.nagios.org/documentation
 Main PID: 66552 (nagios)
    CGroup: /system.slice/nagios.service
        ├─66552 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
        ├─66553 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        ├─66554 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        ├─66555 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        ├─66556 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        ├─66557 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        ├─66558 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
        └─66559 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: qh: echo service query handler registered
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: qh: help for the query handler registered
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Successfully registered manager as @wp...ler
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...553
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...554
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...555
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...556
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...558
Apr 22 01:18:09 csa-server.csa.lk nagios[66552]: wproc: Registry request: name=Core Worker 665...557
Apr 22 01:18:11 csa-server.csa.lk nagios[66552]: Successfully launched command file worker wit...559
Hint: Some lines were ellipsized, use -l to show in full.
[root@csa-server:~]$ _
```

Figure 1.20: Status of Nagios Service

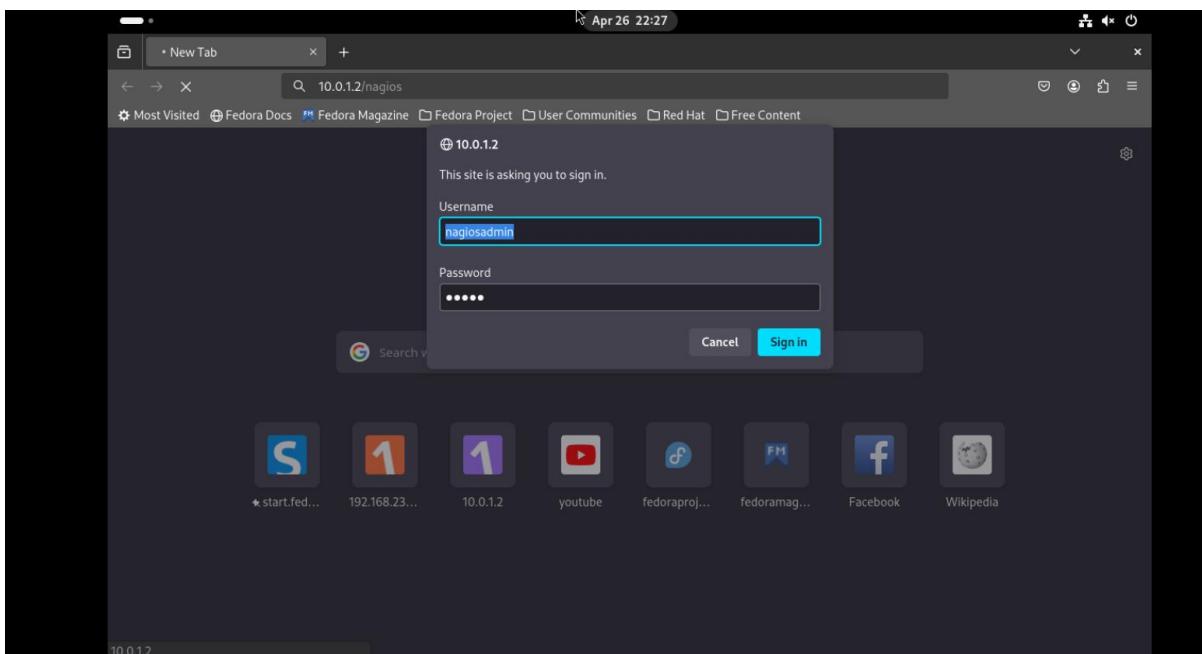


Figure 1.21: Login to the Nagios Web

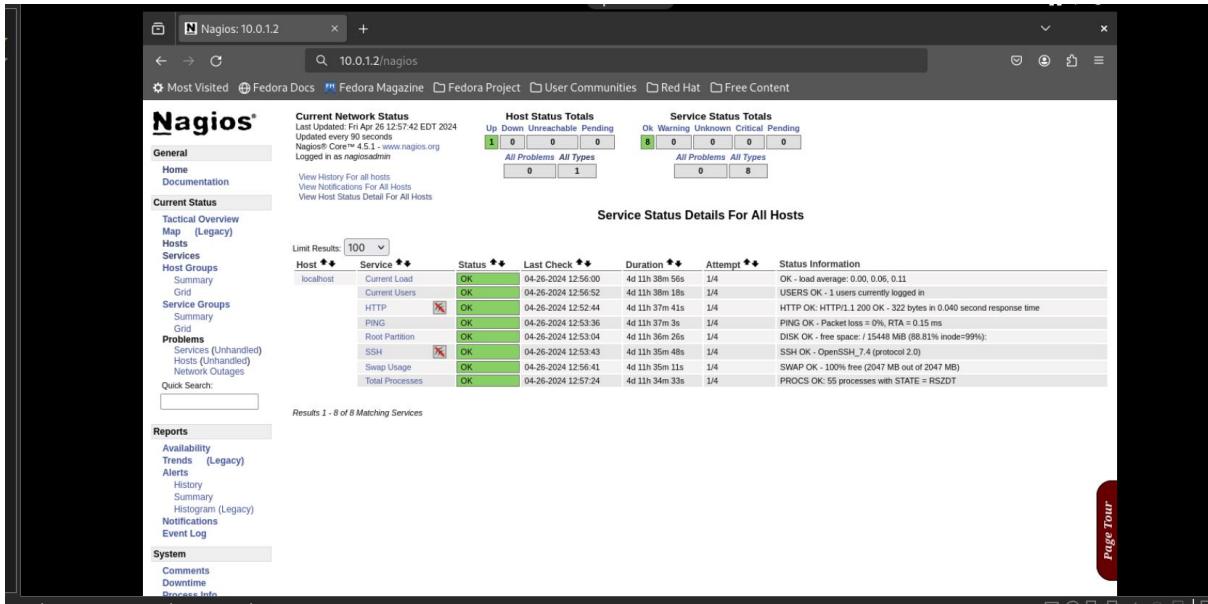


Figure 1.22: Monitoring Details for Nagios Server

Nagios Configuration on Fedora Client

```
chanika@csa-client ~ $ sudo yum install -y gcc glibc glibc-common gd gd-devel make net-snmp openssl-devel tar wget
[sudo] password for chanika:
Last metadata expiration check: 0:02:48 ago on Mon 22 Apr 2024 11:20:41 AM +0530.
Package glibc-2.38-16.fc39.x86_64 is already installed.
Package glibc-common-2.38-16.fc39.x86_64 is already installed.
Package gd-2.3.3-12.fc39.x86_64 is already installed.
Package tar-2:1.35-2.fc39.x86_64 is already installed.
Package wget-1.21.3-7.fc39.x86_64 is already installed.
Dependencies resolved.
=====
 Package                               Architecture     Version      Repository    Size
 =====
Installing:
  gcc                                  x86_64          13.2.1-7.fc39   updates        34 M
  gd-devel                             x86_64          2.3.3-12.fc39   fedora        36 k
  make                                 x86_64          1:4.4.1-2.fc39   fedora       589 k
  net-snmp                            x86_64          1:5.9.4-5.fc39   updates       307 k
  openssl-devel                        x86_64          1:3.1.1-4.fc39   fedora        2.6 M
Upgrading:
  cpp                                  x86_64          13.2.1-7.fc39   updates        11 M
  glibc                                x86_64          2.38-18.fc39    updates       2.2 M
  glibc-all-langpacks                  x86_64          2.38-18.fc39    updates        17 M
  glibc-common                         x86_64          2.38-18.fc39    updates       353 k
  glibc-gconv-extra                   x86_64          2.38-18.fc39    updates        1.6 M
```

Figure 1.23: Install httpd-tools, PHP, GCC Compiler

```

chanika@csa-client ~ $ sudo useradd nagios
[sudo] password for chanika:
chanika@csa-client ~ $ sudo passwd nagios
Changing password for user nagios.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
chanika@csa-client ~ $ id nagios
uid=1007(nagios) gid=1007(nagios) groups=1007(nagios)

```

Figure 1.24: Create Nagios User

```

root@csa-client:~# sudo dnf install xinetd
Copr repo for xinetd owned by brandfbb           1.5 kB/s | 3.3 kB     00:02
Dependencies resolved.
=====
Package          Arch    Version      Repository      Size
=====
Installing:
xinetd          x86_64  2:2.3.15-34.fc39  copr:copr.fedorainfracloud.org:brandfbb:xinetd 125 k
Transaction Summary
=====
Install 1 Package

Total download size: 125 k
Installed size: 264 k
Is this ok [y/N]: y
Downloading Packages:
xinetd-2.3.15-34.fc39.x86_64.rpm           161 kB/s | 125 kB     00:00
-----
Total                      159 kB/s | 125 kB     00:00

```

Figure 1.25: Install Xinetd Package

```

root@csa-client:~/nagios/nrpe-4.1.0/sample-config# vi nrpe.xinetd
root@csa-client:~/nagios/nrpe-4.1.0/sample-config# cat nrpe.xinetd
# default: on
# description: NRPE (Nagios Remote Plugin Executor)
service nrpe
{
    flags      = REUSE
    type       = UNLISTED
    port       = 5666
    socket_type = stream
    wait       = no
    user       = nagios
    group      = nagios
    server     = /usr/sbin/nrpe
    server_args = -c /etc/nagios/nrpe.cfg --inetd
    log_on_failure += USERID
    disable    = no
#    only_from   = 127.0.0.1
}
root@csa-client:~/nagios/nrpe-4.1.0/sample-config#

```

Figure 1.26: Create nrpe.xinetd config

```
root@csa-client:/etc/xinetd.d# vi nrpe.xinetd

# description: NRPE (Nagios Remote Plugin Executor)
service nrpe
{
    flags          = REUSE
    type           = UNLISTED
    port           = 5666
    socket_type   = stream
    wait           = no
    user           = nagios
    group          = nagios
    server         = /usr/sbin/nrpe
    server_args    = -c /etc/nagios/nrpe.cfg --inetd
    log_on_failure += USERID
    disable        = no
    only_from     = 10.0.1.2
}
```

Figure 1.27: Add Nagios Server IP address

```
root@csa-client:~# service xinetd restart
Redirecting to /bin/systemctl restart xinetd.service
root@csa-client:~#
```

Figure 1.28: Restart Xinetd Service

```
root@csa-client: # mkdir nagios
root@csa-client: # cd nagios
root@csa-client:~/nagios# wget https://nagios-plugins.org/download/nagios-plugins-2.4.9.tar.gz
--2024-04-22 11:39:15-- https://nagios-plugins.org/download/nagios-plugins-2.4.9.tar.gz
Resolving nagios-plugins.org (nagios-plugins.org)... 45.56.123.251
Connecting to nagios-plugins.org (nagios-plugins.org)|45.56.123.251|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2754403 (2.6M) [application/x-gzip]
Saving to: 'nagios-plugins-2.4.9.tar.gz'

nagios-plugins-2.4.9.tar.gz      100%[=====]  2.63M  432KB/s  in 8.1s

2024-04-22 11:39:26 (334 KB/s) - 'nagios-plugins-2.4.9.tar.gz' saved [2754403/2754403]

root@csa-client:~/nagios# ls
nagios-plugins-2.4.9.tar.gz
root@csa-client:~/nagios#
```

Figure 1.29: Create new directory & Download nagios plugins

```
root@csa-client:~/nagios# ls
nagios-plugins-2.4.9.tar.gz
root@csa-client:~/nagios# tar -xvf nagios-plugins-2.4.9.tar.gz
nagios-plugins-2.4.9/
nagios-plugins-2.4.9/build-aux/
nagios-plugins-2.4.9/build-aux/compile
nagios-plugins-2.4.9/build-aux/config.guess
nagios-plugins-2.4.9/build-aux/config.rpath
nagios-plugins-2.4.9/build-aux/config.sub
nagios-plugins-2.4.9/build-aux/install-sh
nagios-plugins-2.4.9/build-aux/ltmain.sh
nagios-plugins-2.4.9/build-aux/missing
nagios-plugins-2.4.9/build-aux/mkinstalldirs
```

Figure 1.30: Extract nagios tar

```
root@csa-client:~/nagios# cd nagios-plugins-2.4.9/
root@csa-client:~/nagios/nagios-plugins-2.4.9# ./configure
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /usr/bin/mkdir -p
checking for gawk... gawk
checking whether make sets $(MAKE)... yes
checking whether make supports nested variables... yes
checking whether to enable maintainer-specific portions of Makefiles... yes
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether gcc understands -c and -o together... yes
```

Figure 1.31: Configure the nagios plugins

```
root@csa-client:~# cd nagios
root@csa-client:~/nagios# cd nagios-plugins-2.4.9/
root@csa-client:~/nagios/nagios-plugins-2.4.9# make all
make  all-recursive
make[1]: Entering directory '/root/nagios/nagios-plugins-2.4.9'
Making all in gl
make[2]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make  all-recursive
make[3]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[4]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[4]: Nothing to be done for 'all-am'.
make[4]: Leaving directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[3]: Leaving directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[2]: Leaving directory '/root/nagios/nagios-plugins-2.4.9/gl'
Making all in tap
make[2]: Entering directory '/root/nagios/nagios-plugins-2.4.9/tap'
make[2]: Nothing to be done for 'all'.
make[2]: Leaving directory '/root/nagios/nagios-plugins-2.4.9/tap'
Making all in lib
make[2]: Entering directory '/root/nagios/nagios-plugins-2.4.9/lib'
```

Figure 1.32: Make Nagios Plugins

```
root@csa-client:~/nagios/nagios-plugins-2.4.9# make install
Making install in gl
make[1]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make  install-recursive
make[2]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[3]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
make[4]: Entering directory '/root/nagios/nagios-plugins-2.4.9/gl'
if test yes = no; then \
  case 'linux-gnu' in \
    darwin[56]*) \
      need_charset_alias=true ;; \
    darwin* | cygwin* | mingw* | pw32* | cegcc*) \
      need_charset_alias=false ;; \
  *) \
    need_charset_alias=true ;; \
  esac ; \
else \
  need_charset_alias=false ; \
fi : \
```

Figure 1.33: Make Install Nagios Plugins

```

root@csa-client:~# ls -l /usr/local/nagios
total 0
drwxr-xr-x. 1 root root 1352 Apr 22 11:56 libexec
drwxr-xr-x. 1 root root    12 Apr 22 11:56 share
root@csa-client:~# chown nagios:nagios /usr/local/nagios
root@csa-client:~# ls -l /usr/local/nagios
total 0
drwxr-xr-x. 1 root root 1352 Apr 22 11:56 libexec
drwxr-xr-x. 1 root root    12 Apr 22 11:56 share
root@csa-client:~# chown -R nagios:nagios /usr/local/nagios/libexec
root@csa-client:~# ls -l /usr/local/nagios
total 0
drwxr-xr-x. 1 nagios nagios 1352 Apr 22 11:56 libexec
drwxr-xr-x. 1 root   root    12 Apr 22 11:56 share

```

Figure 1.34: Change the libexec file Ownership

```

root@csa-client:~/nagios# wget https://github.com/NagiosEnterprises/nrpe/releases/download/nrpe-4.1.0/nrpe-4.1.0.tar.gz
--2024-04-22 12:02:58-- https://github.com/NagiosEnterprises/nrpe/releases/download/nrpe-4.1.0/nrpe-4.1.0.tar.gz
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.110.133, 185.199.109.133, 185.199.108.133
, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.110.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 528228 (516K) [application/octet-stream]
Saving to: 'nrpe-4.1.0.tar.gz'

nrpe-4.1.0.tar.gz      100%[=====] 515.85K  305KB/s    in 1.7s

2024-04-22 12:02:58 (305 KB/s) - 'nrpe-4.1.0.tar.gz' saved [528228/528228]

root@csa-client:~/nagios# ls
nagios-plugins-2.4.9  nagios-plugins-2.4.9.tar.gz  nrpe-4.1.0.tar.gz
root@csa-client:~/nagios#

```

Figure 1.35: Download NRPE Plugin

```

root@csa-client:~/nagios# tar -xvf nrpe-4.1.0.tar.gz
nrpe-4.1.0/
nrpe-4.1.0/.gitignore
nrpe-4.1.0/.travis.yml
nrpe-4.1.0/CHANGELOG.md
nrpe-4.1.0/CONTRIBUTING.md
nrpe-4.1.0/LEGAL
nrpe-4.1.0/LICENSE.md
nrpe-4.1.0/Makefile.in
  ./RELEASE_NOTES

```

Figure 1.36: Extract NRPE Plugin

```

root@cse-client:~/nagios/nrpe-4.1.0# ./configure
checking for a BSD-compatible install... /usr/bin/install -c
checking what the operating system is ... linux
checking what the distribution type is ... fedora
checking what init system is being used ... systemd
checking what inetc is being used ... systemd
checking for which paths to use ... default
checking for which init file to use ... default-service
checking for which inetc files to use ... default-socket
checking for gcc... gcc
checking whether the C compiler works... yes
[...]
*** Configuration summary for nrpe 4.1.0 2022-07-18 ***:

General Options:
-----
NRPE port:      5666
NRPE user:      nagios
NRPE group:     nagios
Nagios user:    nagios
Nagios group:   nagios

```

Figure 1.37: Configure NRPE Plugin

```

root@cse-client:~/nagios/nrpe-4.1.0# make install
cd ./src; make install
make[1]: Entering directory '/root/nagios/nrpe-4.1.0/src'
make install-plugin
make[2]: Entering directory '/root/nagios/nrpe-4.1.0/src'
/usr/bin/install -c -m 755 -d /usr/local/nagios/bin
/usr/bin/install -c -m 755 ../uninstall /usr/local/nagios/bin/nrpe-uninstall
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/libexec
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/libexec
/usr/bin/install -c -m 775 -o nagios -g nagios check_nrpe /usr/local/nagios/libexec
make[2]: Leaving directory '/root/nagios/nrpe-4.1.0/src'
make install-daemon
make[2]: Entering directory '/root/nagios/nrpe-4.1.0/src'
/usr/bin/install -c -m 755 -d /usr/local/nagios/bin
/usr/bin/install -c -m 755 ../uninstall /usr/local/nagios/bin/nrpe-uninstall
/usr/bin/install -c -m 755 nrpe /usr/local/nagios/bin
/usr/bin/install -c -m 755 -o nagios -g nagios -d /usr/local/nagios/var
/usr/bin/install -c -m 755 -d /usr/lib/tmpfiles.d
/usr/bin/install -c -m 644 ../startup/tmpfile.conf /usr/lib/tmpfiles.d/nrpe.conf
make[2]: Leaving directory '/root/nagios/nrpe-4.1.0/src'
make[1]: Leaving directory '/root/nagios/nrpe-4.1.0/src'

```

Figure 1.38: Make Install NRPE plugin

```

root@csa-client:~/nagios/nrpe-4.1.0# make install-plugin
cd ./src/; make install-plugin
make[1]: Entering directory '/root/nagios/nrpe-4.1.0/src'
/usr/bin/install -c -m 755 -d /usr/local/nagios/bin
/usr/bin/install -c -m 755 ../uninstall /usr/local/nagios/bin/nrpe-uninstall
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/libexec
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/libexec
/usr/bin/install -c -m 775 -o nagios -g nagios check_nrpe /usr/local/nagios/libexec
make[1]: Leaving directory '/root/nagios/nrpe-4.1.0/src'
root@csa-client:~/nagios/nrpe-4.1.0# make install-daemon
cd ./src/; make install-daemon
make[1]: Entering directory '/root/nagios/nrpe-4.1.0/src'
/usr/bin/install -c -m 755 -d /usr/local/nagios/bin
/usr/bin/install -c -m 755 ..uninstall /usr/local/nagios/bin/nrpe-uninstall
/usr/bin/install -c -m 755 nrpe /usr/local/nagios/bin
/usr/bin/install -c -m 755 -d /usr/lib/tmpfiles.d
/usr/bin/install -c -m 644 ../startup/tmpfile.conf /usr/lib/tmpfiles.d/nrpe.conf
make[1]: Leaving directory '/root/nagios/nrpe-4.1.0/src'
root@csa-client:~/nagios/nrpe-4.1.0# make install-config
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc
/usr/bin/install -c -m 644 -o nagios -g nagios sample-config/nrpe.cfg /usr/local/nagios/etc
root@csa-client:~/nagios/nrpe-4.1.0#

```

Figure 1.39: Make Install - plugin NRPE Plugin

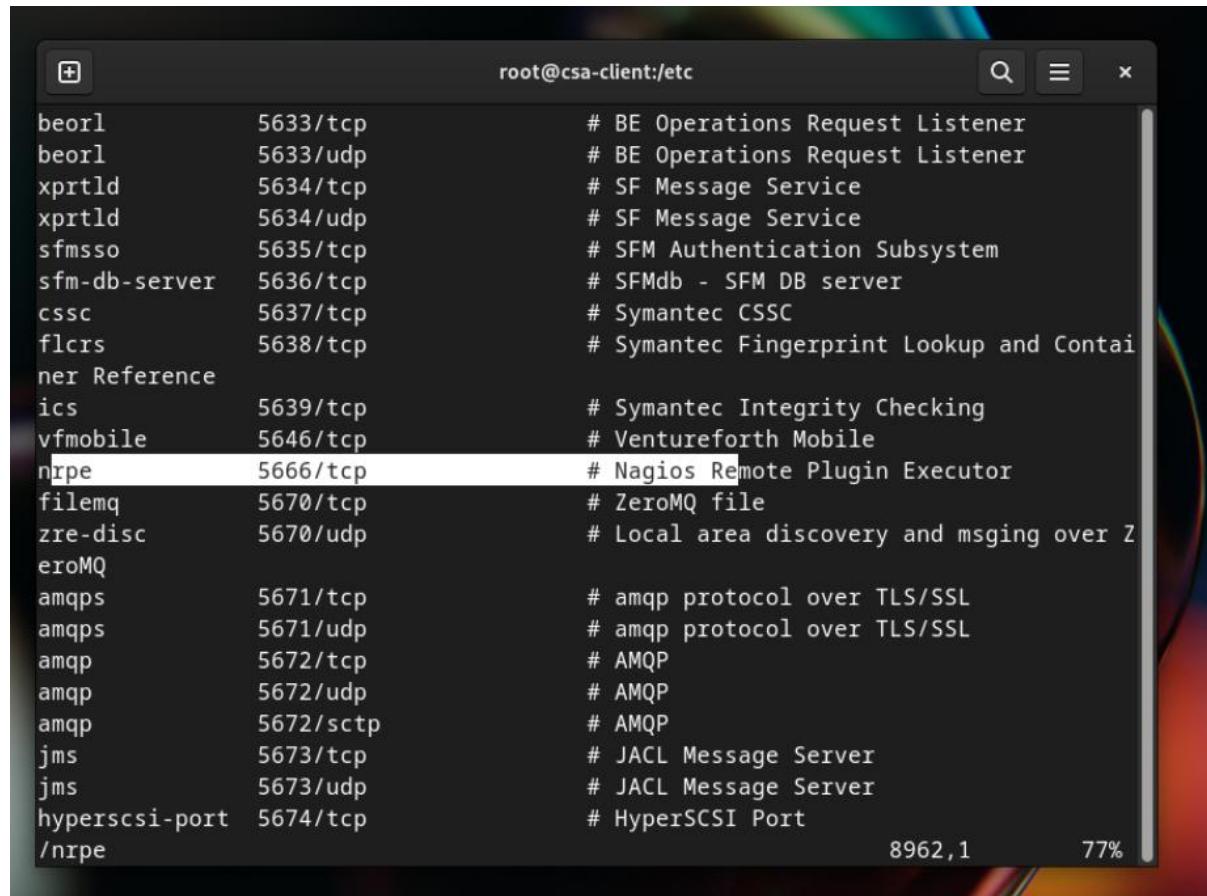


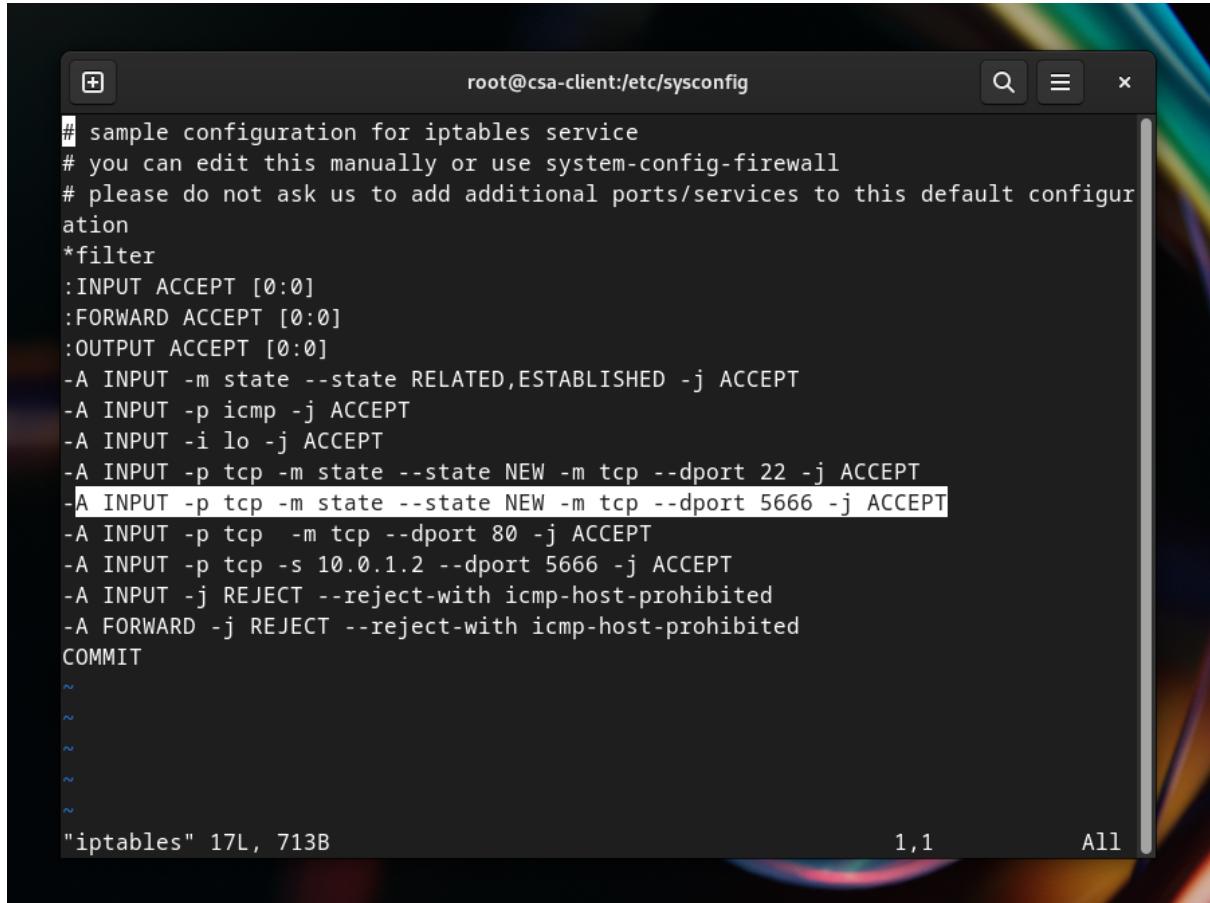
Figure 1.40: Port 5666 Active for NRPE

```
chanika@csa-client ~ $ systemctl enable nrpe
Created symlink /etc/systemd/system/multi-user.target.wants/nrpe.service → /usr/lib/systemd/system/nrpe.service.
chanika@csa-client ~ $ systemctl start nrpe
chanika@csa-client ~ $
```

Figure 1.41: Enable and Start NRPE Plugin

```
chanika@csa-client ~ $ /usr/local/nagios/libexec/check_nrpe -H 127.0.0.1
NRPE v4.1.0
chanika@csa-client ~ $
```

Figure 1.42: Verify the NRPE Plugin



The screenshot shows a terminal window titled "root@csa-client:/etc/sysconfig" with a dark background. It displays a portion of the iptables configuration file. The configuration includes rules for INPUT, FORWARD, and OUTPUT chains, primarily for TCP ports 22, 5666, and 80. The "ACCEPT" rule for port 5666 is highlighted with a yellow box. The terminal window has a standard Linux-style interface with tabs, a search bar, and a status bar at the bottom showing "iptables" 17L, 713B, line 1, column 1, and "All".

```
# sample configuration for iptables service
# you can edit this manually or use system-config-firewall
# please do not ask us to add additional ports/services to this default configuration
*filter
:INPUT ACCEPT [0:0]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [0:0]
-A INPUT -m state --state RELATED,ESTABLISHED -j ACCEPT
-A INPUT -p icmp -j ACCEPT
-A INPUT -i lo -j ACCEPT
-A INPUT -p tcp -m state --state NEW -m tcp --dport 22 -j ACCEPT
-A INPUT -p tcp -m state --state NEW -m tcp --dport 5666 -j ACCEPT
-A INPUT -p tcp -m tcp --dport 80 -j ACCEPT
-A INPUT -p tcp -s 10.0.1.2 --dport 5666 -j ACCEPT
-A INPUT -j REJECT --reject-with icmp-host-prohibited
-A FORWARD -j REJECT --reject-with icmp-host-prohibited
COMMIT
~
~
~
~
~
"iptables" 17L, 713B
```

Figure 1.43: Add TCP port 5666 and port 80 to iptables

```
#####
# LOCALHOST.CFG - SAMPLE OBJECT CONFIG FILE FOR MONITORING THIS MACHINE
#
#
# NOTE: This config file is intended to serve as an *extremely* simple
#       example of how you can create configuration entries to monitor
#       the local (Linux) machine.
#
#####

#####
# HOST DEFINITION
#
#####

# Define a host for the local machine

define host {

    use           linux-server          ; Name of host template to use
    ; This host definition will inherit all variable
    ;s that are defined
    ; in (or inherited by) the linux-server host tem
    plate definition.
        host_name      csa-client
        alias          fedora
        address        10.0.1.20
    }

#####

# "csaclient.cfg" 173L, 5033C
```

Figure 1.44: Create New Config file for the CSA-Client

```
# Define a service to check the number of currently running procs
# on the local machine. Warning if > 250 processes, critical if
# > 400 processes.

define service {

    use          generic-service      ; Name of service template to use
    host_name    csa-client
    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          generic-service      ; Name of service template to use
    host_name    csa-client
    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          generic-service      ; Name of service template to use
    host_name    csa-client
    service_description  Swap Usage
```

Figure 1.45: Change hostname in Service definitions

```

# 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

# 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
# extension) in a particular directory by using the cfg_dir
# directive as shown below:

#cfg_dir=/usr/local/nagios/etc/servers
#cfg_dir=/usr/local/nagios/etc/printers
#cfg_dir=/usr/local/nagios/etc/switches
#cfg_dir=/usr/local/nagios/etc/routers

cfg_file=/usr/local/nagios/etc/objects/csclient.cfg

# OBJECT CACHE FILE
# This option determines where object definitions are cached when
# Nagios starts/restarts. The CGIs read object definitions from
# this cache file (rather than looking at the object config files
# directly) in order to prevent inconsistencies that can occur
# when the config files are modified after Nagios starts.

object_cache_file=/usr/local/nagios/var/objects.cache

# PRE-CACHED OBJECT FILE
-- INSERT --

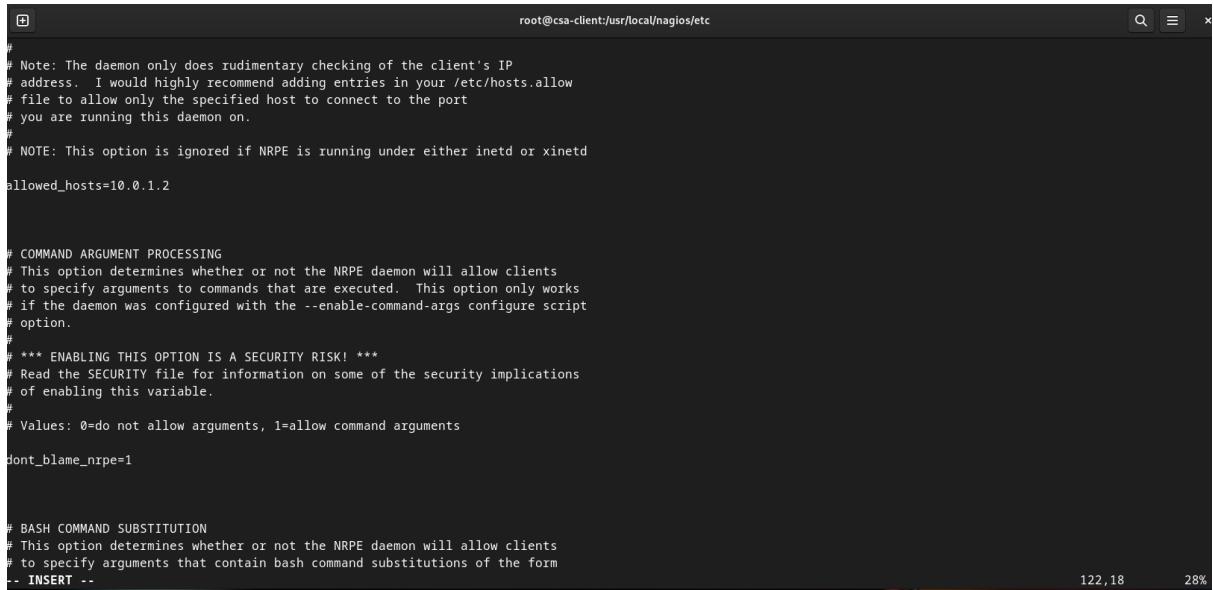
```

Figure 1.46: Add Client.cfg to Nagios.cfg

```
[root@csa-server:~]# systemctl restart nagios
[root@csa-server:~]# systemctl status nagios
● nagios.service - Nagios Core 4.5.1
   Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; vendor preset: disabled)
   Active: active (running) since Fri 2024-04-26 13:35:11 EDT; 12s ago
     Docs: https://www.nagios.org/documentation
   Process: 1737 ExecStopPost=/bin/rm -f /usr/local/nagios/var/rw/nagios.cmd (code=exited, status=0/SUCCESS)
   Process: 1734 ExecStop=/bin/kill -s TERM ${MAINPID} (code=exited, status=0/SUCCESS)
   Process: 1742 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Process: 1739 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
 Main PID: 1744 (nagios)
   CGroup: /system.slice/nagios.service
           ├─1744 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
           ├─1745 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           ├─1746 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           ├─1747 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           ├─1748 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           ├─1749 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           ├─1750 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
           └─1752 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: qh: echo service query handler registered
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: qh: help for the query handler registered
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Successfully registered manager as @proc...ller
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1746...746
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1747...747
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1745...745
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1748...748
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1749...749
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: uproc: Registry request: name=Core Worker 1750...750
Apr 26 13:35:11 csa-server.csa.lk nagios[1744]: Successfully launched command file worker with...752
Hint: Some lines were ellipsized, use -l to show in full.
[root@csa-server:~]
```

Figure 1.47: Restart Nagios Service



```
# Note: The daemon only does rudimentary checking of the client's IP
# address. I would highly recommend adding entries in your /etc/hosts.allow
# file to allow only the specified host to connect to the port
# you are running this daemon on.
#
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd
allowed_hosts=10.0.1.2

# COMMAND ARGUMENT PROCESSING
# This option determines whether or not the NRPE daemon will allow clients
# to specify arguments to commands that are executed. This option only works
# if the daemon was configured with the --enable-command-args configure script
# option.
#
# *** ENABLING THIS OPTION IS A SECURITY RISK! ***
# Read the SECURITY file for information on some of the security implications
# of enabling this variable.
#
# Values: 0=do not allow arguments, 1=allow command arguments
dont_blame_nrpe=1

# BASH COMMAND SUBSTITUTION
# This option determines whether or not the NRPE daemon will allow clients
# to specify arguments that contain bash command substitutions of the form
-- INSERT --
```

Figure 1.48: Allow Nagios Server IP on Clients NRPE

```
Server X | CSA Client X
[root@csa-server:/usr/local/nagios/libexec]$ wget https://raw.githubusercontent.com/sokecillo/nagios-check_cpu/master/check_cpu.sh
--2024-04-25 09:41:19-- https://raw.githubusercontent.com/sokecillo/nagios-check_cpu/master/check_cpu.sh
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.110.133, 185.199.109.133,
185.199.108.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|185.199.110.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1476 (1.4K) [text/plain]
Saving to: 'check_cpu.sh'

100%[=====] 1,476 --.-K/s in 0s

2024-04-25 09:41:20 (12.9 MB/s) - 'check_cpu.sh' saved [1476/1476]

[root@csa-server:/usr/local/nagios/libexec]$ chown nagios:nagios check_cpu.sh
[root@csa-server:/usr/local/nagios/libexec]$ chmod 755 check_cpu.sh
[root@csa-server:/usr/local/nagios/libexec]$
```

Figure 1.49: Download the plugin for check CPU

```
A Server X | CSA Client X
[root@csa-server:/usr/local/nagios/libexec]$ wget "https://exchange.nagios.org/components/com_mtree/attachment.php?link_id=332&cf_id=24" -O check_mem.txt
--2024-04-25 09:47:22-- https://exchange.nagios.org/components/com_mtree/attachment.php?link_id=332&cf_id=24
Resolving exchange.nagios.org (exchange.nagios.org)... 66.228.58.94, 2600:3c02::f03c:91ff:fedf:d653
Connecting to exchange.nagios.org (exchange.nagios.org)|66.228.58.94|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2393 (2.3K) [text/plain]
Saving to: 'check_mem.txt'

100%[=====] 2,393 --.-K/s in 0s

2024-04-25 09:47:23 (51.8 MB/s) - 'check_mem.txt' saved [2393/2393]

[root@csa-server:/usr/local/nagios/libexec]$ chown nagios:nagios check_mem.txt
[root@csa-server:/usr/local/nagios/libexec]$ chmod 755 check_mem.txt
[root@csa-server:/usr/local/nagios/libexec]$ ./check_mem.txt -w 10 -c 5
OK - 756 MB (77%) Free Memory
[root@csa-server:/usr/local/nagios/libexec]$
```

Figure 1.50: : Download the plugin for check Memory Usage

```

ver X | CSA Client X |
[root@csa-server:/usr/local/nagios/libexec]$ wget "https://exchange.nagios.org/components/com_mtree/attachment.php?link_id=5891&cf_id=29" -O check_disk_space
--2024-04-25 09:51:15-- https://exchange.nagios.org/components/com_mtree/attachment.php?link_id=5891&cf_id=29
Resolving exchange.nagios.org (exchange.nagios.org)... 66.228.58.94, 2600:3c02::f03c:91ff:fedf:d653
Connecting to exchange.nagios.org (exchange.nagios.org)|66.228.58.94|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 6175 (6.0K) [application/octet-stream]
Saving to: 'check_disk_space'

100%[=====] 6,175 --.- K/s   in 0.02s

2024-04-25 09:51:16 (261 KB/s) - 'check_disk_space' saved [6175/6175]

[root@csa-server:/usr/local/nagios/libexec]$ chown nagios:nagios check_disk
check_disk      check_disk_smb      check_disk_space
[root@csa-server:/usr/local/nagios/libexec]$ chown nagios:nagios check_disk_space
[root@csa-server:/usr/local/nagios/libexec]$ chmod 755 check_disk_s
check_disk_smb      check_disk_space
[root@csa-server:/usr/local/nagios/libexec]$ chmod 755 check_disk_space
[root@csa-server:/usr/local/nagios/libexec]$ ./check_disk_space -w 70 -c 90 -p /
OK: /: total 17.0GB, used 1.9GB (11.2%), free 15.1GB (88.8%) | 'used space'=2038231040B:12767251660;
16415037849:0:18238930944 'used space (pct.)'=11.2%;70:90:0:100
[root@csa-server:/usr/local/nagios/libexec]$

```

Figure 1.51: Download the plugin for check Disk Space

```

# Disable notifications for this service by default, as not all users may have HTTP enabled.

define service {
    use           generic-service          ; Name of service template to use
    host_name     csa-client
    service_description  HTTP
    check_command  check_http
    notifications_enabled  0
}

define service {
    use           generic-service
    host_name     csa-client
    service_description  Memory Usage
    check_command  check_mem!10!5
}

define service {
    use           generic-service
    host_name     csa-client
    service_description  Disk Space
    check_command  check_disk_space!70!90!/
}

define service {
    use           generic-service
    host_name     csa-client
    service_description  CPU Usage
    check_command  check_cpu!80!90!
}

-- INSERT --

```

Figure 1.52: Define new Services

```

A Server X | CSA Client X

define command {
    command_name check_udp
    command_line $USER1$/check_udp -H $HOSTADDRESS$ -p $ARG1$ $ARG2$
}

define command {
    command_name check_nt
    command_line $USER1$/check_nt -H $HOSTADDRESS$ -p 12489 -v $ARG1$ $ARG2$
}

define command {
    command_name check_cpu
    command_line $USER1$/check_cpu.sh -w $ARG1$ -c $ARG2$
}

define command {
    command_name check_mem
    command_line $USER1$/check_mem.txt -w $ARG1$ -c $ARG2$
}

define command {
    command_name check_disk_space
    command_line $USER1$/check_disk_space -w $ARG1$ -c $ARG2$ -p$ARG3$
}

#####
#
# SAMPLE PERFORMANCE DATA COMMANDS

```

Figure 1.53: Define new command for services

The screenshot shows the Nagios service status details for a host named 'csa-client'. The page includes navigation links for 'General', 'Current Status', 'Reports', and 'System'. The main content displays two tables: 'Host Status Totals' and 'Service Status Details For All Hosts'.

Host Status Totals:

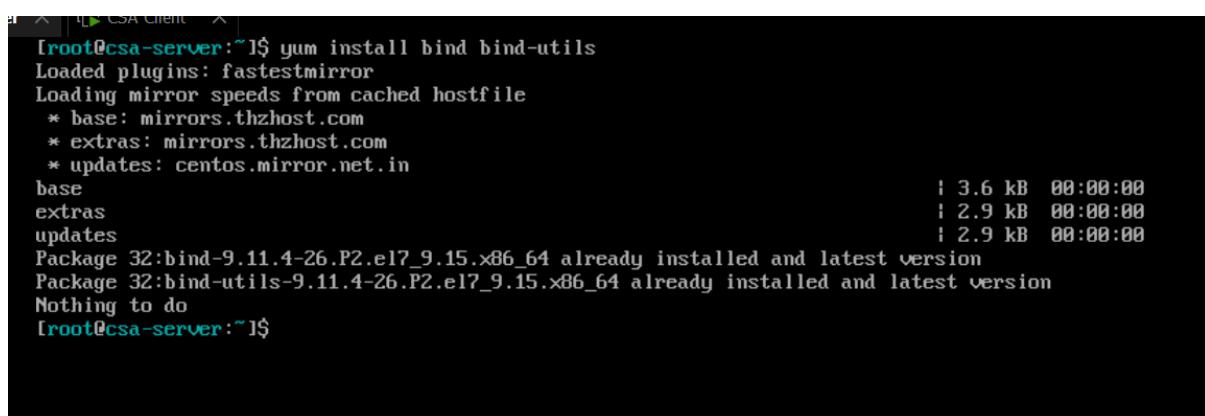
Up	Down	Unreachable	Pending
2	0	0	0

Service Status Details For All Hosts:

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	CPU Usage	OK	04-26-2024 13:56:02	0d 0h 20m 23s	1/3	OK - CPU Usage
	Current Load	OK	04-26-2024 13:46:54	0d 0h 19m 31s	1/3	OK - load average: 0.00, 0.01, 0.05
	Current Users	OK	04-26-2024 13:47:46	0d 0h 18m 39s	1/3	USERS OK - 1 users currently logged in
	Disk Space	OK	04-26-2024 13:48:30	0d 0h 17m 47s	1/3	OK : total 17.0GB, used 1.9GB (11.2%), free 15.1GB (88.8%)
	HTTP	OK	04-26-2024 13:49:30	0d 0h 16m 55s	1/3	HTTP OK. HTTP/1.1 200 OK - 265 bytes in 0.132 second response time
	Memory Usage	OK	04-26-2024 13:50:22	0d 0h 16m 3s	1/3	OK - 761 MB (77%) Free Memory
	Network Connectivity	OK	04-26-2024 13:51:13	0d 0h 15m 12s	1/3	PING OK - Packet loss = 0%, RTA = 1.95 ms
	SSH	OK	04-26-2024 13:52:05	0d 0h 15m 20s	1/3	SSH OK - OpenSSH_7.4 (protocol 2.0)
	Swap Usage	OK	04-26-2024 13:52:57	0d 0h 13m 28s	1/3	SWAP OK - 100% free (2047 MB out of 2047 MB)
	Total Processes	OK	04-26-2024 13:46:28	0d 0h 13m 57s	1/3	PROCS OK - 58 processes with STATE = RZDZT
Current Load	OK	04-26-2024 13:56:00	4d 12h 37m 39s	1/4	OK - load average: 0.00, 0.01, 0.05	
Current Users	OK	04-26-2024 13:51:52	4d 12h 37m 1s	1/4	USERS OK - 1 users currently logged in	
HTTP	OK	04-26-2024 13:52:44	4d 12h 36m 24s	1/4	HTTP OK. HTTP/1.1 200 OK - 322 bytes in 0.037 second response time	
PING	OK	04-26-2024 13:53:36	4d 12h 35m 46s	1/4	PING OK - Packet loss = 0%, RTA = 0.11 ms	
Root Partition	OK	04-26-2024 13:53:04	4d 12h 35m 9s	1/4	DISK OK - free space / 1548 MB (88.81% used=99%)	
SSH	OK	04-26-2024 13:53:43	4d 12h 34m 31s	1/4	SSH OK - OpenSSH_7.4 (protocol 2.0)	
Swap Usage	OK	04-26-2024 13:51:41	4d 12h 33m 54s	1/4	SWAP OK - 100% free (2047 MB out of 2047 MB)	
Total Processes	OK	04-26-2024 13:52:24	4d 12h 33m 16s	1/4	PROCS OK - 58 processes with STATE = RZDZT	

Figure 1.54: Service Status of Nagios Sever and Fedora Client

2. DNS Caching Server



```
[root@csa-server:~]# yum install bind bind-utils
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: mirrors.thzhost.com
 * extras: mirrors.thzhost.com
 * updates: centos.mirror.net.in
base                                         | 3.6 kB  00:00:00
extras                                        | 2.9 kB  00:00:00
updates                                       | 2.9 kB  00:00:00
Package 32:bind-9.11.4-26.P2.el7_9.15.x86_64 already installed and latest version
Package 32:bind-utils-9.11.4-26.P2.el7_9.15.x86_64 already installed and latest version
Nothing to do
[root@csa-server:~]#
```

Figure 2.1: Install Bind-utils Package for DNS

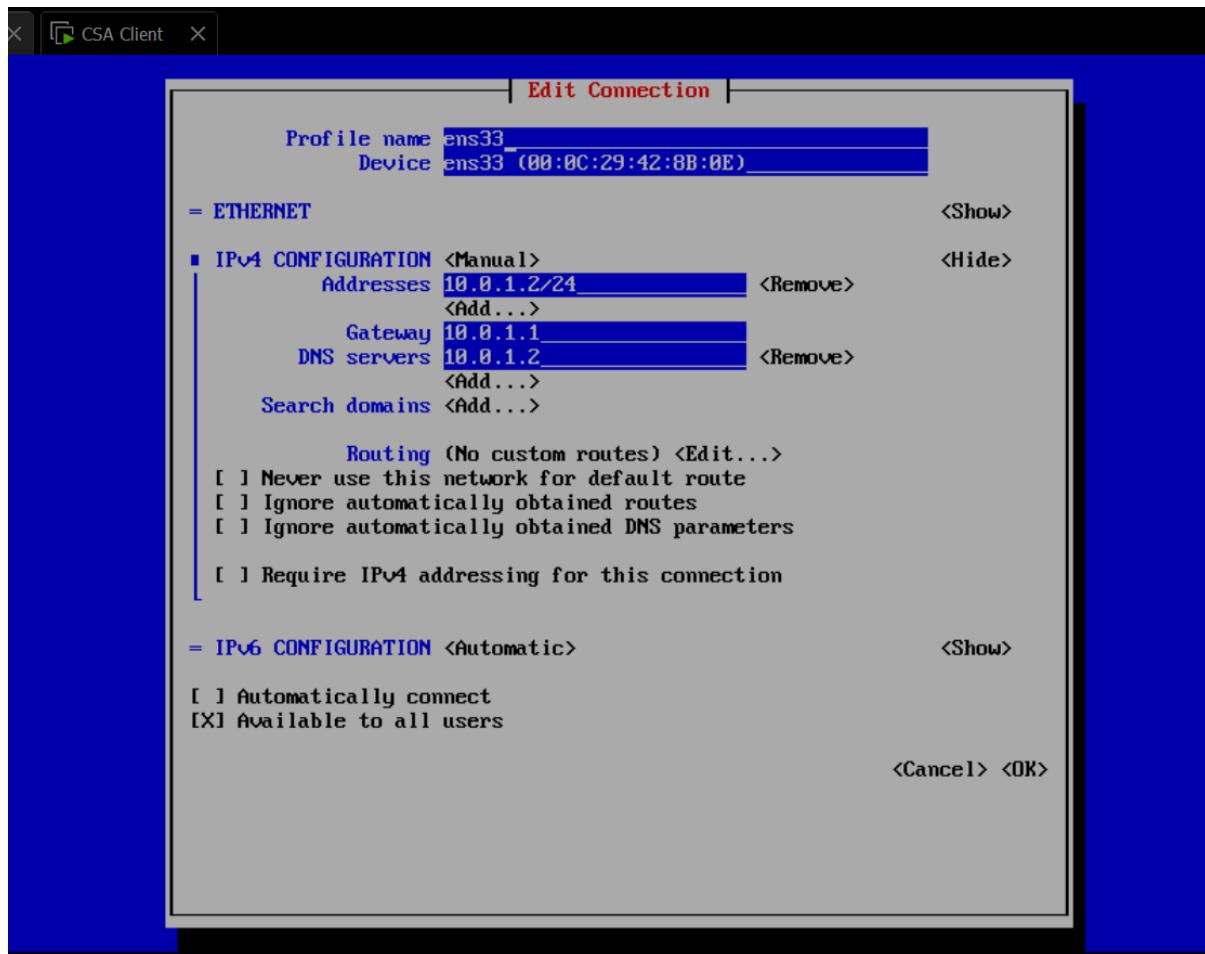


Figure 2.2: Configure the name server

```

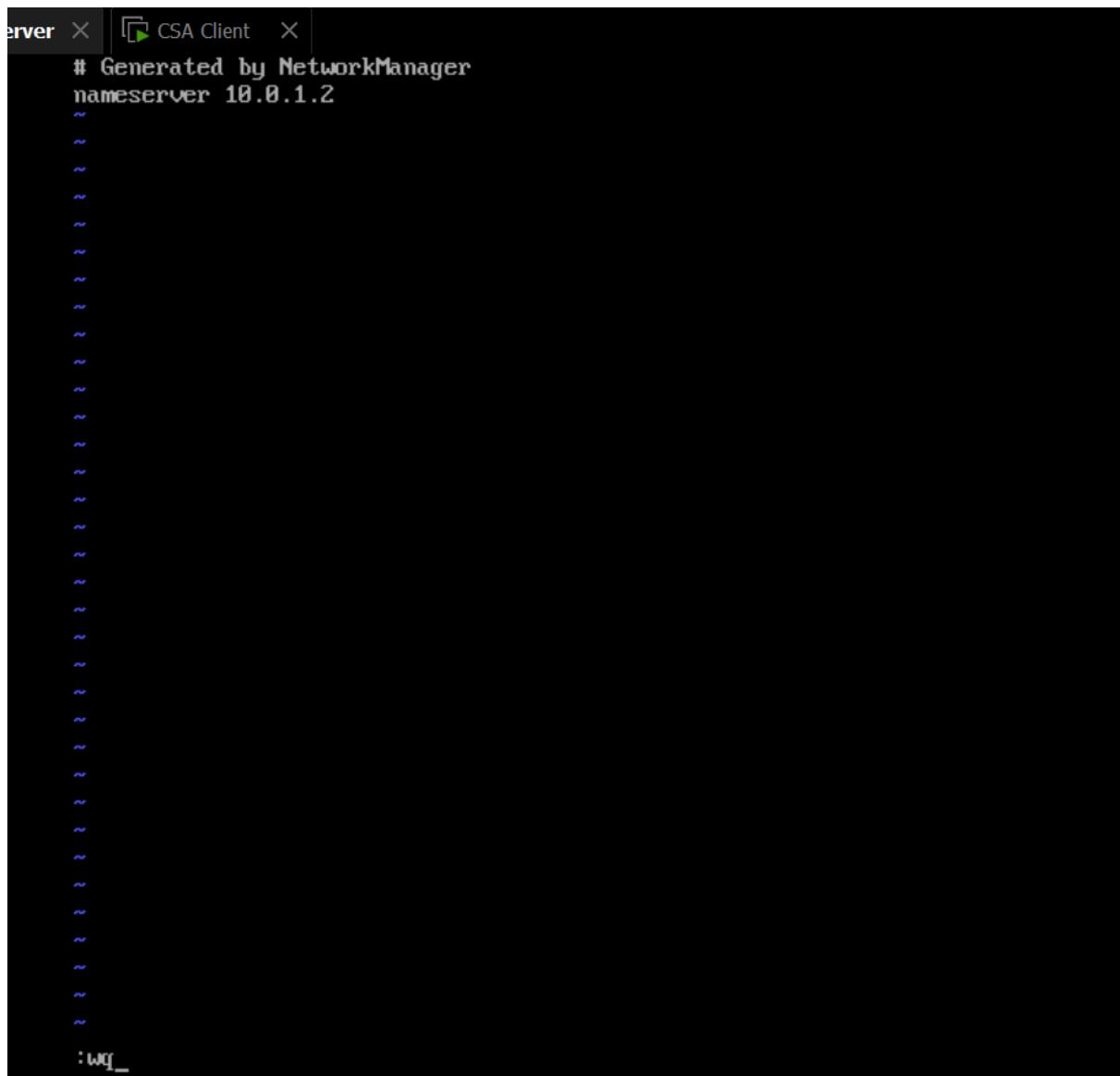
// named.conf
//
// Provided by Red Hat bind package to configure the ISC BIND named(8) DNS
// server as a caching only nameserver (as a localhost DNS resolver only).
//
// See /usr/share/doc/bind*/sample/ for example named configuration files.
//
// See the BIND Administrator's Reference Manual (ARM) for details about the
// configuration located in /usr/share/doc/bind-{version}/Bv9ARM.html

options {
    listen-on port 53 { 127.0.0.1: any; };
    listen-on-v6 port 53 { ::1: any; };
    directory      "/var/named";
    dump-file      "/var/named/data/cache_dump.db";
    statistics-file "/var/named/data/named_stats.txt";
    memstatistics-file "/var/named/data/named_mem_stats.txt";
    recursing-file  "/var/named/data/named.recurse";
    secroots-file   "/var/named/data/named.secroots";
    allow-query     { localhost: any; };
    allow-query-cache {localhost: any;};
    allow-transfer   { any; };

    /*
     * If you are building an AUTHORITATIVE DNS server, do NOT enable recursion.
     * If you are building a RECURSIVE (caching) DNS server, you need to enable
     * recursion.
     * If your recursive DNS server has a public IP address, you MUST enable access
     * control to limit queries to your legitimate users. Failing to do so will
     * cause your server to become part of large scale DNS amplification
     * attacks. Implementing BCP38 within your network would greatly
     * reduce such attack surface
     */
    recursion yes;
    dnssec-enable yes;
}

```

Figure 2.3: Edit the Named.conf



The screenshot shows a terminal window with two tabs: "server" and "CSA Client". The "server" tab is active and displays the contents of the /etc/resolv.conf file. The file contains the following text:

```
# Generated by NetworkManager
nameserver 10.0.1.2
```

Below the file content, there are approximately 30 blank lines, each ending with a tilde (~). At the bottom of the terminal window, the command ":wq_" is visible, indicating that the user is about to save and quit the editor.

Figure 2.4: Edit the resolv.conf file

```

[root@csa-server:~]# systemctl start named.service
[root@csa-server:~]# systemctl status named.service
● named.service - Berkeley Internet Name Domain (DNS)
   Loaded: loaded (/usr/lib/systemd/system/named.service; disabled; vendor preset: disabled)
     Active: active (running) since Fri 2024-04-26 14:10:34 EDT; 6s ago
       Process: 2399 ExecStart=/usr/sbin/named -u named -c ${NAMEDCONF} $OPTIONS (code=exited, status=0/SUCCESS)
      Main PID: 2401 (named)
        CGroup: /system.slice/named.service
                  └─2401 /usr/sbin/named -u named -c /etc/named.conf

Apr 26 14:10:35 csa-server.csa.lk named[2401]: network unreachable resolving '.DNSKEY/IN': 28...#53
Apr 26 14:10:35 csa-server.csa.lk named[2401]: network unreachable resolving '.DNSKEY/IN': 20...#53
Apr 26 14:10:35 csa-server.csa.lk named[2401]: network unreachable resolving '.DNSKEY/IN': 20...#53
Apr 26 14:10:35 csa-server.csa.lk named[2401]: network unreachable resolving '.DNSKEY/IN': 20...#53
Apr 26 14:10:35 csa-server.csa.lk named[2401]: managed-keys-zone: Key 20326 for zone . accepted
Apr 26 14:10:36 csa-server.csa.lk named[2401]: resolver priming query complete
Apr 26 14:10:36 csa-server.csa.lk named[2401]: checkhints: b.root-servers.net/A (170.247.170.2...nts
Apr 26 14:10:36 csa-server.csa.lk named[2401]: checkhints: b.root-servers.net/A (199.9.14.201)...nts
Apr 26 14:10:36 csa-server.csa.lk named[2401]: checkhints: b.root-servers.net/AAAA (2001:1b8:1...nts
Apr 26 14:10:36 csa-server.csa.lk named[2401]: checkhints: b.root-servers.net/AAAA (2001:500:2...nts
Hint: Some lines were ellipsized, use -l to show in full.
[root@csa-server:~]#

```

Figure 2.5: Restart the Named.service

```

[SA Server X] [CSA Client X]
com.          172800 IN    NS      k.gtld-servers.net.
com.          172800 IN    NS      m.gtld-servers.net.

;; ADDITIONAL SECTION:
e.gtld-servers.net. 172800 IN    A      192.12.94.30
b.gtld-servers.net. 172800 IN    A      192.33.14.30
a.gtld-servers.net. 172800 IN    A      192.5.6.30
d.gtld-servers.net. 172800 IN    A      192.31.80.30
i.gtld-servers.net. 172800 IN    A      192.43.172.30
f.gtld-servers.net. 172800 IN    A      192.35.51.30
j.gtld-servers.net. 172800 IN    A      192.48.79.30
k.gtld-servers.net. 172800 IN    A      192.52.178.30
c.gtld-servers.net. 172800 IN    A      192.26.92.30
g.gtld-servers.net. 172800 IN    A      192.42.93.30
h.gtld-servers.net. 172800 IN    A      192.54.112.30
l.gtld-servers.net. 172800 IN    A      192.41.162.30
m.gtld-servers.net. 172800 IN    A      192.55.83.30
e.gtld-servers.net. 172800 IN    AAAA  2001:502:1ca1::30
b.gtld-servers.net. 172800 IN    AAAA  2001:503:231d::2:30
a.gtld-servers.net. 172800 IN    AAAA  2001:503:a83e::2:30
d.gtld-servers.net. 172800 IN    AAAA  2001:500:856e::30
i.gtld-servers.net. 172800 IN    AAAA  2001:503:39c1::30
f.gtld-servers.net. 172800 IN    AAAA  2001:503:d414::30
j.gtld-servers.net. 172800 IN    AAAA  2001:502:7094::30
k.gtld-servers.net. 172800 IN    AAAA  2001:503:d2d::30
c.gtld-servers.net. 172800 IN    AAAA  2001:503:83eb::30
g.gtld-servers.net. 172800 IN    AAAA  2001:503:eea3::30
h.gtld-servers.net. 172800 IN    AAAA  2001:502:8cc::30
l.gtld-servers.net. 172800 IN    AAAA  2001:500:d937::30
m.gtld-servers.net. 172800 IN    AAAA  2001:501:b1f9::30

;; Query time: 1277 msec
;; SERVER: 10.0.1.2#53(10.0.1.2)
;; WHEN: Fri Apr 26 10:13:36 EDT 2024
;; MSG SIZE  rcvd: 851

```

Figure 2.6: Dig google.com

```
r X | CSA Client X |
com.          172770 IN      NS      m.gtld-servers.net.
com.          172770 IN      NS      k.gtld-servers.net.

:: ADDITIONAL SECTION:
e.gtld-servers.net. 172770 IN      A      192.12.94.30
b.gtld-servers.net. 172770 IN      A      192.33.14.30
a.gtld-servers.net. 172770 IN      A      192.5.6.30
d.gtld-servers.net. 172770 IN      A      192.31.80.30
i.gtld-servers.net. 172770 IN      A      192.43.172.30
f.gtld-servers.net. 172770 IN      A      192.35.51.30
j.gtld-servers.net. 172770 IN      A      192.48.79.30
k.gtld-servers.net. 172770 IN      A      192.52.178.30
c.gtld-servers.net. 172770 IN      A      192.26.92.30
g.gtld-servers.net. 172770 IN      A      192.42.93.30
h.gtld-servers.net. 172770 IN      A      192.54.112.30
l.gtld-servers.net. 172770 IN      A      192.41.162.30
m.gtld-servers.net. 172770 IN      A      192.55.83.30
e.gtld-servers.net. 172770 IN      AAAA   2001:502:1ca1::30
b.gtld-servers.net. 172770 IN      AAAA   2001:503:231d::2:30
a.gtld-servers.net. 172770 IN      AAAA   2001:503:a83e::2:30
d.gtld-servers.net. 172770 IN      AAAA   2001:500:856e::30
i.gtld-servers.net. 172770 IN      AAAA   2001:503:39c1::30
f.gtld-servers.net. 172770 IN      AAAA   2001:503:d414::30
j.gtld-servers.net. 172770 IN      AAAA   2001:502:7094::30
k.gtld-servers.net. 172770 IN      AAAA   2001:503:d2d::30
c.gtld-servers.net. 172770 IN      AAAA   2001:503:83eb::30
g.gtld-servers.net. 172770 IN      AAAA   2001:503:eea3::30
h.gtld-servers.net. 172770 IN      AAAA   2001:502:8cc::30
l.gtld-servers.net. 172770 IN      AAAA   2001:500:d937::30
m.gtld-servers.net. 172770 IN      AAAA   2001:501:b1f9::30

:: Query time: 0 msec
:: SERVER: 10.0.1.2#53(10.0.1.2)
:: WHEN: Fri Apr 26 10:14:06 EDT 2024
:: MSG SIZE rcvd: 851

[root@csa-server:~]$ _
```

Figure 2.7: Verify the caching Server

```
ven ~ | CSA Client ~ |
[root@csa-server:~]$ firewall-cmd --get-default-zone
public
[root@csa-server:~]$ firewall-cmd --zone=public --add-service=dns
success
[root@csa-server:~]$
```

Figure 2.8: Allow DNS through Firewall

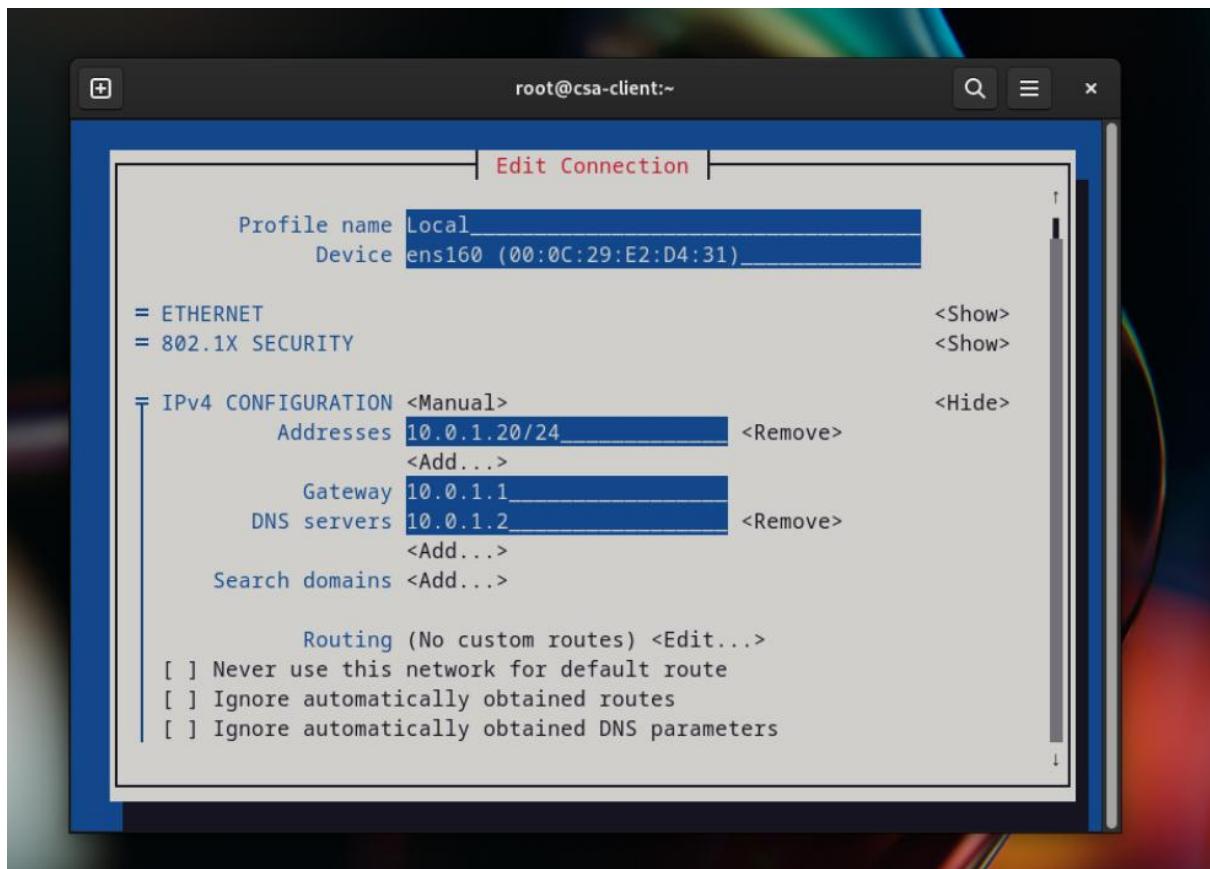
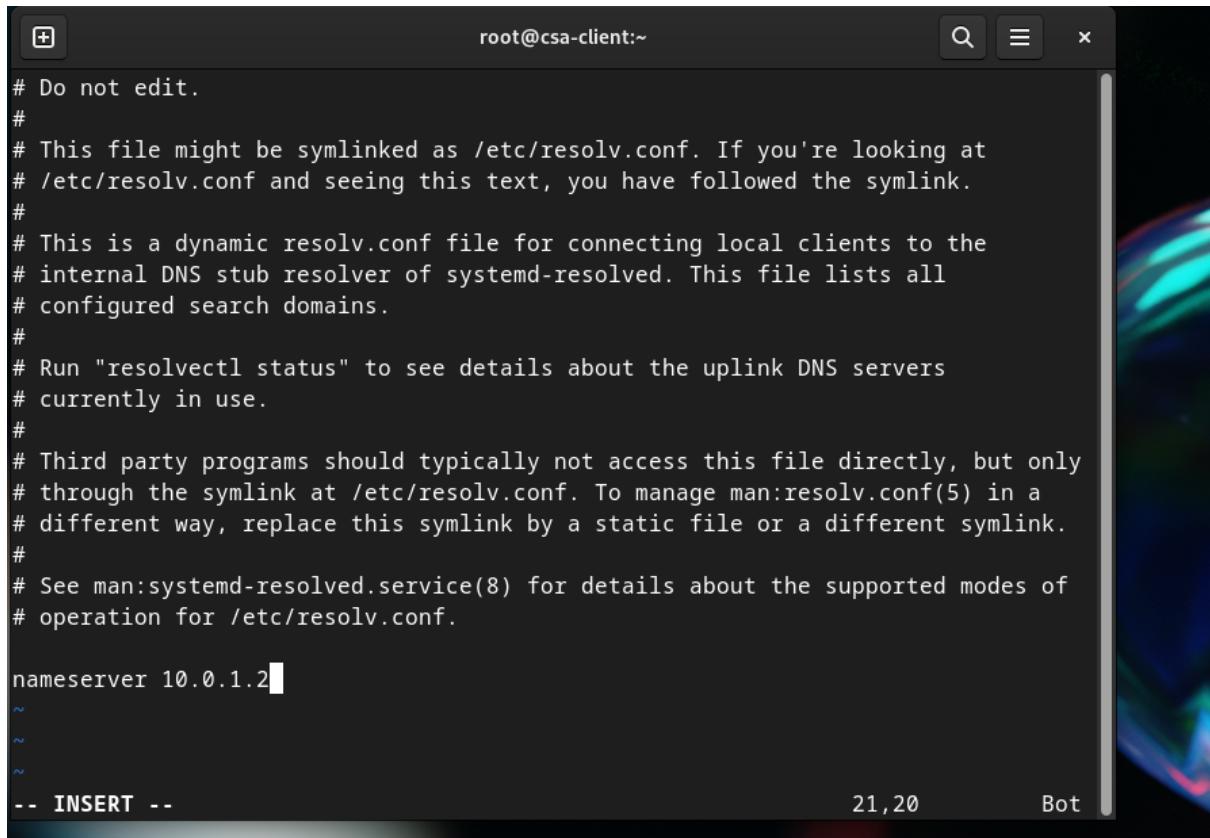
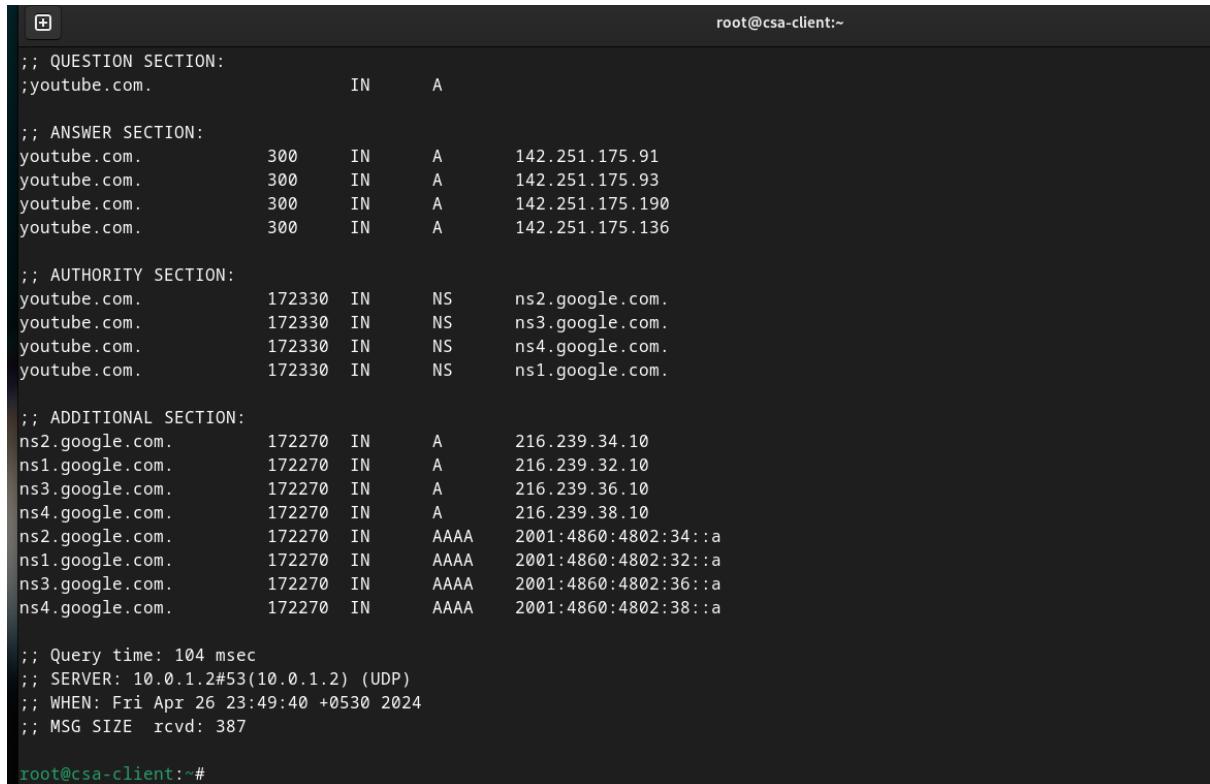


Figure 2.9: Configuring Fedora clients DNS IP



```
# Do not edit.  
#  
# This file might be symlinked as /etc/resolv.conf. If you're looking at  
# /etc/resolv.conf and seeing this text, you have followed the symlink.  
#  
# This is a dynamic resolv.conf file for connecting local clients to the  
# internal DNS stub resolver of systemd-resolved. This file lists all  
# configured search domains.  
#  
# Run "resolvectl status" to see details about the uplink DNS servers  
# currently in use.  
#  
# Third party programs should typically not access this file directly, but only  
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a  
# different way, replace this symlink by a static file or a different symlink.  
#  
# See man:systemd-resolved.service(8) for details about the supported modes of  
# operation for /etc/resolv.conf.  
  
nameserver 10.0.1.2  
~  
~  
~  
-- INSERT --
```

Figure 2.10: Edit the resolv.conf file on fedora client



```
;; QUESTION SECTION:  
;youtube.com. IN A  
;; ANSWER SECTION:  
youtube.com. 300 IN A 142.251.175.91  
youtube.com. 300 IN A 142.251.175.93  
youtube.com. 300 IN A 142.251.175.190  
youtube.com. 300 IN A 142.251.175.136  
;; AUTHORITY SECTION:  
youtube.com. 172330 IN NS ns2.google.com.  
youtube.com. 172330 IN NS ns3.google.com.  
youtube.com. 172330 IN NS ns4.google.com.  
youtube.com. 172330 IN NS ns1.google.com.  
;; ADDITIONAL SECTION:  
ns2.google.com. 172270 IN A 216.239.34.10  
ns1.google.com. 172270 IN A 216.239.32.10  
ns3.google.com. 172270 IN A 216.239.36.10  
ns4.google.com. 172270 IN A 216.239.38.10  
ns2.google.com. 172270 IN AAAA 2001:4860:4802:34::a  
ns1.google.com. 172270 IN AAAA 2001:4860:4802:32::a  
ns3.google.com. 172270 IN AAAA 2001:4860:4802:36::a  
ns4.google.com. 172270 IN AAAA 2001:4860:4802:38::a  
;; Query time: 104 msec  
;; SERVER: 10.0.1.2#53(10.0.1.2) (UDP)  
;; WHEN: Fri Apr 26 23:49:40 +0530 2024  
;; MSG SIZE rcvd: 387  
root@csa-client:~#
```

Figure 2.11: dig youtube.com

```
root@csa-client:~#
;; QUESTION SECTION:
:youtube.com.           IN      A

;; ANSWER SECTION:
youtube.com.        234    IN      A      142.251.175.136
youtube.com.        234    IN      A      142.251.175.190
youtube.com.        234    IN      A      142.251.175.93
youtube.com.        234    IN      A      142.251.175.91

;; AUTHORITY SECTION:
youtube.com.       172264  IN      NS     ns1.google.com.
youtube.com.       172264  IN      NS     ns2.google.com.
youtube.com.       172264  IN      NS     ns3.google.com.
youtube.com.       172264  IN      NS     ns4.google.com.

;; ADDITIONAL SECTION:
ns2.google.com.    172204  IN      A      216.239.34.10
ns1.google.com.    172204  IN      A      216.239.32.10
ns3.google.com.    172204  IN      A      216.239.36.10
ns4.google.com.    172204  IN      A      216.239.38.10
ns2.google.com.    172204  IN      AAAA   2001:4860:4802:34::a
ns1.google.com.    172204  IN      AAAA   2001:4860:4802:32::a
ns3.google.com.    172204  IN      AAAA   2001:4860:4802:36::a
ns4.google.com.    172204  IN      AAAA   2001:4860:4802:38::a

;; Query time: 6 msec
;; SERVER: 10.0.1.2#53(10.0.1.2) (UDP)
;; WHEN: Fri Apr 26 23:50:46 +0530 2024
;; MSG SIZE  rcvd: 387

root@csa-client: #
```

Figure 2.12: Verify the Name server

3. References

[1]

“Nagios Core Part 1: Server (CentOS) and Client (Linux & Windows) Setup Tutorial,” www.youtube.com. https://youtu.be/BtaSY1ALZzE?si=FQI3oJvstW4bvb_g (accessed Apr. 23, 2024).

[2]

“Nagios Core Part 2: Client (Linux & Windows) Setup Tutorial,” www.youtube.com. https://youtu.be/wKXVz_9GDbM?si=kbxSNPY6F3dMDvHT (accessed Apr. 23, 2024).