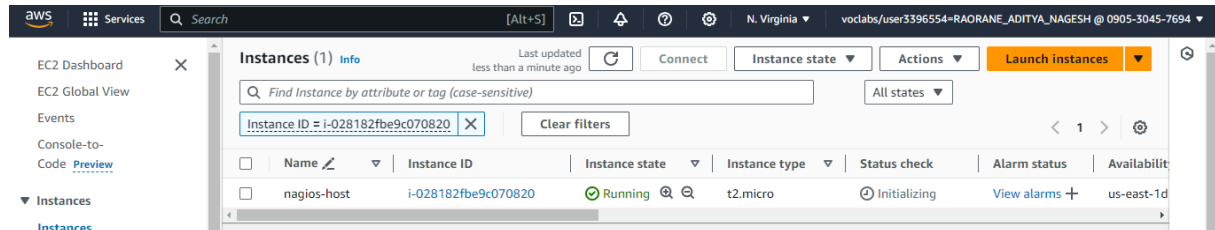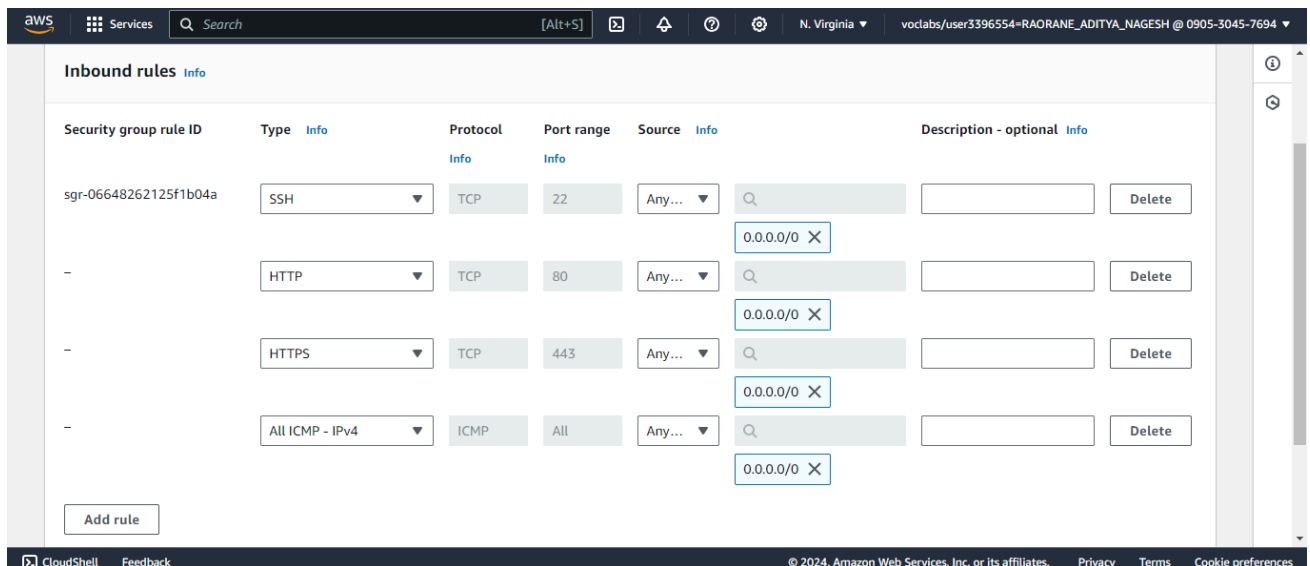**Aim:** To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

1. Create an Amazon Linux EC2 Instance in AWS and name it - nagios-host

2. Under Security Group, make sure HTTP, HTTPS, SSH, ICMP are open from everywhere.

1

3. SSH into Your EC2 instance.

4. Update the package indices and install the following packages

sudo yum update
sudo yum install httpd php
sudo yum install gcc glibc glibc-common
sudo yum install gd gd-devel

5. Create a new Nagios User with its password. You'll have to enter the password twice for confirmation. (adityaraorane)

sudo adduser -m nagios
sudo passwd nagios

6. Create a new user group

sudo groupadd nagcmd

7. Use these commands so that you don't have to use sudo for Apache and Nagios

sudo usermod -a -G nagcmd nagios
sudo usermod -a -G nagcmd apache

8. Create a new directory for Nagios downloads

mkdir ~/downloads
cd ~/downloads

```
[ec2-user@ip-172-31-84-15 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-84-15 ~]$ sudo usermod -aG nagcmd nagios
sudo usermod -aG nagcmd apache
[ec2-user@ip-172-31-84-15 ~]$ mkdir ~/downloads
cd ~/downloads
[ec2-user@ip-172-31-84-15 downloads]$ |
```

9. Use wget to download the source zip files.
wget https://go.nagios.org/l/975333/2024-09-17/6kqcx

wget https://nagios-plugins.org/download/nagios-plugins-2.4.11.tar.gz

```
[ec2-user@ip-172-31-84-15 downloads]$ wget http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
wget http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
--2024-09-23 08:33:27--  http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
Resolving prdownloads.sourceforge.net (prdownloads.sourceforge.net)... 204.68.111.105
Connecting to prdownloads.sourceforge.net (prdownloads.sourceforge.net)|204.68.111.105|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: http://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz [following]
--2024-09-23 08:33:27--  http://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 204.68.111.105
Reusing existing connection to prdownloads.sourceforge.net:80.
HTTP request sent, awaiting response... 302 Found
Location: http://pilotfiber.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1 [following]
--2024-09-23 08:33:27--  http://pilotfiber.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1
Resolving pilotfiber.dl.sourceforge.net (pilotfiber.dl.sourceforge.net)... 216.158.133.250
Connecting to pilotfiber.dl.sourceforge.net (pilotfiber.dl.sourceforge.net)|216.158.133.250|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1805059 (1.7M) [application/x-gzip]
Saving to: 'nagios-4.0.8.tar.gz'

nagios-4.0.8.tar.gz          100%[===================================================================>]   1.72M  10.8MB/s    in 0.2s

2024-09-23 08:33:28 (10.8 MB/s) - 'nagios-4.0.8.tar.gz' saved [1805059/1805059]

--2024-09-23 08:33:28--  http://nagios-plugins.org/download/nagios-plugins-2.0.3.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|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2659772 (2.5M) [application/x-gzip]
Saving to: 'nagios-plugins-2.0.3.tar.gz'

nagios-plugins-2.0.3.tar.gz  100%[===================================================================>]   2.54M  8.81MB/s    in 0.3s

2024-09-23 08:33:28 (8.81 MB/s) - 'nagios-plugins-2.0.3.tar.gz' saved [2659772/2659772]

[ec2-user@ip-172-31-84-15 downloads]$ |
```

10. Use tar to unzip and change to that directory.

    tar zxvf nagios-4.5.5.tar.gz

    cd nagios-4.5.5

```
Command Prompt                    ×    +    ⌄

[ec2-user@ip-172-31-80-195 downloads]$ cd nagios-4.5.5
[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ ./configure --with-command-group=nagcmd
checking for a BSD-compatible install... /usr/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 the compiler supports GNU C... yes
checking whether gcc accepts -g... yes
checking for gcc option to enable C11 features... none needed
checking whether make sets $(MAKE)... yes
checking whether ln -s works... yes
checking for strip... /usr/bin/strip
checking for sys/wait.h that is POSIX.1 compatible... yes
checking for stdio.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for strings.h... yes
checking for sys/stat.h... yes
checking for sys/types.h... yes
checking for unistd.h... yes
checking for arpa/inet.h... yes
checking for ctype.h... yes
checking for dirent.h... yes
checking for errno.h... yes
checking for fcntl.h... yes
checking for getopt.h... yes
checking for grp.h... yes
checking for libgen.h... yes
checking for limits.h... yes
checking for math.h... yes
checking for netdb.h... yes
checking for netinet/in.h... yes
checking for pwd.h... yes
checking for regex.h... yes
checking for signal.h... yes
checking for socket.h... no
checking for stdarg.h... yes
checking for string.h... (cached) yes
checking for strings.h... (cached) yes
```

```
[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ sudo yum install openssl-devel
Last metadata expiration check: 0:10:42 ago on Fri Sep 27 11:19:57 2024.
Dependencies resolved.
=================================================================================================================
 Package                    Architecture        Version                        Repository            Size
=================================================================================================================
Installing:
 openssl-devel              x86_64              1:3.0.8-1.amzn2023.0.14        amazonlinux           3.0 M

Transaction Summary
=================================================================================================================
Install  1 Package

Total download size: 3.0 M
Installed size: 4.7 M
Is this ok [y/N]: y
Downloading Packages:
openssl-devel-3.0.8-1.amzn2023.0.14.x86_64.rpm                                   14 MB/s | 3.0 MB    00:00
-----------------------------------------------------------------------------------------------------------------
Total                                                                            11 MB/s | 3.0 MB    00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                                                      1/1
  Installing       : openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64                                         1/1
  Running scriptlet: openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64                                         1/1
  Verifying        : openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64                                         1/1

Installed:
  openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64

Complete!
```

11. Run the configuration script with the same group name you previously created.

./configure --with-command-group=nagcmd

12. Compile the source code.
make all

13. Install binaries, init script and sample config files. Lastly, set permissions on the external command directory.
    sudo make install
    sudo make install-init
    sudo make install-config
    sudo make install-commandmode

```
[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ sudo make install
sudo make install-init
sudo make install-config
sudo make install-commandmode
cd ./base && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/base'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagios /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagiostats /usr/local/nagios/bin
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/base'
cd ./cgi && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
make install-basic
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/sbin
for file in *.cgi; do \
        /usr/bin/install -c -s -m 775 -o nagios -g nagios $file /usr/local/nagios/sbin; \
done
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
cd ./html && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/html'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/media
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/stylesheets
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/contexthelp
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/docs
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/docs/images
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/js
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/images
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/images/logos
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/includes
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/ssi
/usr/bin/install -c -m 664 -o nagios -g nagios ./robots.txt /usr/local/nagios/share
/usr/bin/install -c -m 664 -o nagios -g nagios ./jsonquery.html /usr/local/nagios/share
rm -f /usr/local/nagios/share/index.html
rm -f /usr/local/nagios/share/main.html
rm -f /usr/local/nagios/share/side.html
rm -f /usr/local/nagios/share/map.html
rm -f /usr/local/nagios/share/rss-*
rm -f /usr/local/nagios/share/graph-header.html
rm -f /usr/local/nagios/share/histogram.html
rm -f /usr/local/nagios/share/histogram-form.html
rm -f /usr/local/nagios/share/histogram-graph.html
rm -f /usr/local/nagios/share/histogram-links.html
```

14. Configure the web interface.
    sudo make install-webconf

```
[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ sudo make install-webconf
/usr/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 ***
```
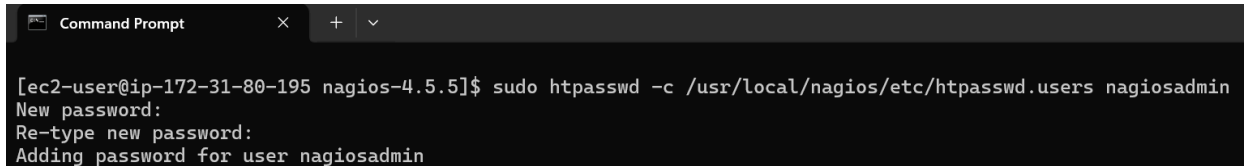
15. Create a nagiosadmin account for nagios login along with password. You'll have to specify the password twice. (adityaraorane)
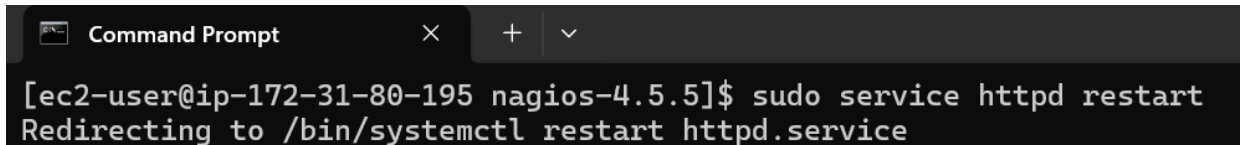
sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

```
Command Prompt          ×    +  ∨

[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
```

16. Restart Apache

sudo service httpd restart

```
Command Prompt          ×    +  ∨

[ec2-user@ip-172-31-80-195 nagios-4.5.5]$ sudo service httpd restart
Redirecting to /bin/systemctl restart httpd.service
```
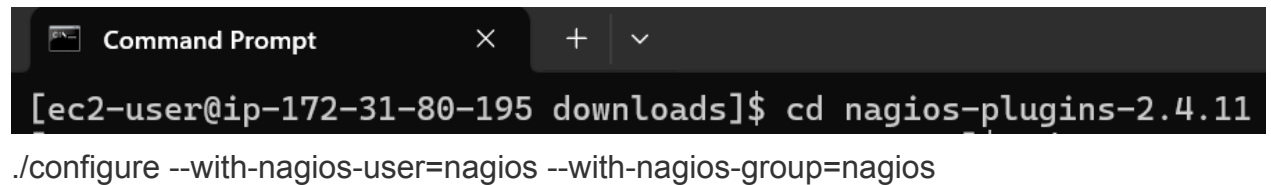
17. Go back to the downloads folder and unzip the plugins zip file.

cd ~/downloads
tar zxvf nagios-plugins-2.0.3.tar.gz
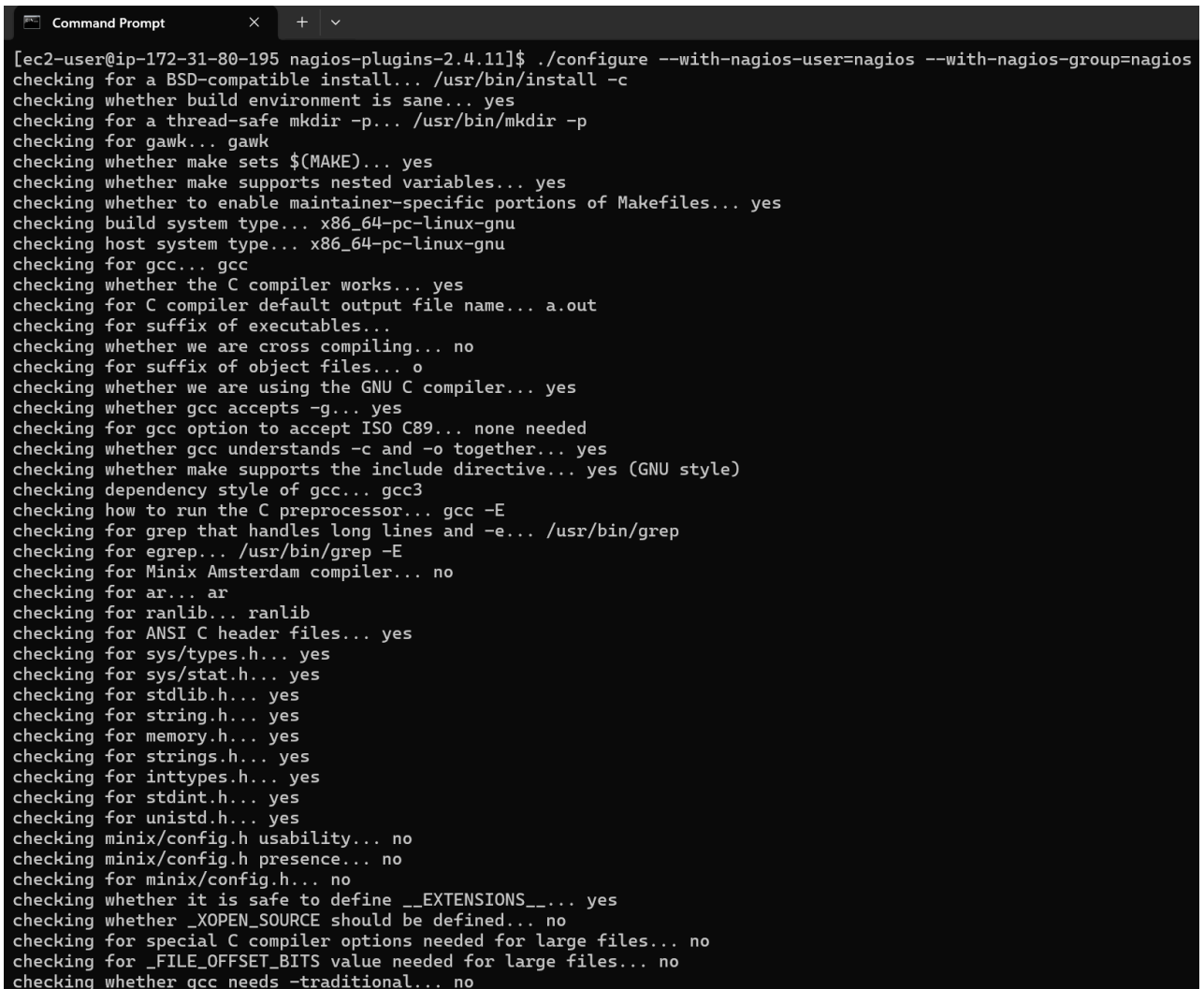
```
Command Prompt                    ×    +    ∨

[ec2-user@ip-172-31-80-195 downloads]$ ls
6kqcx   nagios-4.5.5   nagios-plugins-2.4.11.tar.gz
[ec2-user@ip-172-31-80-195 downloads]$ tar zxvf nagios-plugins-2.4.11.tar.gz
nagios-plugins-2.4.11/
nagios-plugins-2.4.11/build-aux/
nagios-plugins-2.4.11/build-aux/compile
nagios-plugins-2.4.11/build-aux/config.guess
nagios-plugins-2.4.11/build-aux/config.rpath
nagios-plugins-2.4.11/build-aux/config.sub
nagios-plugins-2.4.11/build-aux/install-sh
nagios-plugins-2.4.11/build-aux/ltmain.sh
nagios-plugins-2.4.11/build-aux/missing
nagios-plugins-2.4.11/build-aux/mkinstalldirs
nagios-plugins-2.4.11/build-aux/depcomp
nagios-plugins-2.4.11/build-aux/snippet/
nagios-plugins-2.4.11/build-aux/snippet/_Noreturn.h
nagios-plugins-2.4.11/build-aux/snippet/arg-nonnull.h
nagios-plugins-2.4.11/build-aux/snippet/c++defs.h
nagios-plugins-2.4.11/build-aux/snippet/warn-on-use.h
nagios-plugins-2.4.11/build-aux/test-driver
nagios-plugins-2.4.11/config_test/
nagios-plugins-2.4.11/config_test/Makefile
nagios-plugins-2.4.11/config_test/run_tests
nagios-plugins-2.4.11/config_test/child_test.c
nagios-plugins-2.4.11/gl/
nagios-plugins-2.4.11/gl/m4/
nagios-plugins-2.4.11/gl/m4/00gnulib.m4
nagios-plugins-2.4.11/gl/m4/absolute-header.m4
nagios-plugins-2.4.11/gl/m4/alloca.m4
nagios-plugins-2.4.11/gl/m4/arpa_inet_h.m4
nagios-plugins-2.4.11/gl/m4/base64.m4
nagios-plugins-2.4.11/gl/m4/btowc.m4
nagios-plugins-2.4.11/gl/m4/codeset.m4
nagios-plugins-2.4.11/gl/m4/configmake.m4
nagios-plugins-2.4.11/gl/m4/dirname.m4
nagios-plugins-2.4.11/gl/m4/double-slash-root.m4
nagios-plugins-2.4.11/gl/m4/eealloc.m4
nagios-plugins-2.4.11/gl/m4/environ.m4
nagios-plugins-2.4.11/gl/m4/errno_h.m4
nagios-plugins-2.4.11/gl/m4/error.m4
nagios-plugins-2.4.11/gl/m4/exponentd.m4
nagios-plugins-2.4.11/gl/m4/extensions.m4
nagios-plugins-2.4.11/gl/m4/extern-inline.m4
nagios-plugins-2.4.11/gl/m4/fcntl-o.m4
nagios-plugins-2.4.11/gl/m4/float_h.m4
nagios-plugins-2.4.11/gl/m4/floorf.m4
```

18. Compile and install plugins

cd nagios-plugins-2.0.3

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

make

```
[ec2-user@ip-172-31-80-195 nagios-plugins-2.4.11]$ ./configure --with-nagios-user=nagios --with-nagios-group=nagios
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
checking whether make supports the include directive... yes (GNU style)
checking dependency style of gcc... gcc3
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for Minix Amsterdam compiler... no
checking for ar... ar
checking for ranlib... ranlib
checking for ANSI C header files... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for memory.h... yes
checking for strings.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for unistd.h... yes
checking minix/config.h usability... no
checking minix/config.h presence... no
checking for minix/config.h... no
checking whether it is safe to define __EXTENSIONS__... yes
checking whether _XOPEN_SOURCE should be defined... no
checking for special C compiler options needed for large files... no
checking for _FILE_OFFSET_BITS value needed for large files... no
checking whether gcc needs -traditional... no
```

sudo make install

19. Start Nagios

Add Nagios to the list of system services

sudo chkconfig --add nagios
sudo chkconfig nagios on

Verify the sample configuration files

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

sudo service nagios start

20. Check the status of Nagios

sudo systemctl status nagios

21. Go back to EC2 Console and copy the Public IP address of this instance. Open up your browser and look for **http://<your_public_ip_address>/nagios .**

http://3.90.61.81/nagios
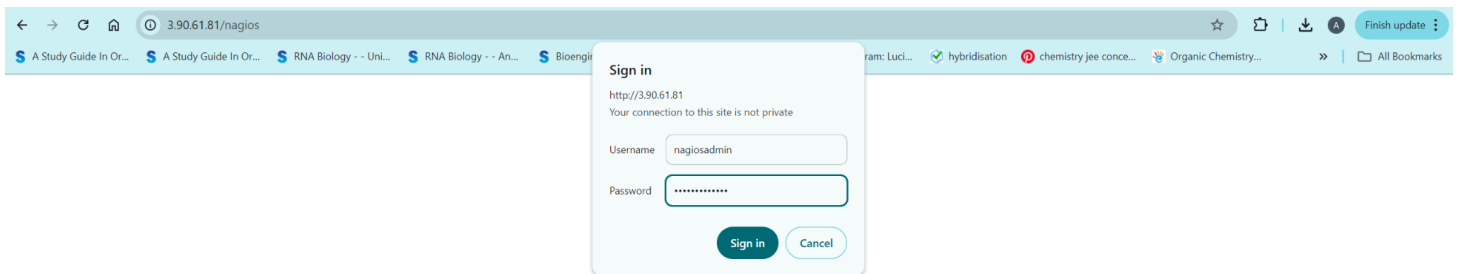
Enter username as **nagiosadmin** and password as **adityaraorane** (which you set in Step 15).

24. After entering the correct credentials, you will see this page.

Conclusion: We have successfully installed and configured Nagios Core, Nagios Plugins, and NRPE on a Linux machine. This enables us to effectively manage system performance and proactively address potential issues.