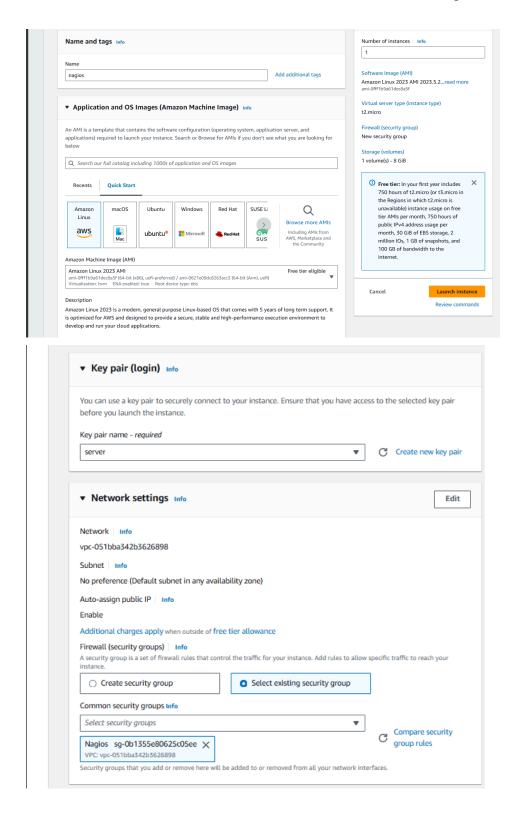
<u>Aim</u>: To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

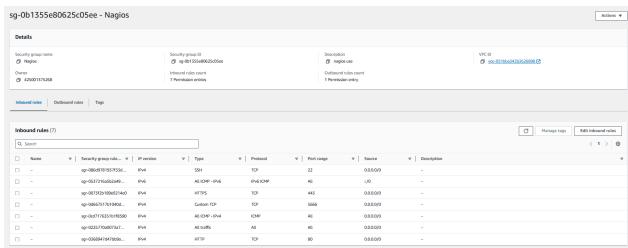
Steps:

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.





You have to edit the inbound rules of the specified Security Group for this.

3. SSH into Your EC2 instance or simply use EC2 Instance Connect from the browser.

4. Update the package indices and install the following packages using yum

```
sudo yum install httpd php

sudo yum install gcc glibc glibc-common

sudo yum install gd gd-devel

[ec2-user@ip-172-31-39-90 ~]$ sudo yum update
    sudo yum install httpd php
    sudo yum install gcc glibc glibc-common
    sudo yum install gd gd-devel
    Last metadata expiration check: 0:02:27 ago on Fri Oct 4 03:35:02 2024.

Dependencies resolved.

Nothing to do.

Complete!
```

```
Installed:
brotli-1.0.9-4.amzn2023.0.2.x86_64
bzip2-devel-1.0.8-6.amzn2023.0.2.x86_64
caircol.17.6-2.amzn2023.0.2.x86_64
fontconfig-devel-2.13.9-4-2.amzn2023.0.2.x86_64
fontconfig-devel-2.13.9-4-2.amzn2023.0.2.x86_64
fontconfig-devel-2.13.9-4-2.amzn2023.0.2.x86_64
gd-2.3.3-5.amzn2023.0.3.x86_64
glib2-devel-2.7.47.-689.amzn2023.0.2.x86_64
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
gpogle-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.x86_64
libICE-1.0.10-6.amzn2023.0.2.x86_64
libICE-1.0.10-6.amzn2023.0.2.x86_64
libICE-1.0.10-6.amzn2023.0.2.x86_64
libXau-1.0.10-6.amzn2023.0.2.x86_64
libXau-1.0.10-6.amzn2023.0.2.x86_64
libXau-1.2.0-4.amzn2023.0.2.x86_64
libXau-devel-3.1.5-2.amzn2023.0.1.x86_64
libYam-devel-3.1.5-2.amzn2023.0.1.x86_64
libYam-devel-3.1.5-1.7-amzn2023.0.1.x86_64
libYam-devel-3.1.5-1.7-amzn2023.0.1.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.1.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.1.x86_64
libYam-devel-3.4.5-3.4.amzn2023.0.2.x86_64
libYam-devel-3.4.5-3.4.amzn2023.0.2.x86_64
libYam-devel-3.4.5-3.4.amzn2023.0.6.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.5-4.amzn2023.0.6.x86_64
libYam-devel-3.4.5-4.amzn2023.0.6.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.5-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-devel-3.4.6-4.amzn2023.0.6.x86_64
libYam-deve
```

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

```
sudo adduser -m nagios
sudo passwd nagios
```

[ec2-user@ip-172-31-39-90 ~]\$ sudo adduser -m nagios sudo passwd nagios
Changing password for user nagios.
New password:

```
Retype new password:
passwd: all authentication tokens updated successfully.
```

6. Create a new user group

sudo groupadd nagcmd

```
[ec2-user@ip-172-31-39-90 ~]$ 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
```

```
[ec2-user@ip-172-31-39-90 ~]$ 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-172-31-39-90 ~]$ mkdir ~/downloads
cd ~/downloads
```

9. Use wget to download the source zip files.

wget https://go.nagios.org/1/975333/2024-09-17/6kqcx

```
[ec2-user@ip-172-31-39-90 downloads]$ wget https://go.nagios.org/l/975333/2024-09-17/6kqcx
--2024-10-04 03:45:50-- https://go.nagios.org/l/975333/2024-09-17/6kqcx
Resolving go.nagios.org (go.nagios.org)... 3.92.120.28, 34.237.219.119, 52.54.96.194, ...
Connecting to go.nagios.org (go.nagios.org)]3.92.120.28[:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: http://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz?utm_source=Nagios.org&utm_content=Dow
utm_campaign=Core+4.5.5+Download+&pi_content=1e9662c93afb2ed6bd2e3f3cc38771a7f01125e969f2a75b0e2254439d4a81d8 [following]
--2024-10-04 03:45:51-- http://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz?utm_source=Nagios.org&
=Download+Form&utm_campaign=Core+4.5.5+Download+&pi_content=1e9662c93afb2ed6bd2e3f3cc38771a7f01125e969f2a75b0e2254439d4a81
Resolving assets.nagios.com (assets.nagios.com)... 45.79.49.120|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz?utm_source=Nagios.org&utm_content=Dow
&utm_campaign=Core+4.5.5+Download+&pi_content=1e9662c93afb2ed6bd2e3f3cc38771a7f01125e969f2a75b0e2254439d4a81d8 [following]
--2024-10-04 03:45:51-- https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz?utm_source=Nagios.org&utm_content=Dow
&utm_campaign=Core+4.5.5+Download+&pi_content=1e9662c93afb2ed6bd2e3f3cc38771a7f01125e969f2a75b0e2254439d4a81d8 [following]
--2024-10-04 03:45:51-- https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz?utm_source=Nagios.org
&t=Download+Form&utm_campaign=Core+4.5.5+Download+&pi_content=1e9662c93afb2ed6bd2e3f3cc38771a7f01125e969f2a75b0e2254439d4a8
Connecting to assets.nagios.com (assets.nagios.com)|45.79.49.120|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2065473 (2.0M) [application/x-gzip]
Saving to: '6kqcx'
       Saving to: '6kqcx'
                                                                                                                                                                                                                             100%[======>] 1.97M 7.32MB/s
        6kacx
        2024-10-04 03:45:51 (7.32 MB/s) - '6kgcx' saved [2065473/2065473]
       [ec2-user@ip-172-31-39-90 downloads]$ |
```

Wget http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz

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

tar zxvf 6kqcx

```
[ec2-user@ip-172-31-39-90 downloads]$ tar zxvf 6kqcx
nagios-4.5.5/
nagios-4.5.5/.github/
nagios-4.5.5/.github/workflows/
nagios-4.5.5/.github/workflows/test.yml
nagios-4.5.5/.gitignore
nagios-4.5.5/CONTRIBUTING.md
nagios-4.5.5/Changelog
nagios-4.5.5/INSTALLING
nagios-4.5.5/LEGAL
nagios-4.5.5/LICENSE
nagios-4.5.5/Makefile.in
nagios-4.5.5/README.md
nagios-4.5.5/THANKS
nagios-4.5.5/UPGRADING
nagios-4.5.5/aclocal.m4
nagios-4.5.5/autoconf-macros/
nagios-4.5.5/autoconf-macros/.gitignore
nagios-4.5.5/autoconf-macros/CHANGELOG.md
nagios-4.5.5/autoconf-macros/LICENSE
```

[ec2-user@ip-172-31-39-90 downloads]\$ cd nagios-4.5.5

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

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

```
[ec2-user@ip-172-31-39-90 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
```

error:

```
checking for Kerberos include files... configure: WARNING: could not find include files checking for pkg-config... pkg-config checking for SSL headers... configure: error: Cannot find ssl headers
```

Package 	Architecture	Version 	Repository 	Siz
nstalling: openssl-devel	x86_64	1:3.0.8-1.amzn2023.0.14	amazonlinux	3.0
ransaction Summary				
nstall 1 Package				
otal download size: 3.0 M installed size: 4.7 M is this ok [y/N]: y lownloading Packages: penssl-devel-3.0.8-1.amzn	2023.0.14.x86_64.rpm		19 MB/s 3.0 MB	00:00
Total Running transaction check Transaction check succeeded. Running transaction test Transaction test succeeded. Running transaction Preparing : Installing : openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64 Running scriptlet: openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64 Verifying : openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64			15 MB/s 3.0 MB	00:00 1/ 1/ 1/

```
[ec2-user@ip-172-31-39-90 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-qnu
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 arp.h... ves
```

```
Creating sample config files in sample-config/ ...
*** Configuration summary for nagios 4.5.5 2024-09-17 ***:
 General Options:
        Nagios executable: nagios
        Nagios user/group:
                             nagios, nagios
                             nagios, nagcmd
       Command user/group:
        Event Broker:
Install ${prefix}:
                             yes
/usr/local/nagios
                             /usr/local/nagios/include/nagios
    Install ${includedir}:
                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:
                             /bin/mail
                             linux-gnu
                   Host OS:
          IOBroker Method: epoll
 Web Interface Options:
                 HTML URL: http://localhost/nagios/
CGI URL: http://localhost/nagios/cgi-bin/
 Traceroute (used by WAP): /usr/bin/traceroute
Review the options above for accuracy. If they look okay,
type 'make all' to compile the main program and CGIs.
```

12. Compile the source code.

make all

```
*** Compile finished ***

If the main program and CGIs compiled without any errors, you can continue with testing or installing Nagios as follows (type 'make' without any arguments for a list of all possible options):

make test

- This runs the test suite

make install

- This installs the main program, CGIs, and HTML files

make install-init

- This installs the init script in /lib/systemd/system

make install-daemoninit

- This will initialize the init script in /lib/systemd/system
```

```
*** Support Notes ***************************
If you have questions about configuring or running Nagios,
please make sure that you:
    - Look at the sample config files
    - Read the documentation on the Nagios Library at:
          https://library.nagios.com
before you post a question to one of the mailing lists.
Also make sure to include pertinent information that could
help others help you. This might include:
    - What version of Nagios you are using
    - What version of the plugins you are using
    - Relevant snippets from your config files
    - Relevant error messages from the Nagios log file
For more information on obtaining support for Nagios, visit:
      https://support.nagios.com
************************
Enjoy.
```

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
```

14. Edit the config file and change the email address.

sudo nano /usr/local/nagios/etc/objects

```
*** Main program, CGIs and HTML files installed ***
You can continue with installing Nagios as follows (type 'make'
without any arguments for a list of all possible options):

make install-init
   - This installs the init script in /lib/systemd/system

make install-commandmode
   - This installs and configures permissions on the
        directory for holding the external command file

make install-config
   - This installs sample config files in /usr/local/nagios/etc
```

```
*** Config files installed ***

Remember, these are *SAMPLE* config files. You'll need to read the documentation for more information on how to actually define services, hosts, etc. to fit your particular needs.

/usr/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 ***
```

cd nagios-plugins-2.4.11

```
[ec2-user@ip-172-31-39-90 downloads]$ cd nagios-plugins-2.4.11
[ec2-user@ip-172-31-39-90 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 sets $(MAKE)... yes checking whether to enable maintainer-specific portions of Makefiles... yes checking whether to enable maintainer-specific portions of Makefiles... yes checking build system type... x86_64-pc-linux-gnu checking for gcc... gcc checking whether to compiler works... yes checking for compiler default output file name... a.out checking for 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 we are using the GNU C compiler... yes checking whether gcc accepts -g... yes checking whether gcc option to accept ISO C89... none needed 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 gerp that handles long lines and -e... /usr/bin/grep checking for gerp that handles long lines and -e... /usr/bin/grep checking for Minix Amsterdam compiler... no checking for Minix Amsterdam compiler... no
```

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

16. Create a nagiosadmin account for nagios login along with password. You'll have to specify the password twice.

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

```
[ec2-user@ip-172-31-39-90 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
```

17. Restart Apache

sudo service httpd restart

[ec2-user@ip-172-31-39-90 nagios-4.5.5]\$ sudo service httpd restart Redirecting to /bin/systemctl restart httpd.service

18. Go back to the downloads folder and unzip the plugins zip file.

cd ~/downloads

tar zxvf nagios-plugins-2.0.3.tar.gz

```
[ec2-user@ip-172-31-39-90 nagios-4.5.5]$ cd ~/downloads
[ec2-user@ip-172-31-39-90 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/
```

20. Start Nagios

Add Nagios to the list of system services sudo chkconfig --add nagios

(error)

[ec2-user@ip-172-31-39-90 nagios-plugins-2.4.11]\$ sudo chkconfig --add nagios error reading information on service nagios: No such file or directory

sudo chkconfig nagios on

Verify the sample configuration files sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

```
≥ ec2-user@ip-172-31-39-90:~ × + ∨
[ec2-user@ip-172-31-39-90 ~]$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
Nagios Core 4.5.5
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2024-09-17
License: GPL
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
```

```
≥ ec2-user@ip-172-31-39-90:~/ × + ∨
 [ec2-user@ip-172-31-39-90 nagios-plugins-2.4.11]$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
Nagios Core 4.5.5
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2024-09-17
 License: GPL
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.
Checked 0 host 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:
```

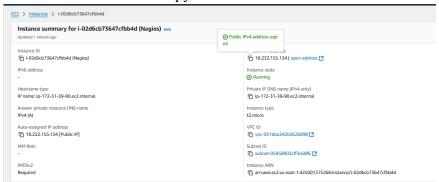
sudo service nagios start

[ec2-user@ip-172-31-39-90 ~]\$ sudo service nagios start Redirecting to /bin/systemctl start nagios.service

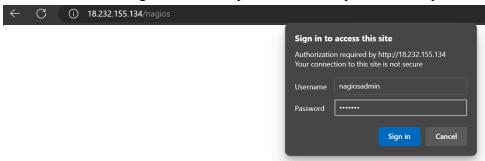
21. Check the status of Nagios

sudo systemctl status nagios

22. Go back to EC2 Console and copy the Public IP address of this instance



23. Open up your browser and look for <a href="http://<your_public_ip_address">http://<your_public_ip_address/nagios
Enter username as nagiosadmin and password which you set in Step 16.



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



This means that Nagios was correctly installed and configured with its plugins so far.

Conclusion: