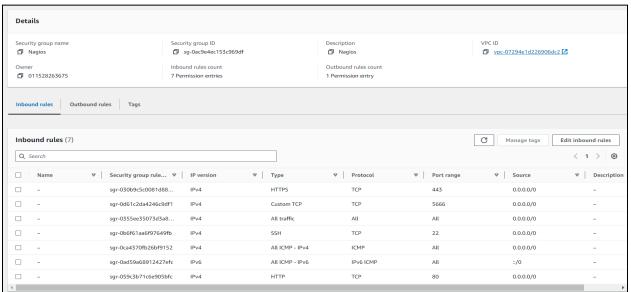
ADVANCE DEVOPS EXP-9

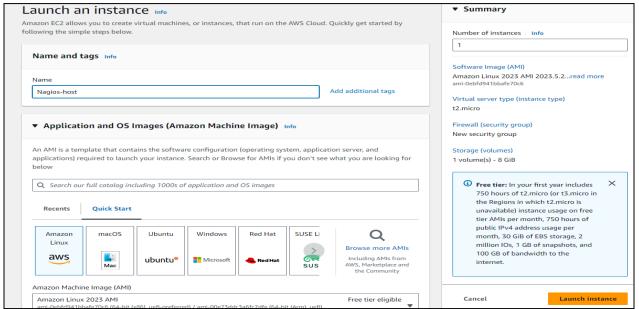
ANSH SARFARE D15A/50

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

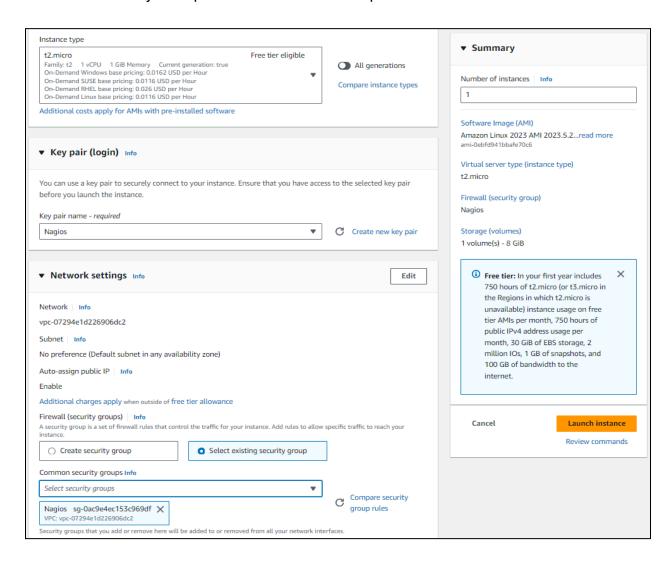
Step-1:Login to your AWS account Personal / Academy. Click on EC2 instance then click on Create Security Group. Give the name as Nagios and any description and add the following inbound rules.

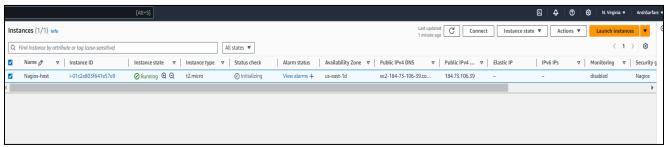


Step 2: Now Create a new EC2 instance. Name: Nagios-host ,AMI: Amazon Linux, Instance Type: t2.micro.

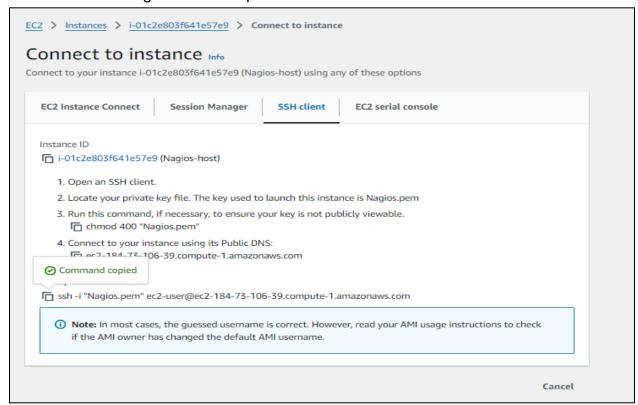


For Key pair : Click on create key and make key of type RSA with extension .pem . Key will be downloaded to your local machine and select the **Existing Security Group** and select the Security Group we have created in Step 1.





Step 3: Now After creating the EC2 Instance click on connect and then copy the command which is given as example in the SSH Client section .



Successfully connected to the instance.

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Ansh> cd Desktop
PS C:\Users\Ansh\Desktop> cd Nagios
PS C:\Users\Ansh\Desktop\Nagios> ssh -i "Nagios.pem" ec2-user@ec2-184-73-106-39.compute-1.amazonaws.com
The authenticity of host 'ec2-184-73-106-39.compute-1.amazonaws.com (184.73.106.39)' can't be established.
ED25519 key fingerprint is SHA256:i7NMc6WI0yzJAd4YHlwTc+dDHM9igux+4/N/7+Lq4xU.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-184-73-106-39.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
        ####_
                     Amazon Linux 2023
       \_####\
         \###|
                     https://aws.amazon.com/linux/amazon-linux-2023
           \#/
 [ec2-user@ip-172-31-90-152 ~]$|
```

Step 4: Now Run the following command to make a new user.- sudo adduser -m nagios sudo passwd nagios

```
[ec2-user@ip-172-31-90-152 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-90-152 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-90-152 ~]$ |
```

Step 5: Now Run the following command to make a new user group. sudo groupadd nagcmd, sudo usermod -a -G nagcmd nagios, sudo usermod -a -G nagcmd apache

If apache is not installed on your system:

```
[ec2-user@ip-172-31-90-152 ~]$ sudo yum update -v
Last metadata expiration check: 0:13:57 ago on Mon Sep 30 17:57:12 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-90-152 ~]$ sudo yum install httpd -y
Last metadata expiration check: 0:15:05 ago on Mon Sep 30 17:57:12 2024.
Dependencies resolved.
______
                         Architecture
                                        Version
______
Installing:
                         x86_64
                                        2.4.62-1.amzn2023
Installing dependencies:
                         x86_64
                                        1.7.2-2.amzn2023.0.2
apr
apr-util
                                        1.6.3-1.amzn2023.0.1
```

```
[ec2-user@ip-172-31-90-152 ~]$ sudo groupadd nagcmd
groupadd: group 'nagcmd' already exists
[ec2-user@ip-172-31-90-152 ~]$ sudo usermod -a -G nagcmd nagios
[ec2-user@ip-172-31-90-152 ~]$ sudo usermod -a -G nagcmd httpd
usermod: user 'httpd' does not exist
[ec2-user@ip-172-31-90-152 ~]$ ps aux | grep apache
apache 22421 0.0 0.4 17020 4580 ? S 18:12 0:00 /usr/sbin/httpd -DFOREGROUND
apache 22426 0.0 0.7 1084984 7560 ? Sl 18:12 0:00 /usr/sbin/httpd -DFOREGROUND
apache 22427 0.0 0.7 1084984 7560 ? Sl 18:12 0:00 /usr/sbin/httpd -DFOREGROUND
apache 22428 0.0 0.7 1248888 7560 ? Sl 18:12 0:00 /usr/sbin/httpd -DFOREGROUND
apache 22428 0.0 0.7 1248888 7560 ? Sl 18:12 0:00 /usr/sbin/httpd -DFOREGROUND
ec2-user 26483 0.0 0.2 222312 2064 pts/0 S+ 18:14 0:00 grep --color=auto apache
[ec2-user@ip-172-31-90-152 ~]$ sudo usermod -a -G nagcmd nagios
[ec2-user@ip-172-31-90-152 ~]$ sudo usermod -a -G nagcmd apache
[ec2-user@ip-172-31-90-152 ~]$ sudo usermod -a -G nagcmd apache
```

Step 6: Now make a new directory and go to that directory. mkdir ~/downloads cd ~/downloads

```
[ec2-user@ip-172-31-90-152 ~]$ mkdir ~/downloads
cd ~/downloads
[ec2-user@ip-172-31-90-152 downloads]$
```

Step 7: Now to download the Nagios 4.5.5 and Nagios-plugins 2.4.11 run the following commands respectively.

wget https://go.nagios.org/l/975333/2024-09-17/6kgcx

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

Step 8: Now to extract the files from the downloaded Nagios 4.5.5 run the following command. tar zxvf 6kqcx

```
[ec2-user@ip-172-31-90-152 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
nagios-4.5.5/autoconf-macros/LICENSE.md
nagios-4.5.5/autoconf-macros/README.md
nagios-4.5.5/autoconf-macros/add_group_user
nagios-4.5.5/autoconf-macros/ax nagios
```

Step 9: Now change the directory to nagios-4.5.5

```
[ec2-user@ip-172-31-90-152 downloads]$ cd nagios-4.5.5
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$
```

Step 10: Now run the following command to configure../configure --with-command-group=nagcmd.

In this step you can get the error, it might be due to gcc is not installed in your system so to install it run the following command:sudo yum groupinstall "Development Tools" -y

```
[ec2-user@ip-172-31-90-152 downloads]$ cd nagios-4.5.5
[ec2-user@ip-172-31-90-152 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
```

At the end we have found the error of cannot find ssl header.

```
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 [ec2-user@ip-172-31-90-152 nagios-4.5.5]$ |
```

So run following command to install ssl. sudo yum install openssl-devel

```
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ sudo yum install openssl-devel
Last metadata expiration check: 0:39:47 ago on Mon Sep 30 17:57:12 2024.
Dependencies resolved.
                                                   Architecture
                   ______
Installing:
 openssl-devel
                                                   x86 64
                                                                                            1:3.0.8-1.amzn2023.0.14
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
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
Installed:
  openssl-devel-1:3.0.8-1.amzn2023.0.14.x86_64
Complete!
```

Now rerun the command ./configure--with-command-group=nagcmd

```
[ec2-user@ip-172-31-90-152 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
```

Step 11: Now run the following commands to steup the Nagios. sudo make install

```
*** 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

make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5'
```

sudo make install-init

```
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ sudo make install-init
/usr/bin/install -c -m 755 -d -o root -g root /lib/systemd/system
/usr/bin/install -c -m 755 -o root -g root startup/default-service /lib/systemd/system/nagios.service
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$|
```

sudo make install-config

```
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ sudo make install-config
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc/objects
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/nagios.cfg /usr/local/nagios/etc/cgi.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/cgi.cfg /usr/local/nagios/etc/resource.cfg
/usr/bin/install -c -b -m 660 -o nagios -g nagios sample-config/resource.cfg /usr/local/nagios/etc/resource.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/commands.cfg /usr/local/nagios/etc/objects/templates.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/contacts.cfg /usr/local/nagios/etc/objects/contacts.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/contacts.cfg /usr/local/nagios/etc/objects/contacts.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/nagios/etc/objects/localhost.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/nagios/etc/objects/localhost.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/printer.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install
```

sudo make install-webconf

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

```
[ec2-user@ip-172-31-90-152 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
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ |
```

Now to restart the httpd service run the following command. sudo service httpd restart

```
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ sudo service httpd restart Redirecting to /bin/systemctl restart httpd.service [ec2-user@ip-172-31-90-152 nagios-4.5.5]$ |
```

Step 12: Now to extract the files from the downloaded Nagios plugin 2.4.11 run the following command first change the directory.

cd ~/downloads

tar zxvf nagios-plugins-2.4.11.tar.gz

```
[ec2-user@ip-172-31-90-152 nagios-4.5.5]$ cd ~/downloads
[ec2-user@ip-172-31-90-152 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/
```

Step 13: Now change the directory to nagios-plugins-2.4.11 and run the config command to configure.

cd nagios-plugins-2.4.11

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

```
[ec2-user@ip-172-31-90-152 downloads]$ cd nagios-plugins-2.4.11
[ec2-user@ip-172-31-90-152 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 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 whether gcc accepts -g... yes checking for gcc option to accept ISO C89... none needed
```

Step 14: Run the following commands to check nagios and start it. sudo chkconfig--add nagios

```
[ec2-user@ip-172-31-90-152 nagios-plugins-2.4.11]$ sudo chkconfig —add nagios sudo chkconfig nagios on error reading information on service nagios: No such file or directory Note: Forwarding request to 'systemctl enable nagios.service'. Created symlink /etc/systemd/system/multi-user.target.wants/nagios.service → /usr/lib/systemd/system/nagios.service. [ec2-user@ip-172-31-90-152 nagios-plugins-2.4.11]$
```

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

```
[ec2-user@ip-172-31-90-152 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.
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
Things look okay - No serious problems were detected during the pre-flight check
```

```
[ec2-user@ip-172-31-90-152 nagios-plugins-2.4.11]$ cd
[ec2-user@ip-172-31-90-152 ~]$ sudo service nagios start
Redirecting to /bin/systemctl start nagios.service
[ec2-user@ip-172-31-90-152 ~]$ |
```

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

```
[ec2-user@ip-172-31-90-152 ~]$ 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:
Things look okay - No serious problems were detected during the pre-flight check
```

sudo systemctl restart nagios sudo systemctl status nagios

```
[ec2-user@ip-172-31-90-152 nagios-plugins-2.3.3]$ cd
[ec2-user@ip-172-31-90-152 ~]$ sudo systemctl restart nagios
[ec2-user@ip-172-31-90-152 ~]$ sudo systemctl status nagios
 nagios.service - Nagios Core 4.5.5
        Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; preset: disabled)
                                (running) since Mon 2024-09-30 19:41:36 UTC; 7s ago
          Docs: https://www.nagios.org/documentation
      Process: 80238 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
      Process: 80239 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
     Main PID: 80240 (nagios)
         Tasks: 6 (limit: 1112)
        Memory: 4.0M
          CPU: 15ms
        CGroup: /system.slice/nagios.service
                       -80242 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
-80243 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
-80244 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
                     _80245 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
 Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: Socket '/usr/local/nagios/var/rw/nagios.qh' successfully initialized
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: core query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal magios[80240]: qh: echo service query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal magios[80240]: qh: help for the query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal magios[80240]: wproc: Successfully registered manager as @wproc with query handler
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80244;pid=80244
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80243;pid=80243
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80242;pid=80242
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80241;pid=80241
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: Successfully launched command file worker with pid 80245
```

Step 15: We can see we have successfully launched the Nagios now . Open http:///nagios/ here it is **http://44.202.108.37/nagios** we can see the running web page of nagios.

