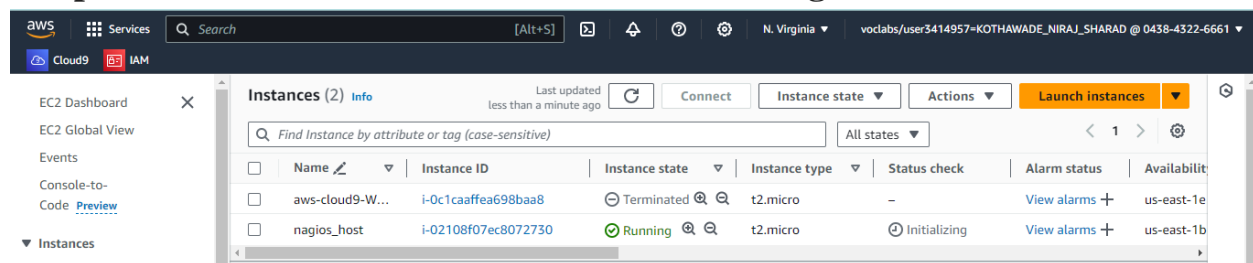# Advanced DevOps Exp-9

Niraj S. Kothawade

D15A – 24
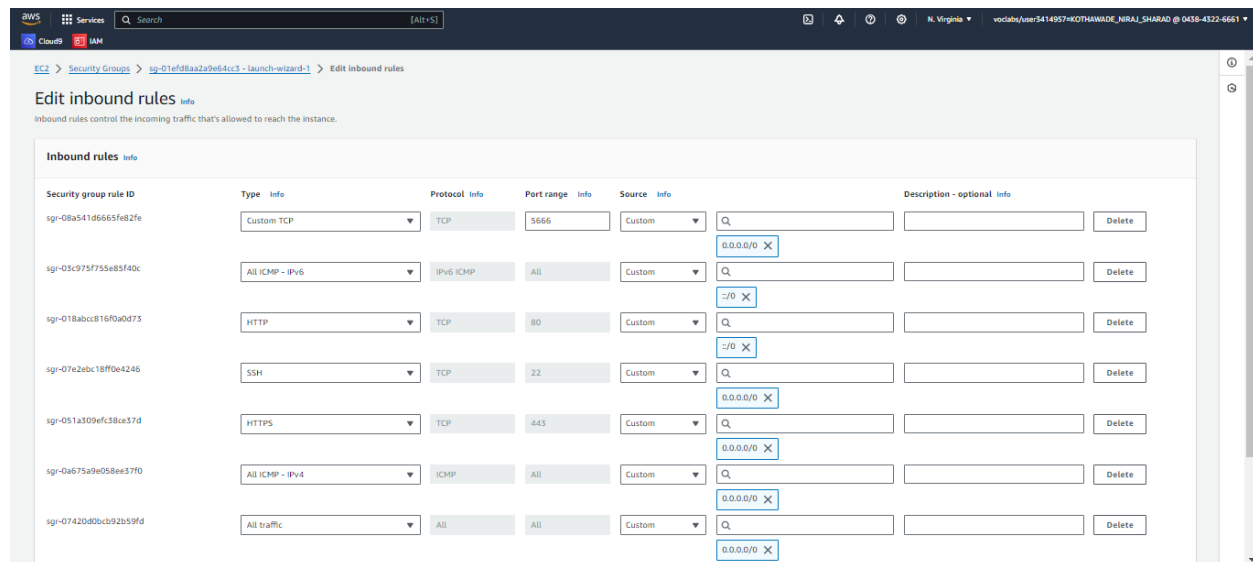
Aim: To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

Procedure:-

Step 1: Create an EC2 Instance and name it as nagios-host

Step 2: Under the security groups, click on edit inbound rules and set as shown in the figure below

Step 3: Now, run the following commands -

sudo su sudo yum update

sudo yum install httpd php

sudo yum install gcc glibc glibc-common sudo

yum install gd gd-devel

```
[ec2-user@ip-172-31-16-211 ~]$ sudo yum install httpd php
Last metadata expiration check: 0:04:23 ago on Sun Sep 29 04:05:53 2024.
Dependencies resolved.
====================================================================================
 Package                        Architecture           Version
====================================================================================
Installing:
 httpd                          x86_64                 2.4.62-1.amzn2023
 php8.3                         x86_64                 8.3.10-1.amzn2023.0.1
Installing dependencies:
 apr                            x86_64                 1.7.2-2.amzn2023.0.2
 apr-util                       x86_64                 1.6.3-1.amzn2023.0.1
```

```
[ec2-user@ip-172-31-16-211 ~]$ sudo yum install gcc glibc glibc-common
Last metadata expiration check: 0:04:54 ago on Sun Sep 29 04:05:53 2024.
Package glibc-2.34-52.amzn2023.0.11.x86_64 is already installed.
Package glibc-common-2.34-52.amzn2023.0.11.x86_64 is already installed.
Dependencies resolved.
====================================================================================
 Package                        Architecture           Version
====================================================================================
Installing:
 gcc                            x86_64                 11.4.1-2.amzn2023.0.2
Installing dependencies:
 annobin-docs                   noarch                 10.93-1.amzn2023.0.1
 annobin-plugin-gcc             x86_64                 10.93-1.amzn2023.0.1
 cpp                            x86_64                 11.4.1-2.amzn2023.0.2
```

```
[ec2-user@ip-172-31-16-211 ~]$ sudo yum install gd gd-devel
Last metadata expiration check: 0:05:21 ago on Sun Sep 29 04:05:53 2024.
Dependencies resolved.
====================================================================================
 Package                        Architecture           Version
====================================================================================
Installing:
 gd                             x86_64                 2.3.3-5.amzn2023.0.3
 gd-devel                       x86_64                 2.3.3-5.amzn2023.0.3
Installing dependencies:
```

Step 4: Create a new nagios user with its password.

sudo adduser -m nagios

sudo passwd nagios sudo

groupadd nagcmd

sudo usermod -a -G nagcmd nagios

sudo usermod -a -G nagcmd apache

```
[ec2-user@ip-172-31-16-211 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-16-211 ~]$ 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.
```

```
[ec2-user@ip-172-31-16-211 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-16-211 ~]$ sudo usermod -a -G nagcmd nagios
[ec2-user@ip-172-31-16-211 ~]$ sudo usermod -a -G nagcmd apache
```

Step 5: Now, run the following commands -

mkdir ~/downloads

cd ~/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 tar zxvf nagios-4.0.8.tar.gz

```
[ec2-user@ip-172-31-16-211 ~]$ mkdir ~/downloads
[ec2-user@ip-172-31-16-211 ~]$ cd ~/downloads
[ec2-user@ip-172-31-16-211 downloads]$
```

```
[ec2-user@ip-172-31-16-211 downloads]$ wget http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
--2024-09-29 04:17:09--  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]
--2024-09-29 04:17:10--  http://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz
```

```
[ec2-user@ip-172-31-16-211 downloads]$ wget http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
--2024-09-29 04:17:25--  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  1.68MB/s    in 1.5s

2024-09-29 04:17:27 (1.68 MB/s) - 'nagios-plugins-2.0.3.tar.gz' saved [2659772/2659772]
```

```
[ec2-user@ip-172-31-16-211 downloads]$ tar zxvf nagios-4.0.8.tar.gz
nagios-4.0.8/
nagios-4.0.8/.gitignore
nagios-4.0.8/Changelog
nagios-4.0.8/INSTALLING
nagios-4.0.8/LEGAL
nagios-4.0.8/LICENSE
nagios-4.0.8/Makefile.in
nagios-4.0.8/README
nagios-4.0.8/README.asciidoc
nagios-4.0.8/THANKS
nagios-4.0.8/UPGRADING
nagios-4.0.8/base/
nagios-4.0.8/base/.gitignore
nagios-4.0.8/base/Makefile.in
```
```
[ec2-user@ip-172-31-16-211 downloads]$ cd nagios-4.0.8
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ ▮
```

Step 6: Now to run the configuration script run the following command.

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

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ ./configure --with-command-group=nagcmd
checking for a BSD-compatible install... /usr/bin/install -c
checking build system type... x86_64-unknown-linux-gnu
checking host system type... x86_64-unknown-linux-gnu
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
```

Step 7: Now, to compile the source code run the following command - make all

sudo make install sudo

make install-init

sudo make install-config

sudo make install-commandmode

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ make all
cd ./base && make
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/base'
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o nagios.o nagios.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o broker.o broker.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o nebmods.o nebmods.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o ../common/shared.o ../common/shared.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o nerd.o nerd.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o query-handler.o query-handler.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o workers.o workers.c
In function 'get_wproc_list',
    inlined from 'get_worker' at workers.c:224:12:
workers.c:209:17: warning: '%s' directive argument is null [-Wformat-overflow=]
  209 |                 log_debug_info(DEBUGL_CHECKS, 1, "Found specialized worker(s) for '%s'", (slash && *slash != '/') ? slash : cmd_name);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o checks.o checks.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o config.o config.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o commands.o commands.c
commands.c: In function 'process_passive_service_check':
commands.c:2247:19: warning: assignment discards 'const' qualifier from pointer target type [-Wdiscarded-qualifiers]
 2247 |         cr.source = command_worker.source_name;
      |                   ^
commands.c: In function 'process_passive_host_check':
```

```
c2-user/downloads/nagios-4.0.8/base/../common/shared.c:24: f
collect2: error: ld returned 1 exit status
make[1]: *** [Makefile:177: archivejson.cgi] Error 1
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-
make: *** [Makefile:72: all] Error 2
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
c2-user/downloads/nagios-4.0.8/base/../common/shared.c:24: first defined
collect2: error: ld returned 1 exit status
make[1]: *** [Makefile:177: archivejson.cgi] Error 1
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make: *** [Makefile:72: all] Error 2
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo make install
cd ./base && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/base'
make install-basic
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/base'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/usr/bin/install -c -m 774 -o nagios -g nagios nagios /usr/local/nagios/bin
/usr/bin/install -c -m 774 -o nagios -g nagios nagiostats /usr/local/nagios/bin
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/base'
make strip-post-install
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/base'
/usr/bin/strip /usr/local/nagios/bin/nagios
/usr/bin/strip /usr/local/nagios/bin/nagiostats
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/base'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/base'
cd ./cgi && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make install-basic
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/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 -m 775 -o nagios -g nagios $file /usr/local/nagios/sbin; \
done
/usr/bin/install: cannot stat '*.cgi': No such file or directory
make[2]: *** [Makefile:205: install-basic] Error 1
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo make install-init
/usr/bin/install -c -m 755 -d -o root -g root /etc/rc.d/init.d
/usr/bin/install -c -m 755 -o root -g root daemon-init /etc/rc.d/init.d/nagios

*** Init script installed ***

[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ 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/nagios.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/cgi.cfg /usr/local/nagios/etc/cgi.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/templates.cfg /usr/local/nagios/etc/objects/templates.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/commands.cfg /usr/local/nagios/etc/objects/commands.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/timeperiods.cfg /usr/local/nagios/etc/objects/timeperiods.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/windows.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/printer.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/switch.cfg

*** 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.

[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo make install-commandmode
/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 ***

[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

Step 8: Edit the config file and change the email address. sudo nano /usr/local/nagios/etc/objects/contacts.cfg

```
define contact{
        contact_name                    nagiosadmin             ; Short name of user
        use                             generic-contact         ; Inherit default values from generic-contact template (defined above)
        alias                           Nagios Admin            ; Full name of user

        email                           2022.niraj.kothawade@ves.ac.in  ; <<***** CHANGE THIS TO YOUR EMAIL ADDRESS *****
        }
```

Step 9: Now run the following commands –

sudo make install-webconf

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

service httpd restart

cd ~/downloads

tar zxvf nagios-plugins-2.0.3.tar.gz

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.conf

*** Nagios/Apache conf file installed ***
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ sudo service httpd restart
Redirecting to /bin/systemctl restart httpd.service
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-16-211 nagios-4.0.8]$ cd ~/downloads
[ec2-user@ip-172-31-16-211 downloads]$ tar zxvf nagios-plugins-2.0.3.tar.gz
nagios-plugins-2.0.3/
nagios-plugins-2.0.3/perlmods/
nagios-plugins-2.0.3/perlmods/Config-Tiny-2.14.tar.gz
nagios-plugins-2.0.3/perlmods/parent-0.226.tar.gz
nagios-plugins-2.0.3/perlmods/Test-Simple-0.98.tar.gz
nagios-plugins-2.0.3/perlmods/Makefile.in
nagios-plugins-2.0.3/perlmods/version-0.9903.tar.gz
nagios-plugins-2.0.3/perlmods/Makefile.am
nagios-plugins-2.0.3/perlmods/Module-Runtime-0.013.tar.gz
nagios-plugins-2.0.3/perlmods/Module-Metadata-1.000014.tar.gz
nagios-plugins-2.0.3/perlmods/Params-Validate-1.08.tar.gz
nagios-plugins-2.0.3/perlmods/Class-Accessor-0.34.tar.gz
nagios-plugins-2.0.3/perlmods/Try-Tiny-0.18.tar.gz
```

Step 10: Compile and install plugins

cd nagios-plugins-2.0.3

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

sudo make install

```
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ ./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 to disable maintainer-specific portions of Makefiles... yes
checking build system type... x86_64-unknown-linux-gnu
checking host system type... x86_64-unknown-linux-gnu
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
```

```
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo make install
```

```
make  install-exec-hook
make[3]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins'
cd /usr/local/nagios/libexec && \
for i in check_ftp check_imap check_nntp check_pop check_udp check_clamd  ; do rm -f $i; ln -
if [ -x check_ldap ] ; then rm -f check_ldaps ; ln -s check_ldap check_ldaps ; fi
make[3]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins'
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins'
Making install in plugins-scripts
make[1]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins-scripts'
make[2]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins-scripts'
test -z "/usr/local/nagios/libexec" || /usr/bin/mkdir -p "/usr/local/nagios/libexec"
 /usr/bin/install -c -o nagios -g nagios check_breeze check_disk_smb check_flexlm check_ircd
tus check_ifoperstatus check_mailq check_file_age utils.sh utils.pm '/usr/local/nagios/libexe
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.0.3/plugins-scripts'
```

Step 11: To start nagios run the following commands –

sudo chkconfig --add nagios

sudo chkconfig nagios

on Verify using the following command

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

```
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo chkconfig --add nagios
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo chkconfig nagios on
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$
```

```
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo chkconfig --add nagios
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo chkconfig nagios on
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

Nagios Core 4.0.8
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 08-12-2014
License: GPL

Website: http://www.nagios.org
Reading configuration data...
Error in configuration file '/usr/local/nagios/etc/nagios.cfg' - Line 452 (Check result path '/usr/local/nagios/var/spool/checkresults' is not a valid directory
   Error processing main config file!

[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$
```

```
[ec2-user@ip-172-31-16-211 nagios-plugins-2.0.3]$ sudo service nagios start
Starting nagios (via systemctl):                      [  OK  ]
```

Step 12: Go to EC2 instance and copy the public IP address of the instance

Step 13: Now visit http://<your IP address>/nagios Enter correct credentials and then you will see this page