

ADVANCE DEVOPS EXPERIMENT 9

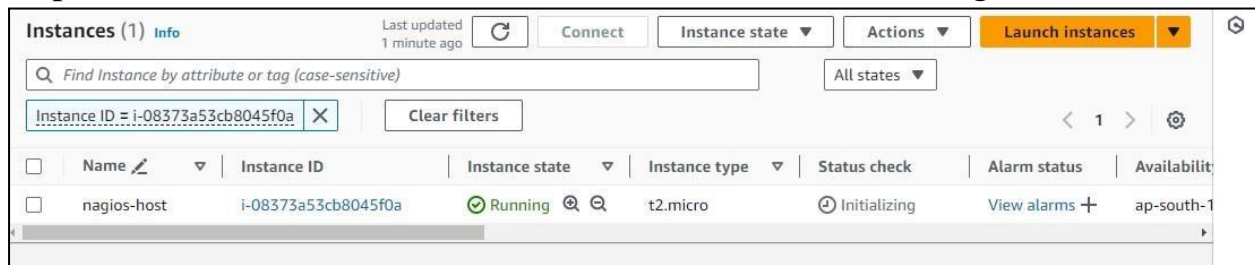
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Class:D15A

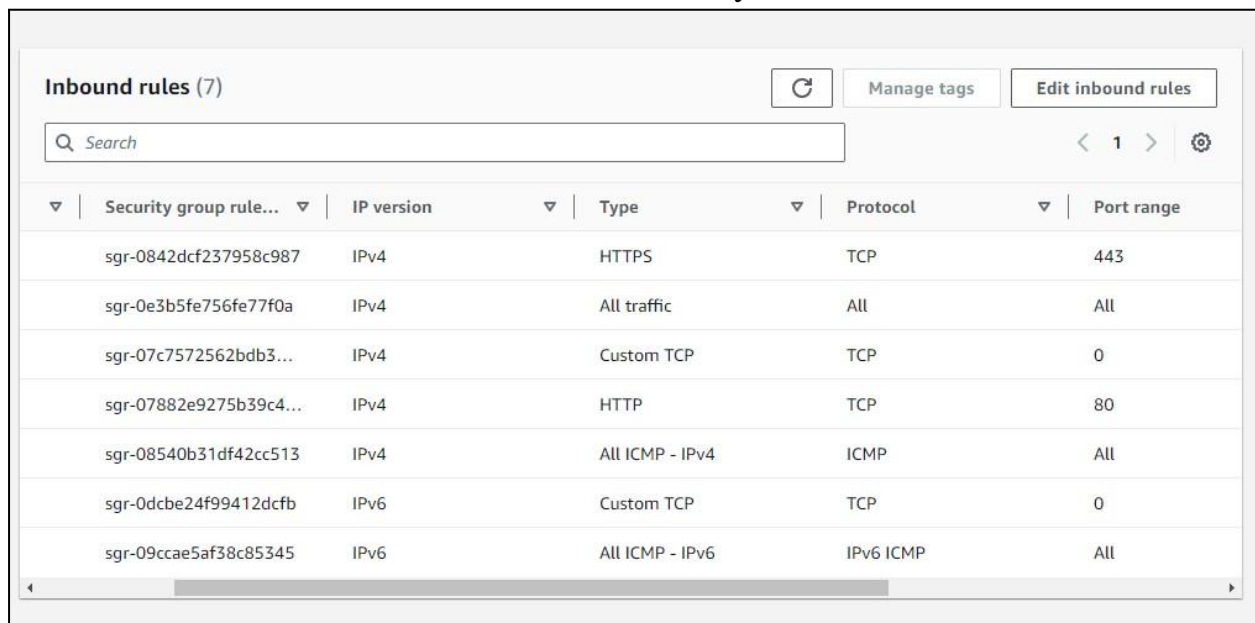
Roll No:64

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: Create an Amazon Linux EC2 instance and name it as nagios-host



Step 2:Edit the following inbound rules of the specified security groups and ensure HTTP,HTTPS,SSH,ICMP are accessible from anywhere



Step 3:Connect to your EC2 instance via the connect option available in EC2 instances menu

```
[ec2-user@ip-172-31-33-14 ~]$ sudo yum install httpd php
Last metadata expiration check: 0:19:23 ago on Thu Sep 26 08:42:17 2024.
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
Installing:				
httpd	x86_64	2.4.62-1.amzn2023	amazonlinux	48 k
php8.3	x86_64	8.3.10-1.amzn2023.0.1	amazonlinux	10 k
Installing dependencies:				
apr	x86_64	1.7.2-2.amzn2023.0.2	amazonlinux	129 k
apr-util	x86_64	1.6.3-1.amzn2023.0.1	amazonlinux	98 k
generic-logos-httpd	noarch	18.0.0-12.amzn2023.0.3	amazonlinux	19 k
httpd-core	x86_64	2.4.62-1.amzn2023	amazonlinux	1.4 M
httpd-filesystem	noarch	2.4.62-1.amzn2023	amazonlinux	14 k
httpd-tools	x86_64	2.4.62-1.amzn2023	amazonlinux	81 k
libbrotli	x86_64	1.0.9-4.amzn2023.0.2	amazonlinux	315 k
libsodium	x86_64	1.0.19-4.amzn2023	amazonlinux	176 k
libxslt	x86_64	1.1.34-5.amzn2023.0.2	amazonlinux	241 k
mailman	noarch	2.1.49-2.amzn2023.0.3	amazonlinux	23 k

Step 4: Update and install the required packages Use the following commands: **sudo yum update sudo yum install httpd php sudo yum install gcc glibc glibc-common sudo yum install gd gd-devel**

```
[ec2-user@ip-172-31-33-14 ~]$ sudo yum install gcc glibc glibc-common
Last metadata expiration check: 0:20:32 ago on Thu Sep 26 08:42:17 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	Repository	Size
Installing:				
gcc	x86_64	11.4.1-2.amzn2023.0.2	amazonlinux	32 M
Installing dependencies:				
annobin-docs	noarch	10.93-1.amzn2023.0.1	amazonlinux	92 k
annobin-plugin-gcc	x86_64	10.93-1.amzn2023.0.1	amazonlinux	887 k
cpp	x86_64	11.4.1-2.amzn2023.0.2	amazonlinux	10 M
gc	x86_64	8.0.4-5.amzn2023.0.2	amazonlinux	105 k
glibc-devel	x86_64	2.34-52.amzn2023.0.11	amazonlinux	27 k
glibc-headers-x86	noarch	2.34-52.amzn2023.0.11	amazonlinux	427 k
guile22	x86_64	2.2.7-2.amzn2023.0.3	amazonlinux	6.4 M
kernel-headers	x86_64	6.1.109-118.189.amzn2023	amazonlinux	1.4 M
libmpc	x86_64	1.2.1-2.amzn2023.0.2	amazonlinux	62 k
libtool-ltdl	x86_64	2.4.7-1.amzn2023.0.3	amazonlinux	38 k
libwrap-devel	x86_64	4.4.33-7.amzn2023	amazonlinux	32 k

```
[ec2-user@ip-172-31-33-14 ~]$ sudo yum install gd gd-devel
Last metadata expiration check: 0:21:27 ago on Thu Sep 26 08:42:17 2024.
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
Installing:				
gd	x86_64	2.3.3-5.amzn2023.0.3	amazonlinux	139 k
gd-devel	x86_64	2.3.3-5.amzn2023.0.3	amazonlinux	38 k
Installing dependencies:				
brotli	x86_64	1.0.9-4.amzn2023.0.2	amazonlinux	314 k
brotli-devel	x86_64	1.0.9-4.amzn2023.0.2	amazonlinux	31 k
bzip2-devel	x86_64	1.0.8-6.amzn2023.0.2	amazonlinux	214 k
cairo	x86_64	1.17.6-2.amzn2023.0.1	amazonlinux	684 k
cmake-filesystem	x86_64	3.22.2-1.amzn2023.0.4	amazonlinux	16 k
fontconfig	x86_64	2.13.94-2.amzn2023.0.2	amazonlinux	273 k
fontconfig-devel	x86_64	2.13.94-2.amzn2023.0.2	amazonlinux	128 k
fonts-filesystem	noarch	1:2.0.5-12.amzn2023.0.2	amazonlinux	9.5 k
fonttools	x86_64	2.13.2-5.amzn2023.0.1	amazonlinux	422 k

Step 5:Create a new nagios user by writing the following commands **sudo adduser -m nagios sudo passwd nagios**

```
Complete!
[ec2-user@ip-172-31-33-14 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-33-14 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-33-14 ~]$
```

Step 6: Create a new user group using **sudo groupadd nagcmd** and

Add users to the group using the following commands:

sudo usermod -a -G nagcmd nagios

sudo usermod -a -G nagcmd apache

```
Complete!
[ec2-user@ip-172-31-33-14 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-33-14 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-33-14 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-33-14 ~]$ sudo usermod -a -G nagcmd nagios
[ec2-user@ip-172-31-33-14 ~]$ sudo usermod -a -G nagcmd apache
[ec2-user@ip-172-31-33-14 ~]$ mkdir downloads
[ec2-user@ip-172-31-33-14 ~]$ cd downloads
[ec2-user@ip-172-31-33-14 downloads]$ wget https://sourceforge.net/projects/nagios/files/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz/download?use_mirror=excellmedia
--2024-09-26 09:15:54-- https://sourceforge.net/projects/nagios/files/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz/download?use_mirror=excellmedia
Resolving sourceforge.net (sourceforge.net)... 172.64.150.145, 104.18.37.111, 2606:4700:4400::6812:256f, ...
Connecting to sourceforge.net (sourceforge.net)[172.64.150.145]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?ts=gAAAAABm9S2KLFw7LwD1QAJ2jNzqmSJwAPA1mQ-eAJYK8z5Nmrv ifVkhbsV-qOfPsLUyICC6yvdHu6UeeIyvNZsVGUti9BeQ%3D%3D&use_mirror=excellmedia&r= [following]
```

Step 7: Create a directory for Nagios downloads using the following commands-

Commands - **mkdir ~/downloads**

cd ~/downloads

Also download Nagios and plugin source files

Commands - **wget**

https://assets.nagios.com/downloads/nagioscore/releases/nagios-

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

2.3.3.tar.gz

```

Connecting to prdownloads.sourceforge.net (prdownloads.sourceforge.net)[204.68.111.105]:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz [following]
--2024-09-26 09:38:43-- https://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
Connecting to downloads.sourceforge.net (downloads.sourceforge.net)[204.68.111.105]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://excellmedia.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1 [following]
--2024-09-26 09:38:45-- https://excellmedia.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1
Resolving excellmedia.dl.sourceforge.net (excellmedia.dl.sourceforge.net)... 202.153.32.19, 2401:fb00:0:1fe:8000::5
Connecting to excellmedia.dl.sourceforge.net (excellmedia.dl.sourceforge.net)[202.153.32.19]:443... 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  8.14MB/s   in 0.2s

2024-09-26 09:38:45 (8.14 MB/s) - 'nagios-4.0.8.tar.gz' saved [1805059/1805059]

[ec2-user@ip-172-31-33-14 downloads]$ ls
'download?use_mirror=excellmedia'  nagios-4.0.8.tar.gz
[ec2-user@ip-172-31-33-14 downloads]$ tar -xzf nagios-4.0.8.tar.gz
[ec2-user@ip-172-31-33-14 downloads]$ 

```

Step 8-Extract the nagios source file with the following commands
tar zxvf nagios-4.4.6.tar.gz cd nagios-4.4.6

Then run the configuration script with the following command
/configure --with-command-group=nagcmd

```

      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:         ${prefix}/var/nagios.lock
      Check result directory: ${prefix}/var/spool/checkresults
      Init directory:     /etc/rc.d/init.d
      Apache conf.d directory: /etc/httpd/conf.d
      Mail program:       /bin/mail
      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): /usr/bin/traceroute

Review the options above for accuracy.  If they look okay,
type 'make all' to compile the main program and CGIs.

[ec2-user@ip-172-31-33-14 nagios-4.0.8]$ 

```

Step 9-Compile the source code with the following commands
make all

```
[ec2-user@ip-172-31-33-14 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 nebmodes.o nebmodes.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]
```

Step 10-Install binaries,init script and sample config files

Commands -

```
./sudo make install sudo make
install-init sudo make install-
config sudo make install-
commandmode
```

```
*** 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 ***

[ec2-user@ip-172-31-33-14 nagios-4.0.8]$
```

Step 11-Edit the Config File to Change the Email Address Commands

-

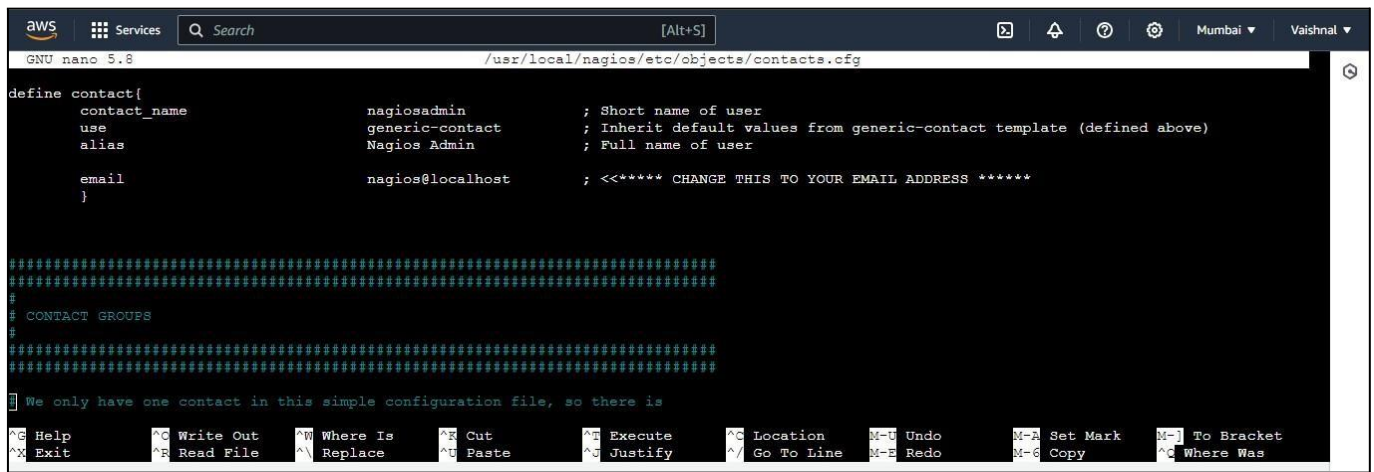
```
sudo nano /usr/local/nagios/etc/objects/contacts.cfg
```

- Change the email address in the contacts.cfg file to your preferred email

Step 12-Configure the Web Interface

Commands - **sudo make**

```
install-webconf
```

```
aws Services [Alt+S] Mumbai Vaishnal
GNU nano 5.8 /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              nagios@localhost ; <<***** CHANGE THIS TO YOUR EMAIL ADDRESS *****
}

#####
#####
#
# CONTACT GROUPS
#
#####
#####

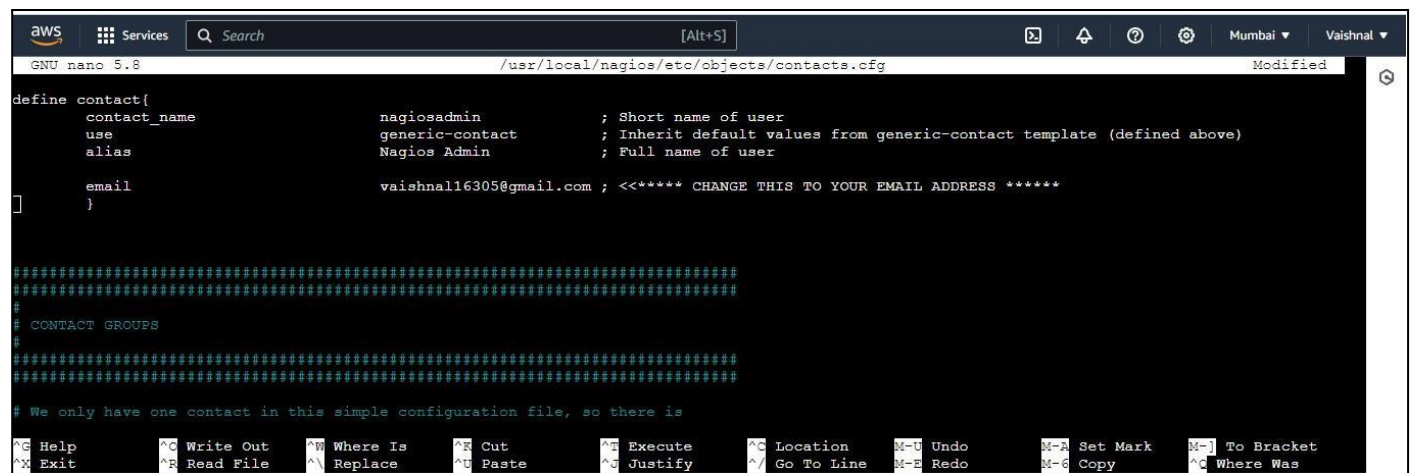
We only have one contact in this simple configuration file, so there is

^G Help      ^O Write Out  ^W Where Is   ^R Cut        ^T Execute    ^C Location   ^U Undo       ^M Set Mark   ^I To Bracket
^X Exit      ^R Read File  ^N Replace    ^U Paste      ^J Justify    ^_ Go To Line  ^- Redo       ^G Copy      ^C Where Was
```

Step 13-Create a Nagios Admin Account

Commands -

sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin • You will be prompted to enter and confirm the password for the nagiosadmin user



```
aws Services [Alt+S] Mumbai Vaishnal
GNU nano 5.8 /usr/local/nagios/etc/objects/contacts.cfg Modified

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              vaishnal16305@gmail.com ; <<***** CHANGE THIS TO YOUR EMAIL ADDRESS *****
}

#####
#####
#
# CONTACT GROUPS
#
#####
#####

We only have one contact in this simple configuration file, so there is

^G Help      ^O Write Out  ^W Where Is   ^R Cut        ^T Execute    ^C Location   ^U Undo       ^M Set Mark   ^I To Bracket
^X Exit      ^R Read File  ^N Replace    ^U Paste      ^J Justify    ^_ Go To Line  ^- Redo       ^G Copy      ^C Where Was
```

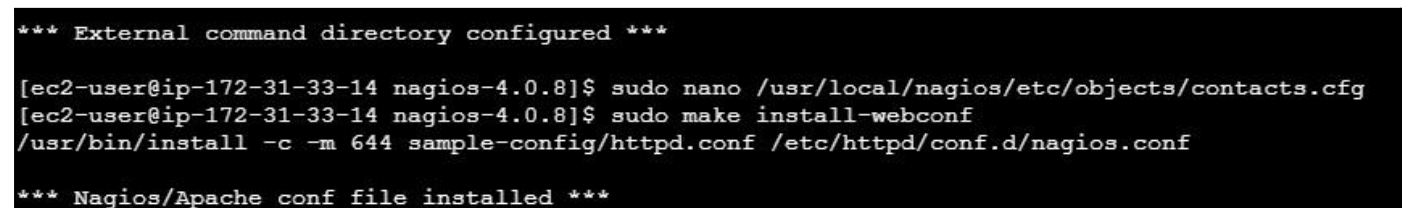
Step 14-. Extract the Plugins Source File

Commands - **cd**

~/downloads

tar zxvf nagios-plugins-2.3.3.tar.gz

cd nagios-plugins-2.3.3



```
*** External command directory configured ***

[ec2-user@ip-172-31-33-14 nagios-4.0.8]$ sudo nano /usr/local/nagios/etc/objects/contacts.cfg
[ec2-user@ip-172-31-33-14 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 ***
```

Step 15-19. Compile and Install Plugins

Commands -

**./configure --with-nagios-user=nagios --with-nagios-group=nagios make
sudo make install**

```
[ec2-user@ip-172-31-33-14 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
```

Step 16-Start Nagios

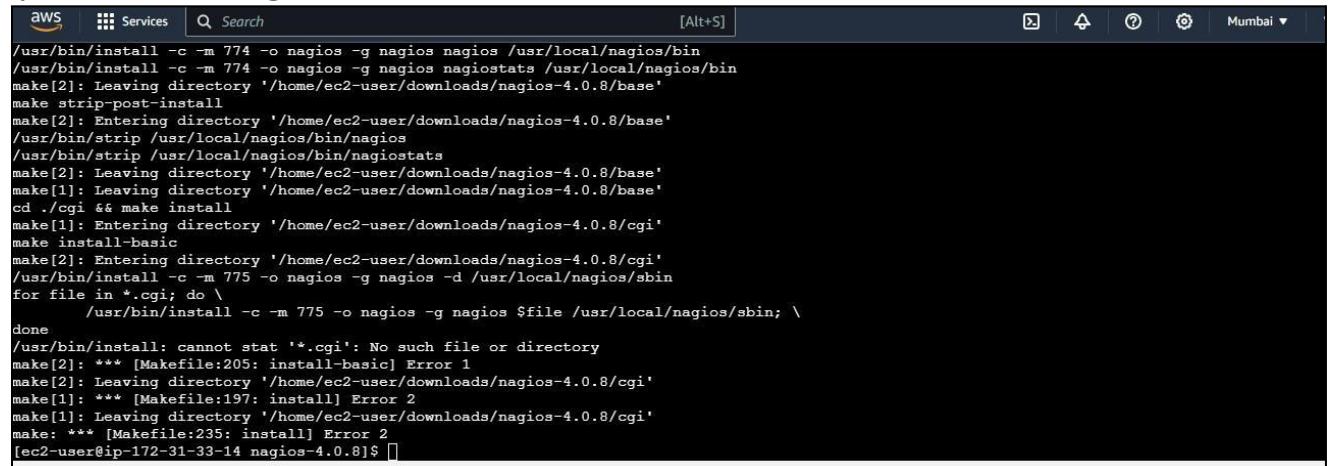
Commands - **sudo chkconfig**

--add nagios sudo chkconfig

nagios on

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

systemctl start nagios



```
aws Services Search [Alt+S] Mumbai ▼
/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 nagiosstats /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/nagiosstats
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 $file /usr/local/nagios/sbin; \
done
/usr/bin/install: cannot stat '*.cgi': No such file or directory
make[2]: *** [Makefile:205: install-basic] Error 1
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make[1]: *** [Makefile:197: install] Error 2
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make: *** [Makefile:235: install] Error 2
[ec2-user@ip-172-31-33-14 nagios-4.0.8]$
```

Step 17-Access Nagios Web Interface

- Copy the Public IP address of your EC2 instance.
- Open your browser and navigate to <http://nagios>.
- Enter the username nagiosadmin and the password you set in Step 16.

A new version of Nagios Core is available!
Visit nagios.org to download Nagios 4.5.5.

Get Started

- Start monitoring your infrastructure
- Change the look and feel of Nagios
- Extend Nagios with hundreds of addons
- Get support
- Get training
- Get certified

Quick Links

- [Nagios Library](#) (tutorials and docs)
- [Nagios Labs](#) (development blog)
- [Nagios Exchange](#) (plugins and addons)
- [Nagios Support](#) (tech support)
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