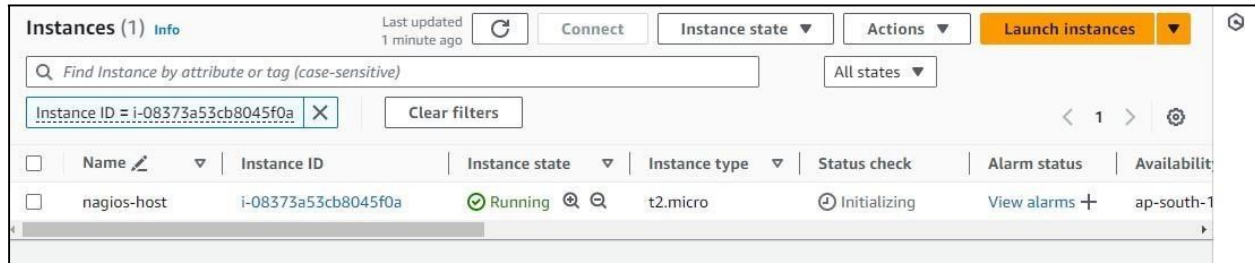# ADVANCE DEVOPS EXPERIMENT 9

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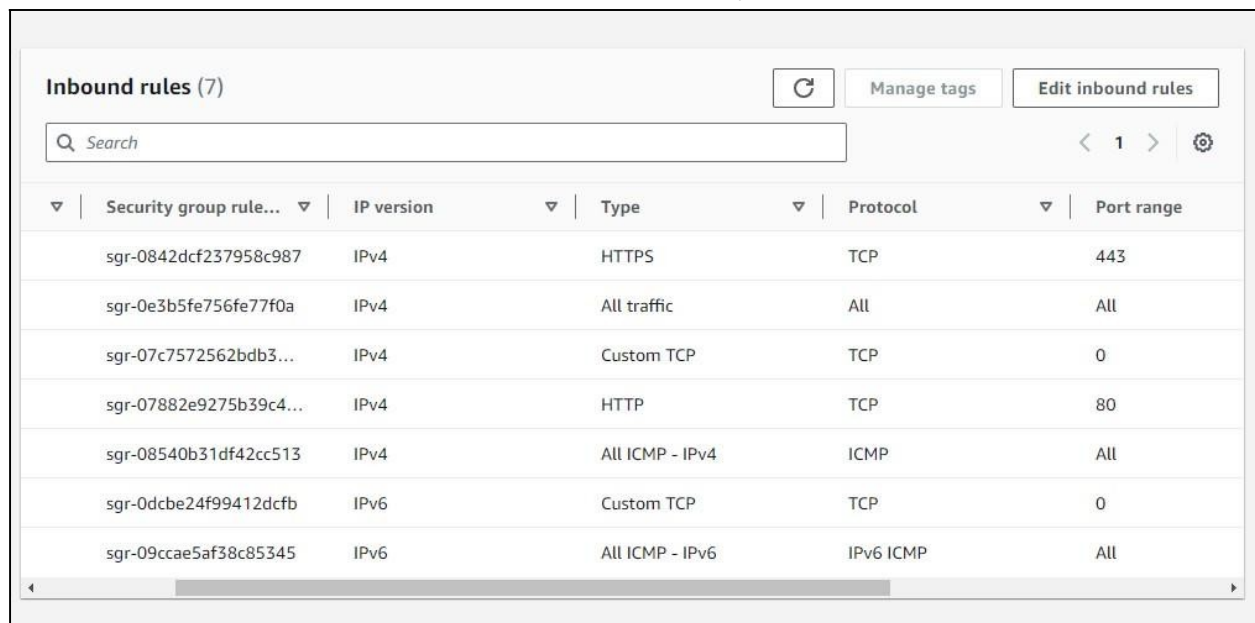
Step 3:Connect to your EC2 instance via the connect option available in EC2 instances menu

```
[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
 mailcap              noarch            2.1.49-3.amzn2023.0.3        amazonlinux          33 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
 libxcrypt-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
 freetype             x86_64            2.13.2-5.amzn2023.0.1        amazonlinux         423 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=excellmedi
a
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=gAAAAABm9SZKLFW7LwD1QAJ2jNzqmSJwAPA1mQ-
eAJYK8z5NmrV ifVkhbsV-qOfPsLUvICC6vvdHu6UeeIyvNZsVGUtir9BeQ%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 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]
```

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**

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

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

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
```
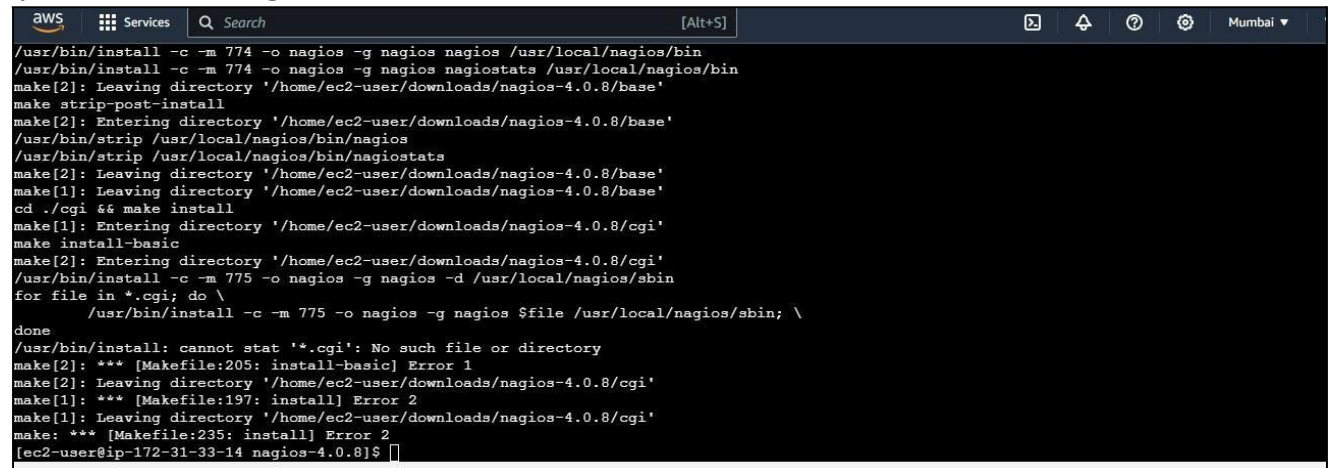
Step 16-Start Nagios

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    Q Search                    [Alt+S]                    ⊡  ⏀  ⑦  ⚙  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 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 $file /usr/local/nagios/sbin; \
done
/usr/bin/install: cannot stat '*.cgi': No such file or directory
make[2]: *** [Makefile:205: install-basic] Error 1
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make[1]: *** [Makefile:197: install] Error 2
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.0.8/cgi'
make: *** [Makefile:235: install] Error 2
[ec2-user@ip-172-31-33-14 nagios-4.0.8]$
```

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.

Nagios® Core™

Unable to get process status

Nagios® Core™
Version 4.4.6
April 28, 2020
Check for updates

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
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