Name: Devansh Wadhwani

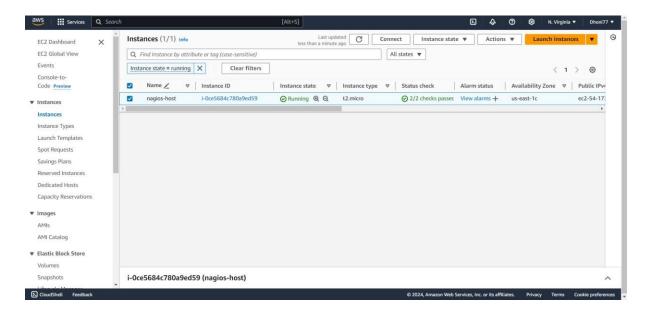
Class: D15A

Roll No.: 64

EXPERIMENT 9

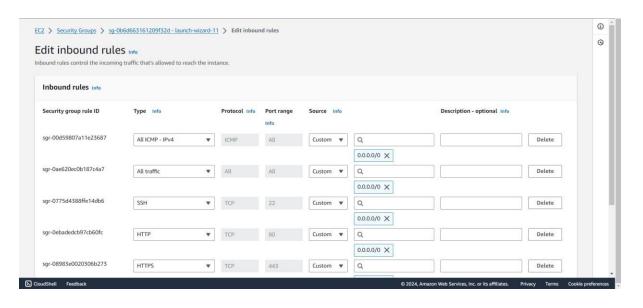
Aim :- To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

1. Create an Amazon Linux EC2 Instance



2. Configure Security Group

- Ensure HTTP, HTTPS, SSH, and ICMP are open from everywhere.
- Edit the inbound rules of the specified Security Group



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.

```
O Keyboard shortcut
To tab out of the terminal window and select the next button element, press the left and right Shift keys together.

Amazon Linux 2023

https://aws.amazon.com/linux/amazon-linux-2023

i-Oce5684c780a9ed59 (nagios-host)

publiciPs: 54.173.178.241 PrivatelPs: 172.31.45.178
```

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

```
[ec2-user@ip-172-31-40-254 ~]$ sudo yum update
Last metadata expiration check: 0:01:31 ago on Wed Oct 2 05:48:47 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-40-254 ~]$
```

sudo yum install httpd php

Package	Architecture	Version	Repository	Siz
Installing:				
httpd	x86 64	2.4.62-1.amzn2023	amazonlinux	48
php8.3	x86 64	8.3.10-1.amzn2023.0.1	amazonlinux	10
Installing dependencies:				
apr	x86 64	1.7.2-2.amzn2023.0.2	amazonlinux	129
apr-util	x86 64	1.6.3-1.amzn2023.0.1	amazonlinux	98
generic-logos-httpd	noarch	18.0.0-12.amzn2023.0.3	amazonlinux	19
httpd-core	x86 64	2.4.62-1.amzn2023	amazonlinux	1.4
httpd-filesystem	noarch	2.4.62-1.amzn2023	amazonlinux	14
httpd-tools	x86_64	2.4.62-1.amzn2023	amazonlinux	81
libbrotli	x86 64	1.0.9-4.amzn2023.0.2	amazonlinux	315
libsodium	x86 64	1.0.19-4.amzn2023	amazonlinux	176
libxslt	x86_64	1.1.34-5.amzn2023.0.2	amazonlinux	241
mailcap	noarch	2.1.49-3.amzn2023.0.3	amazonlinux	
nginx-filesystem	noarch	1:1.24.0-1.amzn2023.0.4	amazonlinux	9.8
php8.3-cli	x86_64	8.3.10-1.amzn2023.0.1	amazonlinux	3.7
php8.3-common	x86_64	8.3.10-1.amzn2023.0.1	amazonlinux	737
php8.3-process	x86 64	8.3.10-1.amzn2023.0.1	amazonlinux	45

sudo yum install gcc glibc glibc-common

ependencies resorved:	ackage glibc-common-2.34-52.amzn2023.0.11.x86_64 is already installed. ependencies resolved.						
Package	Architecture	Version	Repository	S			
nstalling:							
gcc	x86_64	11.4.1-2.amzn2023.0.2	amazonlinux	3			
nstalling dependencies:							
annobin-docs	noarch	10.93-1.amzn2023.0.1	amazonlinux	9			
annobin-plugin-gcc	x86_64	10.93-1.amzn2023.0.1	amazonlinux	88			
cpp	x86_64	11.4.1-2.amzn2023.0.2	amazonlinux				
gc	x86 64	8.0.4-5.amzn2023.0.2	amazonlinux	10			
glibc-devel	x86 64	2.34-52.amzn2023.0.11	amazonlinux	2			
glibc-headers-x86	noarch	2.34-52.amzn2023.0.11	amazonlinux	42			
guile22	x86 64	2.2.7-2.amzn2023.0.3	amazonlinux	6.			
kernel-headers	x86 64	6.1.109-118.189.amzn2023	amazonlinux	1.			
libmpc	x86 64	1.2.1-2.amzn2023.0.2	amazonlinux	6			
libtool-ltdl	x86 64	2.4.7-1.amzn2023.0.3	amazonlinux	3			
libxcrypt-devel	x86 64	4.4.33-7.amzn2023	amazonlinux	3			
make	x86 64	1:4.3-5.amzn2023.0.2	amazonlinux	53			

sudo yum install gd gd-devel

ec2-user8ip-172-31-40-254 ~]\$ sudo yum install gd gd-devel ast metadata expiration check: 0:03:46 ago on Wed Oct 2 05:48:47 2024. wependencies resolved.						
Package	Architecture	Version	Repository	Size		
Installing:						
gd	x86 64	2.3.3-5.amzn2023.0.3	amazonlinux	139 1		
gd-devel	x86 64	2.3.3-5.amzn2023.0.3	amazonlinux	38 1		
Installing dependencies:						
brotli	x86 64	1.0.9-4.amzn2023.0.2	amazonlinux	314		
brotli-devel	x86 64	1.0.9-4.amzn2023.0.2	amazonlinux	31 1		
bzip2-devel	x86 64	1.0.8-6.amzn2023.0.2	amazonlinux	214		
cairo	x86 64	1.17.6-2.amzn2023.0.1	amazonlinux	684 1		
cmake-filesystem	x86 64	3.22.2-1.amzn2023.0.4	amazonlinux	16 1		
fontconfig	x86 64	2.13.94-2.amzn2023.0.2	amazonlinux	273 1		
fontconfig-devel	x86 64	2.13.94-2.amzn2023.0.2	amazonlinux	128		
fonts-filesystem	noarch	1:2.0.5-12.amzn2023.0.2	amazonlinux	9.5		
freetype	x86 64	2.13.2-5.amzn2023.0.1	amazonlinux	423 1		
freetype-devel	x86 64	2.13.2-5.amzn2023.0.1	amazonlinux	912 1		
glib2-devel	x86 64	2.74.7-689.amzn2023.0.2	amazonlinux	486 1		
google-noto-fonts-common	noarch	20201206-2.amzn2023.0.2	amazonlinux	15 1		
google-noto-sans-vf-fonts	noarch	20201206-2.amzn2023.0.2	amazonlinux	492 1		
graphite2	x86 64	1.3.14-7.amzn2023.0.2	amazonlinux	97 1		
graphite2-devel	x86 64	1.3.14-7.amzn2023.0.2	amazonlinux	21 1		
harfbuzz	x86 64	7.0.0-2.amzn2023.0.1	amazonlinux	868		
harfbuzz-devel	x86 64	7.0.0-2.amzn2023.0.1	amazonlinux	404		
harfbuzz-icu	x86 64	7.0.0-2.amzn2023.0.1	amazonlinux	18 1		

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-172-31-40-254 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-40-254 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
BAD PASSWORD: The password is a palindrome
Retype new password:
Sorry, passwords do not match.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-40-254 ~]$
```

6. Create a new user group sudo groupadd nagcmd

```
[ec2-user@ip-172-31-40-254 ~]$ sudo groupadd nagcmd [ec2-user@ip-172-31-40-254 ~]$
```

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-1/2-31-40-254 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-40-254 ~]$ sudo usermod -a -G nagcmd nagios
sudo usermod -a -G nagcmd apache
[ec2-user@ip-172-31-40-254 ~]$
```

8. Create a new directory for Nagios downloads mkdir ~/downloads cd ~/downloads

```
[ec2-user@ip-172-31-40-254 ~]$ mkdir ~/downloads
cd ~/downloads
[ec2-user@ip-172-31-40-254 downloads]$
```

9. Use wget to download the source zip files.

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

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

tar zxvf nagios-4.4.6.tar.gz cd nagios-4.4.6

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

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

```
care --with-command-group=nagemd

sc2-user8ip-172-31-40-254 nagios-4.4.6]$ /configure --with-command

sc2-user8ip-172-31-40-254 nagios-4.4.6]$ /configure --with-command

sckcing for a BSD-compatible install... /usr/bin/install -c

sckcing for a BSD-compatible install... /usr/bin/install -c

sckcing host system type... x86_64-pc-linux-gnu

sckcing for gcc... gcc

sckcing whether the C compiler works... yes

sckcing for c compiler default output file name... a.out

scking for suffix of executables...

scking whether we are cross compiling... no

sckcing whether we are using the GNU C compiler... yes

sckcing whether we are using the GNU c compiler... yes

sckcing for gcc option to accept 150 C89... none needed

sckcing whether make sets $(MARS)... yes

sckcing whether In -s works... yes

sckcing for strip... /usr/bin/strip

sckcing for strip... /usr/bin/grep -E

sckcing for grep that handles long lines and -e.. /usr/bin/grep

sckcing for grep that handles long lines and -e.. /usr/bin/grep

sckcing for sys/wait. h that is POSIX.1 compatible... yes

scking for sys/stat.h... yes

scking for stdlib.h... yes

sckcing for inttypes.h... yes

sckcing for inttypes.h... yes

sckcing for inttypes.h... yes

sckcing for unistd.h... yes

sckcing for arpa/inet.h presence... yes

sckcing for arpa/inet.h presence... yes

sckcing for arpa/inet.h. yes
```

12. Compile the source code.

make all

```
| Cec2-user@ip-172-31-40-254 nagios-4.4.6|$ make all | d./base & make | 
             tutils.c:50:46: note: directive argument in the range [-2147483648, 65535]
50 | snprintf(port_str, sizeof(port_str), "%d", port);
       stutils.c:50:9: note: 'snprintf' output between 2 and 12 bytes into a destination of size 6
50 | snprintf(port_str, sizeof(port_str), "%d", port);
                                                                                                                                                                                                                                                                                                                                                                            o notifications o notificati
```

```
make install-classicui
  - This installs the classic theme for the Nagios
  web interface
** Support Notes ********************************
f you have questions about configuring or running Nagios, lease make sure that you:
       Look at the sample config files
Read the documentation on the Nagios Library at:
https://library.nagios.com
efore you post a question to one of the mailing lists.
Iso make sure to include pertinent information that could
alp others help you. This might include:
       re information on obtaining support for Nagios, visit:
       https://support.nagios.com
```

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

```
[ec2-user8ip-172-31-40-254 nagios-4.4.6]$ ./sudo make install
sudo make install-config
sudo make install-commandmode
-bash: ./sudo: No such file or directory
//sur/bin/install - c = m755 - d - or root - g root /lib/systemd/system
//sur/bin/install - c = m755 - d - or root - g root startup/default-service /lib/systemd/system/nagios.service
//sur/bin/install - c = m755 - on agios - g nagios - d /usr/local/nagios/etc
//sur/bin/install - c = m775 - o nagios - g nagios - d /usr/local/nagios/etc/objects
//sur/bin/install - c = m 775 - on agios - g nagios - d /usr/local/nagios/etc/objects
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/commands.cfg /usr/local/nagios/etc/objects/templates.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/remplates.cfg /usr/local/nagios/etc/objects/commands.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/remplates.cfg /usr/local/nagios/etc/objects/commands.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/remplates.cfg /usr/local/nagios/etc/objects/commands.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/rothates.cfg /usr/local/nagios/etc/objects/comtacts.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/rothates.cfg /usr/local/nagios/etc/objects/comtacts.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/rothates.cfg /usr/local/nagios/etc/objects/comtacts.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/rothates.cfg /usr/local/nagios/etc/objects/comtacts.cfg
//sur/bin/install - c - b = m 664 - on agios - g nagios sample-config/remplate-object/rothates.cfg /usr/local/nagios/etc/objects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects/robjects
```

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

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

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-172-31-40-254 nagios-4.4.6]$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[ec2-user@ip-172-31-40-254 nagios-4.4.6]$
```

17. Restart Apache sudo systemetl restart httpd

```
Adding password for user nagiosadmin
[ec2-user@ip-172-31-40-254 nagios-4.4.6]$ sudo systemctl restart httpd
[ec2-user@ip-172-31-40-254 nagios-4.4.6]$
```

cd ~/downloads tar zxvf nagiosplugins-2.3.3.tar.gz cd nagiosplugins-2.3.3

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

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

```
ec2-user@ip-172-31-80-22 nagios-plugins-2.3.3]$ ./configure --with-nagios-user=nagios --with-nagios-group=nagios nake undo make install ... /usr/bin/install -c hecking for a BSD-compatible install... /usr/bin/install -c hecking whether build environment is sane... yes hecking for a thread-safe mkdir -p.. /usr/bin/mkdir -p hecking for gawk... gawk hecking whether make sets $(MAKE)... yes hecking whether to disable maintainer-specific portions of Makefiles... yes hecking build system type... x86 64-unknown-linux-gnu hecking host system type... x86 64-unknown-linux-gnu hecking for gcc... gcc hecking for C compiler default output file name... a.out hecking whether the C compiler works... yes hecking whether we are cross compiling... no hecking for suffix of executables... hecking for suffix of executables... hecking whether we are using the GNU C compiler... yes hecking whether we are using the GNU C compiler... yes hecking for gcc option to accept ISO C89... none needed hecking for style of include used by make... GNU hecking for gcp that handles long lines and -e... /usr/bin/grep
```

19. Compile and install plugins 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

```
[ec2-user@ip-172-31-80-22 nagios-plugins-2.3.3] sudo chkconfig --add nagios
sudo chkconfig nagios on
sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
sudo systemetl start nagios
arror reading information on service nagios: No such file or directory
Note: Forwarding request to 'systemctl enable nagios.service'.
Treated symlink /etc/systemd/system/multi-user.target.wants/nagios.service -- /usr/lib/systemd/system/nagios.service.

Nagios Core 4.4.6

Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2020-04-28
License: GPL

Website: https://www.nagios.org
Reading configuration data...
Read main config file okay...
Read main config file okay...
Read object config files okay...

Checked 8 services.
Checked 1 hosts.
Checked 1 host s.
Checked 1 host s.
Checked 1 host s.
Checked 1 host s.
```

20. Check the status of Nagios

```
hings look okay - No serious problems were detected during the pre-flight check
ec2-user#ip-172-31-45-178 nagios-plugins-2.3.3]$ sudo systemctl status nagios
- nagios.service - Nagios Core 4.4.6
Loaded: loaded (JunXt/lib/xystew/rystew/ragios.service; enabled; preset: disabled)
Active: active (running) since Wed 2024-10-02 05:37:36 UTC; 14s ago
Docs: https://wow.nagios.org/documentation
Process: 67990 ExecstartPre-/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
Process: 67991 Execstart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
Main PID: 67992 (nagios)
Tasks: 6 (limit: 1112)
Memory: 2.0M
CEU: 16ms
CGroup: /system.slice/nagios.service
|-67992 /usr/local/nagios/bin/nagios -d /usr/local/nagios/var/rw/nagios.cfg
|-67992 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67994 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67995 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67996 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67996 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.dh
|-67996 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67997 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67996 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67997 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67996 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
|-67996 /us
```

23. Open up your browser and look for <a href="http://<your public ip address">http://<your public ip address/nagios

