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.

Theory:

Introduction
Continuous monitoring is a critical aspect of IT infrastructure management, enabling organizations to maintain system reliability and performance. Nagios Core is a widely-used open-source monitoring system that provides comprehensive monitoring solutions for servers, network devices, and applications. This practical aims to understand the theoretical underpinnings of Nagios Core, its plugins, and the Nagios Remote Plugin Executor (NRPE).

Overview of Nagios Core

What is Nagios Core?

Nagios Core is an open-source application designed to monitor the status of various components in an IT environment. It allows administrators to track the health of servers, network devices, and applications in real-time, providing alerts and notifications for any issues that may arise.
The core functionality includes:
Host Monitoring: Monitoring the availability and performance of servers and network devices.
Service Monitoring: Keeping track of specific services (e.g., HTTP, FTP) running on hosts.
Alerting: Sending notifications via email or SMS when issues are detected.
Reporting: Generating reports on system performance and uptime.

Key Components

Nagios Core: The central engine that performs monitoring tasks.
Nagios Plugins: A set of scripts that extend Nagios's capabilities by allowing it to check various metrics (e.g., CPU load, disk usage).
NRPE (Nagios Remote Plugin Executor): A daemon that allows Nagios to execute plugins on remote hosts. This is essential for monitoring systems that cannot be directly accessed by the Nagios server.

Importance of Continuous Monitoring

Continuous monitoring is vital for several reasons:
Proactive Issue Detection: By continuously monitoring systems, organizations can identify potential problems before they escalate into significant outages.

Performance Optimization: Monitoring helps in understanding system performance trends, enabling optimization and resource allocation.
Compliance and Reporting: Many industries require compliance with regulations that mandate continuous monitoring and reporting of system health.
Improved Reliability: Continuous monitoring contributes to higher system availability, reducing downtime and improving user satisfaction.

Installation and Configuration of Nagios Core:

Installing Nagios Core involves setting up the core application on a server that will act as the monitoring host. This includes configuring a web interface for easy access to monitoring data, which allows administrators to visualize the status of their infrastructure.

Configuration of Nagios Plugins

Nagios plugins are essential for extending the functionality of Nagios Core. These plugins perform specific checks on hosts and services, returning results back to the Nagios server. Proper configuration ensures that all necessary metrics are monitored effectively.
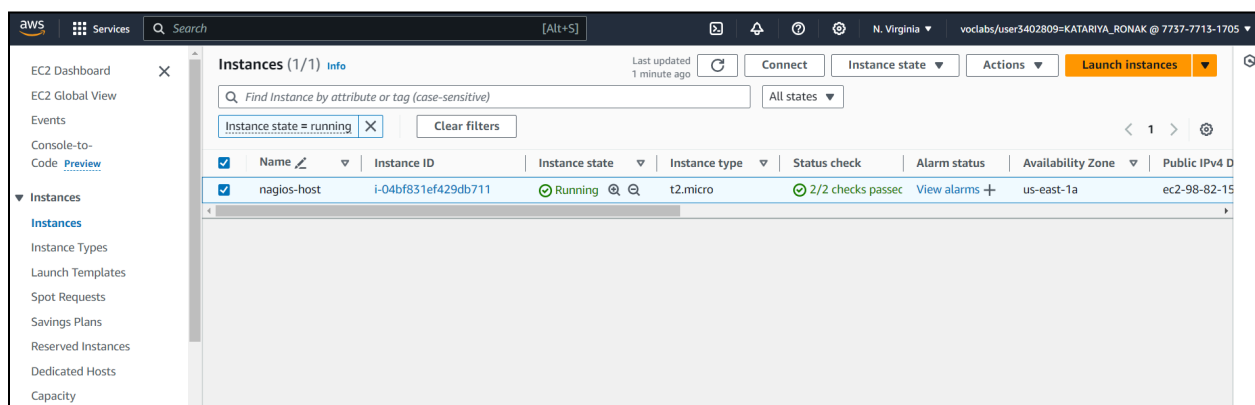
Deployment of NRPE

NRPE enables remote execution of plugins on monitored hosts. This is particularly useful for environments where direct access to servers is limited or where additional checks need to be performed on remote systems. Configuring NRPE involves setting up a daemon on each remote host and defining which checks can be executed remotely.

Implementation:

1. Create an Amazon Linux EC2 Instance
● Name it nagios-host.

2. Configure Security Group

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

3. Connect to Your EC2 Instance
● SSH into your EC2 instance or use EC2 Instance Connect from the browser

4. Update Package Indices and Install Required Packages
Commands -
sudo yum update
sudo yum install httpd php
sudo yum install gcc glibc glibc-common
sudo yum install gd gd-devel

```
Verifying          : mailcap-2.1.49-3.amzn2023.0.3.noarch                                                                    12/25
Verifying          : mod_http2-2.0.27-1.amzn2023.0.3.x86_64                                                                  13/25
Verifying          : mod_lua-2.4.62-1.amzn2023.x86_64                                                                        14/25
Verifying          : nginx-filesystem-1:1.24.0-1.amzn2023.0.4.noarch                                                         15/25
Verifying          : php8.3-8.3.10-1.amzn2023.0.1.x86_64                                                                     16/25
Verifying          : php8.3-cli-8.3.10-1.amzn2023.0.1.x86_64                                                                 17/25
Verifying          : php8.3-common-8.3.10-1.amzn2023.0.1.x86_64                                                              18/25
Verifying          : php8.3-fpm-8.3.10-1.amzn2023.0.1.x86_64                                                                 19/25
Verifying          : php8.3-mbstring-8.3.10-1.amzn2023.0.1.x86_64                                                            20/25
Verifying          : php8.3-opcache-8.3.10-1.amzn2023.0.1.x86_64                                                             21/25
Verifying          : php8.3-pdo-8.3.10-1.amzn2023.0.1.x86_64                                                                 22/25
Verifying          : php8.3-process-8.3.10-1.amzn2023.0.1.x86_64                                                             23/25
Verifying          : php8.3-sodium-8.3.10-1.amzn2023.0.1.x86_64                                                              24/25
Verifying          : php8.3-xml-8.3.10-1.amzn2023.0.1.x86_64                                                                 25/25

Installed:
apr-1.7.2-2.amzn2023.0.2.x86_64               apr-util-1.6.3-1.amzn2023.0.1.x86_64        apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch   httpd-2.4.62-1.amzn2023.x86_64       httpd-core-2.4.62-1.amzn2023.x86_64
httpd-filesystem-2.4.62-1.amzn2023.noarch     httpd-tools-2.4.62-1.amzn2023.x86_64        libbrotli-1.0.9-4.amzn2023.0.2.x86_64
libsodium-1.0.19-4.amzn2023.x86_64            libxslt-1.1.34-5.amzn2023.0.2.x86_64        mailcap-2.1.49-3.amzn2023.0.3.noarch
mod_http2-2.0.27-1.amzn2023.0.3.x86_64        mod_lua-2.4.62-1.amzn2023.x86_64            nginx-filesystem-1:1.24.0-1.amzn2023.0.4.noarch
php8.3-8.3.10-1.amzn2023.0.1.x86_64           php8.3-cli-8.3.10-1.amzn2023.0.1.x86_64     php8.3-common-8.3.10-1.amzn2023.0.1.x86_64
php8.3-fpm-8.3.10-1.amzn2023.0.1.x86_64       php8.3-mbstring-8.3.10-1.amzn2023.0.1.x86_64  php8.3-opcache-8.3.10-1.amzn2023.0.1.x86_64
php8.3-pdo-8.3.10-1.amzn2023.0.1.x86_64       php8.3-process-8.3.10-1.amzn2023.0.1.x86_64  php8.3-sodium-8.3.10-1.amzn2023.0.1.x86_64
php8.3-xml-8.3.10-1.amzn2023.0.1.x86_64

Complete!
[ec2-user@ip-172-31-92-109 ~]$
```

i-04bf831ef429db711 (nagios-host)   ✕

PublicIPs: 98.82.15.175   PrivateIPs: 172.31.92.109

5. Create a New Nagios User
Commands -
sudo adduser -m nagios
sudo passwd nagios

```
[ec2-user@ip-172-31-92-109 ~]$ sudo adduser -m nagios
sudo passwd nagios
Changing password for user nagios.
New password:
BAD PASSWORD: The password contains the user name in some form
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-92-109 ~]$
```

6. Create a New User Group
Commands -
sudo groupadd nagcmd

```
[ec2-user@ip-172-31-92-109 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-92-109 ~]$ sudo usermod -a -G nagcmd nagios
sudo usermod -a -G nagcmd apache
[ec2-user@ip-172-31-92-109 ~]$ mkdir ~/downloads
cd ~/downloads
```

7. Add Users to the Group
Commands -
sudo usermod -a -G nagcmd nagios

sudo usermod -a -G nagcmd apache

```
[ec2-user@ip-172-31-92-109 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-92-109 ~]$ sudo usermod -a -G nagcmd nagios
sudo usermod -a -G nagcmd apache
[ec2-user@ip-172-31-92-109 ~]$ mkdir ~/downloads
cd ~/downloads
```

8. Create a Directory for Nagios Downloads
Commands -
mkdir ~/downloads
cd ~/downloads

9. Download Nagios and Plugins 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

```
[ec2-user@ip-172-31-92-109 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
wget: missing URL
Usage: wget [OPTION]... [URL]...

Try `wget --help' for more options.
-bash: http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.: No such file or directory
-bash: gz: command not found
--2024-09-26 09:42:16--  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  8.63MB/s    in 0.3s

2024-09-26 09:42:16 (8.63 MB/s) - 'nagios-plugins-2.0.3.tar.gz' saved [2659772/2659772]
```

```
[ec2-user@ip-172-31-92-109 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
--2024-09-26 09:44:10--  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]
--2024-09-26 09:44:10--  http://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
Reusing existing connection to prdownloads.sourceforge.net:80.
HTTP request sent, awaiting response... 302 Found
Location: http://psychz.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1 [following]
--2024-09-26 09:44:11--  http://psychz.dl.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.8/nagios-4.0.8.tar.gz?viasf=1
Resolving psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)... 208.87.241.191
Connecting to psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)|208.87.241.191|:80... 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  2.60MB/s    in 0.7s

2024-09-26 09:44:12 (2.60 MB/s) - 'nagios-4.0.8.tar.gz' saved [1805059/1805059]

--2024-09-26 09:44:12--  http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
```

```
nagios-plugins-2.0.3/plugins-scripts/check_rpc.pl
nagios-plugins-2.0.3/plugins-scripts/check_oracle.sh
nagios-plugins-2.0.3/plugins-scripts/utils.pm.in
nagios-plugins-2.0.3/plugins-scripts/check_disk_smb.pl
nagios-plugins-2.0.3/plugins-scripts/t/
nagios-plugins-2.0.3/plugins-scripts/t/check_ifoperstatus.t
nagios-plugins-2.0.3/plugins-scripts/t/check_rpc.t
nagios-plugins-2.0.3/plugins-scripts/t/check_file_age.t
nagios-plugins-2.0.3/plugins-scripts/t/check_disk_smb.t
nagios-plugins-2.0.3/plugins-scripts/t/check_ifstatus.t
nagios-plugins-2.0.3/plugins-scripts/t/utils.t
nagios-plugins-2.0.3/plugins-scripts/check_mailq.pl
nagios-plugins-2.0.3/plugins-scripts/check_wave.pl
nagios-plugins-2.0.3/plugins-scripts/check_ircd.pl
nagios-plugins-2.0.3/plugins-scripts/utils.sh.in
nagios-plugins-2.0.3/plugins-scripts/check_ifstatus.pl
nagios-plugins-2.0.3/plugins-scripts/check_sensors.sh
nagios-plugins-2.0.3/pkg/
nagios-plugins-2.0.3/pkg/fedora/
nagios-plugins-2.0.3/pkg/fedora/requires
nagios-plugins-2.0.3/pkg/solaris/
nagios-plugins-2.0.3/pkg/solaris/preinstall
nagios-plugins-2.0.3/pkg/solaris/solpkg
nagios-plugins-2.0.3/pkg/solaris/pkginfo.in
nagios-plugins-2.0.3/pkg/solaris/pkginfo
nagios-plugins-2.0.3/pkg/redhat/
nagios-plugins-2.0.3/pkg/redhat/requires
[ec2-user@ip-172-31-92-109 downloads]$
```

i-04bf831ef429db711 (nagios-host)

PublicIPs: 98.82.15.175   PrivateIPs: 172.31.92.109

10. Extract the Nagios Source File
Commands -
tar zxvf nagios-4.4.6.tar.gz
cd nagios-4.4.6

```
[ec2-user@ip-172-31-92-109 downloads]$  cd nagios-4.0.8
```

11. Run the Configuration Script
Commands -
./configure --with-command-group=nagcmd

EXTRA (some packages were installed which when not installed were giving errors)

```
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ sudo yum update -y
Last metadata expiration check: 0:25:56 ago on Thu Sep 26 09:26:37 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ sudo yum groupinstall "Development Tools" -y
Last metadata expiration check: 0:26:09 ago on Thu Sep 26 09:26:37 2024.
No match for group package "system-rpm-config"
No match for group package "rcs"
No match for group package "pkgconfig"
Dependencies resolved.
================================================================================================
 Package                    Architecture      Version                              Repository        Size
================================================================================================
Installing group/module packages:
 autoconf                   noarch            2.69-36.amzn2023.0.3                  amazonlinux       666 k
 automake                   noarch            1.16.5-9.amzn2023.0.3                 amazonlinux       677 k
 bison                      x86_64            3.7.4-2.amzn2023.0.2                  amazonlinux       925 k
 byacc                      x86_64            2.0.20210109-2.amzn2023.0.3           amazonlinux        90 k
 cscope                     x86_64            15.9-15.amzn2023.0.3                  amazonlinux       288 k
 ctags                      x86_64            5.9-1.20210725.0.amzn2023.0.2         amazonlinux       719 k
 diffstat                   x86_64            1.64-4.amzn2023.0.2                   amazonlinux        43 k
 doxygen                    x86_64            2:1.9.4-1.amzn2023.0.3                amazonlinux       4.7 M
 elfutils                   x86_64            0.188-3.amzn2023.0.2                  amazonlinux       525 k
 flex                       x86_64            2.6.4-7.amzn2023.0.2                  amazonlinux       310 k
```

i-04bf831ef429db711 (nagios-host)   ×

PublicIPs: 98.82.15.175   PrivateIPs: 172.31.92.109

```
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ gcc --version
gcc (GCC) 11.4.1 20230605 (Red Hat 11.4.1-2)
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

```
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ which gcc
/usr/bin/gcc
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ nano ~/.bashrc
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ source ~/.bashrc
[ec2-user@ip-172-31-92-109 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
checking for gcc option to accept ISO C89... none needed
checking whether make sets $(MAKE)... yes
checking for strip... /usr/bin/strip
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for ANSI C header files... yes
checking whether time.h and sys/time.h may both be included... yes
checking for sys/wait.h that is POSIX.1 compatible... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
```

EXTRA done

Change directory to nagios4.08
Then run configure file:

```
[ec2-user@ip-172-31-92-109 downloads]$ cd nagios-4.0.8
[ec2-user@ip-172-31-92-109 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
checking for gcc option to accept ISO C89... none needed
checking whether make sets $(MAKE)... yes
checking for strip... /usr/bin/strip
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for ANSI C header files... yes
checking whether time.h and sys/time.h may both be included... yes
checking for sys/wait.h that is POSIX.1 compatible... yes
checking for sys/types.h... yes
```

Configuration 👍

```
*** Configuration summary for nagios 4.0.8 08-12-2014 ***:

 General Options:
 -------------------------
         Nagios executable:  nagios
         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.
```

12. Compile the Source Code
Commands -
make all

```
[ec2-user@ip-172-31-92-109 nagios-4.0.8]$ make all
cd ./base && make
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/base'
make -C ../lib
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.0.8/lib'
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c squeue.c -o squeue.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c kvvec.c -o kvvec.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c iocache.c -o iocache.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c iobroker.c -o iobroker.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c bitmap.c -o bitmap.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c dkhash.c -o dkhash.o
gcc -Wall -g -O2 -DHAVE_CONFIG_H -c runcmd.c -o runcmd.o
runcmd.c: In function 'runcmd_open':
runcmd.c:347:12: warning: 'nonnull' argument 'cmd' compared to NULL [-Wnonnull-compare]
  347 |         if (!cmd || !*cmd || !pfd || !pfderr)
      |            ^
runcmd.c:347:30: warning: 'nonnull' argument 'pfd' compared to NULL [-Wnonnull-compare]
  347 |        if (!cmd || !*cmd || !pfd || !pfderr)
      |                                ^~~~
runcmd.c:347:38: warning: 'nonnull' argument 'pfderr' compared to NULL [-Wnonnull-compare]
  347 |        if (!cmd || !*cmd || !pfd || !pfderr)
      |                                         ^~~~~~~~
runcmd.c:389:12: warning: 'nonnull' argument 'iobreg' compared to NULL [-Wnonnull-compare]
```

```
[ec2-user@ip-172-31-92-109 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;
      |                   ^
```

```
*** Support Notes *************************************

If you have questions about configuring or running Nagios,
please make sure that you:

    - Look at the sample config files
    - Read the documentation on the Nagios Library at:
         https://library.nagios.com

before you post a question to one of the mailing lists.
Also make sure to include pertinent information that could
help others help you.  This might include:

    - What version of Nagios you are using
    - What version of the plugins you are using
    - Relevant snippets from your config files
    - Relevant error messages from the Nagios log file

For more information on obtaining support for Nagios, visit:

       https://support.nagios.com

*************************************************************

Enjoy.

[ec2-user@ip-172-31-81-173 nagios-4.4.6]$
```

13. Install Binaries, Init Script, and Sample Config Files

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

```
Enjoy.

[ec2-user@ip-172-31-81-173 nagios-4.4.6]$ ./sudo make install
sudo make install-init
sudo make install-config
sudo make install-commandmode
-bash: ./sudo: No such file or directory
/usr/bin/install -c -m 755 -d -o root /lib/systemd/system
/usr/bin/install -c -m 755 -o root -g root startup/default-service /lib/systemd/system/nagios.service
/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.

/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-172-31-81-173 nagios-4.4.6]$ ~
```

14. 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.

```
  GNU nano 5.8                            /usr/local/nagios/etc/objects/contacts.cfg
#
###################################################################

# Just one contact defined by default - the Nagios admin (that's you)
# This contact definition inherits a lot of default values from the
# 'generic-contact' template which is defined elsewhere.

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                   masterincoding03@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    ^K Cut       ^T Execute    ^C Location    M-U Undo    M-A Set Mark   M-] T
^X Exit       ^R Read File   ^\ Replace     ^U Paste     ^J Justify    ^/ Go To Line  M-E Redo    M-6 Copy       ^Q Wh
```

15. Configure the Web Interface

Commands -
sudo make install-webconf

```
[ec2-user@ip-172-31-81-173 nagios-4.4.6]$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.conf
if [ 0 -eq 1 ]; then \
        ln -s /etc/httpd/conf.d/nagios.conf /etc/apache2/sites-enabled/nagios.conf; \
fi

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

[ec2-user@ip-172-31-81-173 nagios-4.4.6]$
```

16. 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.

```
[ec2-user@ip-172-31-81-173 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-172-31-81-173 nagios-4.4.6]$
```

17. Restart Apache

Commands -
sudo systemctl restart httpd

```
[ec2-user@ip-172-31-81-173 nagios-4.4.6]$ sudo systemctl restart httpd
```

18. Extract the Plugins Source File

Commands -
cd ~/downloads
tar zxvf nagios-plugins-2.3.3.tar.gz
cd nagios-plugins-2.3.3

19. Compile and Install Plugins

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

```
[ec2-user@ip-172-31-81-173 nagios-plugins-2.3.3]$ ./configure --with-nagios-user=nagios --with-nagios-group=nagios
make
sudo make install
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
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
checking for gcc option to accept ISO C89... none needed
checking for style of include used by make... GNU
checking dependency style of gcc... gcc3
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for Minix Amsterdam compiler... no
checking for ar... ar
```

i-02099de677d2ddadf (nagios-host)

PublicIPs: 34.226.142.160   PrivateIPs: 172.31.81.173

20. 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

```
[ec2-user@ip-172-31-81-173 nagios-4.4.6]$ sudo systemctl enable httpd
sudo systemctl start httpd
sudo systemctl enable nagios
sudo systemctl start nagios
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[ec2-user@ip-172-31-81-173 nagios-4.4.6]$
```

```
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.3.3/plugins-root'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.3.3/plugins-root'
Making install in po
make[1]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.3.3/po'
/usr/bin/mkdir -p /usr/local/nagios/share
installing fr.gmo as /usr/local/nagios/share/locale/fr/LC_MESSAGES/nagios-plugins.mo
installing de.gmo as /usr/local/nagios/share/locale/de/LC_MESSAGES/nagios-plugins.mo
if test "nagios-plugins" = "gettext-tools"; then \
  /usr/bin/mkdir -p /usr/local/nagios/share/gettext/po; \
  for file in Makefile.in.in remove-potcdate.sin    Makevars.template; do \
    /usr/bin/install -c -o nagios -g nagios -m 644 ./$file \
                   /usr/local/nagios/share/gettext/po/$file; \
  done; \
  for file in Makevars; do \
    rm -f /usr/local/nagios/share/gettext/po/$file; \
  done; \
else \
  : ; \
fi
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.3.3/po'
make[1]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.3.3'
make[2]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.3.3'
make[2]: Nothing to be done for 'install-exec-am'.
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.3.3'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.3.3'
[ec2-user@ip-172-31-81-173 nagios-plugins-2.3.3]$
```

i-02099de677d2ddadf (nagios-host)

21. Check the Status of Nagios

Commands -
sudo systemctl status nagios

```
● nagios.service - Nagios Core 4.4.6
     Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; preset: disabled)
     Active: active (running) since Tue 2024-10-01 16:44:47 UTC; 26s ago
       Docs: https://www.nagios.org/documentation
    Process: 79825 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
    Process: 79826 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Main PID: 79827 (nagios)
      Tasks: 6 (limit: 1112)
     Memory: 2.1M
        CPU: 21ms
     CGroup: /system.slice/nagios.service
             ├─79827 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
             ├─79828 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─79829 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─79830 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─79831 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─79832 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: qh: Socket '/usr/local/nagios/var/rw/nagios.qh' successfully initialized
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: qh: core query handler registered
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: qh: echo service query handler registered
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: qh: help for the query handler registered
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: wproc: Successfully registered manager as @wproc with query handler
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: wproc: Registry request: name=Core Worker 79830;pid=79830
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: wproc: Registry request: name=Core Worker 79831;pid=79831
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: wproc: Registry request: name=Core Worker 79829;pid=79829
Oct 01 16:44:47 ip-172-31-81-173.ec2.internal nagios[79827]: wproc: Registry request: name=Core Worker 79828;pid=79828
lines 1-27
```
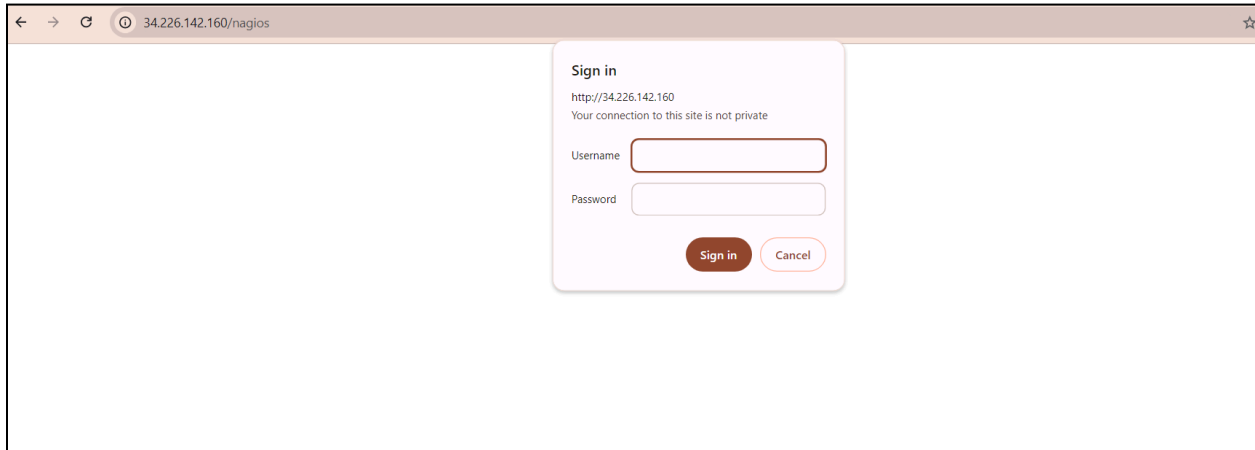
i-02099de677d2ddadf (nagios-host)

22. Access Nagios Web Interface
● Copy the Public IP address of your EC2 instance.
● Open your browser and navigate to http://<your_public_ip_address>/nagios.

● Enter the username nagiosadmin and the password you set in Step 16.
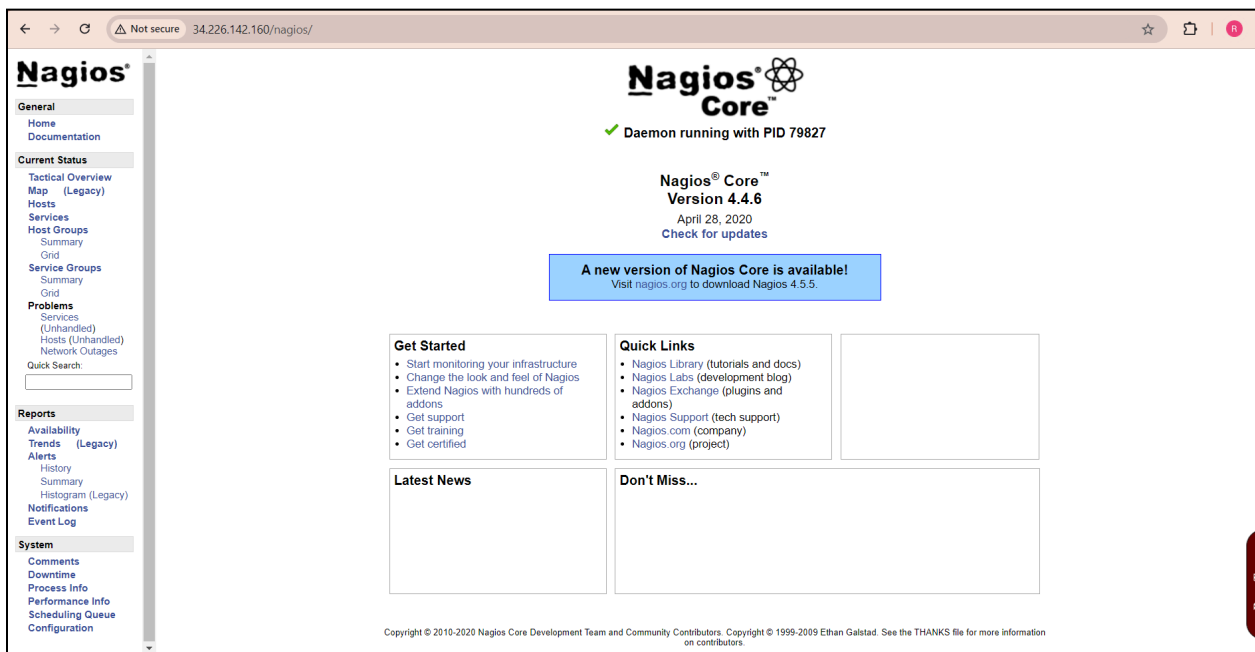
EXTRA:

Downloaded extra packages:

```
[ec2-user@ip-172-31-81-173 nagios-plugins-2.3.3]$ sudo yum install https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
Last metadata expiration check: 0:33:33 ago on Tue Oct  1 15:46:18 2024.
[MIRROR] epel-release-latest-7.noarch.rpm: Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
[MIRROR] epel-release-latest-7.noarch.rpm: Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
[MIRROR] epel-release-latest-7.noarch.rpm: Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
[MIRROR] epel-release-latest-7.noarch.rpm: Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
[FAILED] epel-release-latest-7.noarch.rpm: Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
Status code: 404 for https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm (IP: 38.145.60.23)
[ec2-user@ip-172-31-81-173 nagios-plugins-2.3.3]$
```

EXTRA:

```
[ec2-user@ip-172-31-81-173 nagios-plugins-2.3.3]$ sudo yum install -y gcc glibc glibc-common perl httpd php
sudo yum install -y gd gd-devel
Last metadata expiration check: 0:53:46 ago on Tue Oct  1 15:46:18 2024.
Package gcc-11.4.1-2.amzn2023.0.2.x86_64 is already installed.
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.
Package httpd-2.4.62-1.amzn2023.x86_64 is already installed.
Package php8.3-8.3.10-1.amzn2023.0.1.x86_64 is already installed.
Dependencies resolved.
================================================================================
 Package            Architecture   Version                  Repository     Size
================================================================================
Installing:
 perl               x86_64         4:5.32.1-477.amzn2023.0.6  amazonlinux    13 k
Installing dependencies:
 gcc-c++            x86_64         11.4.1-2.amzn2023.0.2     amazonlinux    12 M
 libdatrie          x86_64         0.2.13-1.amzn2023.0.2     amazonlinux    33 k
 libstdc++-devel    x86_64         11.4.1-2.amzn2023.0.2     amazonlinux    2.2 M
 libthai            x86_64         0.1.28-6.amzn2023.0.2     amazonlinux    209 k
 perl-Algorithm-Diff  noarch       1.2010-2.amzn2023.0.2     amazonlinux    47 k
 perl-Archive-Tar     noarch       2.40-1.amzn2023.0.2       amazonlinux    72 k
```