

## 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:

#### What is Nagios?

Nagios is an open-source software for continuous monitoring of systems, networks, and infrastructures. It runs plugins stored on a server that is connected with a host or another server on your network or the Internet. In case of any failure, Nagios alerts about the issues so that the technical team can perform the recovery process immediately.

Nagios is used for continuous monitoring of systems, applications, service and business processes in a DevOps culture

#### Installation of Nagios

**Prerequisites:** AWS Free Tier

#### Steps:

1. Create an Amazon Linux EC2 Instance in AWS and name it - nagios-host

**Name and tags** [Info](#)

Name  
nagios-host [Add additional tags](#)

**Application and OS Images (Amazon Machine Image)** [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.

Q Search our full catalog including 1000s of application and OS images

Recents Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Linux OpenSUSE

**Amazon Machine Image (AMI)**

Amazon Linux 2023 AMI  
ami-0ff1b9a61dec8a5f (64-bit (x86), uefi-preferred) / ami-0621e09dd3263acc3 (64-bit (Arm), uefi)  
Virtualization: hvm ENA enabled: true Root device type: ebs [Free tier eligible](#)

Description  
Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.

**Summary**

Number of instances [Info](#)  
1

Software Image (AMI)  
Amazon Linux 2023 AMI 2023.5.2...[read more](#)  
ami-0ff1b9a61dec8a5f

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
nagios-sec

Storage (volumes)  
1 volume(s) - 8 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel [Launch instance](#)  
[Review commands](#)

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

lab9 ▼

🔄 Create new key pair

▼ Network settings [Info](#)

Edit

Network [Info](#)

vpc-0531204c9e29f6332

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☐ Create security group
 ☒ Select existing security group

Select security groups ▼

nagios-sec sg-0641cf06e5063ce27 ✕

VPC: vpc-0531204c9e29f6332

🔄 Compare security group rules

Security groups that you add or remove here will be added to or removed from all your network interfaces.

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.5.2...[read more](#)

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✕

Cancel

Launch Instance

Review commands

|   |             |                     |         |   |          |                   |               |            |                          |                |   |   |
|---|-------------|---------------------|---------|---|----------|-------------------|---------------|------------|--------------------------|----------------|---|---|
| ✓ | nagios-host | i-05fbf6cb094782d3a | Running | 🔍 | t2.micro | 2/2 checks passed | View alarms + | us-east-1d | ec2-44-203-198-177.co... | 44.203.198.177 | - | - |
|---|-------------|---------------------|---------|---|----------|-------------------|---------------|------------|--------------------------|----------------|---|---|

2. Under Security Group, make sure HTTP, HTTPS, SSH, ICMP are open from everywhere.

Inbound rules (7)

Q Search

1

Edit inbound rules

Manage tags

| <input type="checkbox"/> | Name | Security group rule... | IP version | Type            | Protocol  | Port range | Source    | Description |
|--------------------------|------|------------------------|------------|-----------------|-----------|------------|-----------|-------------|
| <input type="checkbox"/> | -    | sgr-0f8f465fa81870fb   | IPv4       | Custom TCP      | TCP       | 5666       | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-03b98ec2d7ebfffb   | IPv4       | HTTP5           | TCP       | 443        | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-0662407c877a008... | IPv4       | All ICMP - IPv6 | IPv6 ICMP | All        | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-0e4392fdec7375227  | IPv4       | All ICMP - IPv4 | ICMP      | All        | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-0c07df76a67494d56  | IPv4       | SSH             | TCP       | 22         | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-0a9bd50af59255429  | IPv4       | All traffic     | All       | All        | 0.0.0.0/0 | -           |
| <input type="checkbox"/> | -    | sgr-0272c1b9ca6fb1b73  | IPv4       | HTTP            | TCP       | 80         | 0.0.0.0/0 | -           |

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.

EC2 > Instances > i-095b567c2f5ae6a91 > Connect to instance

## Connect to instance Info

Connect to your instance i-095b567c2f5ae6a91 (nagios-host) using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

All ports are open to all IPv4 addresses in your security group

All ports are currently open to all IPv4 addresses, indicated by All and 0.0.0.0/0 in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect service IP addresses for your Region: 18.206.107.24/29. [Learn more.](#)

Instance ID  
i-095b567c2f5ae6a91 (nagios-host)

Connection Type

☒

Connect using EC2 Instance Connect

Connect using the EC2 Instance Connect browser-based client, with a public IPv4 or IPv6 address.

☐

Connect using EC2 Instance Connect Endpoint

Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

☒

Public IPv4 address

54.162.128.119

☐

IPv6 address

Username

Enter the username defined in the AMI used to launch the instance. If you don't define a custom username, use the default username, ec2-user.

ec2-user

X

Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel

Connect

```
[ec2-user@ip-172-31-34-108 ~]$ sudo yum update
Last metadata expiration check: 0:04:33 ago on Fri Oct 4 04:35:02 2024.
Dependencies resolved.
Nothing to do.
Complete!
```

### sudo yum update

```
[ec2-user@ip-172-31-91-91 ~]$
sudo yum update
Last metadata expiration check: 0:19:03 ago on Sun Sep 29 06:56:15 2024.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-91-91 ~]$ |
```

### sudo yum install httpd php

```
[ec2-user@ip-172-31-91-91 ~]$ sudo yum install httpd php
Last metadata expiration check: 0:19:29 ago on Sun Sep 29 06:56:15 2024.
Dependencies resolved.
=====
Package                Architecture      Version           Repository        Size
=====
Installing:
httpd                  x86_64           2.4.62-1.amzn2023.0.1  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.amzn2022.0.2   amazonlinux      315 k
libsodium             x86_64           1.0.19-4.amzn2023      amazonlinux      176 k
libssl               x86_64           1.1.34-5.amzn2023.0.2   amazonlinux      241 k
mailcap               noarch           2.1.49-3.amzn2023.0.3   amazonlinux      33 k
mpinnr-filesystem     noarch           1:1.24.0-1.amzn2023.0.4  amazonlinux      9.0 k
php8.3-cli            x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      3.7 M
php8.3-common         x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      737 k
php8.3-process        x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      45 k
php8.3-xml            x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      154 k
Installing weak dependencies:
apr-util-openssl      x86_64           1.6.3-1.amzn2023.0.1   amazonlinux      17 k
mod_http2             x86_64           2.0.27-1.amzn2023.0.3   amazonlinux      166 k
sod_lua               x86_64           2.4.62-1.amzn2023      amazonlinux      61 k
php8.3-fpm            x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      1.9 M
php8.3-mbstring       x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      528 k
php8.3-opcache        x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      379 k
php8.3-pdo            x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      89 k
php8.3-sodium         x86_64           8.3.10-1.amzn2023.0.1   amazonlinux      41 k
```

```

Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing
Installing      : php8.3-common-8.3.10-1.amzn2023.0.1.x86_64      1/1
Installing      : apr-1.7.2-2.amzn2023.0.2.x86_64                1/25
Installing      : apr-util-openssl-1.6.2-1.amzn2023.0.1.x86_64    2/25
Installing      : apr-util-1.6.3-1.amzn2023.0.1.x86_64           3/25
Installing      : apr-1.6.3-1.amzn2023.0.1.x86_64                4/25
Installing      : mailcap-2.1.49-3.amzn2023.0.3.noarch             5/25
Running scriptlet: httpd-filesystem-2.4.62-1.amzn2023.noarch      6/25

```

### sudo yum install gcc glibc glibc-common

```

[ec2-user@ip-172-31-34-108 ~]$ sudo yum install gcc glibc glibc-common
Last metadata expiration check: 0:06:01 ago on Fri Oct 4 04:35:02 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                Arch      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

```

```

Installed:
annobin-docs-10.93-1.amzn2023.0.1.noarch
annobin-plugin-gcc-10.93-1.amzn2023.0.1.x86_64
cpp-11.4.1-2.amzn2023.0.2.x86_64
gc-8.0.4-5.amzn2023.0.2.x86_64
gcc-11.4.1-2.amzn2023.0.2.x86_64
glibc-devel-2.34-52.amzn2023.0.11.x86_64
glibc-headers-x86-2.34-52.amzn2023.0.11.noarch
guile22-2.2.7-2.amzn2023.0.3.x86_64
kernel-headers-6.1.109-118.189.amzn2023.x86_64
libmpc-1.2.1-2.amzn2023.0.2.x86_64
libtool-ltdl-2.4.7-1.amzn2023.0.3.x86_64
libxcrypt-devel-4.4.33-7.amzn2023.x86_64
make-1:4.3-5.amzn2023.0.2.x86_64

```

Complete!

### sudo yum install gd gd-devel

```
[ec2-user@ip-172-31-34-108 ~]$ sudo yum install gd gd-devel
Last metadata expiration check: 0:06:19 ago on Fri Oct 4 04:35:02 2024.
Dependencies resolved.

=====
Package                               Arch 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-filestream                     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
freetype-devel                       x86_64 2.13.2-5.amzn2023.0.1                    amazonlinux 912 k
glib2-devel                          x86_64 2.74.7-689.amzn2023.0.2                  amazonlinux 486 k
google-noto-fonts-common              noarch 20201206-2.amzn2023.0.2                  amazonlinux 15 k
google-noto-sans-vf-fonts             noarch 20201206-2.amzn2023.0.2                  amazonlinux 492 k
graphite2                             x86_64 1.3.14-7.amzn2023.0.2                    amazonlinux 97 k
graphite2-devel                       x86_64 1.3.14-7.amzn2023.0.2                    amazonlinux 21 k
harfbuzz                             x86_64 7.0.0-2.amzn2023.0.1                    amazonlinux 868 k
harfbuzz-devel                       x86_64 7.0.0-2.amzn2023.0.1                    amazonlinux 404 k
harfbuzz-icu                         x86_64 7.0.0-2.amzn2023.0.1                    amazonlinux 18 k
jbigkit-libs                         x86_64 2.1-21.amzn2023.0.2                    amazonlinux 54 k
langpacks-core-font-en               noarch 3.0-21.amzn2023.0.4                    amazonlinux 10 k
libICE                               x86_64 1.0.10-6.amzn2023.0.2                    amazonlinux 71 k
libSM                                 x86_64 1.2.3-8.amzn2023.0.2                    amazonlinux 42 k
libX11                               x86_64 1.7.2-3.amzn2023.0.4                    amazonlinux 657 k

Installed:
brotli-1.0.9-4.amzn2023.0.2.x86_64      brotli-devel-1.0.9-4.amzn2023.0.2.x86_64      bzip2-devel-1.0.8-6.amzn2023.0.2.x86_64
cairo-1.17.6-2.amzn2023.0.1.x86_64      cmake-filesystem-3.22.2-1.amzn2023.0.4.x86_64  fontconfig-devel-2.13.94-2.amzn2023.0.2.x86_64
fontconfig-2.13.2-5.amzn2023.0.1.x86_64  gd-2.3.3-5.amzn2023.0.3.x86_64                gd-devel-2.3.3-5.amzn2023.0.3.x86_64
glib2-devel-2.74.7-689.amzn2023.0.2.x86_64  google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch  google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
graphite2-1.3.14-7.amzn2023.0.2.x86_64    graphite2-devel-1.3.14-7.amzn2023.0.2.x86_64  harfbuzz-7.0.0-2.amzn2023.0.1.x86_64
harfbuzz-devel-7.0.0-2.amzn2023.0.1.x86_64  harfbuzz-icu-7.0.0-2.amzn2023.0.1.x86_64      harfbuzz-libs-7.0.0-2.amzn2023.0.1.x86_64
jbigkit-libs-2.1-21.amzn2023.0.2.x86_64    libICE-1.0.10-6.amzn2023.0.2.x86_64           libSM-1.2.3-8.amzn2023.0.2.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch  libX11-common-1.7.2-3.amzn2023.0.4.noarch  libXau-1.0.9-6.amzn2023.0.2.x86_64
libXcb-1.13.1-4.amzn2023.0.2.x86_64        libXdmcp-1.1.3-4.amzn2023.0.2.x86_64          libXext-1.3.4-6.amzn2023.0.2.x86_64
libXft-2.0.4-1.amzn2023.0.2.x86_64         libXrender-0.9.10-14.amzn2023.0.2.x86_64       libffi-devel-3.4.4-1.amzn2023.0.1.x86_64
libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64  libpng-devel-2.1.6-37-10.amzn2023.0.6.x86_64  libpng-2.1.6-37-10.amzn2023.0.6.x86_64
libsepol-devel-3.4-3.amzn2023.0.3.x86_64    libwebp-1.2.4-1.amzn2023.0.6.x86_64          libwebp-devel-1.2.4-1.amzn2023.0.6.x86_64
libxcb-devel-1.13.1-7.amzn2023.0.2.x86_64  pcre2-utf16-10.40-1.amzn2023.0.3.x86_64       pcre2-utf32-10.40-1.amzn2023.0.3.x86_64
sysprof-capture-devel-3.40-1-2.amzn2023.0.2.x86_64  xml-common-0.6-3-56.amzn2023.0.2.noarch  zlib-devel-1.2.11-33.amzn2023.0.5.x86_64
xz-devel-5.2.5-9.amzn2023.0.2.x86_64

Complete!
```

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
```

(password : *hello123*)

```
[ec2-user@ip-172-31-34-108 ~]$ sudo adduser -m nagios
sudo passwd nagios
Changing password for user nagios.
New password:
[ec2-user@ip-172-31-34-108 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
```

6. Create a new user group

**sudo groupadd nagcmd**

```
[ec2-user@ip-172-31-34-108 ~]$ sudo groupadd nagcmd
```

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-172-31-34-108 ~]$ sudo usermod -a -G nagcmd nagios
sudo usermod -a -G nagcmd apache
```

8. Create a new directory for Nagios downloads

**mkdir ~/downloads**

**cd ~/downloads**

```
[ec2-user@ip-172-31-34-108 ~]$ mkdir ~/downloads
cd ~/downloads
```

9. Use wget to download the source zip files.

wget <https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz>

```
[ec2-user@ip-172-31-34-108 downloads]$ wget https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz
--2024-10-04 04:42:39-- https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.5.5.tar.gz
Resolving assets.nagios.com (assets.nagios.com)... 45.79.49.120, 2600:3c00::f03c:92ff:fe7:45ce
Connecting to assets.nagios.com (assets.nagios.com)|45.79.49.120|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2065473 (2.0M) [application/x-gzip]
Saving to: 'nagios-4.5.5.tar.gz'

nagios-4.5.5.tar.g 100%[=====>] 1.97M 5.31MB/s in 0.4s

2024-10-04 04:42:39 (5.31 MB/s) - 'nagios-4.5.5.tar.gz' saved [2065473/2065473]
```

wget <https://nagios-plugins.org/download/nagios-plugins-2.4.11.tar.gz>

```
[ec2-user@ip-172-31-34-108 downloads]$ wget https://nagios-plugins.org/download/nagios-plugins-2.4.11.tar.gz
--2024-10-04 04:42:47-- https://nagios-plugins.org/download/nagios-plugins-2.4.11.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|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2753049 (2.6M) [application/x-gzip]
Saving to: 'nagios-plugins-2.4.11.tar.gz'

nagios-plugins-2.4 100%[=====>] 2.62M 5.79MB/s in 0.5s

2024-10-04 04:42:48 (5.79 MB/s) - 'nagios-plugins-2.4.11.tar.gz' saved [2753049/2753049]

[ec2-user@ip-172-31-34-108 downloads]$ tar zxvf nagios-4.5.5.tar.gz
nagios-4.5.5/
nagios-4.5.5/.github/
nagios-4.5.5/.github/workflows/
nagios-4.5.5/.github/workflows/test.yml
nagios-4.5.5/.gitignore
nagios-4.5.5/CONTRIBUTING.md
```

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

`tar zxvf nagios-4.5.5.tar.gz`

```
[ec2-user@ip-172-31-91-91 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
```

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

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

*Here we get an error*

```
[ec2-user@ip-172-31-34-108 downloads]$ ./configure --with-command-group=nagcmd
-bash: ./configure: No such file or directory
```

**Solution**



*Navigate to nagios folder in downloads*

`cd nagios-4.5.5`

```
[ec2-user@ip-172-31-34-108 downloads]$ cd nagios-4.5.5
```

Error 2: Cannot find SSL headers.

Solution: Install openssl dev library

Steps:

`sudo yum install openssl-devel`

```
[ec2-user@ip-172-31-91-91 nagios-4.5.5]$ sudo yum install openssl-devel
Last metadata expiration check: 2:24:05 ago on Sun Sep 29 06:56:15 2024.
Dependencies resolved.
=====
Package                Arch      Version                               Repository      Size
=====
Installing:
openssl-devel           x86_64    1:3.0.8-1.amzn2023.0.14             amazonlinux     3.0 M
Transaction Summary
=====
Install 1 Package

Total download size: 3.0 M
Installed size: 4.7 M
Is this ok [y/N]: y
Downloading Packages:
```

Now run

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

```
[ec2-user@ip-172-31-34-108 nagios-4.5.5]$ ./configure --with-command-group=nagcmd
checking for a BSD-compatible install... /usr/bin/install -c
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether the compiler supports GNU C... yes
checking whether gcc accepts -g... yes
checking for gcc option to enable C11 features... none needed
checking whether make sets $(MAKE)... yes
checking whether ln -s works... yes
checking for strip... /usr/bin/strip
checking for sys/wait.h that is POSIX.1 compatible... yes
```



12. Compile the source code.

**make all**

```
[ec2-user@ip-172-31-34-108 nagios-4.5.5]$ make all
cd ./base && make
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/base'
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o nagios.o ./nagios.c
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o broker.o broker.c
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o nebmods.o nebmods.c
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o ../common/shared.o ../common/shared.c
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o query-handler.o query-handler.c
gcc -Wall -I.. -I. -I../lib -I../include -I../include -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:277:12:
workers.c:253:17: warning: '%s' directive argument is null [-Wformat-overflo
w=]
   253 |         log_debug_info(DEBUGL_CHECKS, 1, "Found specialized
worker(s) for '%s'", (slash && *slash != '/') ? slash : cmd_name);
       |         ^ ~~~~~~
~~~~~
gcc -Wall -I.. -I. -I../lib -I../include -I../include -I.. -g -O2 -DHAVE_
CONFIG_H -DNSCORE -c -o checks.o checks.c
```

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-user@ip-172-31-34-108 nagios-4.5.5]$ sudo make install
sudo make install-init
sudo make install-config
sudo make install-commandmode
cd ./base && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/base'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagios /usr/local/nagios/b
in
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagiosstats /usr/local/nagi
os/bin
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/base'
cd ./cgi && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
make install-basic
make[2]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/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 -s -m 775 -o nagios -g nagios $file /usr/local/n
agios/sbin; \
done
make[2]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-4.5.5/cgi'
cd ./html && make install
make[1]: Entering directory '/home/ec2-user/downloads/nagios-4.5.5/html'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/me
dia
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/st
ylesheets
```

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

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

```
[ec2-user@ip-172-31-34-108 nagios-4.5.5]$ sudo nano /usr/local/nagios/etc/ob
jects/contacts.cfg
```



## 17. Restart Apache

**sudo service httpd restart**

```
[ec2-user@ip-172-31-34-108 nagios-4.5.5]$ sudo service httpd restart
Redirecting to /bin/systemctl restart httpd.service
```

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

**cd ~/downloads****tar zxvf nagios-plugins-2.4.11.tar.gz**

```
[ec2-user@ip-172-31-34-108 nagios-4.5.5]$ cd ~/downloads
tar zxvf nagios-plugins-2.4.11.tar.gz
nagios-plugins-2.4.11/
nagios-plugins-2.4.11/build-aux/
nagios-plugins-2.4.11/build-aux/compile
nagios-plugins-2.4.11/build-aux/config.guess
nagios-plugins-2.4.11/build-aux/config.rpath
nagios-plugins-2.4.11/build-aux/config.sub
nagios-plugins-2.4.11/build-aux/install-sh
nagios-plugins-2.4.11/build-aux/ltmain.sh
nagios-plugins-2.4.11/build-aux/missing
nagios-plugins-2.4.11/build-aux/mkinstalldirs
nagios-plugins-2.4.11/build-aux/depcomp
nagios-plugins-2.4.11/build-aux/snippet/
nagios-plugins-2.4.11/build-aux/snippet/_Noreturn.h
nagios-plugins-2.4.11/build-aux/snippet/arg-nonnull.h
nagios-plugins-2.4.11/build-aux/snippet/c++defs.h
nagios-plugins-2.4.11/build-aux/snippet/warn-on-use.h
nagios-plugins-2.4.11/build-aux/test-driver
nagios-plugins-2.4.11/config_test/
nagios-plugins-2.4.11/config_test/Makefile
nagios-plugins-2.4.11/config_test/run_tests
nagios-plugins-2.4.11/config_test/child_test.c
```

## 19. Compile and install plugins

**cd nagios-plugins-2.4.11****./configure --with-nagios-user=nagios --with-nagios-group=nagios**

```
[ec2-user@ip-172-31-34-108 downloads]$ cd nagios-plugins-2.4.11
./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 make supports nested variables... yes
checking whether to enable maintainer-specific portions of Makefiles... yes
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
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 gcc understands -c and -o together... yes
checking whether make supports the include directive... yes (GNU style)
```

**make**

**sudo make install**

```
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ make
sudo make install
make all-recursive
make[1]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.4.11'
Making all in gl
make[2]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.4.11/gl'
rm -f alloca.h-t alloca.h && \
{ echo '/* DO NOT EDIT! GENERATED AUTOMATICALLY! */'; \
  cat ./alloca.in.h; \
} > alloca.h-t && \
mv -f alloca.h-t alloca.h
rm -f c++defs.h-t c++defs.h && \
sed -n -e '/_GL_CXXDEFS/, $p' \
  < ../build-aux/snippet/c++defs.h \
  > c++defs.h-t && \
mv c++defs.h-t c++defs.h
rm -f warn-on-use.h-t warn-on-use.h && \
sed -n -e '/^\.ifndef/, $p' \
```

```
fi
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.4.11/p
o'
make[1]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.4.11'
make[2]: Entering directory '/home/ec2-user/downloads/nagios-plugins-2.4.11'
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-2.4.11'
make[1]: Leaving directory '/home/ec2-user/downloads/nagios-plugins-2.4.11'
```

## 20. Start Nagios

Add Nagios to the list of system services

**sudo chkconfig --add nagios**

**sudo chkconfig nagios on**

```
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ sudo chkconfig --add nagi
os
sudo chkconfig nagios on
error reading information on service nagios: No such file or directory
Note: Forwarding request to 'systemctl enable nagios.service'.
Created symlink /etc/systemd/system/multi-user.target.wants/nagios.service →
/usr/lib/systemd/system/nagios.service.
```

Verify the sample configuration files

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

```
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ sudo /usr/local/nagios/bin/nagios -v /us
r/local/nagios/etc/nagios.cfg

Nagios Core 4.5.5
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2024-09-17
License: GPL

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

Running pre-flight check on configuration data...

Checking objects...
  Checked 8 services.
  Checked 1 hosts.
  Checked 1 host groups.
  Checked 0 service groups.
  Checked 1 contacts.
  Checked 1 contact groups.
  Checked 24 commands.
  Checked 5 time periods.
  Checked 0 host escalations.
  Checked 0 service escalations.
Checking for circular paths...
  Checked 1 hosts
  Checked 0 service dependencies
  Checked 0 host dependencies
  Checked 5 timeperiods
Checking global event handlers...
Checking obsessive compulsive processor commands...
Checking misc settings...

Total Warnings: 0
Total Errors: 0
```

**sudo service nagios start**

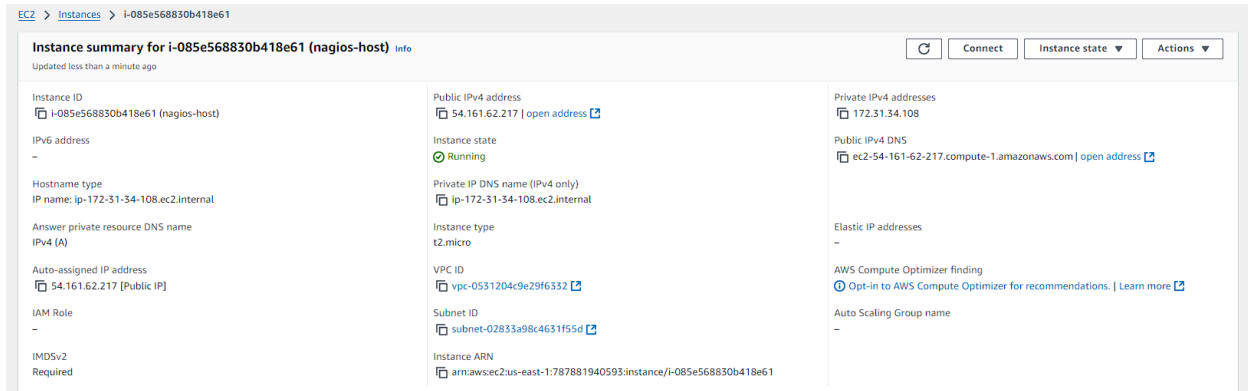
```
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ sudo service nagios start
Redirecting to
/bin/systemctl start nagios.service
```

**21. Check the status of Nagios****sudo systemctl status nagios**

```
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ sudo systemctl status nagios
● nagios.service - Nagios Core 4.5.5
   Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; prese█    Active: active (runni
ng) since Fri 2024-10-04 04:48:01 UTC; 6s ago
     Docs: https://www.nagios.org/documentation
   Process: 63465 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/█    Process: 63466 ExecSta
rt=/usr/local/nagios/bin/nagios -d /usr/local/nag█    Main PID: 63467 (nagios)
    Tasks: 6 (limit: 1112)
   Memory: 5.6M
      CPU: 79ms
   CGroup: /system.slice/nagios.service
           └─63467 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/█           └─63468 /usr/
local/nagios/bin/nagios --worker /usr/local/nagio█           └─63469 /usr/local/nagios/bin/nagios --
worker /usr/local/nagio█           └─63470 /usr/local/nagios/bin/nagios --worker /usr/local/nagio█
           └─63471 /usr/local/nagios/bin/nagios --worker /usr/local/nagio█           └─63472 /usr/lo
cal/nagios/bin/nagios -d /usr/local/nagios/etc/█
Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: qh: Socket '/u█Oct 04 04:48:01 ip-172-31-
34-108.ec2.internal nagios[63467]: qh: core query█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios
[63467]: qh: echo servi█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: qh: help for t█Oc
t 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Success█Oct 04 04:48:01 ip-172-31-34
-108.ec2.internal nagios[63467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[6
3467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Registr█Oct
04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-1
08.ec2.internal nagios[63467]: Successfully l█lines 1-28/28 (END)
[ec2-user@ip-172-31-34-108 nagios-plugins-2.4.11]$ sudo systemctl status nagios
● nagios.service - Nagios Core 4.5.5
   Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; prese█    Active: active (runni
ng) since Fri 2024-10-04 04:48:01 UTC; 30s ago
     Docs: https://www.nagios.org/documentation
   Process: 63465 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/█    Process: 63466 ExecSta
rt=/usr/local/nagios/bin/nagios -d /usr/local/nag█    Main PID: 63467 (nagios)
    Tasks: 6 (limit: 1112)
   Memory: 5.6M
      CPU: 82ms
   CGroup: /system.slice/nagios.service
           └─63467 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/█           └─63468 /usr/
local/nagios/bin/nagios --worker /usr/local/nagio█           └─63469 /usr/local/nagios/bin/nagios --
worker /usr/local/nagio█           └─63470 /usr/local/nagios/bin/nagios --worker /usr/local/nagio█
           └─63471 /usr/local/nagios/bin/nagios --worker /usr/local/nagio█           └─63472 /usr/lo
cal/nagios/bin/nagios -d /usr/local/nagios/etc/█
Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: qh: Socket '/u█Oct 04 04:48:01 ip-172-31-
34-108.ec2.internal nagios[63467]: qh: core query█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios
[63467]: qh: echo servi█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: qh: help for t█Oc
t 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Success█Oct 04 04:48:01 ip-172-31-34
-108.ec2.internal nagios[63467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[6
3467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Registr█Oct
04 04:48:01 ip-172-31-34-108.ec2.internal nagios[63467]: wproc: Registr█Oct 04 04:48:01 ip-172-31-34-1
08.ec2.internal nagios[63467]: Successfully l█lines 1-28/28 (END)client_loop: send disconnect: Connect
ion reset
```

**22. Go back to EC2 Console and copy the Public IP address of this instance**





EC2 > Instances > i-085e568830b418e61

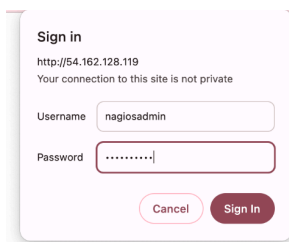
**Instance summary for i-085e568830b418e61 (nagios-host)** info

Updated less than a minute ago

|  |  |   |
|--|--|---|
| <b>Instance ID</b><br>i-085e568830b418e61 (nagios-host)        | <b>Public IPv4 address</b><br>54.161.62.217   <a href="#">open address</a>             | <b>Private IPv4 addresses</b><br>172.31.34.108  |
| <b>IPv6 address</b><br>-                                       | <b>Instance state</b><br>Running   | <b>Public IPv4 DNS</b><br>ec2-54-161-62-217.compute-1.amazonaws.com   <a href="#">open address</a>                        |
| <b>Hostname type</b><br>IP name: ip-172-31-34-108.ec2.internal | <b>Private IP DNS name (IPv4 only)</b><br>ip-172-31-34-108.ec2.internal                | <b>Elastic IP addresses</b><br>-  |
| <b>Answer private resource DNS name</b><br>IPv4 (A)            | <b>Instance type</b><br>t2.micro   | <b>AWS Compute Optimizer finding</b><br>Opt-in to AWS Compute Optimizer for recommendations.   <a href="#">Learn more</a> |
| <b>Auto-assigned IP address</b><br>54.161.62.217 [Public IP]   | <b>VPC ID</b><br>vpc-0531204c9e29f6332   | <b>Auto Scaling Group name</b><br>-   |
| <b>IAM Role</b><br>-   | <b>Subnet ID</b><br>subnet-02833a98c4631f55d   |   |
| <b>IMDSv2</b><br>Required                                      | <b>Instance ARN</b><br>arn:aws:ec2:us-east-1:787881940593:instance/i-085e568830b418e61 |   |

23. Open up your browser and look for [http://<your\\_public\\_ip\\_address>/nagios](http://<your_public_ip_address>/nagios)

Enter username as nagiosadmin and password which you set in Step 16.



Sign in

http://54.162.128.119

Your connection to this site is not private

Username: nagiosadmin

Password: .....

Cancel Sign In

24. After entering the correct credentials, you will see this page.



Nagios Core

✓ Daemon running with PID 1998

Nagios Core™  
Version 4.5.5  
September 17, 2024  
[Check for updates](#)

**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)
- Nagios.com (company)
- Nagios.org (project)

**Latest News**

**Don't Miss...**

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This means that Nagios was correctly installed and configured with its plugins so far.

**Conclusion:**

In this practical, we successfully installed and configured Nagios Core along with Nagios plugins and NRPE on an Amazon EC2 instance. We created a Nagios user, set up necessary permissions, and resolved common installation errors. Finally, we verified the setup by accessing the Nagios web interface, confirming that our monitoring system was fully operational.