

PROJECT - 10

Server Monitoring Tool

Description

1. install and check the functioning of server monitoring tools like
 - 1.Nagios
 - 2.Zabbix
- 2.Deeply study the commands used to monitor the server as well as the services.

Install Nagios

Step 1 - Install essential packages like GCC (compiler), glibc (C library), Perl, Apache HTTP server, PHP, wget (for downloading files), and GD (graphics library) needed for building and running Nagios

```
[root@ip-172-31-0-165 ~]# dnf install -y gcc glibc glibc-common perl httpd php wget gd gd-devel
Updating Subscription Management repositories.
Unable to read consumer identity


This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.

Last metadata expiration check: 0:03:17 ago on Fri 28 Mar 2025 04:42:14 AM UTC.
Package gcc-11.5.0-5.el9_5.x86_64 is already installed.
Package glibc-2.34-125.el9_5.3.x86_64 is already installed.
Package glibc-common-2.34-125.el9_5.3.x86_64 is already installed.
Package perl-4:5.32.1-481.el9.x86_64 is already installed.
Package httpd-2.4.62-1.el9_5.2.x86_64 is already installed.
Package php-8.0.30-1.el9_2.x86_64 is already installed.
Package wget-1.21.1-8.el9_4.x86_64 is already installed.
Package gd-2.3.2-3.el9.x86_64 is already installed.
Package gd-devel-2.3.2-3.el9.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-0-165 ~]#
```

Step 2 - Install OpenSSL development libraries required for secure communication in Nagios.

```
yum install openssl-devel
```

```
[root@ip-172-31-0-165 ~]# yum install openssl-devel
```



Step 3 - Ensure all system packages are up-to-date.

```
dnf update -y
```

```
[root@ip-172-31-0-165 ~]# dnf update -y
```

Step 4 - **Navigate to the /tmp directory:**

```
cd /tmp
```

This is a temporary directory for downloading and building files.

4. **Download the latest Nagios Core source code:**

```
bash
wget --output-document="nagioscore.tar.gz" $(wget -q -O - https://api.github.com/repos/NagiosEnterprises/nagioscore/releases/latest | grep '"browser_download_url":' | grep -o 'https://[^\"]*')
```

Fetches the latest release of Nagios Core from GitHub.

```
[root@ip-172-31-0-165 tmp]# cd /tmp
[root@ip-172-31-0-165 tmp]# wget --output-document="nagioscore.tar.gz" $(wget -q -O - https://api.github.com/repos/NagiosEnterprises/nagioscore/releases/latest | grep
'"browser_download_url":' | grep -o 'https://[^\"]*')
--2025-03-28 04:53:14-- https://github.com/NagiosEnterprises/nagioscore/releases/download/nagios-4.5.9/nagios-4.5.9.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)[20.207.73.82]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/16119670/8e2b7eda-021e-49ea-9cac-eb6b7b241e23?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-
Amz-Credential=releaseassetproduction%2F20250328%2Fus-east-1%2Fsa3%2Faws4_request&X-Amz-Date=20250328T045314Z&X-Amz-Expires=300&X-Amz-Signature=8540f46927d0dfa93c3486db7
beba98d92023800ad2af177cd8d5596c52b3c78&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnagios-4.5.9.tar.gz&response-content-type=appli
cation%2Foctet-stream [following]
--2025-03-28 04:53:14-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/16119670/8e2b7eda-021e-49ea-9cac-eb6b7b241e23?X-Amz-Algorithm=AWS4
-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250328%2Fus-east-1%2Fsa3%2Faws4_request&X-Amz-Date=20250328T045314Z&X-Amz-Expires=300&X-Amz-Signature=8540f46927
d0dfa93c3486db7beba98d92023800ad2af177cd8d5596c52b3c78&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnagios-4.5.9.tar.gz&response-con
tent-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.109.133, 185.199.110.133, 185.199.111.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)[185.199.109.133]:443... connected.
HTTP request sent, awaiting response...
```

Step -5 Extract the downloaded tarball

```
tar xzf nagioscore.tar.gz
```

Extracts the Nagios Core source files.

```
[root@ip-172-31-0-165 tmp]# tar xzf nagioscore.tar.gz  
[root@ip-172-31-0-165 tmp]#
```

Step 6 - Navigate to the extracted directory:

```
cd /tmp/nagios-*
```

```
[root@ip-172-31-0-165 tmp]# cd /tmp/nagios-*  
[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step 7 - **Configure the build environment:**

```
./configure
```

Prepares the source code for compilation by checking dependencies and configuring settings.

```
[root@ip-172-31-0-165 nagios-4.5.9]# ./configure
checking for a BSD-compatible install... /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... /bin/strip
checking for sys/wait.h that is POSIX.1 compatible... yes
checking for stdio.h... yes
checking for stdlib.h...
```

Step – 8 **Compile the source code:**

```
make all
```



```
[root@ip-172-31-0-165 nagios-4.5.9]# make all
cd ./base && make
make[1]: Entering directory '/tmp/nagios-4.5.9/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 nebmodes.o nebmodes.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
```

Step - 9 Create user groups and accounts for Nagios:

```
make install-groups-users
```

Adds a nagios user and group, along with adding apache to the nagios group.

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install-groups-users
groupadd -r nagios
useradd -g nagios nagios
[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step 10 - Install Nagios binaries:

```
make install
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install
cd ./base && make install
make[1]: Entering directory '/tmp/nagios-4.5.9/base'
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/bin/install -c -s -m 774 -o nagios -g nagios nagios /usr/local/nagios/bin
/bin/install -c -s -m 774 -o nagios -g nagios nagiosstats /usr/local/nagios/bin
make[1]: Leaving directory '/tmp/nagios-4.5.9/base'
cd ./cgi && make install
make[1]: Entering directory '/tmp/nagios-4.5.9/cgi'
make install-basic
make[2]: Entering directory '/tmp/nagios-4.5.9/cgi'
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/sbin
for file in *.cgi; do \
    /bin/install -c -s -m 775 -o nagios -g nagios $file /usr/local/nagios/sbin; \
done
```

Step 11 - Set up daemon/service initialization scripts:

```
make install-daemoninit
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install-daemoninit
/bin/install -c -m 755 -d -o root -g root /lib/systemd/system
/bin/install -c -m 755 -o root -g root startup/default-service /lib/systemd/system/nagios.service
Created symlink /etc/systemd/system/multi-user.target.wants/nagios.service → /usr/lib/systemd/system/nagios.service.

*** Init script installed ***

[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step 12 - Enable Apache HTTP server to start on boot:

```
systemctl enable httpd.service
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# systemctl enable httpd.service
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step - 13 Configure external command execution mode:

```
make install-commandmode
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install-commandmode
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/var/rw
chmod g+s /usr/local/nagios/var/rw

*** External command directory configured ***

[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step -14 Install sample configuration files :

make install-config

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install-config
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc
/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc/objects
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/nagios.cfg /usr/local/nagios/etc/nagios.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/cgi.cfg /usr/local/nagios/etc/cgi.cfg
/bin/install -c -b -m 660 -o nagios -g nagios sample-config/resource.cfg /usr/local/nagios/etc/resource.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/templates.cfg /usr/local/nagios/etc/objects/templates.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/commands.cfg /usr/local/nagios/etc/objects/commands.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/contacts.cfg /usr/local/nagios/etc/objects/contacts.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/timeperiods.cfg /usr/local/nagios/etc/objects/timeperiods.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/nagios/etc/objects/localhost.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/windows.cfg /usr/local/nagios/etc/objects/windows.cfg
/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/printer.cfg /usr/local/nagios/etc/objects/printer.cfg
/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.

[root@ip-172-31-0-165 nagios-4.5.9]#
```

make install-webconf

```
[root@ip-172-31-0-165 nagios-4.5.9]# make install-webconf
/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 ***

[root@ip-172-31-0-165 nagios-4.5.9]#
```

Firewall Configuration

Step -15 Allow HTTP traffic through the firewall:

```
firewall-cmd --zone=public --add-port=80/tcp --permanent  
firewall-cmd --reload
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# sudo yum install firewalld
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.
Last metadata expiration check: 0:01:37 ago on Fri 28 Mar 2025 04:57:23 AM UTC.
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# firewall-cmd --zone=public --add-port=80/tcp
firewall-cmd --zone=public --add-port=80/tcp --permanent
success
success
[root@ip-172-31-0-165 nagios-4.5.9]# █
```

Set Up Web Interface

Step – 16 Create a web user for accessing Nagios:

```
htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
```

```
[root@ip-172-31-0-165 nagios-4.5.9]# htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[root@ip-172-31-0-165 nagios-4.5.9]#
```

Step - 17 Start apache service

```
[root@ip-172-31-0-165 nagios-4.5.9]# systemctl start httpd.service  
[root@ip-172-31-0-165 nagios-4.5.9]#
```

Download and Install Plugins

Step 18 - Download Nagios Plugins source code & Extract the plugins tarball:

```
[root@ip-172-31-0-165 nagios-4.5.9]# cd /tmp
wget --output-document="nagios-plugins.tar.gz" $(wget -q -O - https://api.github.com/repos/nagios-plugins/nagios-plugins/releases/latest | grep "browser_download_url"
:) | grep -o 'https://[^\"]+'
tar xzf nagios-plugins.tar.gz
--2025-03-28 05:03:38-- https://github.com/nagios-plugins/nagios-plugins/releases/download/release-2.4.12/nagios-plugins-2.4.12.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)[20.207.73.82]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/15980298/1faf366d-b6c9-412b-af69-1896eb02ccba?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-
Amz-Credential=releaseassetproduction%2F20250328%2Fus-east-1%2Fsa3%2Faws4_request&X-Amz-Date=20250328T050338Z&X-Amz-Expires=300&X-Amz-Signature=b82bf66c490f43fab85eca1c9
313158d996d2c55ec4af2da6527a3239e398d15&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnagios-plugins-2.4.12.tar.gz&response-content-t
ype=application%2Foctet-stream [following]
--2025-03-28 05:03:38-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/15980298/1faf366d-b6c9-412b-af69-1896eb02ccba?X-Amz-Algorithm=AWS4
-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250328%2Fus-east-1%2Fsa3%2Faws4_request&X-Amz-Date=20250328T050338Z&X-Amz-Expires=300&X-Amz-Signature=b82bf66c49
0f43fab85eca1c9313158d996d2c55ec4af2da6527a3239e398d15&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnagios-plugins-2.4.12.tar.gz&res
ponse-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.111.133, 185.199.108.133, 185.199.109.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)[185.199.111.133]:443... connected.
HTTP request sent, awaiting response...
```

Step -19 Navigate to the extracted plugins directory

8. `cd /tmp/nagios-plugins-*`

```
[root@ip-172-31-0-165 tmp]# cd /tmp/nagios-plugins-*  
[root@ip-172-31-0-165 nagios-plugins-2.4.12]#
```

Step - 20 **Configure, compile, and install plugins:**

```
[root@ip-172-31-0-165 nagios-plugins-2.4.12]# make
```



compile

Make Install


```
[root@ip-172-31-0-165 nagios-plugins-2.4.12]# make install
```

Step - 21

Start Nagios Service

25.**Start Nagios service**

```
systemctl start nagios.service
```

```
[root@ip-172-31-0-165 nagios-plugins-2.4.12]# systemctl start nagios.service
[root@ip-172-31-0-165 nagios-plugins-2.4.12]#
```

Launched Nagios monitoring service

[illegible]

Thank you