

## Adv DevOps Exp 10

**Aim:** To perform Port, Service monitoring, Windows/Linux server monitoring using Nagios.

### Monitoring Using Nagios:

**Step 1:** To Confirm Nagios is running on the server side Perform the following command on your Amazon Linux Machine (Nagios-host).

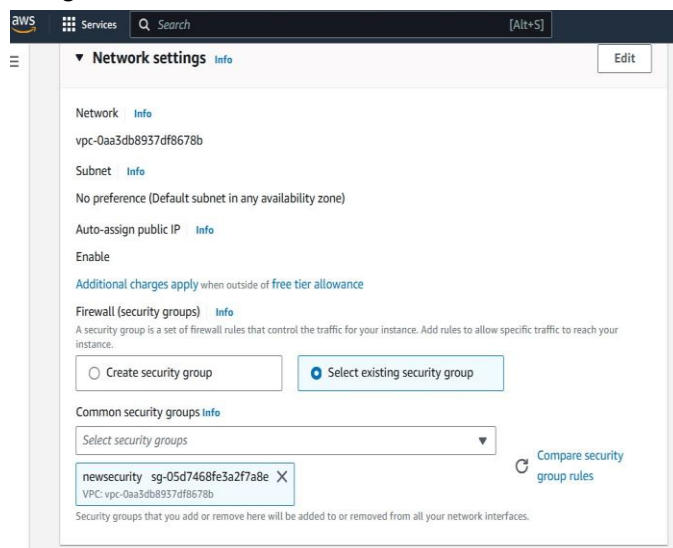
Run this command **sudo systemctl status**

```
ec2-user@ip-172-31-41-160:~/downloads/nagios-plugins-2.4.11
[ec2-user@ip-172-31-41-160 nagios-plugins-2.4.11]$ sudo systemctl status
ip-172-31-41-160.ec2.internal
State: running
Units: 296 loaded (incl. loaded aliases)
Jobs: 0 queued
Failed: 0 units
Since: Wed 2024-10-02 12:28:05 UTC; 33min ago
systemd: 252.23-2.amzn2023
cGroup: /
└─init.scope
├─1 /usr/lib/systemd/systemd --switched-root --system --deserialize=32
└─system.slice
├─acpid.service
│   └─1938 /usr/bin/systemd-inhibit --what=handle-suspend-key:handle-hibernate-key --who=noah "--why=acpid instead" --mode=block /usr/sbin/acpid -f
│   └─2059 /usr/sbin/acpid -f
├─amazon-ssm-agent.service
│   └─2141 /usr/bin/amazon-ssm-agent
├─atd.service
│   └─2152 /usr/sbin/atd -f
├─auditd.service
│   └─1768 /sbin/auditd
├─chronyd.service
│   └─2175 /usr/sbin/chronyd -F 2
├─dbus-broker.service
│   └─1946 /usr/bin/dbus-broker-launch --scope system --audit
│   └─1954 dbus-broker --log 4 --controller 9 --machine-id ec2e4d759a3e2f6fe850b14e4cdacabe --max-bytes 536870912 --max-fds 4096 --max-matches 16384 --audit
├─gssproxy.service
│   └─1959 /usr/sbin/gssproxy -D
├─httpd.service
│   └─49553 /usr/sbin/httpd -DFOREGROUND
│   └─49555 /usr/sbin/httpd -DFOREGROUND
│   └─49556 /usr/sbin/httpd -DFOREGROUND
│   └─49557 /usr/sbin/httpd -DFOREGROUND
│   └─49558 /usr/sbin/httpd -DFOREGROUND
│   └─62800 /usr/sbin/httpd -DFOREGROUND
├─libstoragemgmt.service
│   └─1940 /usr/bin/lsmc -d
```

**Step 2:** Before we begin,

To monitor a Linux machine, create an **Ubuntu 20.04 server** EC2 Instance in AWS.

Provide it with the **same security group** as the Nagios Host and name it 'nagios-client' alongside the host.



▼ **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*

[Create new key pair](#)

EC2 Dashboard ×

EC2 Global View

Events

Console-to-Code [Preview](#)

▼ Instances

Instances

Instance Types

Launch Templates

Spot Requests

**Instances (2)** [Info](#)

Last updated less than a minute ago

[Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

[Running](#)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	nagios-host	i-03facef442a77494d	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	us-east-1a	ec2-34-229-45-75
<input type="checkbox"/>	nagios-client	i-0b934b61f21351c1b	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	us-east-1a	ec2-54-172-92-22

Select an instance

### Step 3: TO BE DONE IN THE Nagios-host TERMINAL

In the nagios-host terminal, run this command

**ps -ef | grep nagios**

```
[ec2-user@ip-172-31-41-160 nagios-plugins-2.4.11]$ ps -ef | grep nagios
ec2-user  63115    2315    0 13:03 pts/0    00:00:00 grep --color=auto nagios
[ec2-user@ip-172-31-41-160 nagios-plugins-2.4.11]$
```

To become a root user, run '**sudo su**' and make two directories using the following commands. If one is running these commands in windows powershell, make sure that he/she copies it line by line as powershell might make an error while interpreting multiple lines

**/usr/local/nagios/etc/objects/monitorhosts mkdir**

**/usr/local/nagios/etc/objects/monitorhosts/linuxhosts**

```
[ec2-user@ip-172-31-92-249 ~]$ sudo su
[root@ip-172-31-92-249 ec2-user]# mkdir /usr/local/nagios/etc/objects/monitorhosts
[root@ip-172-31-92-249 ec2-user]# mkdir /usr/local/nagios/etc/objects/monitorhosts/linuxhosts
[root@ip-172-31-92-249 ec2-user]#
```

Copy the sample localhost.cfg file to linuxhost folder. Use the following mentioned command to achieve it

**/usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg**

Open linuxserver.cfg using nano and make the following changes. This is a conf type file in which we will have to modify the configurations in way which will help us specify the hosts and clients to be monitored

**nano /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg**

**Changes to be made:**

1. Change the hostname to linux-server (EVERYWHERE ON THE FILE)
2. Change address to the public IP address of your LINUX CLIENT.
3. Change hostgroup\_name under hostgroup to linux-servers1

```
# HOST DEFINITION
#
#####

# Define a host for the local machine

define host {

    use                linux-server        ; Name of host template to use
                                           ; This host definition will inherit all variables that are defined
                                           ; in (or inherited by) the linux-server host template definition.

    host_name          linux-server
    alias              localhost
    address             54.172.92.226
}

#####
```

```
# Define an optional hostgroup for Linux machines

define hostgroup {

    hostgroup_name     linux-servers1      ; The name of the hostgroup
    alias              Linux Servers       ; Long name of the group
    members             localhost          ; Comma separated list of hosts that belong to this group
}

#####
```

**IMP: Everywhere else on the file, change the hostname to linux-server instead of localhost.**

Open the Nagios Config file and add the following line

**nano /usr/local/nagios/etc/nagios.cfg**

Add the following line in the file and save

**cfg\_dir=/usr/local/nagios/etc/objects/monitorhosts/**

```
# OBJECT CONFIGURATION FILE(S)
# These are the object configuration files in which you define hosts,
# host groups, contacts, contact groups, services, etc.
# You can split your object definitions across several config files
# if you wish (as shown below), or keep them all in a single config file.

# You can specify individual object config files as shown below:
cfg_file=/usr/local/nagios/etc/objects/commands.cfg
cfg_file=/usr/local/nagios/etc/objects/contacts.cfg
cfg_file=/usr/local/nagios/etc/objects/timeperiods.cfg
cfg_file=/usr/local/nagios/etc/objects/templates.cfg

# Definitions for monitoring the local (Linux) host
cfg_file=/usr/local/nagios/etc/objects/localhost.cfg
cfg_dir=/usr/local/nagios/etc/objects/monitorhosts/
# Definitions for monitoring a Windows machine
wcfg_file=/usr/local/nagios/etc/objects/windows.cfg
```

Verify the configuration files by running the following command

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

```
[root@ip-172-31-41-160 nagios-plugins-2.4.11]# /usr/local/nagios/bin/nagios -v /usr/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 16 services.
  Checked 2 hosts.
  Checked 2 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 2 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

Things look okay - No serious problems were detected during the pre-flight check
[root@ip-172-31-41-160 nagios-plugins-2.4.11]#
```

You are good to go if there are no errors.

Restart the nagios service **service**

**nagios restart**

And by running `sudo systemctl status nagios`, we can again check whether our server is running or not

```

root@ip-172-31-41-160:/tmp/nagios-plugins-2.4.11
[root@ip-172-31-41-160 nagios-plugins-2.4.11]# sudo systemctl restart nagios
[root@ip-172-31-41-160 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; preset: disabled)
   Active: active (running) since Wed 2024-10-02 13:28:17 UTC; 7s ago
     Docs: https://www.nagios.org/documentation
   Process: 78776 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Main PID: 78778 (nagios)
    Tasks: 6 (limit: 1112)
   Memory: 4.0M
     CPU: 24ms
   CGroup: /system.slice/nagios.service
           └─78778 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
             └─78779 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─78780 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─78781 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─78782 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─78783 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: qh: echo service query handler registered
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: qh: help for the query handler registered
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: Successfully registered manager as @mproc with query handler
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: Registry request: name=Core Worker 78782;pid=78782
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: Registry request: name=Core Worker 78781;pid=78781
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: Registry request: name=Core Worker 78780;pid=78780
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: Registry request: name=Core Worker 78779;pid=78779
Oct 02 13:28:17 ip-172-31-41-160.ec2.internal nagios[78778]: Successfully launched command file worker with pid 78783
Oct 02 13:28:21 ip-172-31-41-160.ec2.internal nagios[78778]: HOST ALERT: linux-server;UP;SOFT;1;PING OK - Packet loss = 0%, RTA = 0.93 ms
Oct 02 13:28:24 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE ALERT: localhost;HTTP;WARNING;HARD;4;HTTP WARNING: HTTP/1.1 403 Forbidden - 319 bytes in 0.0
[root@ip-172-31-41-160 nagios-plugins-2.4.11]# sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
   Drop-In: /usr/lib/systemd/system/httpd.service.d
           └─php-fpm.conf
   Active: active (running) since Wed 2024-10-02 12:47:56 UTC; 33min ago
     Docs: man:httpd.service(8)
   Main PID: 49553 (httpd)
    Status: "Total requests: 26; Idle/Busy workers 100/0;Requests/sec: 0.0129; Bytes served/sec: 94 B/sec"
    Tasks: 238 (limit: 1112)
   Memory: 21.0M
     CPU: 1.416s
   CGroup: /system.slice/httpd.service
           └─49553 /usr/sbin/httpd -DFOREGROUND

```

## Step 4: TO BE DONE IN THE Nagios-client TERMINAL

Now it is time to switch to the client machine.

SSH into the machine or simply use the EC2 Instance Connect feature.

```

PS C:\WINDOWS\system32> cd C:\Users\Dell\Downloads
PS C:\Users\Dell\Downloads> ssh -i "mohit.pem" ubuntu@ec2-54-172-92-226.compute-1.amazonaws.com
The authenticity of host 'ec2-54-172-92-226.compute-1.amazonaws.com (54.172.92.226)' can't be established.
ECDSA key fingerprint is SHA256:e/WkFQRuHSqPjqQ5hDMaA0dku8msNHEtN9SagzEy53E.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-172-92-226.compute-1.amazonaws.com,54.172.92.226' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Wed Oct  2 13:26:11 UTC 2024

System load:  0.0          Processes:      104
Usage of /:   22.8% of 6.71GB Users logged in:   0
Memory usage: 20%         IPv4 address for enx0: 172.31.36.100
Swap usage:   0%

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.

   https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by

```

Make a package index update and install gcc, nagios-nrpe-server and the plugins. Run the following commands to achieve the same.

**sudo apt update -y sudo apt install gcc -y sudo apt  
install -y nagios-nrpe-server nagios-plugins**



```
ubuntu@ip-172-31-36-100:~$ sudo apt update -y
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [380 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [83.1 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [4576 B]
Get:9 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [275 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [116 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [10.4 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [10.9 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2808 B]
Get:16 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [344 B]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [535 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [139 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [8676 B]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [380 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [157 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [45.0 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [14.9 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [216 B]
Get:32 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3608 B]
Get:33 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:34 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Get:35 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:36 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.6 kB]
Get:38 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.8 kB]
Get:39 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:40 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1104 B]
Get:41 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:42 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:43 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
```

```
ubuntu@ip-172-31-36-100:~$ sudo apt install gcc -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu cpp cpp-13 cpp-13-x86-64-linux-gnu gcc-13 gcc-13-base
  gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu libatomic libatomic1 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd libctf-nobfd0 libctf0 libde265-0
  libdeflate libfontconfig1 libgcc-13-dev libgd3 libgomp1 libhogweed libidn2-0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg9 liblerc4 liblsan0 libmpc3 libquadmath0 libstdc++6 libubsan1 libunwind8 libzstd1
Suggested packages:
  binutils-doc gprof-gui gcc-doc gcc-13-locales gcc-13-doc gcc-multilib make autoconf automake libtool flex bison gdb gcc-doc gcc-13-doc gdb-x86-64-linux-gnu glibc-doc
  libgd-tools libheif-plugin-x265 libheif-plugin-fmpgdec libheif-plugin-jpegdec libheif-plugin-jpegenc libheif-plugin-j2kdec libheif-plugin-j2kenc libheif-plugin-ravie
  libheif-plugin-svtenc
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu cpp cpp-13 cpp-13-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu libatomic libatomic1 libbinutils
  libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd libctf-nobfd0 libctf0 libde265-0 libdeflate libfontconfig1 libgcc-13-dev libgd3 libgomp1 libhogweed libidn2-0 libisl23 libitm1 libjbig0
  libjpeg-turbo8 libjpeg9 liblerc4 liblsan0 libmpc3 libquadmath0 libstdc++6 libubsan1 libunwind8 libzstd1
0 upgraded, 37 newly installed, 0 to remove and 0 not upgraded.
Need to get 62.8 MB of archives.
After this operation, 222 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils amd64 2.42-4ubuntu2 [239 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libstdc++6 amd64 14.2.0-4ubuntu2 [414.8 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils-common amd64 2.42-4ubuntu2 [572 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libctf-nobfd0 amd64 2.42-4ubuntu2 [97.1 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libctf0 amd64 2.42-4ubuntu2 [94.5 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libfontconfig1 amd64 2.42-4ubuntu2 [851 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils-x86-64-linux-gnu amd64 2.42-4ubuntu2 [2469 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils amd64 2.42-4ubuntu2 [18.0 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 gcc-13-base amd64 13.2.0-23ubuntu4 [49.0 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libisl23 amd64 0.26-3build1 [680 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libmpc3 amd64 1.3.1-3build1 [54.5 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 cpp-13-x86-64-linux-gnu amd64 13.2.0-23ubuntu4 [111.2 MB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 cpp-13 amd64 13.2.0-23ubuntu4 [1032 B]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 gcc-x86-64-linux-gnu amd64 4.13.2-0.7ubuntu1 [5326 B]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 gcc amd64 4.13.2-0.7ubuntu1 [22.4 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 fonts-dejavu-core all 2.37-8 [602 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 fonts-dejavu-core all 2.37-8 [635 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 fontconfig-config amd64 2.15.0-1ubuntu2 [37.3 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libcc1-0 amd64 14-20240412-0ubuntu1 [47.7 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libgomp1 amd64 14-20240412-0ubuntu1 [22.4 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libitm1 amd64 14-20240412-0ubuntu1 [28.9 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libatomic1 amd64 14-20240412-0ubuntu1 [414.8 kB]
```

```
ubuntu@ip-172-31-36-100:~$ sudo apt install -y nagios-nrpe-server nagios-plugins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'monitoring-plugins' instead of 'nagios-plugins'
The following additional packages will be installed:
  libavahi-client3 libavahi-common-data libavahi-common3 libcups2t64 libdb11t64 libldb2 libnss-smbclient libp5-perl libpq5 libradcli4 libsbcl1.0t14 libsnmp-base libsnmp40t64
  libtalloc2 libtdb1 libtevent0t64 libtirpc1 libzstd1 libzstd-dev libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64
  python3-markdown python3-samba python3-talloc python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb
Suggested packages:
  cups-common libcrypt-dev perl libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev
  libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev libidn2-dev
The following NEW packages will be installed:
  libavahi-client3 libavahi-common-data libavahi-common3 libcups2t64 libdb11t64 libldb2 libnss-smbclient libp5-perl libpq5 libradcli4 libsbcl1.0t14 libsnmp-base libsnmp40t64
  libtalloc2 libtdb1 libtevent0t64 libtirpc1 libzstd1 libzstd-dev libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64 libzstd1t64
  python3-markdown python3-samba python3-talloc python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb python3-tdb
0 upgraded, 37 newly installed, 0 to remove and 0 not upgraded.
Need to get 16.1 MB of archives.
After this operation, 72.0 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 nagios-nrpe-server amd64 4.1.0-1ubuntu3 [356 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 rshmd amd64 1.2.6-7ubuntu2 [46.5 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libavahi-common-data amd64 0.8-13ubuntu2 [29.7 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libavahi-common3 amd64 0.8-13ubuntu2 [23.3 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libavahi-client3 amd64 0.8-13ubuntu2 [26.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libcups2t64 amd64 2.4.7-1.2ubuntu2.3 [272 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtalloc2 amd64 0.9.0-0.1build1 [22.7 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtdb1 amd64 1.4.2-1build1 [27.3 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtdb1 amd64 1.4.2-1build1 [27.3 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtdb1 amd64 1.4.2-1build1 [27.3 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtdb1 amd64 1.4.2-1build1 [27.3 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libtdb1 amd64 1.4.2-1build1 [27.3 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libnss-smbclient amd64 0.8.39-0ubuntu0.24.04.2 [1254 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libnss-smbclient amd64 0.8.39-0ubuntu0.24.04.2 [1254 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libpq5 amd64 16.4-0ubuntu0.24.04.2 [141 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 libradcli4 amd64 1.2.11-1build1 [40.5 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libsbcl1.0t14 amd64 2.14.19.5dfsg-4ubuntu0 [79.6 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:32 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:33 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:34 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:35 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:36 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
Get:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libzstd1t64 amd64 1.5.4+dfsg-1ubuntu0 [101.7 kB]
```

Open nrpe.cfg file to make changes.

**sudo nano /etc/nagios/nrpe.cfg**

Under allowed\_hosts, add your nagios host IP address like so

```
ubuntu@ip-172-31-36-100: ~
GNU nano 7.2

#
# Note: The daemon only does rudimentary checking of the client's IP
# address. I would highly recommend adding entries in your /etc/hosts.allow
# file to allow only the specified host to connect to the port
# you are running this daemon on.
#
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd

allowed_hosts=127.0.0.1,34.229.45.75

# COMMAND ARGUMENT PROCESSING
# This option determines whether or not the NRPE daemon will allow clients
# to specify arguments to commands that are executed. This option only works
# if the daemon was configured with the --enable-command-args configure script
```

Now restart the NRPE server by this command.

**sudo systemctl restart nagios-nrpe-server**

```
ubuntu@ip-172-31-36-100: ~
ubuntu@ip-172-31-36-100: ~$ sudo systemctl restart nagios-nrpe-server
ubuntu@ip-172-31-36-100: ~$
```

Run the following command in the Nagios-host terminal

**sudo systemctl status nagios**

```
[root@ip-172-31-41-160 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; preset: disabled)
   Active: active (running) since Wed 2024-10-02 13:20:17 UTC; 15min ago
     Docs: https://www.nagios.org/documentation
  Main PID: 78778 (nagios)
    Tasks: 6 (limit: 1112)
   Memory: 4.3M
      CPU: 403ms
  CGroup: /system.slice/nagios.service
          └─78778 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
             └─78779 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
                └─78780 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
                   └─78781 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
                      └─78782 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
                         └─78783 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE NOTIFICATION: nagiosadmin;localhost;Swap Usage;CRITICAL;notify-service-by-email;SWAP CRITICAL - 0% free (0 MB out of 0
Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: NOTIFY job 3 from worker Core Worker 78782 is a non-check helper but exited with return code 127
Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: host-localhost; service=Swap Usage; contact=nagiosadmin
Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: early timeout=0; exited ok=1; wait status=32512; error code=0;
Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: stderr line 01: /bin/sh; line 1: /bin/mail: No such file or directory
Oct 02 13:22:54 ip-172-31-41-160.ec2.internal nagios[78778]: wproc: stderr line 02: /usr/bin/printf: write error: Broken pipe
Oct 02 13:23:13 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE ALERT: linux-server;Total Processes;OK;HARD;1;PROCS OK: 37 processes with STATE = RSZDT
Oct 02 13:23:50 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE ALERT: linux-server;Current Load;OK;HARD;1;OK - load average: 0.01, 0.07, 0.04
Oct 02 13:24:28 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE ALERT: linux-server;Current Users;OK;HARD;1;USERS OK - 2 users currently logged in
Oct 02 13:24:46 ip-172-31-41-160.ec2.internal nagios[78778]: SERVICE ALERT: localhost;Current Users;OK;HARD;1;USERS OK - 2 users currently logged in
lines 1-26/26 (END)
```

**Step 5: Visiting your nagios server using your nagios-host ip address** Open up your browser and look for `http://<public_ip_address_of_nagios-host>/nagios`

**Nagios®**

General

Home

Documentation

**Current Status**

Tactical Overview

Map

Hosts

Services

Host Groups

Summary

Grid

Service Groups

Summary

Grid

Problems

Services

(Unhandled)

Hosts (Unhandled)

Network Outages

Quick Search:

**Reports**

Availability

Trends

Alerts

History

Summary

Histogram

Notifications

Event Log

**Nagios® Core™**

✓ Daemon running with PID 78778

**Nagios® Core™**

**Version 4.5.5**

September 17, 2024

[Check for updates](#)

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- Change the look and feel of Nagios
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- Nagios Labs (development blog)
- Nagios Exchange (plugins and addons)
- Nagios Support (tech support)
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General

Home

Documentation

**Current Status**

Tactical Overview

Map

Hosts

Services

Host Groups

Summary

Grid

Service Groups

Summary

Grid

Problems

Services

(Unhandled)

Hosts (Unhandled)

Network Outages

Quick Search:

**Reports**

Availability

Trends

Alerts

History

Summary

Histogram

Notifications

**Current Network Status**

Last Updated: Wed Oct 2 13:40:35 UTC 2024

Updated every 60 seconds

Nagios® Core™ 4.5.5 - [www.nagios.org](http://www.nagios.org)

Logged in as nagiosadmin

**Host Status Totals**

Up	Down	Unreachable	Pending
2	0	0	0

**Service Status Totals**

Ok	Warning	Unknown	Critical	Pending
12	1	0	3	0

**Host Status Details For All Host Groups**

Limit Results: 100

Host	Status	Last Check	Duration	Status Information
linux-server	UP	10-02-2024 13:40:17	0d 0h 20m 18s	PING OK - Packet loss = 0%, RTA = 0.84 ms
localhost	UP	10-02-2024 13:40:09	0d 0h 20m 26s	PING OK - Packet loss = 0%, RTA = 0.04 ms

Results 1 - 2 of 2 Matching Hosts

Click on linux-server to view host information



The screenshot displays the Nagios web interface for the host 'localhost (linux-server)'. The interface includes a sidebar with navigation links such as Home, Documentation, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Service Groups, Problems, Reports, and System. The main content area is divided into several sections:

- Host Information:** Shows the last update time (Wed Oct 2 13:40:56 UTC 2024), update frequency (every 90 seconds), and the user logged in (nagiosadmin).
- Host State Information:** Displays the current status as 'UP' (for 0d 0h 20m 39s), status information (PING OK - Packet loss = 0%, RTA = 0.84 ms), current attempt (1/10 (HARD state)), last check time (10-02-2024 13:40:17), check type (ACTIVE), check latency / duration (0.000 / 4.121 seconds), next scheduled active check (10-02-2024 13:45:17), last scheduled active check (10-02-2024 13:20:17), last notification (N/A (notification 0)), is this host flapping? (NO (0.00% state change)), in scheduled downtime? (NO), and last update (10-02-2024 13:40:46 (0d 0h 0m 10s ago)).
- Host Commands:** A list of commands that can be executed on the host, such as 'Locate host on map', 'Disable active checks of this host', 'Re-schedule the next check of this host', etc.
- Host Comments:** A section for adding or deleting comments about the host.

The bottom of the interface shows a Windows taskbar with the system clock at 19:11 on 02-10-2024.

We can even navigate to the services section, which explicitly mentions the status, duration, checks, information about the numerous services present on our hosts

The screenshot displays the Nagios web interface for the 'Service Status Details For All Hosts'. The interface includes a sidebar with navigation links such as Home, Documentation, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Service Groups, Problems, Reports, and System. The main content area is divided into several sections:

- Current Network Status:** Shows the last update time (Wed Oct 2 13:40:56 UTC 2024), update frequency (every 90 seconds), and the user logged in (nagiosadmin).
- Host Status Totals:** A summary of host statuses: Up (2), Down (0), Unreachable (0), Pending (0).
- Service Status Totals:** A summary of service statuses: OK (12), Warning (1), Unknown (0), Critical (3), Pending (0).
- Service Status Details For All Hosts:** A table showing the status of various services on the 'linux-server' host. The table includes columns for Host, Service, Status, Last Check, Duration, Attempt, and Status Information.

The bottom of the interface shows a Windows taskbar with the system clock at 19:11 on 02-10-2024.

**Conclusion:** In conclusion, the experiment focused on monitoring ports, services, and a Linux server using Nagios. Through the step-by-step process, we successfully configured Nagios to monitor essential network services on the Linux server. By setting up both the Nagios host and client, we were able to track system performance, ensure service availability, and monitor key metrics like CPU and memory usage