Here in the document nagios host machine (interchangibly also referred as exp9 machine or host machine) refers to the instance which was connected to the terminal in previous experiment.

(so if the previous instance was closed do connect with that instance and run the httpd status command to check whether the apache server was closed. if its closed run the start httpd command (google it or use ctrl+f to search for the key word in previous doc).)

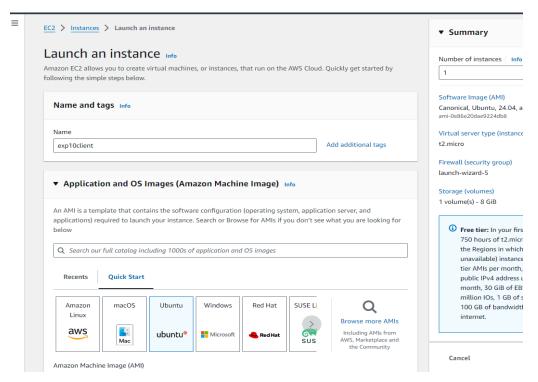
And the client machine refers to the machine created just for this experiment.

# **Steps**

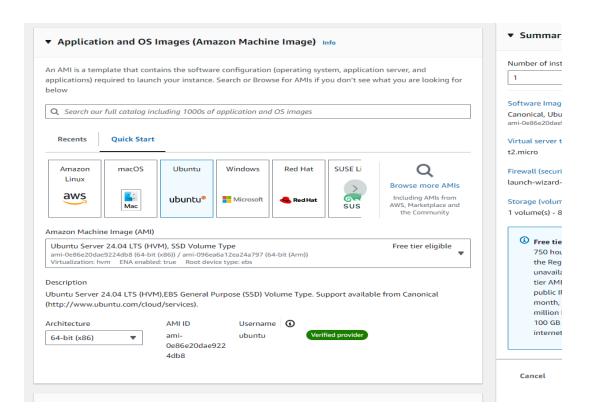
### 1) Launch an instance

Launch an ec2 instance.

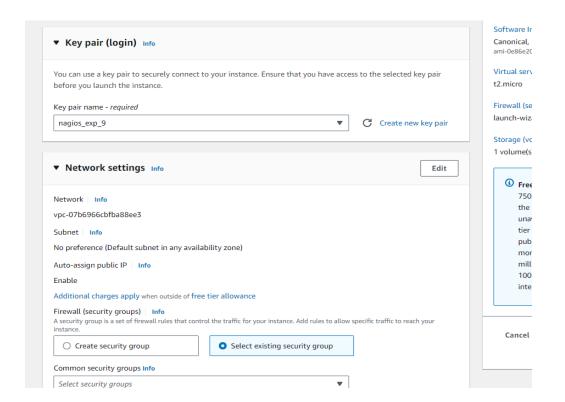
Select Ubuntu as the os give a meaningful name of the instance.



Select the same security group as given to the exp9 machine.

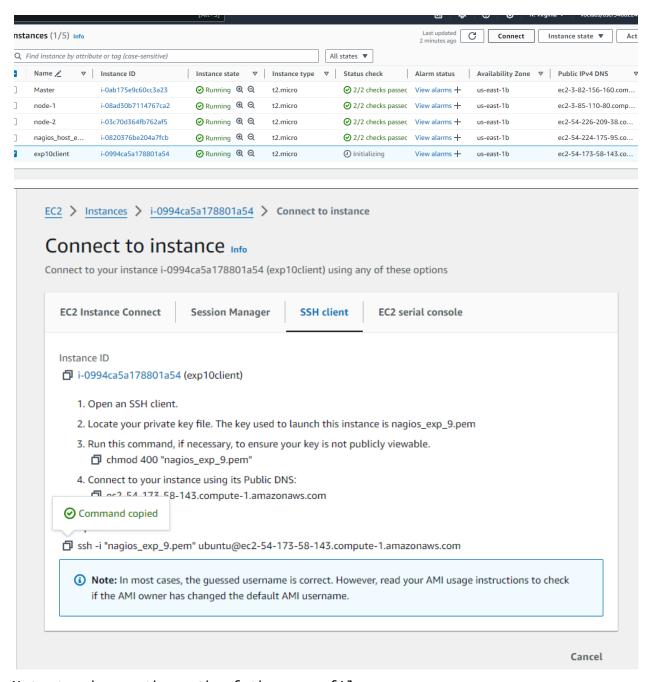


Make sure to select the same key-pair login used in the exp9 machine.



click on launch instance.

Now connect with this client machine using the ssh through your terminal(open a new terminal in your local machine and we will need both of the terminals open)



Note to change the path of the .pem file.

## 2) Go to nagios host machine (Host machine)

Perform the following commands

ps -ef | grep nagios

```
[ec2-user@ip-172-31-80-137 ~]$ ps -ef | grep nagios nagios 3152 1 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg nagios 3153 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh nagios 3154 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh nagios 3155 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh nagios 3160 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh nagios 3160 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh nagios 3160 3152 0 08:36 ? 00:00:00 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg ec2-user@ip-172-31-80-137 ~]$
```

sudo su

mkdir -p /usr/local/nagios/etc/objects/monitorhosts/linuxhosts

```
[root@ip-172-31-80-137 ec2-user]# mkdir -p /usr/local/nagios/etc/objects/monitorhosts/linuxhosts
[root@ip-172-31-80-137 ec2-user]# ls
```

cp /usr/local/nagios/etc/objects/localhost.cfg

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

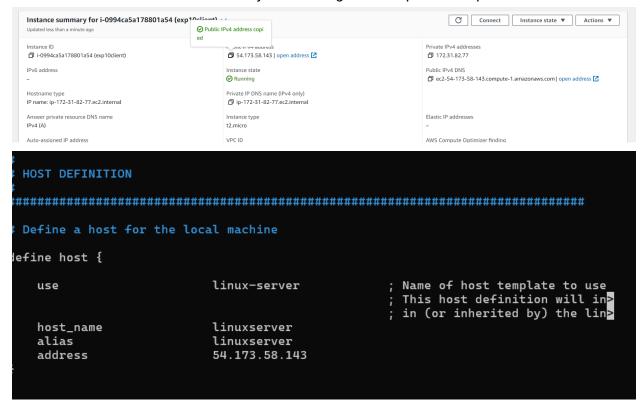
```
[root@ip-172-31-80-137 ec2-user]# cp /usr/local/nagios/etc/objects/localhost.cfg /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg
```

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

```
[root@ip-172-31-80-137 ec2-user]# nano /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg
```

Change hostname and alias to linuxserver
Change address to public ip address of client instance (Ubuntu

instance) you can get the ip address by clicking on the instance id on the instances section there you will get the public ipv4 address



Change hostgroup\_name to linux-servers1

Change the occurrences of hostname further in the document from localhost to linuxserver example like:

```
host_name localhost
changed to
```

#### This is the last one

```
define service {

use local-service ; Name of service template to ≥
host_name linuxserver
service_description HTTP
check_command check_http
notifications enabled 0
```

now ctrl+0 and enter to save and then ctrl+X for exiting.

Open nagios configuration file and add the line shown below nano/usr/local/nagios/etc/nagios.cfg

```
root@ip-172-31-80-137 ec2-user]# nano /usr/local/nagios/etc/nagios.cfg
```

##Add this line below the opened nano interface where similar lines are commented. cfg\_dir=/usr/local/nagios/etc/objects/monitorhosts/

```
GNU nano 5.8
                                                                                                                  /usr/local/nagios/etc/nagios.cfg
  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:
fg_file=/usr/local/nagios/etc/objects/commands.cfg
fg_file=/usr/local/nagios/etc/objects/contacts.cfg
fg_file=/usr/local/nagios/etc/objects/timeperiods.cfg
fg_file=/usr/local/nagios/etc/objects/templates.cfg
Definitions for monitoring the local (Linux) host fg_file=/usr/local/nagios/etc/objects/localhost.cfg
Definitions for monitoring a Windows machine
cfg_file=/usr/local/nagios/etc/objects/windows.cfg
Definitions for monitoring a router/switch
 Definitions for monitoring a network printer
 cfg_file=/usr/local/nagios/etc/objects/printer.cfg
 You can also tell Nagios to process all config files (with a .cfg
  extension) in a particular directory by using the cfg_dir
cfg_dir=/usr/local/nagios/etc/servers
cfg_dir=/usr/local/nagios/etc/printers
cfg_dir=/usr/local/nagios/etc/switches
cfg_dir=/usr/local/nagios/etc/routers
fg_dir=/usr/local/nagios/etc/objects/monitorhosts/
 OBJECT CACHE FILE
```

ctrl+o and enter for saving and ctrl+x to exit nano editor.

#### Verify configuration files

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

```
[root@ip-172-31-80-137 ec2-user]# /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 chiects
```

```
Checked 0 service 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-172-31-80-137 ec2-user]# |
```

Restart nagios service.

service nagios restart

```
Things look okay - No serious problems were detected during the pre-flight check
[root@ip-172-31-80-137 ec2-user]# service nagios restart
Redirecting to /bin/systemctl restart nagios.service
[root@ip-172-31-80-137 ec2-user]# |
```

### 3) Go to client machine (ubuntu machine)

Perform the following commands sudo apt update -y sudo apt install gcc -y sudo apt install -y nagios-nrpe-server nagios-plugins

```
ubuntu@ip-172-31-82-77:~$ sudo apt update -y
sudo apt install gcc -y
sudo apt install -y nagios-nrpe-server nagios-plugins
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 InRelea
se [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 Pa
ckages [15.0 MB]
```

```
Restarting services...

Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart getty@tty1.service
systemctl restart networkd-dispatcher.service
systemctl restart serial-getty@ttyS0.service
systemctl restart systemd-logind.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

Jser sessions running outdated binaries:
ubuntu @ session #1: sshd[990,1101]
ubuntu @ user manager service: systemd[996]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-82-77:~$
```

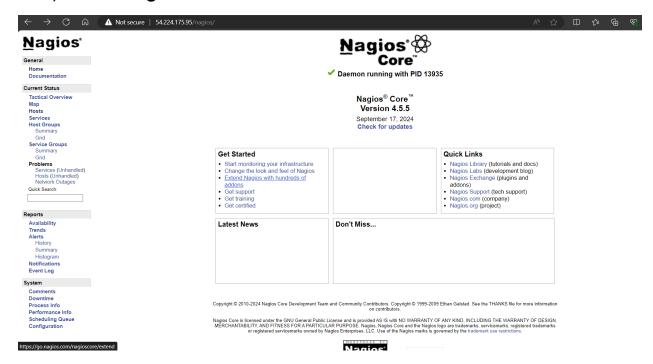
Open the nrpe.cfg file in nano editor sudo nano /etc/nagios/nrpe.cfg

Under allowed\_hosts, add the nagios host ip address (public)

```
You can either supply a username or a UID.
 NOTE: This option is ignored if NRPE is running under either inetd or xin>
nrpe_user=nagios
 NRPE GROUP
This determines the effective group that the NRPE daemon should run as.
 You can either supply a group name or a GID.
 NOTE: This option is ignored if NRPE is running under either inetd or xin>
nrpe_group=nagios
# ALLOWED HOST ADDRESSES
 This is an optional comma-delimited list of IP address or hostnames
 that are allowed to talk to the NRPE daemon. Network addresses with a bit
 (i.e. 192.168.1.0/24) are also supported. Hostname wildcards are not curr>
 supported.
 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 xin>
allowed_hosts=127.0.0.1,54.224.175.95
# COMMAND ARGUMENT PROCESSING
# This option determines whether or not the NRPE daemon will allow clients
```

again save and exit the nano editor.

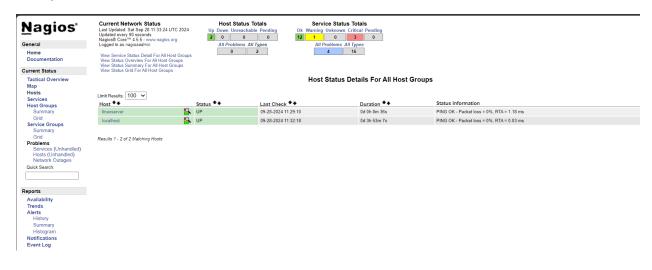
## 4) Go to nagios dashboard and click on hosts

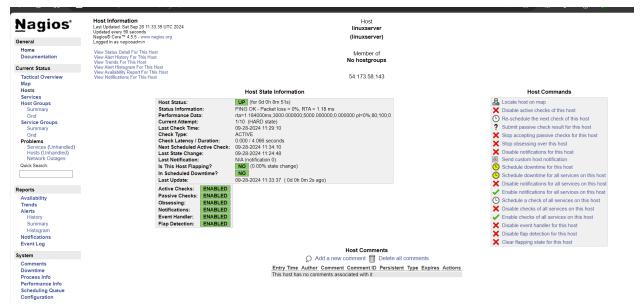


#### Click on hosts

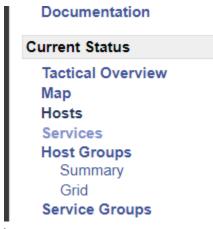


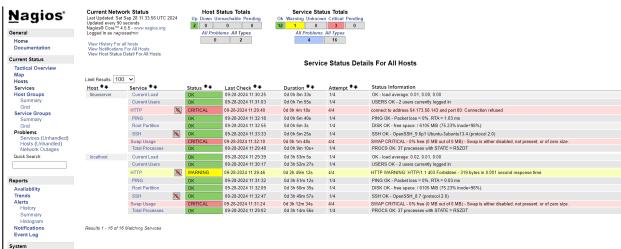
## 5) Click on linux server





### 6) Click on nagios services





## Conclusion:

In this lab, we successfully configured a monitoring setup between a Nagios host machine (referred to as "exp9 machine") and a client machine (created specifically for this experiment). The goal was to set up Nagios to monitor a remote Linux server, which involved configuring both the Nagios host and client machine (Ubuntu instance) in an EC2 environment.

We started by launching an Ubuntu EC2 instance as the client machine, ensuring that we used the same security group and key-pair as the Nagios host machine to maintain consistent access and permissions. After establishing SSH connections to both machines, we worked in parallel, using one terminal for the host and another for the client.

On the Nagios host machine, we created a new directory structure, then copied and modified the localhost.cfg file to set up a configuration for monitoring the remote client machine. This included specifying the public IP address of the client machine and updating the hostgroup and hostname. After editing the Nagios configuration file to recognize the new monitoring host directory, we verified the changes and restarted the Nagios service.

On the client machine, we installed the necessary Nagios packages (nagios-nrpe-server and nagios-plugins), configured the nrpe.cfg file, and allowed communication between the Nagios host and client by updating the allowed hosts configuration.

After these steps, we were able to successfully monitor the remote Linux server from the Nagios dashboard, confirming that our setup was correct. This experiment demonstrated the core concepts of configuring Nagios to monitor a remote machine, providing practical insight into network monitoring and server management in a real-world scenario.

1.