

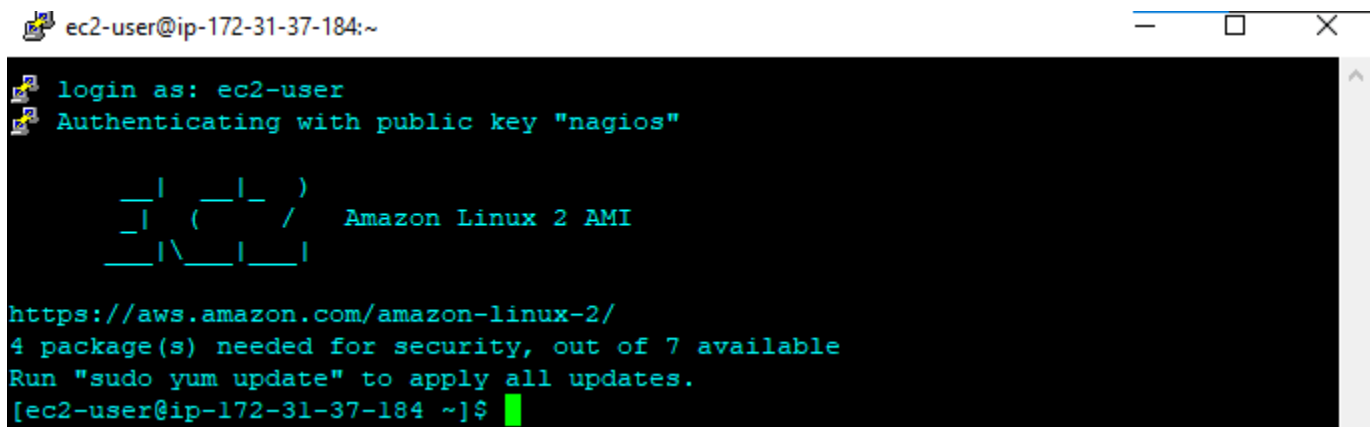
Nagios Configuration with AWS

Create AWS EC2

- Amazon Linux 2 Kernel 5.10 AMI EC2
- Provide network group for SSH, HTTP, HTTPS, TCP
- Create 2 instances as below
 - Master
 - Slave

Putty Connection

- Download Putty
- Copy Public IP of Master
- Connect with authentication
- Username: ec2-user



```
ec2-user@ip-172-31-37-184:~  
login as: ec2-user  
Authenticating with public key "nagios"  
  
  _ | _ | _ )  
  _ | ( _ _ /  Amazon Linux 2 AMI  
  _ | \ _ _ | _ _ |  
  
https://aws.amazon.com/amazon-linux-2/  
4 package(s) needed for security, out of 7 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-37-184 ~]$
```

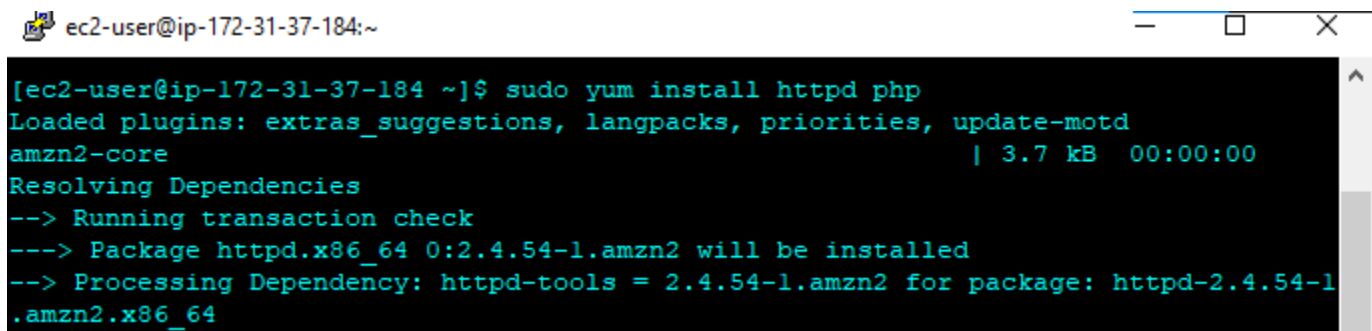
Install Pre-requisite Software

Nagios requires the following packages are installed on your server prior to installing nagios:

- Apache
- PHP
- GCC compiler collection (glibc GNU C library, glibc-common: common libraries)
- GD development libraries (Graphic libraries)

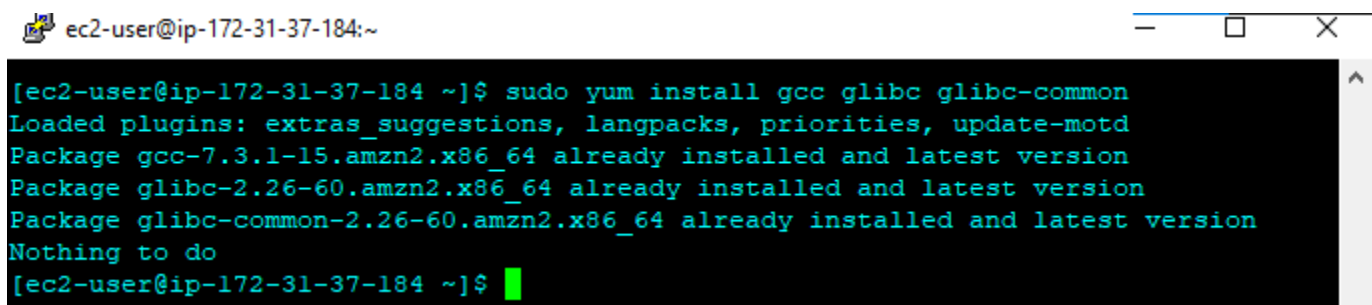
You can use yum to install these packages by running the following commands (as ec2-user):

`sudo yum install httpd php`

A terminal window titled 'ec2-user@ip-172-31-37-184:~' with standard window controls. The terminal shows the command `sudo yum install httpd php` being executed. The output indicates that the packages are installed successfully, showing details for 'httpd.x86_64' and its dependencies.

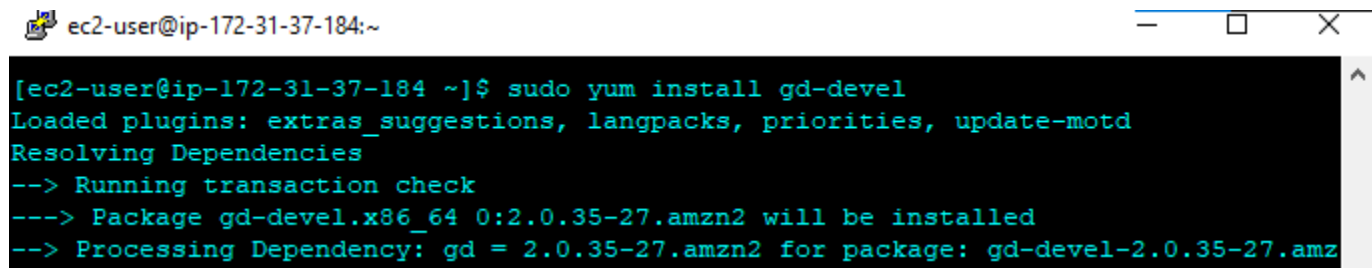
```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo yum install httpd php  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
amzn2-core | 3.7 kB 00:00:00  
Resolving Dependencies  
--> Running transaction check  
---> Package httpd.x86_64 0:2.4.54-1.amzn2 will be installed  
--> Processing Dependency: httpd-tools = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64
```

`sudo yum install gcc glibc glibc-common`

A terminal window titled 'ec2-user@ip-172-31-37-184:~' with standard window controls. The terminal shows the command `sudo yum install gcc glibc glibc-common` being executed. The output indicates that these packages are already installed at their latest versions.

```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo yum install gcc glibc glibc-common  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Package gcc-7.3.1-15.amzn2.x86_64 already installed and latest version  
Package glibc-2.26-60.amzn2.x86_64 already installed and latest version  
Package glibc-common-2.26-60.amzn2.x86_64 already installed and latest version  
Nothing to do  
[ec2-user@ip-172-31-37-184 ~]$
```

sudo yum install gd gd-devel

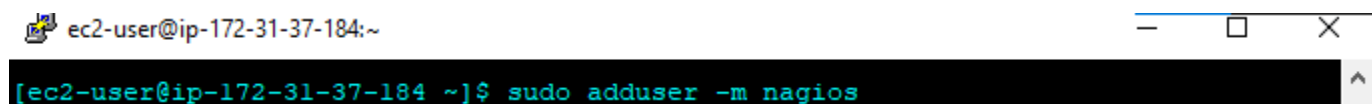


```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo yum install gd-devel  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Resolving Dependencies  
--> Running transaction check  
--> Package gd-devel.x86_64 0:2.0.35-27.amzn2 will be installed  
--> Processing Dependency: gd = 2.0.35-27.amzn2 for package: gd-devel-2.0.35-27.amzn2
```

Create Account Information

You need to set up a Nagios user. Run the following commands:

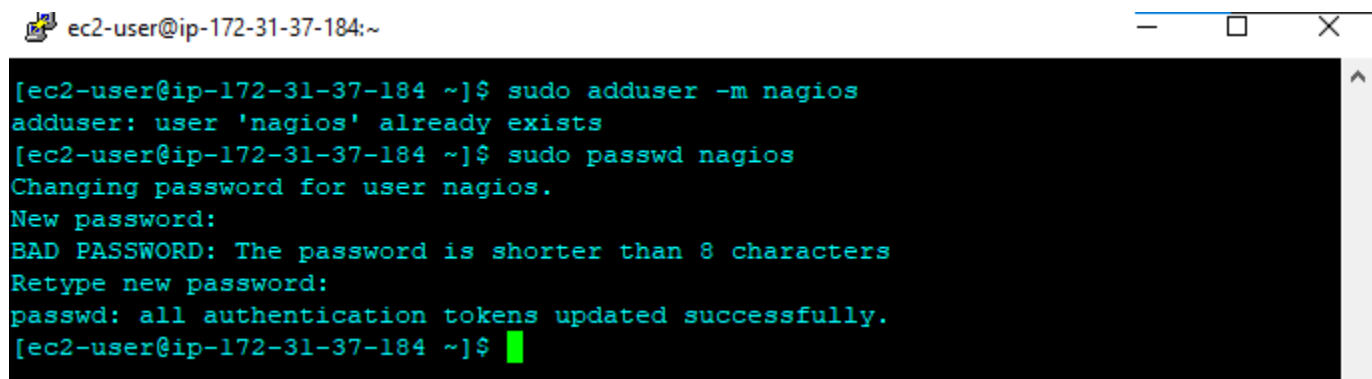
sudo adduser -m nagios //creates the user's home directory -m



```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo adduser -m nagios
```

sudo passwd nagios

//Type the new password twice.

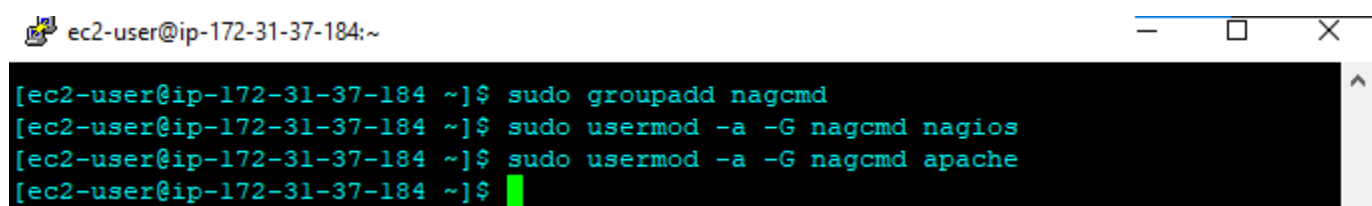


```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo adduser -m nagios  
adduser: user 'nagios' already exists  
[ec2-user@ip-172-31-37-184 ~]$ sudo passwd nagios  
Changing password for user nagios.  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[ec2-user@ip-172-31-37-184 ~]$
```

sudo groupadd nagcmd

sudo usermod -a -G nagcmd nagios //-a append and -G group

sudo usermod -a -G nagcmd apache



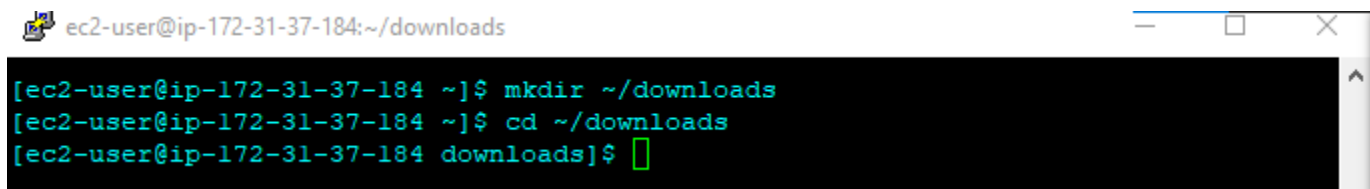
```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo groupadd nagcmd  
[ec2-user@ip-172-31-37-184 ~]$ sudo usermod -a -G nagcmd nagios  
[ec2-user@ip-172-31-37-184 ~]$ sudo usermod -a -G nagcmd apache  
[ec2-user@ip-172-31-37-184 ~]$
```

Download Nagios Core and the Plugins

Create a directory for storing the downloads.

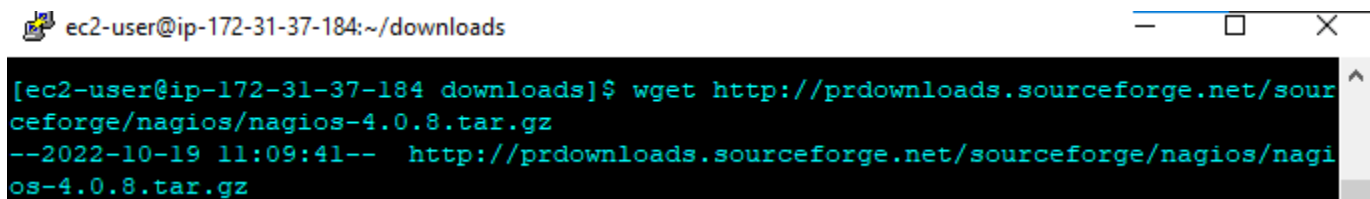
```
mkdir ~/downloads
```

```
cd ~/downloads
```

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads' with standard window controls. The terminal shows the following commands and output:

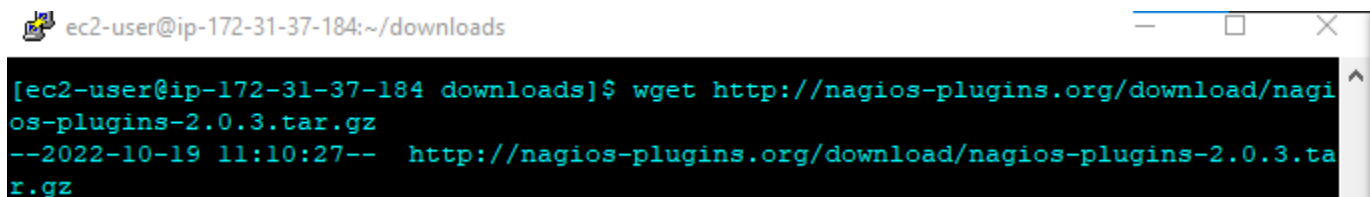
```
[ec2-user@ip-172-31-37-184 ~]$ mkdir ~/downloads
[ec2-user@ip-172-31-37-184 ~]$ cd ~/downloads
[ec2-user@ip-172-31-37-184 downloads]$
```

```
wget http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
```

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads' with standard window controls. The terminal shows the following commands and output:

```
[ec2-user@ip-172-31-37-184 downloads]$ wget http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
--2022-10-19 11:09:41--  http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-4.0.8.tar.gz
```

```
wget http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
```

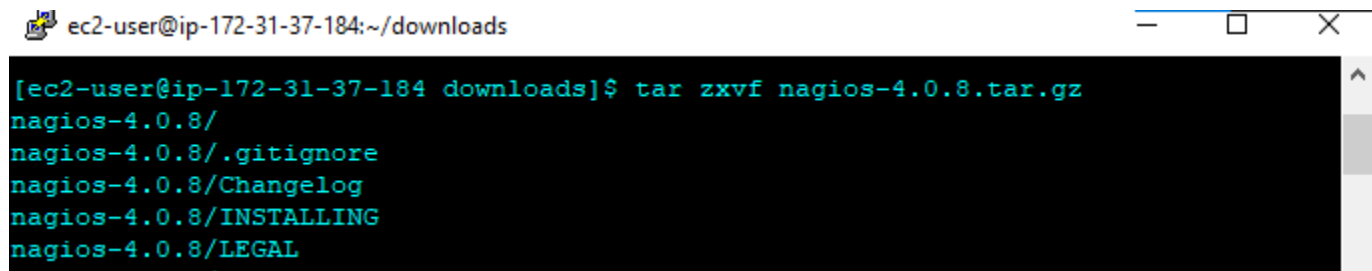
A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads' with standard window controls. The terminal shows the following commands and output:

```
[ec2-user@ip-172-31-37-184 downloads]$ wget http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
--2022-10-19 11:10:27--  http://nagios-plugins.org/download/nagios-plugins-2.0.3.tar.gz
```

Compile and Install Nagios

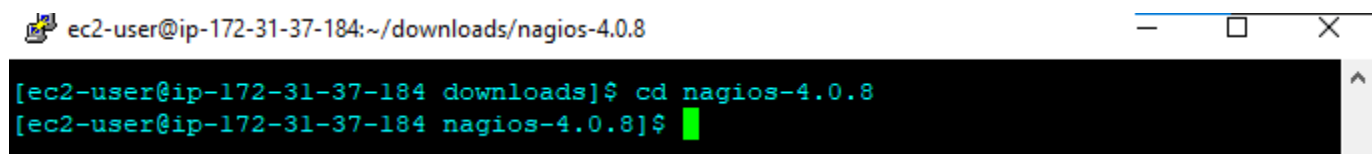
Extract the Nagios source code tarball.

```
tar zxvf nagios-4.0.8.tar.gz
```



```
ec2-user@ip-172-31-37-184:~/downloads  
[ec2-user@ip-172-31-37-184 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
```

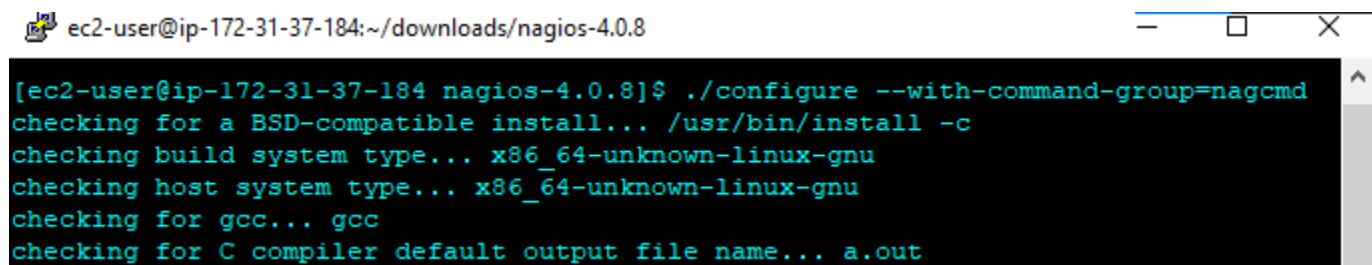
```
cd nagios-4.0.8
```



```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 downloads]$ cd nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$
```

Run the configuration script with the name of the group which you have created in the above step.

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



```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ ./configure --with-command-group=nagcmd  
checking for a BSD-compatible install... /usr/bin/install -c  
checking build system type... x86_64-unknown-linux-gnu  
checking host system type... x86_64-unknown-linux-gnu  
checking for gcc... gcc  
checking for C compiler default output file name... a.out
```

Compile and Install Nagios

Compile the Nagios source code.

make all

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ make all  
cd ./base && make  
make[1]: Entering directory `/home/ec2-user/downloads/nagios-4.0.8/base'  
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o nagios.o nagios.c
```

Install binaries, init script, sample config files and set permissions on the external command directory.

sudo make install

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo make install  
cd ./base && make install  
make[1]: Entering directory `/home/ec2-user/downloads/nagios-4.0.8/base'  
make install-basic
```

sudo make install-init

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo make install-init  
/usr/bin/install -c -m 755 -d -o root -g root /etc/rc.d/init.d  
/usr/bin/install -c -m 755 -o root -g root daemon-init /etc/rc.d/init.d/nagios  
  
*** Init script installed ***
```

sudo make install-config

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo make install-config  
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc  
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/etc/objects  
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/nagios.cfg /usr/local/nagios/etc/nagios.cfg
```

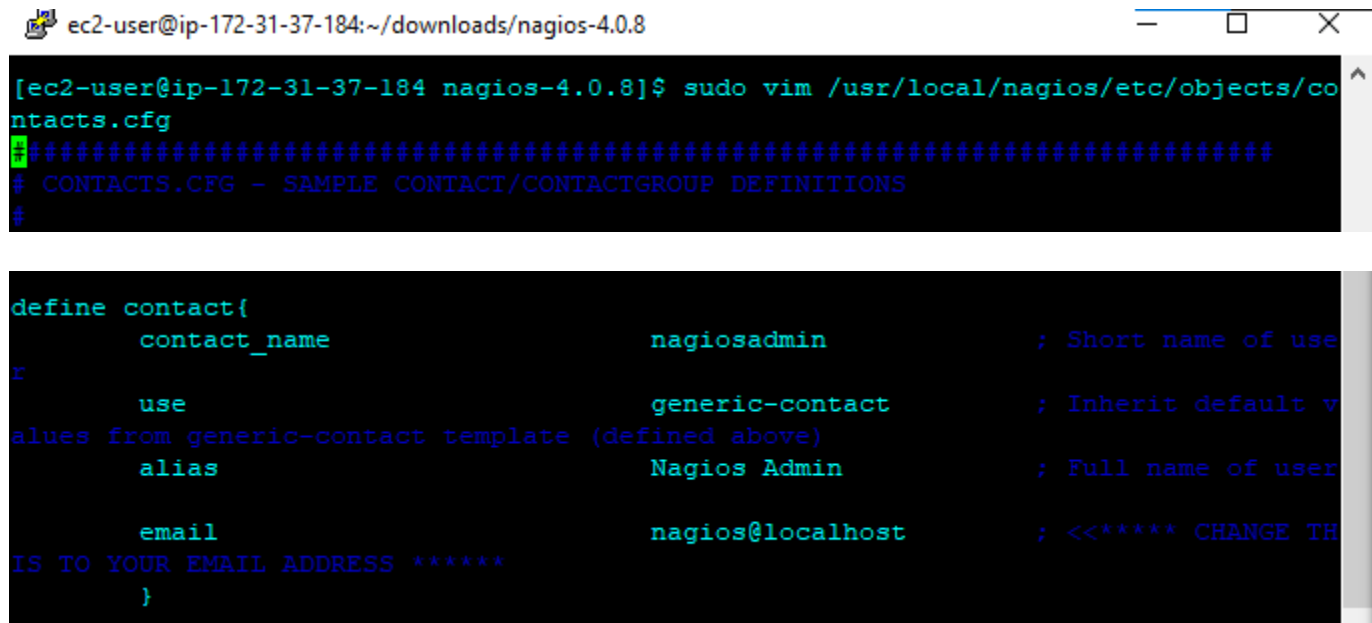
sudo make install-commandmode

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8  
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo make install-commandmode  
/usr/bin/install -c -m 775 -o nagios -g nagcmd -d /usr/local/nagios/var/rw  
chmod g+s /usr/local/nagios/var/rw  
  
*** External command directory configured ***
```

Customize Configuration

Change E-mail address with the nagiosadmin contact definition you'd like to use for receiving Nagios alerts.

```
sudo vim /usr/local/nagios/etc/objects/contacts.cfg
```

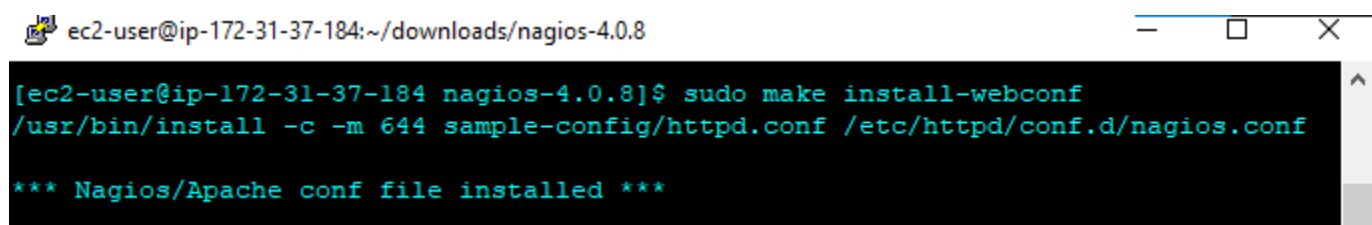
A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8' with standard window controls. The terminal shows the command 'sudo vim /usr/local/nagios/etc/objects/contacts.cfg' being executed. The vim editor displays the contents of 'contacts.cfg', which is a sample configuration for Nagios contacts. The file starts with a header comment, followed by a 'define contact{' block. Inside this block, 'contact_name' is set to 'nagiosadmin', 'use' is set to 'generic-contact', 'alias' is set to 'Nagios Admin', and 'email' is set to 'nagios@localhost'. A comment indicates that the email address should be changed. The block ends with a closing brace '}'.

```
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo vim /usr/local/nagios/etc/objects/contacts.cfg
#####
# CONTACTS.CFG - SAMPLE CONTACT/CONTACTGROUP DEFINITIONS
#

define contact{
    contact_name          nagiosadmin          ; Short name of user
    use                   generic-contact       ; Inherit default values from generic-contact template (defined above)
    alias                 Nagios Admin          ; Full name of user
    email                 nagios@localhost      ; <<***** CHANGE THIS TO YOUR EMAIL ADDRESS *****
}
```

Configure the Web Interface

```
sudo make install-webconf
```

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8' with standard window controls. The terminal shows the command 'sudo make install-webconf' being executed. The output of the command is displayed, showing the installation of the Nagios/Apache configuration file to the specified path.

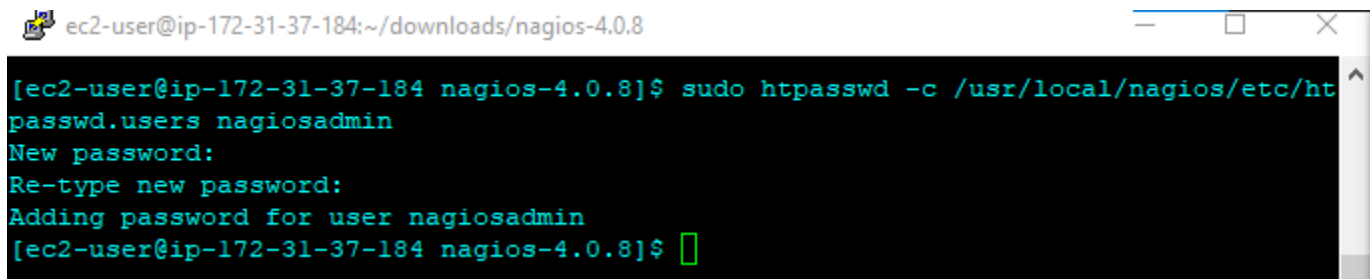
```
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.conf

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

Create a nagiosadmin account for logging into the Nagios web interface. Note the password you need it while login to nagios web console.

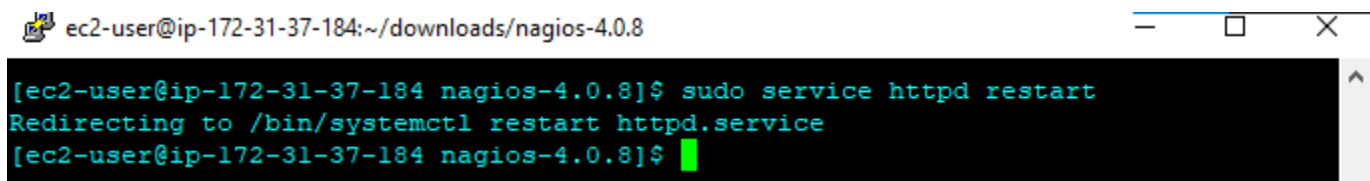
```
sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
```

//Type the new password twice.

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8'. The prompt is '[ec2-user@ip-172-31-37-184 nagios-4.0.8]\$'. The user enters 'sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin'. The output shows 'New password:', 'Re-type new password:', and 'Adding password for user nagiosadmin'. The prompt returns to '[ec2-user@ip-172-31-37-184 nagios-4.0.8]\$' with a green cursor.

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$
```

```
sudo service httpd restart    //Restart service
```

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8'. The prompt is '[ec2-user@ip-172-31-37-184 nagios-4.0.8]\$'. The user enters 'sudo service httpd restart'. The output shows 'Redirecting to /bin/systemctl restart httpd.service'. The prompt returns to '[ec2-user@ip-172-31-37-184 nagios-4.0.8]\$' with a green cursor.

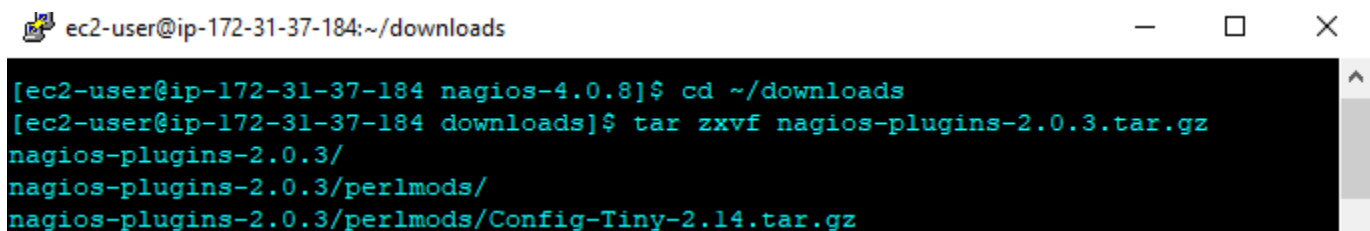
```
ec2-user@ip-172-31-37-184:~/downloads/nagios-4.0.8
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ sudo service httpd restart
Redirecting to /bin/systemctl restart httpd.service
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$
```

Compile and Install the Nagios Plugins

Extract the Nagios plugins source code tarball.

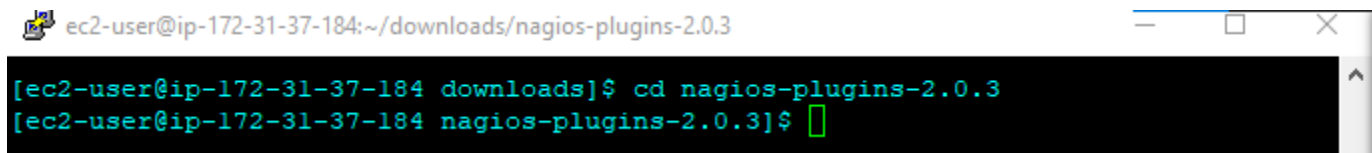
```
cd ~/downloads
```

```
tar zxvf nagios-plugins-2.0.3.tar.gz
```

A terminal window titled 'ec2-user@ip-172-31-37-184:~/downloads'. The prompt is '[ec2-user@ip-172-31-37-184 nagios-4.0.8]\$'. The user enters 'cd ~/downloads'. The prompt changes to '[ec2-user@ip-172-31-37-184 downloads]\$'. The user enters 'tar zxvf nagios-plugins-2.0.3.tar.gz'. The output shows the extraction of 'nagios-plugins-2.0.3/' and 'nagios-plugins-2.0.3/perlmods/Config-Tiny-2.14.tar.gz'. The prompt returns to '[ec2-user@ip-172-31-37-184 downloads]\$' with a green cursor.

```
ec2-user@ip-172-31-37-184:~/downloads
[ec2-user@ip-172-31-37-184 nagios-4.0.8]$ cd ~/downloads
[ec2-user@ip-172-31-37-184 downloads]$ tar zxvf nagios-plugins-2.0.3.tar.gz
nagios-plugins-2.0.3/
nagios-plugins-2.0.3/perlmods/
nagios-plugins-2.0.3/perlmods/Config-Tiny-2.14.tar.gz
[ec2-user@ip-172-31-37-184 downloads]$
```


cd nagios-plugins-2.0.3

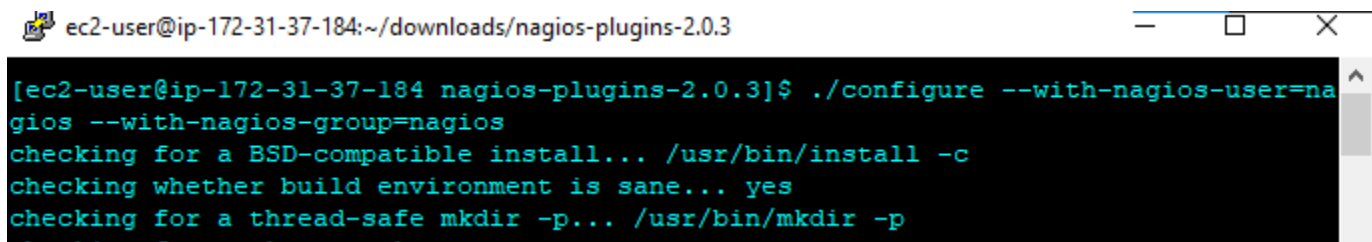


```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 downloads]$ cd nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$
```

Compile and Install the Nagios Plugins

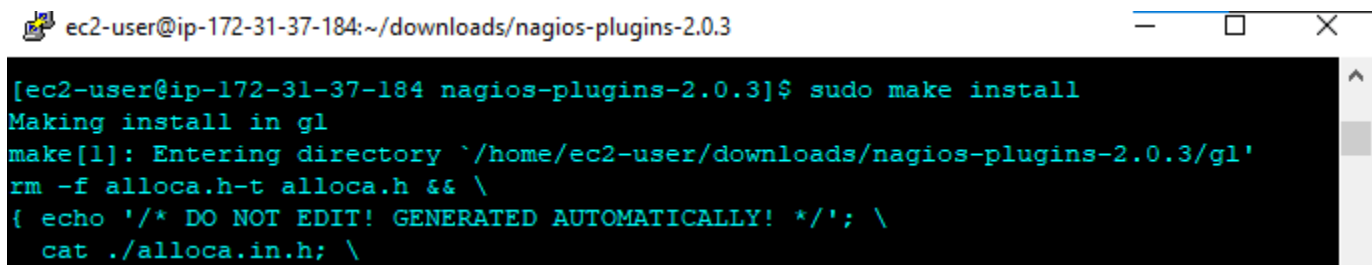
Compile and install the plugins.

`./configure --with-nagios-user=nagios --with-nagios-group=nagios`



```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ ./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
```

`sudo make install`



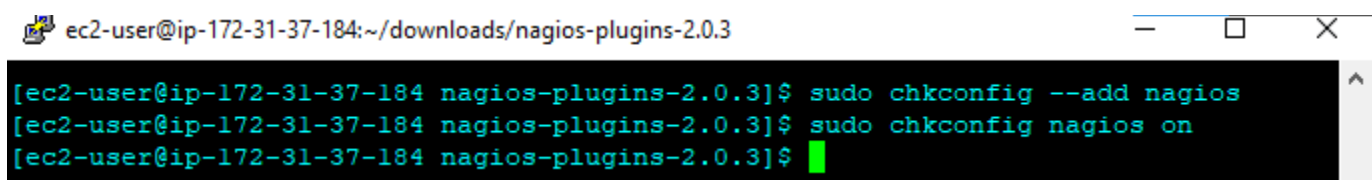
```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ sudo make install  
Making install in gl  
make[1]: Entering directory `/home/ec2-user/downloads/nagios-plugins-2.0.3/gl'  
rm -f alloca.h-t alloca.h && \  
{ echo '/* DO NOT EDIT! GENERATED AUTOMATICALLY! */'; \  
  cat ./alloca.in.h; \  
}
```

Start Nagios

Add Nagios to the list of system services and have it automatically started when the system boots.

`sudo chkconfig --add nagios`

`sudo chkconfig nagios on`

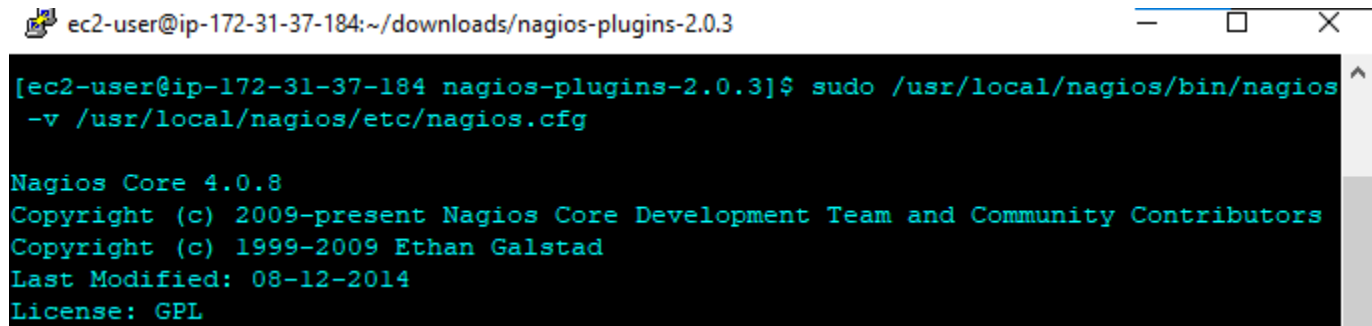


```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ sudo chkconfig --add nagios  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ sudo chkconfig nagios on  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$
```

Start Nagios

Verify the sample Nagios configuration files.

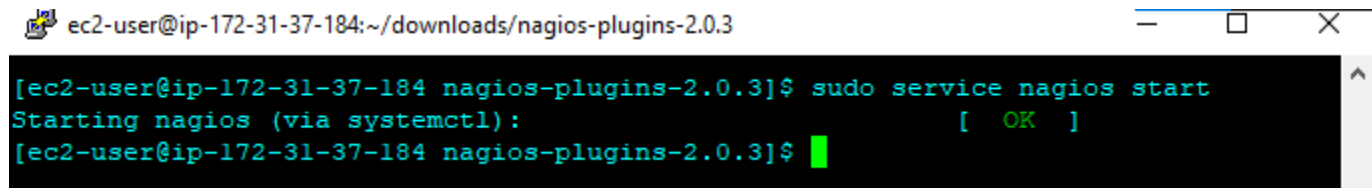
```
sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
```

A terminal window with a title bar showing 'ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3'. The terminal content shows the command 'sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg' being executed. The output displays Nagios Core version 4.0.8, copyright information for Nagios Core Development Team and Community Contributors, and Ethan Galstad, the last modified date of 08-12-2014, and the GPL license.

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ sudo /usr/local/nagios/bin/nagios  
-v /usr/local/nagios/etc/nagios.cfg  
  
Nagios Core 4.0.8  
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors  
Copyright (c) 1999-2009 Ethan Galstad  
Last Modified: 08-12-2014  
License: GPL
```

If there are no errors, start Nagios.

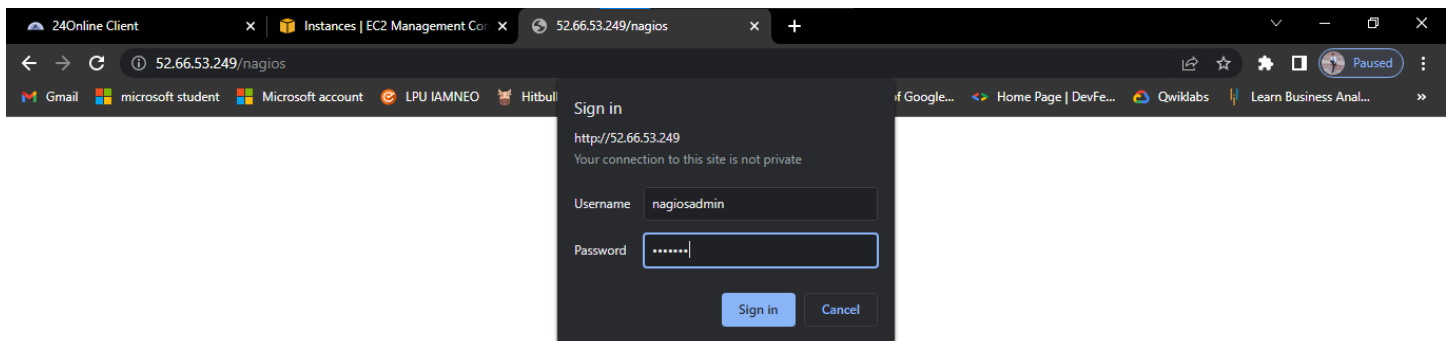
```
sudo service nagios start
```

A terminal window with a title bar showing 'ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3'. The terminal content shows the command 'sudo service nagios start' being executed. The output indicates that Nagios is starting via systemctl and shows a green 'OK' status.

```
ec2-user@ip-172-31-37-184:~/downloads/nagios-plugins-2.0.3  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$ sudo service nagios start  
Starting nagios (via systemctl): [ OK ]  
[ec2-user@ip-172-31-37-184 nagios-plugins-2.0.3]$
```

Access the Nagios web interface to do this you will need to know the Public DNS or IP for your instance, you can get this from the Instance section of the EC2 Console if you do not already know it. You'll be prompted for the username (nagiosadmin) and password you specified earlier.

(Public ip of master)/nagios

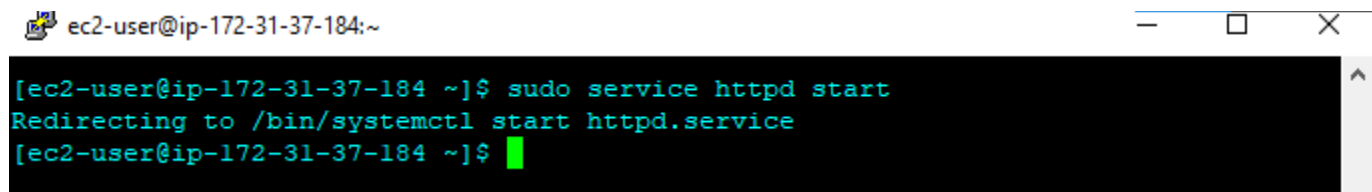


Nagios Adding Hosts

Starting the Nagios service in Master

Start httpd

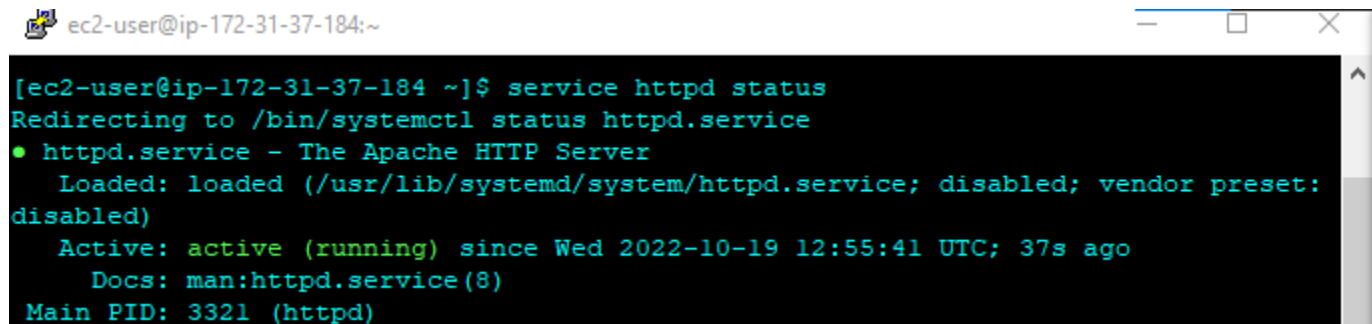
sudo service httpd start

A terminal window with a title bar showing a laptop icon, the text 'ec2-user@ip-172-31-37-184:~', and window control buttons. The terminal content shows the command 'sudo service httpd start' being executed, which redirects to 'systemctl start httpd.service'.

```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo service httpd start  
Redirecting to /bin/systemctl start httpd.service  
[ec2-user@ip-172-31-37-184 ~]$
```

Test if Apache running

service httpd status

A terminal window with a title bar showing a laptop icon, the text 'ec2-user@ip-172-31-37-184:~', and window control buttons. The terminal content shows the command 'service httpd status' being executed, which redirects to 'systemctl status httpd.service'. The output shows that the service is active and running.

```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ service httpd status  
Redirecting to /bin/systemctl status httpd.service  
● httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)  
   Active: active (running) since Wed 2022-10-19 12:55:41 UTC; 37s ago  
     Docs: man:httpd.service(8)  
  Main PID: 3321 (httpd)
```

Check from browser



Starting the Nagios service in Master

Start Nagios

```
sudo systemctl start nagios.service
```

Check if it running

```
service nagios status
```

```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo systemctl start nagios.service  
[ec2-user@ip-172-31-37-184 ~]$ service nagios status  
nagios (pid 3113) is running...  
[ec2-user@ip-172-31-37-184 ~]$
```

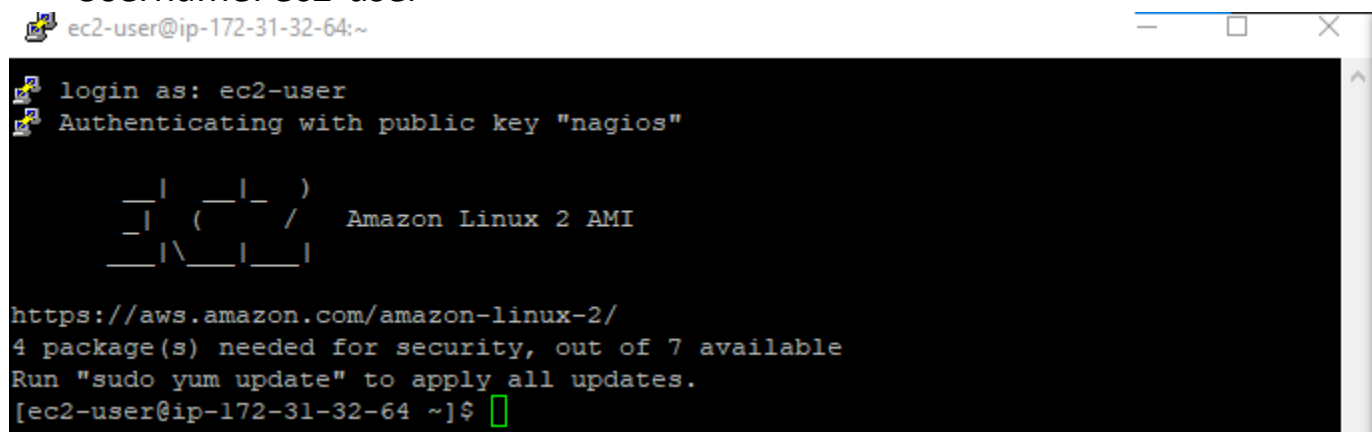
Check from browser

Create AWS EC2

- Amazon Linux 2 Kernel 5.10 AMI EC2
- Provide all network group
- Create the number of slave instances as below
 - Slave1
 - Slave2
 -
 -
 - Slaven

Putty Connection

- Download Putty
- Copy Public IP of master
- Connect with authentication
- Username: ec2-user



```
ec2-user@ip-172-31-32-64:~  
login as: ec2-user  
Authenticating with public key "nagios"  
  
  _ | _ | _ )  
 _ | ( /   Amazon Linux 2 AMI  
__| \__|__|  
  
https://aws.amazon.com/amazon-linux-2/  
4 package(s) needed for security, out of 7 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-32-64 ~]$
```

Install Pre-requisites for Slave

Update server

sudo yum update

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ sudo yum update  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
amzn2-core | 3.7 kB 00:00:00  
Resolving Dependencies  
--> Running transaction check  
--> Package initscripts.x86_64 0:9.49.47-1.amzn2.0.2 will be updated  
--> Package initscripts.x86_64 0:9.49.47-1.amzn2.0.3 will be an update  
--> Package kernel.x86_64 0:5.10.144-127.601.amzn2 will be installed  
--> Package kpatch-runtime.noarch 0:0.9.4-3.amzn2 will be updated
```

Install httpd

sudo yum install httpd

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ sudo yum install httpd  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Resolving Dependencies  
--> Running transaction check  
--> Package httpd.x86_64 0:2.4.54-1.amzn2 will be installed  
--> Processing Dependency: httpd-tools = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64  
--> Processing Dependency: httpd filesystem = 2.4.54-1.amzn2 for package: httpd-2.4
```

Start httpd

sudo service httpd start

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ sudo service httpd start  
Redirecting to /bin/systemctl start httpd.service  
[ec2-user@ip-172-31-32-64 ~]$
```

Test if Apache running

service httpd status

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ service httpd status  
Redirecting to /bin/systemctl status httpd.service  
● httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)  
   Active: active (running) since Wed 2022-10-19 13:03:31 UTC; 39s ago  
     Docs: man:httpd.service(8)
```

Configuration on Master

Move to objects folder

cd /usr/local/nagios/etc/objects

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects  
[ec2-user@ip-172-31-37-184 ~]$ cd /usr/local/nagios/etc/objects  
[ec2-user@ip-172-31-37-184 objects]$
```

Check localhost.cfg

sudo nano localhost.cfg

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects  
[ec2-user@ip-172-31-37-184 objects]$ sudo nano localhost.cfg  
[ec2-user@ip-172-31-37-184 objects]$
```

Copy the content

```
# Define a host for the local machine  
  
define host{  
    use                linux-server                ; Name of host template to use  
    ; This host definition will inherit all attributes  
    ; from the template defined above  
  
    host_name          localhost  
    alias              localhost  
    address            127.0.0.1  
}
```


Configuration on Master

Create a new file hosts.cfg

sudo nano hosts.cfg

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo nano hosts.cfg
[ec2-user@ip-172-31-37-184 objects]$
```

Content of the hosts file

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
GNU nano 2.9.8 hosts.cfg Modified
define host{
    use                linux-server        ; Name of host template to$
                                ; This host definition wil$
                                ; in (or inherited by) the$
    host_name          slave                // give any name
    alias              slave                // give any name
    address            172.31.32.64         // private ip of slave
}
```

Configuration on Master

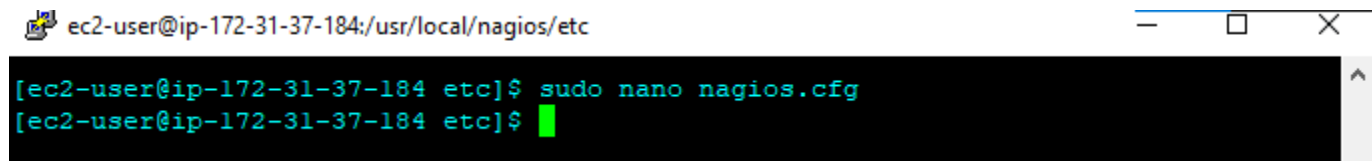
We need to provide the path of this file to the nagios.cfg file.

cd ..

ls

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc
[ec2-user@ip-172-31-37-184 objects]$ cd ..
[ec2-user@ip-172-31-37-184 etc]$ ls
cgi.cfg  htpasswd.users  nagios.cfg  objects  resource.cfg
[ec2-user@ip-172-31-37-184 etc]$
```

sudo nano nagios.cfg

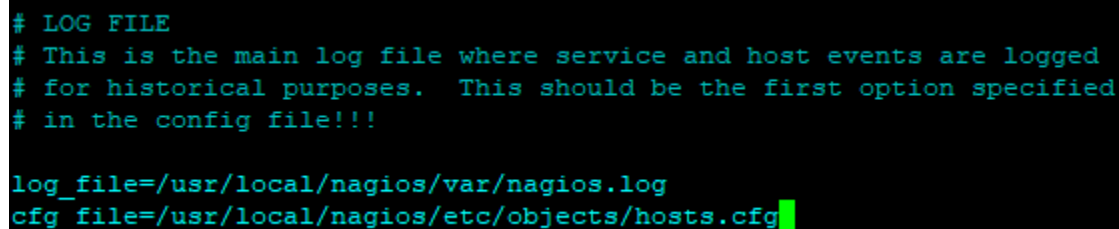
A terminal window titled "ec2-user@ip-172-31-37-184:/usr/local/nagios/etc" with standard window controls. The terminal shows the command "sudo nano nagios.cfg" being executed, with the prompt returning to the user.

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc  
[ec2-user@ip-172-31-37-184 etc]$ sudo nano nagios.cfg  
[ec2-user@ip-172-31-37-184 etc]$
```

Add the line

cfg_file=/usr/local/nagios/etc/objects/hosts.cfg

//Path of hosts.cfg file

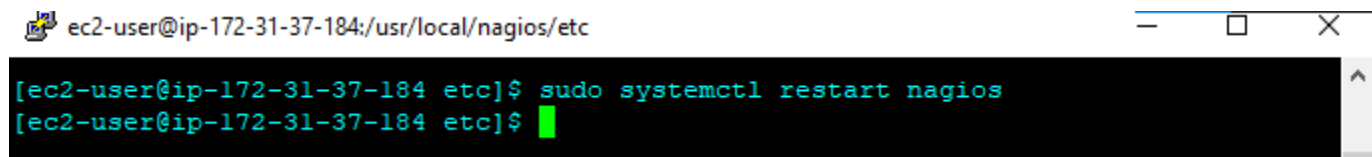
A terminal window showing the contents of the nagios.cfg file. The text is displayed in a monospaced font with green characters on a black background. The cursor is at the end of the line "cfg_file=/usr/local/nagios/etc/objects/hosts.cfg".

```
# LOG FILE  
# This is the main log file where service and host events are logged  
# for historical purposes. This should be the first option specified  
# in the config file!!!  
  
log_file=/usr/local/nagios/var/nagios.log  
cfg_file=/usr/local/nagios/etc/objects/hosts.cfg
```

Configuration on Master

Restart nagios to start with new configuration

sudo systemctl restart nagios

A terminal window titled "ec2-user@ip-172-31-37-184:/usr/local/nagios/etc" with standard window controls. The terminal shows the command "sudo systemctl restart nagios" being executed, with the prompt returning to the user.

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc  
[ec2-user@ip-172-31-37-184 etc]$ sudo systemctl restart nagios  
[ec2-user@ip-172-31-37-184 etc]$
```

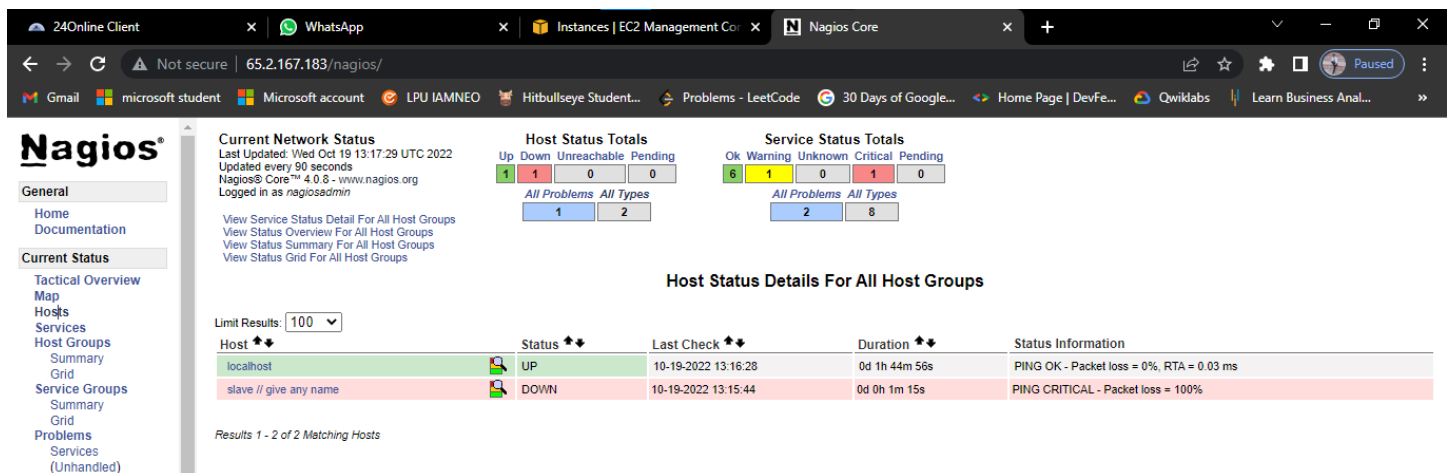
Check the hosts in Nagios interface

- Copy ip address of Master
- Login from browser with following

<public ip of master>/nagios

- Provide username as **nagiosadmin** and password (provided earlier)
- Go to hosts and check if the new slave server is added.

Check the host in the Nagios interface



The screenshot shows the Nagios Core web interface in a browser. The address bar displays '65.2.167.183/nagios/'. The interface includes a left sidebar with navigation links like 'General', 'Current Status', 'Hosts', 'Services', and 'Problems'. The main content area shows 'Current Network Status' and 'Host Status Totals'. Below these, there's a table titled 'Host Status Details For All Host Groups' with columns for Host, Status, Last Check, Duration, and Status Information. The table lists two hosts: 'localhost' (UP) and 'slave // give any name' (DOWN). The status information for the slave host indicates 'PING CRITICAL - Packet loss = 100%'.

Host	Status	Last Check	Duration	Status Information
localhost	UP	10-19-2022 13:16:28	0d 1h 44m 56s	PING OK - Packet loss = 0%, RTA = 0.03 ms
slave // give any name	DOWN	10-19-2022 13:15:44	0d 0h 1m 15s	PING CRITICAL - Packet loss = 100%

Add ICMP inbound rules to Master and Slave

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availabil
<input checked="" type="checkbox"/>	master	i-04d20c8696c5e72e6	Running	t2.micro	-	No alarms	ap-south
<input type="checkbox"/>	slave	i-03c30d4ae0ca17a7c	Running	t2.micro	-	No alarms	ap-south
<input type="checkbox"/>	master-puppet	i-0a1e6761a91f55799	Terminated	t2.micro	-	No alarms	ap-south
<input type="checkbox"/>	slave-puppet	i-090d41cb1dfc1f7e7	Terminated	t2.micro	-	No alarms	ap-south

Instance: i-04d20c8696c5e72e6 (master)

Security groups


 sg-0a753c7aae0d00bd3 (launch-wizard-12)

▼ Inbound rules

Filter rules					< 1 >	
Security group rule ID	Port range	Protocol	Source	Security groups		
sgr-0609452cbdb5e9589	80	TCP	0.0.0.0/0	launch-wizard-12		
sqr-03a854862e2345628	443	TCP	0.0.0.0/0	launch-wizard-12		

Edit inbound rules

Inbound rules
Outbound rules
Tags

 You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Inbound rules (5)

Filter security group rules

Manage tags Edit inbound rules

	Name	Security group rule...	IP version	Type	Protocol
<input type="checkbox"/>	-	sgr-0609452cbdb5e95...	IPv4	HTTP	TCP
<input type="checkbox"/>	-	sgr-03a854862e2345...	IPv4	HTTPS	TCP
<input type="checkbox"/>	-	sgr-016dbd51a25a96...	IPv4	SSH	TCP
<input type="checkbox"/>	-	sgr-072f06acce527f1a7	IPv4	All TCP	TCP

Add inbound rule of ICMP

sg-03a8034802e2343020 HTTPS TCP 443 Custom 0.0.0.0/0 X Delete

sg-016dbd51a25a96d17 SSH TCP 22 Custom 0.0.0.0/0 X Delete

sg-072f06acce527f1a7 All TCP TCP 0 - 6553 Custom 0.0.0.0/0 X Delete

sg-0e0a0b320f13267b7 All ICMP - IPv4 ICMP All Custom 0.0.0.0/0 X Delete

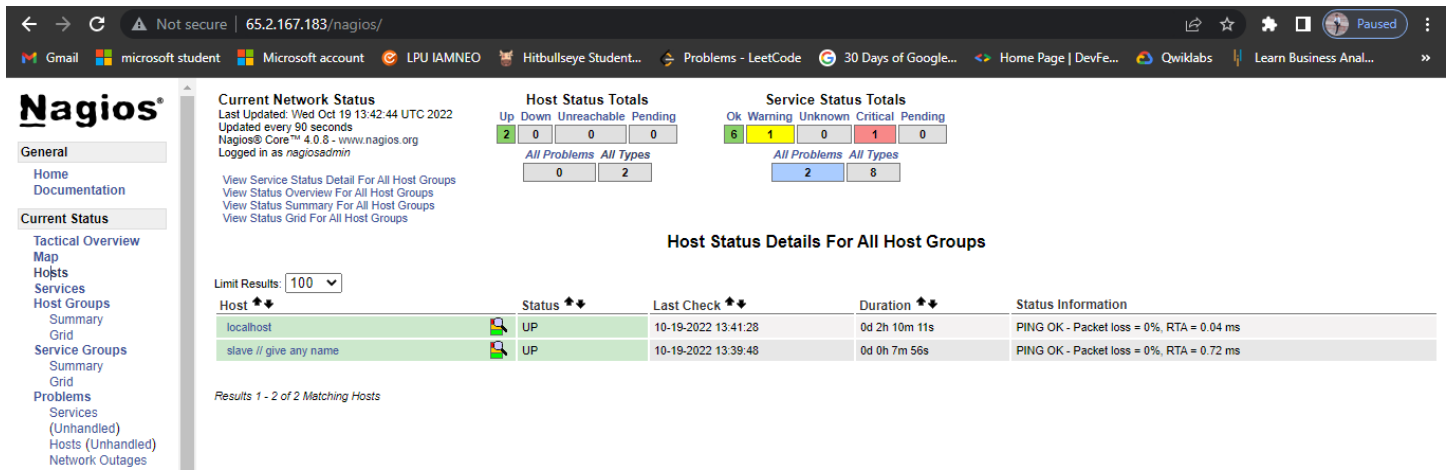
Add rule

Cancel Preview changes Save rules

Added rule

Inbound rules (5)							Manage tags	Edit inbound rules
Filter security group rules							< 1 >	⚙
<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol			
<input type="checkbox"/>	-	sg-0609452cddb5e95...	IPv4	HTTP	TCP			
<input type="checkbox"/>	-	sg-03a854862e2345...	IPv4	HTTPS	TCP			
<input type="checkbox"/>	-	sg-016dbd51a25a96...	IPv4	SSH	TCP			
<input type="checkbox"/>	-	sg-072f06acce527f1a7	IPv4	All TCP	TCP			
<input type="checkbox"/>	-	sg-0e0a0b320f13267b7	IPv4	All ICMP - IPv4	ICMP			

Check the hosts from Nagios Master interface



The screenshot shows the Nagios Master interface at 65.2.167.183/nagios/. The interface includes a sidebar with navigation links like General, Home, Documentation, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Service Groups, Problems, and Network Outages. The main content area displays the 'Current Network Status' (Last Updated: Wed Oct 19 13:42:44 UTC 2022), 'Host Status Totals' (Up: 2, Down: 0, Unreachable: 0, Pending: 0), and 'Service Status Totals' (Ok: 6, Warning: 1, Unknown: 0, Critical: 1, Pending: 0). Below these, the 'Host Status Details For All Host Groups' table is shown, listing two hosts: 'localhost' and 'slave // give any name', both with a status of 'UP'.

Host	Status	Last Check	Duration	Status Information
localhost	UP	10-19-2022 13:41:28	0d 2h 10m 11s	PING OK - Packet loss = 0%, RTA = 0.04 ms
slave // give any name	UP	10-19-2022 13:39:48	0d 0h 7m 56s	PING OK - Packet loss = 0%, RTA = 0.72 ms

Nagios Adding Service

Start Apache and test it from Master

Start httpd

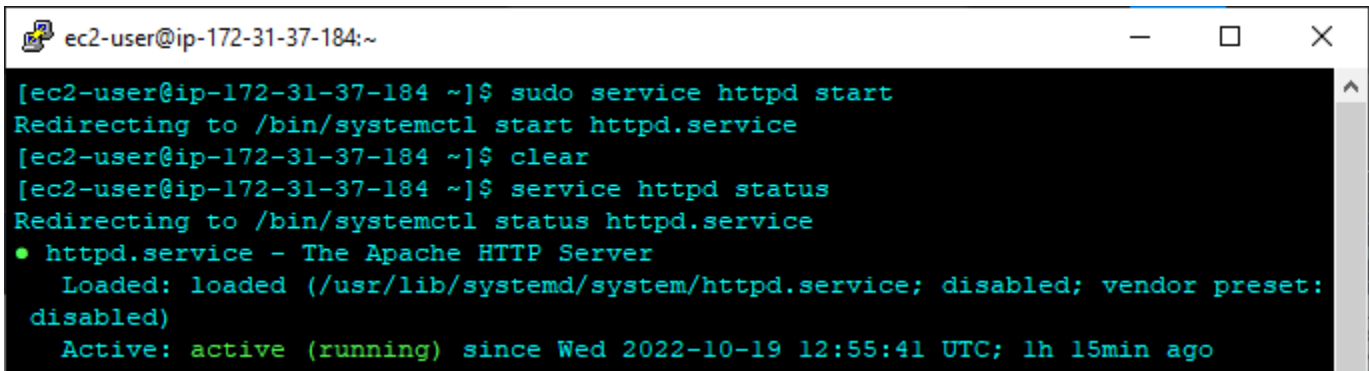
sudo service httpd start

```
ec2-user@ip-172-31-37-184:~  
[ec2-user@ip-172-31-37-184 ~]$ sudo service httpd start  
Redirecting to /bin/systemctl start httpd.service  
[ec2-user@ip-172-31-37-184 ~]$
```

Test if Apache is running

Service httpd status

Check from browser

A terminal window titled 'ec2-user@ip-172-31-37-184:~' with standard window controls. The terminal shows the following commands and output:

```
[ec2-user@ip-172-31-37-184 ~]$ sudo service httpd start
Redirecting to /bin/systemctl start httpd.service
[ec2-user@ip-172-31-37-184 ~]$ clear
[ec2-user@ip-172-31-37-184 ~]$ service httpd status
Redirecting to /bin/systemctl status httpd.service
• httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
  Active: active (running) since Wed 2022-10-19 12:55:41 UTC; 1h 15min ago
```

Start the Nagios service in Master

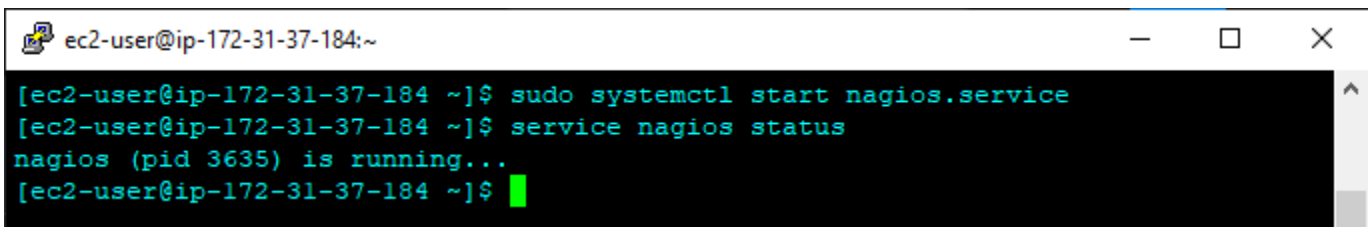
Start Nagios

`sudo systemctl start nagios.service`

Check if it is running

`service nagios status`

Check from browser

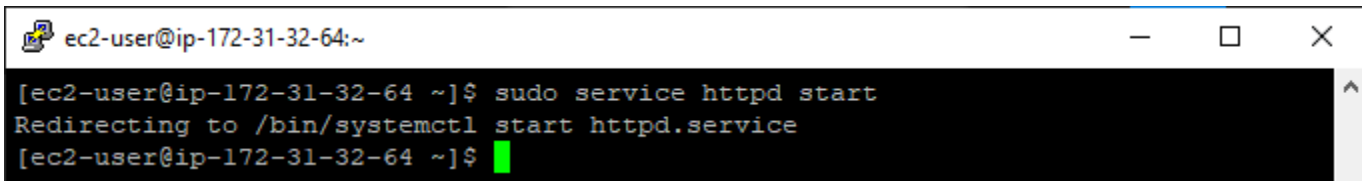
A terminal window titled 'ec2-user@ip-172-31-37-184:~' with standard window controls. The terminal shows the following commands and output:

```
[ec2-user@ip-172-31-37-184 ~]$ sudo systemctl start nagios.service
[ec2-user@ip-172-31-37-184 ~]$ service nagios status
nagios (pid 3635) is running...
[ec2-user@ip-172-31-37-184 ~]$
```

Start Apache and test it from Slave

Start httpd

sudo service httpd start

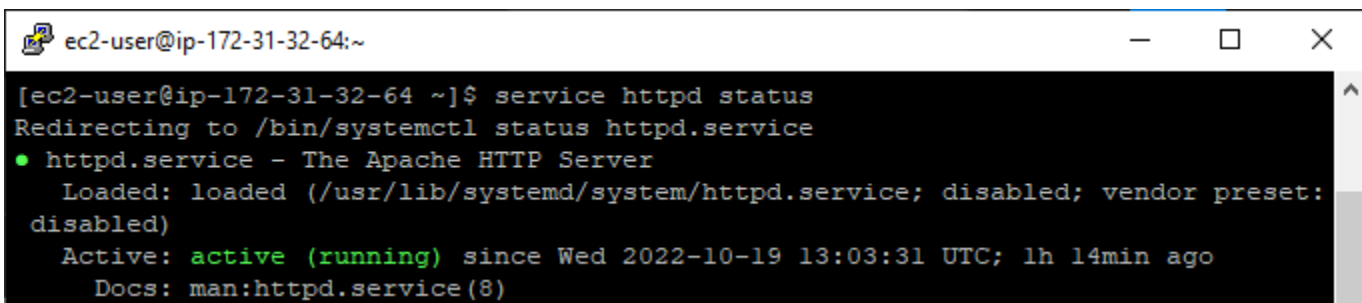
A terminal window with a title bar showing 'ec2-user@ip-172-31-32-64:~'. The terminal content shows the command 'sudo service httpd start' being executed. The output is 'Redirecting to /bin/systemctl start httpd.service' followed by a new prompt line '[ec2-user@ip-172-31-32-64 ~]\$' with a green cursor.

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ sudo service httpd start  
Redirecting to /bin/systemctl start httpd.service  
[ec2-user@ip-172-31-32-64 ~]$
```

Test if Apache running

service httpd status

Check from browser

A terminal window with a title bar showing 'ec2-user@ip-172-31-32-64:~'. The terminal content shows the command 'service httpd status' being executed. The output shows that the service is active and running, with details about its configuration and when it was last updated.

```
ec2-user@ip-172-31-32-64:~  
[ec2-user@ip-172-31-32-64 ~]$ service httpd status  
Redirecting to /bin/systemctl status httpd.service  
● httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)  
   Active: active (running) since Wed 2022-10-19 13:03:31 UTC; 1h 14min ago  
     Docs: man:httpd.service(8)
```

Check the hosts in the Nagios interface

- Copy ip address of Master
- Login from browser with following

<public ip of master>/nagios

- Provide username as **nagiosadmin** and password (provided earlier)
- Go to hosts and check if the new slave server is added.

Check the hosts in the Nagios interface

The screenshot shows the Nagios web interface at 65.2.167.183/nagios/. The left sidebar contains a navigation menu with options like General, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Summary, Grid, Service Groups, Summary, Grid, Problems, and Services. The main content area displays the 'Current Network Status' (Last Updated: Wed Oct 19 14:19:11 UTC 2022), 'Host Status Totals' (Up: 2, Down: 0, Unreachable: 0, Pending: 0), and 'Service Status Totals' (Ok: 6, Warning: 1, Unknown: 0, Critical: 1, Pending: 0). Below these, the 'Host Status Details For All Host Groups' table is shown with columns: Host, Status, Last Check, Duration, and Status Information. The table lists two hosts: 'localhost' and 'slave // give any name', both with a status of 'UP'.

Host	Status	Last Check	Duration	Status Information
localhost	UP	10-19-2022 14:18:58	0d 2h 46m 38s	PING OK - Packet loss = 0%, RTA = 0.04 ms
slave // give any name	UP	10-19-2022 14:15:16	0d 0h 44m 23s	PING OK - Packet loss = 0%, RTA = 0.53 ms

Check the service in the Nagios interface

The screenshot shows the Nagios web interface at 65.2.167.183/nagios/. The left sidebar contains a navigation menu with options like General, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Summary, Grid, Service Groups, Summary, Grid, Problems, and Services. The main content area displays the 'Current Network Status' (Last Updated: Wed Oct 19 14:20:01 UTC 2022), 'Host Status Totals' (Up: 2, Down: 0, Unreachable: 0, Pending: 0), and 'Service Status Totals' (Ok: 6, Warning: 1, Unknown: 0, Critical: 1, Pending: 0). Below these, the 'Service Status Details For All Hosts' table is shown with columns: Host, Service, Status, Last Check, Duration, Attempt, and Status Information. The table lists services for 'localhost': 'Current Load' (OK), 'Current Users' (OK), 'HTTP' (WARNING), 'PING' (OK), 'Root Partition' (OK), 'SSH' (OK), 'Swap Usage' (CRITICAL), and 'Total Processes' (OK).

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	Current Load	OK	10-19-2022 14:15:13	0d 2h 47m 28s	1/4	OK - load average: 0.03, 0.03, 0.00
localhost	Current Users	OK	10-19-2022 14:15:51	0d 2h 46m 50s	1/4	USERS OK - 1 users currently logged in
localhost	HTTP	WARNING	10-19-2022 14:16:28	0d 1h 23m 33s	4/4	HTTP WARNING: HTTP/1.1 403 Forbidden - 3932 bytes in 0.001 second response time
localhost	PING	OK	10-19-2022 14:17:05	0d 2h 45m 35s	1/4	PING OK - Packet loss = 0%, RTA = 0.04 ms
localhost	Root Partition	OK	10-19-2022 14:17:43	0d 2h 44m 58s	1/4	DISK OK - free space: / 6333 MB (77% inode=98%):
localhost	SSH	OK	10-19-2022 14:18:21	0d 2h 44m 20s	1/4	SSH OK - OpenSSH_7.4 (protocol 2.0)
localhost	Swap Usage	CRITICAL	10-19-2022 14:18:58	0d 2h 43m 43s	4/4	SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size.
localhost	Total Processes	OK	10-19-2022 14:19:36	0d 2h 43m 5s	1/4	PROCS OK: 28 processes with STATE = RSZDT

Configuration on Master

Move to objects folder

cd /usr/local/nagios/etc/objects

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 ~]$ cd /usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$
```

Check localhost.cfg

sudo nano localhost.cfg

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo nano localhost.cfg
[ec2-user@ip-172-31-37-184 objects]$
```

Check services definition

Copy the services definitions

```
# Define a service to "ping" the local machine

define service{
    use                local-service        ; Name of service template
    host_name          localhost
    service_description PING
    check_command       check_ping!100.0,20%!500.0,60%
```

Configuration on Master

Open hosts.cfg

sudo nano hosts.cfg

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo nano hosts.cfg
```

Contents of the hosts file

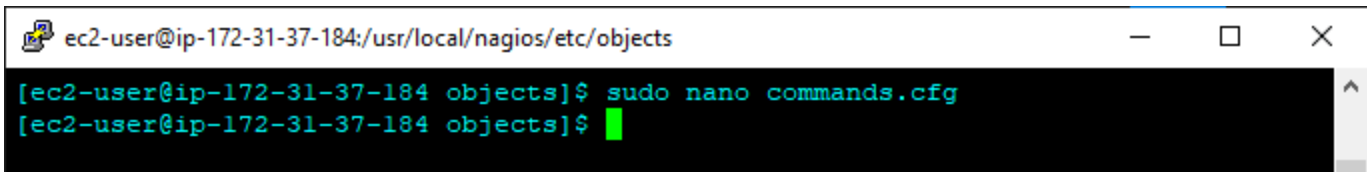
```
# Define a service to "ping" the local machine

define service{
    use                local-service        ; Name of service template
    host_name          localhost
    service_description PING
    check_command       check_ping!100.0,20%!500.0,60%
```

Configuration on Master

Goto command.cfg

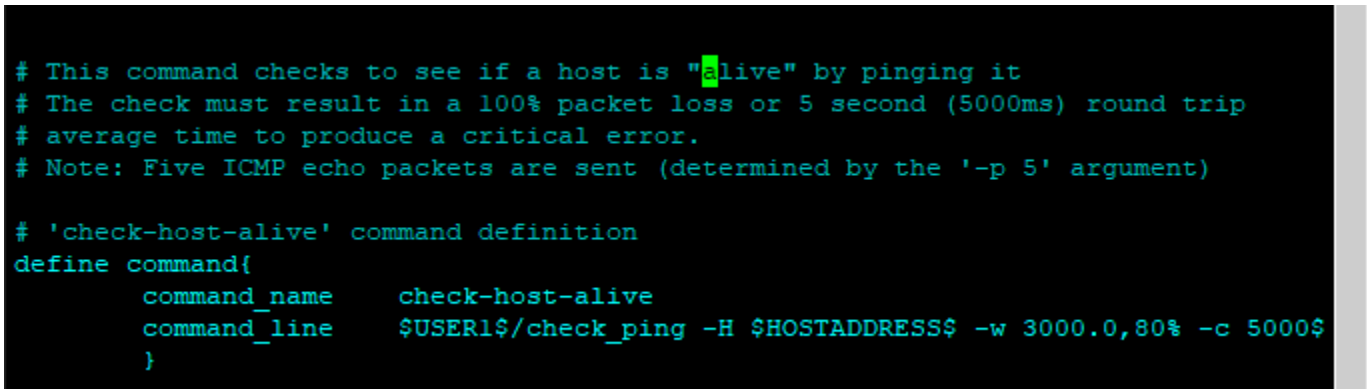
sudo nano commands.cfg



```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo nano commands.cfg
[ec2-user@ip-172-31-37-184 objects]$
```

Search for host alive service

CTRL+w and write alive and enter



```
# This command checks to see if a host is "alive" by pinging it
# The check must result in a 100% packet loss or 5 second (5000ms) round trip
# average time to produce a critical error.
# Note: Five ICMP echo packets are sent (determined by the '-p 5' argument)

# 'check-host-alive' command definition
define command{
    command_name      check-host-alive
    command_line       $USER1$/check_ping -H $HOSTADDRESS$ -w 3000.0,80% -c 5000$
}
```

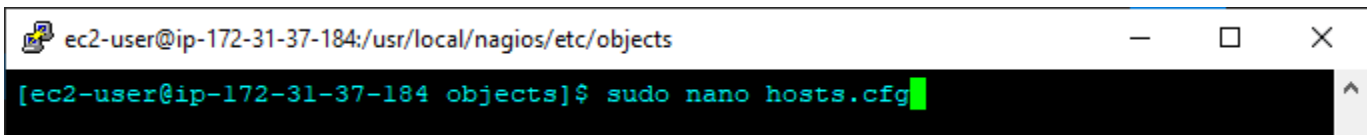
Check the content and copy line

command_name check-host-alive

Configuration on Master

Open hosts.cfg

sudo nano hosts.cfg



```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo nano hosts.cfg
```

Edit the file

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
GNU nano 2.9.8 hosts.cfg

define host{
    use                linux-server                ; Name of host template to use
    ; This host definition will inherit any attributes defined in (or inherited by) the
    ; parent host definition

    host_name          slave
    alias              slave
    address            172.31.32.64
}

define service{
    use                generic-service                ; Name of service to use
    host_name          slave
    service_description check host alive
    check_command       check-host-alive
    check_interval      1
    retry_interval      1
}
```

Configuration on Master

Restart nagios to start with new configuration

sudo systemctl restart nagios

```
ec2-user@ip-172-31-37-184:/usr/local/nagios/etc/objects
[ec2-user@ip-172-31-37-184 objects]$ sudo systemctl restart nagios
[ec2-user@ip-172-31-37-184 objects]$
```

Check services in nagios interface

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:

Current Network Status

Last Updated: Wed Oct 19 20:03:37 UTC 2022
Updated every 90 seconds
Nagios® Core™ 4.0.8 - www.nagios.org
Logged in as nagiosadmin

View History For all hosts
View Notifications For All Hosts
View Host Status Detail For All Hosts

Host Status Totals

Up	Down	Unreachable	Pending
2	0	0	0

All Problems: 0 All Types: 2

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
6	1	0	1	1

All Problems: 2 All Types: 9

Service Status Details For All Hosts

Limit Results: 100

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	Current Load	OK	10-19-2022 20:01:12	0d 8h 31m 4s	1/4	OK - load average: 0.00, 0.01, 0.00
	Current Users	OK	10-19-2022 20:02:08	0d 8h 30m 26s	1/4	USERS OK - 1 users currently logged in
	HTTP	WARNING	10-19-2022 20:03:23	0d 7h 7m 9s	4/4	HTTP WARNING: HTTP/1.1 403 Forbidden - 3932 bytes in 0.001 second response time
	PING	OK	10-19-2022 19:55:53	0d 8h 29m 11s	1/4	PING OK - Packet loss = 0%, RTA = 0.04 ms
	Root Partition	OK	10-19-2022 19:47:45	0d 8h 28m 34s	1/4	DISK OK - free space: / 6333 MB (77% inode=98%):
	SSH	OK	10-19-2022 20:02:45	0d 8h 27m 56s	1/4	SSH OK - OpenSSH_7.4 (protocol 2.0)
	Swap Usage	CRITICAL	10-19-2022 19:55:15	0d 8h 27m 19s	4/4	SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size.
slave	Total Processes	OK	10-19-2022 19:46:46	0d 8h 26m 41s	1/4	PROCS OK: 28 processes with STATE = RSZDT
	check host alive	PENDING	N/A	0d 0h 0m 17s+	1/3	Service check scheduled for Wed Oct 19 20:04:20 UTC 2022

Results 1 - 9 of 9 Matching Services

Check services in nagios interface

Nagios®

- General
 - Home
 - Documentation
- Current Status
 - Tactical Overview
 - Map
 - Hosts
 - Services
 - Summary
 - Grid
 - Service Groups
 - Summary
 - Grid
 - Problems
 - Services (Unhandled)
 - Hosts (Unhandled)
 - Network Outages
 - Quick Search:

Current Network Status
Last Updated: Wed Oct 19 20:05:07 UTC 2022
Updated every 90 seconds
Nagios® Core™ 4.0.8 - www.nagios.org
Logged in as nagiosadmin

[View History For all hosts](#)
[View Notifications For All Hosts](#)
[View Host Status Detail For All Hosts](#)

Host Status Totals			
Up	Down	Unreachable	Pending
2	0	0	0
All Problems		All Types	
0		2	

Service Status Totals				
Ok	Warning	Unknown	Critical	Pending
7	1	0	1	0
All Problems		All Types		
2		9		

Service Status Details For All Hosts

Limit Results: 100

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	Current Load	OK	10-19-2022 20:01:12	0d 8h 32m 34s	1/4	OK - load average: 0.00, 0.01, 0.00
	Current Users	OK	10-19-2022 20:02:08	0d 8h 31m 56s	1/4	USERS OK - 1 users currently logged in
	HTTP	WARNING	10-19-2022 20:03:23	0d 7h 8m 39s	4/4	HTTP WARNING: HTTP/1.1 403 Forbidden - 3932 bytes in 0.001 second response time
	PING	OK	10-19-2022 20:04:38	0d 8h 30m 41s	1/4	PING OK - Packet loss = 0%, RTA = 0.04 ms
	Root Partition	OK	10-19-2022 19:47:45	0d 8h 30m 4s	1/4	DISK OK - free space: / 6333 MB (77% inode=98%):
	SSH	OK	10-19-2022 20:02:45	0d 8h 29m 26s	1/4	SSH OK - OpenSSH_7.4 (protocol 2.0)
	Swap Usage	CRITICAL	10-19-2022 20:04:00	0d 8h 28m 49s	4/4	SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size.
slave	Total Processes	OK	10-19-2022 19:48:46	0d 8h 28m 11s	1/4	PROCS OK: 28 processes with STATE = RSDT
	check host alive	OK	10-19-2022 20:04:20	0d 0h 0m 47s	1/3	PING OK - Packet loss = 0%, RTA = 0.51 ms

Results 1 - 9 of 9 Matching Services

Puppet configuration

Master Configuration

```
ubuntu@ip-172-31-14-195: ~  
login as: ubuntu  
Authenticating with public key "key"  
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1019-aws x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/advantage
```

Update servers

`sudo apt-get update`

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo apt-get update  
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [114 kB]
```

`sudo apt-get install wget`

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo apt-get install wget  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
wget is already the newest version (1.21.2-2ubuntu1).  
wget set to manually installed.  
0 upgraded, 0 newly installed, 0 to remove and 54 not upgraded.  
ubuntu@ip-172-31-14-195:~$
```

change the host

`sudo nano /etc/hosts`

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo nano /etc/hosts
```

`<public ip of master> puppet`

<input type="checkbox"/>	-	i-01tet22ba/d5/ea94	Terminated	t2.micro	-	No alarms	+	ap-south-1b
<input checked="" type="checkbox"/>	master	i-0ab480e5036234fe0	Running	t2.micro	-	No alarms	+	ap-south-1b
<input type="checkbox"/>	slave	i-01d21f2ca5efa9a45	Running	t2.micro	-	No alarms	+	ap-south-1b

Instance: i-0ab480e5036234fe0 (master)

Details

Security

Networking

Storage

Status checks

Monitoring

Tags

▼ Instance summary Info

Instance ID

i-0ab480e5036234fe0 (master)

Public IPv4 address

15.207.89.39 | [open address](#)

Private IPv4 addresses

172.31.14.195

ubuntu@ip-172-31-14-195: ~

```

GNU nano 6.2 /etc/hosts *
127.0.0.1 localhost
15.207.89.39 puppet
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts

```

Download files (Debian package)

wget https://apt.puppetlabs.com/puppet-release-bionic.deb

ubuntu@ip-172-31-14-195: ~

```

ubuntu@ip-172-31-14-195:~$ sudo nano /etc/hosts
ubuntu@ip-172-31-14-195:~$ wget https://apt.puppetlabs.com/puppet-release-bionic.de
b
--2022-10-20 09:46:09-- https://apt.puppetlabs.com/puppet-release-bionic.deb
Resolving apt.puppetlabs.com (apt.puppetlabs.com)... 108.159.80.39, 108.159.80.88,
108.159.80.20, ...
Connecting to apt.puppetlabs.com (apt.puppetlabs.com)|108.159.80.39|:443... connect
ed.
HTTP request sent, awaiting response... 200 OK
Length: 11710 (11K) [application/x-debian-package]
Saving to: 'puppet-release-bionic.deb'

puppet-release-bioni 100%[=====>] 11.44K --.-KB/s in 0s

2022-10-20 09:46:09 (314 MB/s) - 'puppet-release-bionic.deb' saved [11710/11710]

ubuntu@ip-172-31-14-195:~$

```

Unzip the file

sudo dpkg -i puppet-release-bionic.deb

ubuntu@ip-172-31-14-195: ~

```
ubuntu@ip-172-31-14-195:~$ sudo dpkg -i puppet-release-bionic.deb
Selecting previously unselected package puppet-release.
(Reading database ... 63663 files and directories currently installed.)
Preparing to unpack puppet-release-bionic.deb ...
Unpacking puppet-release (1.0.0-24bionic) ...
Setting up puppet-release (1.0.0-24bionic) ...
ubuntu@ip-172-31-14-195:~$
```

Install puppet master

sudo apt-get install puppet-master

ubuntu@ip-172-31-14-195: ~

```
ubuntu@ip-172-31-14-195:~$ sudo apt-get install puppet-master
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
```

Check puppet master policy

apt policy puppet-master

ubuntu@ip-172-31-14-195: ~

```
ubuntu@ip-172-31-14-195:~$ apt policy puppet-master
puppet-master:
  Installed: 5.5.22-4ubuntu0.2
  Candidate: 5.5.22-4ubuntu0.2
  Version table:
 *** 5.5.22-4ubuntu0.2 500
        500 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe
amd64 Packages
        100 /var/lib/dpkg/status
        5.5.22-4 500
        500 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Pa
ckages
ubuntu@ip-172-31-14-195:~$
```

Check the puppet master active status

sudo systemctl status puppet-master.service

ctrl+c


```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo systemctl status puppet-master.service  
● puppet-master.service - Puppet master  
   Loaded: loaded (/lib/systemd/system/puppet-master.service; enabled; vendor pr  
   Active: active (running) since Thu 2022-10-20 09:47:40 UTC; 2min 16s ago  
     Docs: man:puppet-master(8)  
  Process: 2392 ExecStart=/usr/bin/puppet master (code=exited, status=0/SUCCESS)  
 Main PID: 2401 (puppet)
```

Goto file to change args

`sudo vim /etc/default/puppet-master`

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo vim /etc/default/puppet-master
```

Change java args for priamry memory

Xmx specifies the maximum memory allocation pool for a Java virtual machine (JVM), while Xms specifies the initial memory allocation pool

`JAVA_ARGS="-Xms512m -Xmx512m"`

```
ubuntu@ip-172-31-14-195: ~  
# Defaults for puppetmaster - sourced by /etc/init.d/puppet-master  
JAVA_ARGS="-Xms512m -Xmx512m"  
# Startup options.  
DAEMON_OPTS=""  
~
```

Restart Puppet master

`sudo systemctl restart puppet-master.service`

Open port to communicate with slave

`sudo ufw allow 8140/tcp`

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo systemctl restart puppet-master.service  
ubuntu@ip-172-31-14-195:~$ sudo ufw allow 8140/tcp  
Rules updated  
Rules updated (v6)  
ubuntu@ip-172-31-14-195:~$
```

Slave Configuration

sudo apt-get update

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo apt-get update  
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [114 kB]
```

sudo apt-get install wget

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo apt-get install wget  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done
```

sudo nano /etc/hosts

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo nano /etc/hosts
```

<public ip of master> puppet

```
GNU nano 6.2 /etc/hosts *  
127.0.0.1 localhost  
15.207.89.39 puppet  
# The following lines are desirable for IPv6 capable hosts  
::1 ip6-localhost ip6-loopback  
fe00::0 ip6-localnet
```

wget https://apt.puppetlabs.com/puppet-release-bionic.deb

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo nano /etc/hosts  
ubuntu@ip-172-31-5-220:~$ wget https://apt.puppetlabs.com/puppet-release-bionic.de  
b  
--2022-10-20 10:00:48-- https://apt.puppetlabs.com/puppet-release-bionic.deb  
Resolving apt.puppetlabs.com (apt.puppetlabs.com)... 108.159.80.32, 108.159.80.39,  
108.159.80.88, ...  
Connecting to apt.puppetlabs.com (apt.puppetlabs.com)|108.159.80.32|:443... connec  
ted.
```

sudo dpkg -i puppet-release-bionic.deb

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo dpkg -i puppet-release-bionic.deb  
Selecting previously unselected package puppet-release.  
(Reading database ... 63663 files and directories currently installed.)  
Preparing to unpack puppet-release-bionic.deb ...  
Unpacking puppet-release (1.0.0-24bionic) ...  
Setting up puppet-release (1.0.0-24bionic) ...  
ubuntu@ip-172-31-5-220:~$
```

sudo apt-get install puppet

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo apt-get install puppet  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done
```

sudo systemctl start puppet

sudo systemctl enable puppet

```
ubuntu@ip-172-31-5-220: ~  
ubuntu@ip-172-31-5-220:~$ sudo systemctl start puppet  
ubuntu@ip-172-31-5-220:~$ sudo systemctl enable puppet  
Synchronizing state of puppet.service with SysV service script with /lib/systemd/s  
ystemd-sysv-install.  
Executing: /lib/systemd/systemd-sysv-install enable puppet  
Created symlink /etc/systemd/system/multi-user.target.wants/puppet.service → /lib/  
systemd/system/puppet.service.  
ubuntu@ip-172-31-5-220:~$
```

Configuration of the slave is done.

Master

Need to check the certificate request

sudo puppet cert list

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo puppet cert list  
Warning: `puppet cert` is deprecated and will be removed in a future release.  
  (location: /usr/lib/ruby/vendor_ruby/puppet/application.rb:370:in `run')  
  "ip-172-31-5-220.ap-south-1.compute.internal" (SHA256) D5:57:E1:71:22:27:75:51:EF  
:F3:C8:D9:44:6A:A8:83:89:9F:6A:4F:0F:AB:94:38:FA:B6:A0:91:FD:E9:FF:FE  
ubuntu@ip-172-31-14-195:~$
```

If there is any certificate then sign them

sudo puppet cert sign --all

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo puppet cert sign --all  
Warning: `puppet cert` is deprecated and will be removed in a future release.  
  (location: /usr/lib/ruby/vendor_ruby/puppet/application.rb:370:in `run')  
Signing Certificate Request for:  
  "ip-172-31-5-220.ap-south-1.compute.internal" (SHA256) D5:57:E1:71:22:27:75:51:EF  
:F3:C8:D9:44:6A:A8:83:89:9F:6A:4F:0F:AB:94:38:FA:B6:A0:91:FD:E9:FF:FE  
Notice: Signed certificate request for ip-172-31-5-220.ap-south-1.compute.internal  
Notice: Removing file Puppet::SSL::CertificateRequest ip-172-31-5-220.ap-south-1.co  
mpute.internal at '/var/lib/puppet/ssl/ca/requests/ip-172-31-5-220.ap-south-1.compu  
te.internal.pem'  
ubuntu@ip-172-31-14-195:~$
```

Create Manifests

sudo mkdir -p /etc/puppet/code/environments/production/manifests/

sudo nano /etc/puppet/code/environments/production/manifests/site.pp

```
file{'/tmp/puppet_test.txt':  
    filename  
        ensure => present,                #if it exists  
        mode => '0644',                    #permissions  
        content => "Working on ${ipaddress_eth0}!\n", #Print IP add  
}
```

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo mkdir -p /etc/puppet/code/environments/production/manif  
ests/  
ubuntu@ip-172-31-14-195:~$ sudo nano /etc/puppet/code/environments/production/manif  
ests/site.pp  
ubuntu@ip-172-31-14-195:~$
```

```
GNU nano 6.2 /etc/puppet/code/environments/production/manifests/site.pp *  
file{'/tmp/puppet_test.txt':                                #resource type file  
    ensure => present,                                       #if it exists  
    mode => '0644',                                           #permissions  
    content => "Working on ${ipaddress_eth0}!\n",           #Print IP add  
}
```

Restart puppet master

sudo systemctl restart puppet-master

```
ubuntu@ip-172-31-14-195: ~  
ubuntu@ip-172-31-14-195:~$ sudo systemctl restart puppet-master  
ubuntu@ip-172-31-14-195:~$
```

Slave

Check if any file exist on in temp starts with i

cd /tmp

ls

```
ubuntu@ip-172-31-5-220: /tmp  
ubuntu@ip-172-31-5-220:~$ cd /tmp  
ubuntu@ip-172-31-5-220:/tmp$ ls  
snap.lxd  
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-ModemManager.service-R9cNUf  
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-chrony.service-8gGabf  
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-systemd-logind.service-KWeoUw  
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-systemd-resolved.service-pEm7L8  
ubuntu@ip-172-31-5-220:/tmp$
```

Slave asked the master if there is any changes required for this server

sudo puppet agent -test

```
ubuntu@ip-172-31-5-220: /tmp
ubuntu@ip-172-31-5-220:/tmp$ sudo puppet agent --test
Info: Using configured environment 'production'
Info: Retrieving pluginfacts
Info: Retrieving plugin
Info: Retrieving locales
Info: Caching catalog for ip-172-31-5-220.ap-south-1.compute.internal
Info: Applying configuration version '1666260724'
Notice: /Stage[main]/Main/File[/tmp/puppet_test.txt]/ensure: defined content as '{md5}29ca554946458be2384de47cd03e2b05'
Notice: Applied catalog in 0.02 seconds
ubuntu@ip-172-31-5-220:/tmp$
```

Check if any file is created

ls

```
ubuntu@ip-172-31-5-220: /tmp
ubuntu@ip-172-31-5-220:/tmp$ ls
puppet_test.txt
snap.lxd
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-ModemManager.service-R9cNUf
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-chrony.service-8gGabf
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-systemd-logind.service-KWeoUw
systemd-private-1b2ab0049e714b86bde604f9846a0e9b-systemd-resolved.service-pEm7L8
ubuntu@ip-172-31-5-220:/tmp$
```

Check the contents

cat puppet_test.txt

```
ubuntu@ip-172-31-5-220: /tmp
ubuntu@ip-172-31-5-220:/tmp$ cat puppet_test.txt
Working on 172.31.5.220!
ubuntu@ip-172-31-5-220:/tmp$
```

Configuration of master-slave communication is over.

Master

Create Manifests

cd /etc/puppet

ls

cd code

ls

```
ubuntu@ip-172-31-14-195: /etc/puppet/code
ubuntu@ip-172-31-14-195:~$ cd /etc/puppet
ubuntu@ip-172-31-14-195:/etc/puppet$ ls
auth.conf  code  hiera.yaml  puppet.conf
ubuntu@ip-172-31-14-195:/etc/puppet$ cd code
ubuntu@ip-172-31-14-195:/etc/puppet/code$ ls
environments
ubuntu@ip-172-31-14-195:/etc/puppet/code$
```

sudo mkdir -p environments/production/manifests/

cd environments/production/manifests/

```
ubuntu@ip-172-31-14-195: /etc/puppet/code/environments/production/manifests
ubuntu@ip-172-31-14-195:/etc/puppet/code$ sudo mkdir -p environments/production/manifests/
ubuntu@ip-172-31-14-195:/etc/puppet/code$ cd environments/production/manifests/
ubuntu@ip-172-31-14-195:/etc/puppet/code/environments/production/manifests$
```

Create a file new_site1.pp

sudo nano new_site.pp

```
ubuntu@ip-172-31-14-195: /etc/puppet/code/environments/production/manifests
ubuntu@ip-172-31-14-195:/etc/puppet/code/environments/production/manifests$ sudo nano new_site.pp
ubuntu@ip-172-31-14-195:/etc/puppet/code/environments/production/manifests$
```

```
ubuntu@ip-172-31-14-195: /etc/puppet/code/environments/production/manifests
GNU nano 6.2 new site.pp *
node default{                                #any of the agent wanna update master can do
# 1 resource
package {'nginx':                            #resource type{ 'resource name
ensure => installed,                          #attribute
}

#2 resource
file{ '/tmp/status.txt':
content => 'Nginx has been installed successfully',
mode => '0644',
}
}
```

Save the file

ctrl+x

y

Enter

Slave

sudo puppet agent -test

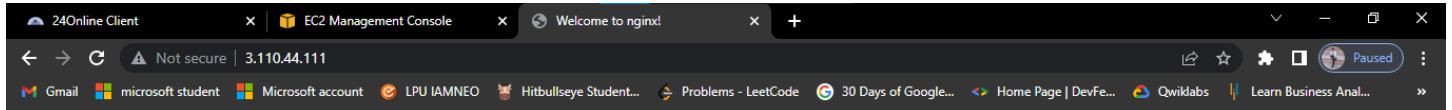
```
ubuntu@ip-172-31-5-220: /tmp
ubuntu@ip-172-31-5-220:/tmp$ sudo puppet agent --test
Info: Using configured environment 'production'
Info: Retrieving pluginfacts
Info: Retrieving plugin
Info: Retrieving locales
Info: Caching catalog for ip-172-31-5-220.ap-south-1.compute.internal
Info: Applying configuration version '1666261136'
Notice: /Stage[main]/Main/Node[default]/Package[nginx]/ensure: created
Notice: /Stage[main]/Main/Node[default]/File[/tmp/status.txt]/ensure: defined cont
ent as '{md5}b4bca9bcd148dbf9f6af4154clebfd17'
Notice: Applied catalog in 9.71 seconds
ubuntu@ip-172-31-5-220:/tmp$
```

Copy public ip of slave

Open browser

Paste ip hit enter

Nginx website is visible



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.