



**CLOUD TRAIN**  
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# Nagios Runbook

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Follow the steps to complete the  
tasks in your hands-on Kubernetes  
lab

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# Exercise 1

## Tasks

1. Create two Ubuntu 18.04 compute instances, one for Nagios master and the other for target host
2. Install Nagios on master Ubuntu GCP instance
3. Access Nagios with <http://MasterIP/nagios/>



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# Task 1 & 2

## Task 1

Create two Ubuntu 18.04 compute instances, one for Nagios master and the other for target host

**Solution:**

Create two ubuntu 18.04 GCP instances following similar steps

## Task 2

Install Nagios on master Ubuntu GCP instance

**Solution:**

a. Login to master node as ubuntu user and Update package index.

`sudo apt-get update`

```
ubuntu@master:~$ sudo apt-get update
Hit:1 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:3 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:5 https://packages.cloud.google.com/apt kubernetes-xenial InRelease
Reading package lists... Done
```



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# Task 2

b. Run the following two commands after that.

`sudo apt-get install wget build-essential unzip openssl libssl-dev`

```
ubuntu@master:~$ sudo apt-get install wget build-essential unzip openssl libssl-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssl is already the newest version (1.1.1-1ubuntu2.1~18.04.7).
openssl set to manually installed.
wget is already the newest version (1.19.4-1ubuntu2.2).
wget set to manually installed.
The following package was automatically installed and is no longer required:
  libnumal
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu cpp cpp-7 dpkg-dev fakeroot g++ g++-7 gcc gcc-7 gcc-7-base libalgorit
```

`sudo apt-get install apache2 php libapache2-mod-php php-gd libgd-dev`

```
ubuntu@master:~$ sudo apt-get install apache2 php libapache2-mod-php php-gd libgd-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  libnumal
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils fontconfig-config fonts-dejavu-core libapache2-mod-php7.2 libapr1 1
  libfontconfig1-dev libfreetype6-dev libgd3 libice-dev libice6 libjpeg-dev libjpeg-tur
  libpthread-stubs0-dev libsm-dev libsm6 libsodium23 libtiff-dev libtiff5 libtiff5-dev libtiffxx5 libvpx-dev
  libx-dev libx6 php-common php7.2 php7.2-cli php7.2-common php7.2-gd php7.2-json php7.2-openssl php7.2-re
  xtrans-dev zlib1g-dev
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom php-pear libgd-tools libice-doc li
The following NEW packages will be installed:
```



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# Task 2

c. Now, add user with the commands given below.

`sudo adduser nagios`

```
buntu@master:~$ sudo adduser nagios
Adding user `nagios' ...
Adding new group `nagios' (1002) ...
Adding new user `nagios' (1001) with group `nagios' ...
Creating home directory `/home/nagios' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for nagios
Enter the new value, or press ENTER for the default
```

You can add passwords and Enter the user information as shown below.

```
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] y
```



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# Task 2

d. Run the following commands to complete the user adding process.

```
sudo groupadd nagcmd  
sudo usermod -a -G nagcmd nagios  
sudo usermod -a -G nagcmd www-data
```

```
ubuntu@master:~$ sudo groupadd nagcmd  
ubuntu@master:~$ sudo usermod -a -G nagcmd nagios  
ubuntu@master:~$ sudo usermod -a -G nagcmd www-data  
ubuntu@master:~$
```

e. Now that we are set with the prerequisites, install Nagios Core as shown below.

```
wget  
https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.2.tar.gz
```

```
ubuntu@master:~$ wget https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.2.tar.gz  
--2021-02-14 12:03:14-- https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.2.tar.gz  
Resolving assets.nagios.com (assets.nagios.com)... 72.14.181.71, 2600:3c00::f03c:91ff:fedf:b821  
Connecting to assets.nagios.com (assets.nagios.com)|72.14.181.71|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 11301454 (11M) [application/x-gzip]  
Saving to: 'nagios-4.4.2.tar.gz'  
  
nagios-4.4.2.tar.gz 100%[=====]  
2021-02-14 12:03:15 (51.4 MB/s) - 'nagios-4.4.2.tar.gz' saved [11301454/11301454]
```



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# Task 2

f. Untar the file with the command shown below.

```
tar xzf nagios-4.4.2.tar.gz
```

Enter the Nagios-4.4.2 directory.

```
cd nagios-4.4.2
```

g. Now with the given command make the required configurations.

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

```
ubuntu@master:~/nagios-4.4.2$ sudo ./configure --with-command-group=nagcmd
checking for a BSD-compatible install... /usr/bin/install -c
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
```



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## Task 2

If the execution ends with the below given setup then we are good to go.

### General Options:

```
-----  
Nagios executable: nagios  
Nagios user/group: nagios,nagios  
Command user/group: nagios,nagcmd  
Event Broker: yes  
Install ${prefix}: /usr/local/nagios  
Install ${includedir}: /usr/local/nagios/include/nagios  
Lock file: /run/nagios.lock  
Check result directory: /usr/local/nagios/var/spool/checkresults  
Init directory: /lib/systemd/system  
Apache conf.d directory: /etc/apache2/sites-available  
Mail program: /bin/mail  
Host OS: linux-gnu  
IOBroker Method: epoll
```

### Web Interface Options:

```
-----  
HTML URL: http://localhost/nagios/  
CGI URL: http://localhost/nagios/cgi-bin/  
Traceroute (used by WAP):
```





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# Task 2

h. Now we will make all the configuration work by running the below command:

`sudo make all`

```
ubuntu@ip-172-31-32-221:~/nagios-4.4.2$ sudo make all
```

If everything is perfect, we should see an output as shown below.

```
*** Support Notes ****
If you have questions about configuring or running Nagios,
please make sure that you:
    - Look at the sample config files
    - Read the documentation on the Nagios Library at:
      https://library.nagios.com
before you post a question to one of the mailing lists.
Also make sure to include pertinent information that could
help others help you. This might include:
    - What version of Nagios you are using
    - What version of the plugins you are using
    - Relevant snippets from your config files
    - Relevant error messages from the Nagios log file
For more information on obtaining support for Nagios, visit:
    https://support.nagios.com
*****
Enjoy.
```



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# Task 2

i. Run the following command.

`sudo make install`

```
ubuntu@master:~/nagios-4.4.2$ sudo make install
cd ./base && make install
make[1]: Entering directory '/home/ubuntu/nagios-4.4.2/base'
make install-basic
make[2]: Entering directory '/home/ubuntu/nagios-4.4.2/base'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/usr/bin/install -c -m 774 -o nagios -g nagios nagios /usr/local/nagios/bin
/usr/bin/install -c -m 774 -o nagios -g nagios nagiosstats /usr/local/nagios/bin
make[2]: Leaving directory '/home/ubuntu/nagios-4.4.2/base'
```

After that you will see the output as shown below:

```
*** Main program, CGIs and HTML files installed ***
You can continue with installing Nagios as follows (type 'make'
without any arguments for a list of all possible options):

make install-init
- This installs the init script in /lib/systemd/system

make install-commandmode
- This installs and configures permissions on the
  directory for holding the external command file

make install-config
- This installs sample config files in /usr/local/nagios/etc

make[1]: Leaving directory '/home/ubuntu/nagios-4.4.2'
```



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# Task 2

j. Install init and run the following command.

sudo make install-init

```
ubuntu@master:~/nagios-4.4.2$ sudo make install-init
/usr/bin/install -c -m 755 -d -o root -g root /lib/systemd/system
/usr/bin/install -c -m 755 -o root -g root startup/default-service /lib/systemd/system/nagios.service
```

k. Install config and run the following command.

sudo make install-config

```
ubuntu@master:~/nagios-4.4.2$ 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
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/cgi.cfg /usr/local/nagios/etc/cgi.cfg
/usr/bin/install -c -b -m 660 -o nagios -g nagios sample-config/resource.cfg /usr/local/nagios/etc/resource.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/templates.cfg /usr/local/nagios/etc/objects/templates.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/commands.cfg /usr/local/nagios/etc/objects/commands.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/contacts.cfg /usr/local/nagios/etc/objects/contacts.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/timeperiods.cfg /usr/local/nagios/etc/objects/timeperiods.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/localhost.cfg /usr/local/nagios/etc/objects/localhost.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/windows.cfg /usr/local/nagios/etc/objects/windows.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/printer.cfg /usr/local/nagios/etc/objects/printer.cfg
/usr/bin/install -c -b -m 664 -o nagios -g nagios sample-config/template-object/switch.cfg /usr/local/nagios/etc/objects/switch.cfg

*** Config files installed ***

Remember, these are *SAMPLE* config files. You'll need to read
the documentation for more information on how to actually define
services, hosts, etc. to fit your particular needs.
```



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# Task 2

l. Install commandmode as shown below:

`sudo make install-commandmode`

```
ubuntu@master:~/nagios-4.4.2$ 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 ***
```

m. Before moving ahead run the following commands to copy eventhandlers scripts under the libexec directory.

```
sudo cp -R contrib/eventhandlers/ /usr/local/nagios/libexec/
sudo chown -R nagios:nagios
/usr/local/nagios/libexec/eventhandlers
```

```
ubuntu@master:~/nagios-4.4.2$ sudo cp -R contrib/eventhandlers/ /usr/local/nagios/libexec/
ubuntu@master:~/nagios-4.4.2$ sudo chown -R nagios:nagios /usr/local/nagios/libexec/eventhandlers
```



# Task 2

n. Create Apache configuration

```
sudo vim /etc/apache2/conf-available/nagios.conf
```

Add the below given content to the configuration file.

```
ScriptAlias /nagios/cgi-bin "/usr/local/nagios/sbin"
```

```
<Directory "/usr/local/nagios/sbin">
```

```
Options ExecCGI
```

```
AllowOverride None
```

```
Order allow,deny
```

```
Allow from all
```

```
AuthName "Restricted Area"
```

```
AuthType Basic
```

```
AuthUserFile /usr/local/nagios/etc/htpasswd.users
```

```
Require valid-user
```

```
</Directory>
```

```
Alias /nagios "/usr/local/nagios/share"
```



# Task 2

```
<Directory "/usr/local/nagios/share">
```

```
Options None
```

```
AllowOverride None
```

```
Order allow,deny
```

```
Allow from all
```

```
AuthName "Restricted Area"
```

```
AuthType Basic
```

```
AuthUserFile /usr/local/nagios/etc/htpasswd.users
```

```
Require valid-user
```

```
ScriptAlias /nagios/cgi-bin "/usr/local/nagios/sbin"
```

```
<Directory "/usr/local/nagios/sbin">
```

```
Options ExecCGI
```

```
AllowOverride None
```

```
Order allow,deny
```

```
Allow from all
```

```
AuthName "Restricted Area"
```

```
AuthType Basic
```

```
AuthUserFile /usr/local/nagios/etc/htpasswd.users
```

```
Require valid-user
```

```
</Directory>
```

```
Alias /nagios "/usr/local/nagios/share"
```

```
<Directory "/usr/local/nagios/share">
```

```
Options None
```

```
AllowOverride None
```

```
Order allow,deny
```

```
Allow from all
```

```
AuthName "Restricted Area"
```

```
AuthType Basic
```

```
AuthUserFile /usr/local/nagios/etc/htpasswd.users
```

```
Require valid-user
```

```
</Directory>
```



# Task 2

o. Add a password as shown below, to complete apache configuration

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

```
ubuntu@master:~/nagios-4.4.2$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
```

p. Enable Apache configuration

`sudo a2enconf nagios`

```
ubuntu@master:~/nagios-4.4.2$ sudo a2enconf nagios
Enabling conf nagios.
To activate the new configuration, you need to run:
systemctl reload apache2
```

q. Enable Apache configuration

`sudo a2enmod cgi rewrite`

```
ubuntu@master:~/nagios-4.4.2$ sudo a2enmod cgi rewrite
Enabling module cgi.
Enabling module rewrite.
To activate the new configuration, you need to run:
systemctl restart apache2
```



## Task 2

r. Restart apache service.

`sudo service apache2 restart`

```
ubuntu@master:~/nagios-4.4.2$ sudo service apache2 restart
ubuntu@master:~/nagios-4.4.2$
```

s. Now go to the main directory.

`cd`

```
ubuntu@ip-172-31-32-221:~/nagios-4.4.2$ cd
ubuntu@ip-172-31-32-221:~$
```

t. To install the required Nagios plugin, download the plugins

`wget http://www.nagios-plugins.org/download/nagios-plugins-2.2.1.tar.gz`

```
ubuntu@master:~$ wget http://www.nagios-plugins.org/download/nagios-plugins-2.2.1.tar.gz
--2021-02-14 12:14:44-- http://www.nagios-plugins.org/download/nagios-plugins-2.2.1.tar.gz
Resolving www.nagios-plugins.org (www.nagios-plugins.org)... 72.14.186.43
Connecting to www.nagios-plugins.org (www.nagios-plugins.org)|72.14.186.43|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: http://nagios-plugins.org/download/nagios-plugins-2.2.1.tar.gz [following]
--2021-02-14 12:14:44-- http://nagios-plugins.org/download/nagios-plugins-2.2.1.tar.gz
Resolving nagios-plugins.org (nagios-plugins.org)... 72.14.186.43
Reusing existing connection to www.nagios-plugins.org:80.
HTTP request sent, awaiting response... 200 OK
Length: 2728818 (2.6M) [application/x-gzip]
Saving to: 'nagios-plugins-2.2.1.tar.gz'

nagios-plugins-2.2.1.tar.gz      100%[=====]
2021-02-14 12:14:44 (20.0 MB/s) - 'nagios-plugins-2.2.1.tar.gz' saved [2728818/2728818]
```





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# Task 2

u. Untar the file.

```
tar xzf nagios-plugins-2.2.1.tar.gz
```

v. Go inside Nagios-2.2.1 directory.

```
cd nagios-plugins-2.2.1
```

w. Compile the plugins and then complete the plugin installation process running the three commands given below  
`sudo ./configure --with-nagios-user=nagios --with-nagios-group=nagios --with-openssl`

```
ubuntu@master:~$ tar xzf nagios-plugins-2.2.1.tar.gz
ubuntu@master:~$ cd nagios-plugins-2.2.1
ubuntu@master:~/nagios-plugins-2.2.1$ sudo ./configure --with-nagios-user=nagios --with-nagios-group=nagios --with-openssl
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... gawk
checking whether make sets $(MAKE)... yes
```

`sudo make`

```
ubuntu@master:~/nagios-plugins-2.2.1$ sudo make
make all-recursive
make[1]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1'
Making all in gl
make[2]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1/gl'
rm -f alloca.h-t alloca.h && \
{ echo '/* DO NOT EDIT! GENERATED AUTOMATICALLY! */'; \
  cat ./alloca.in.h; \
} > alloca.h-t && \
mv -f alloca.h-t alloca.h
```



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# Task 2

sudo make install

```
ubuntu@master:~/nagios-plugins-2.2.1$ sudo make install
Making install in gl
make[1]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1/gl'
make install-recursive
make[2]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1/gl'
make[3]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1/gl'
make[4]: Entering directory '/home/ubuntu/nagios-plugins-2.2.1/gl'
if test yes = no; then \
  case 'linux-gnu' in \
    darwin[56]*) \
      need_charset_alias=true ;; \
    darwin* | cygwin* | mingw* | pw32* | cegcc*) \
```

Before we can start using Nagios, we going to need to make a small change in the base configurations.

x. Edit the nagios configuration file located at  
/usr/local/nagios/etc/nagios.cfg

sudo vim /usr/local/nagios/etc/nagios.cfg



## Task 2

```
# Definitions for monitoring a router/switch
#cfg_file=/usr/local/nagios/etc/objects/switch.cfg

# 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
# directive as shown below:

#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
```

Uncomment that line

```
cfg_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
#cfg_file=/usr/local/nagios/etc/objects/switch.cfg

# 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
# directive as shown below:

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
```



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# Task 2

y. Make the following directory.

```
sudo mkdir /usr/local/nagios/etc/servers
```

z. Verify the configuration before starting Nagios.

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

```
ubuntu@master:~$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg  
  
Nagios Core 4.4.2  
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors  
Copyright (c) 1999-2009 Ethan Galstad  
Last Modified: 2018-08-16  
License: GPL  
  
Website: https://www.nagios.org  
Reading configuration data...  
  Read main config file okay...  
  Read object config files okay...  
  
Running pre-flight check on configuration data...  
  
Checking objects...  
  Checked 8 services.  
  Checked 1 hosts.  
  Checked 1 host groups.  
  Checked 0 service groups.  
  Checked 1 contacts.  
  Checked 1 contact groups.  
  Checked 24 commands.  
  Checked 5 time periods.  
  Checked 0 host escalations.  
  Checked 0 service escalations.  
Checking for circular paths...  
  Checked 1 hosts  
  Checked 0 service dependencies  
  Checked 0 host dependencies  
  Checked 5 timeperiods  
Checking global event handlers...  
Checking obsessive compulsive processor commands...  
Checking misc settings...  
  
Total Warnings: 0  
Total Errors: 0  
  
Things look okay - No serious problems were detected during the pre-flight check
```



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# Task 2

Everything looks fine!

Start Nagios using below command and enable it as service  
`sudo service nagios start`

If no error occurs there your Nagios is installed successfully.



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# Task 3

Access Nagios with `http://MasterIP/nagios/`

**Solution:**

a. Open the browser and enter below URL. Get the master node public IP from GCP console:

`http://MasterIP/nagios/`

← → ↻ ⓘ 104.197.208.128/nagios

Sign in

http://104.197.208.128

Your connection to this site is not private

Username

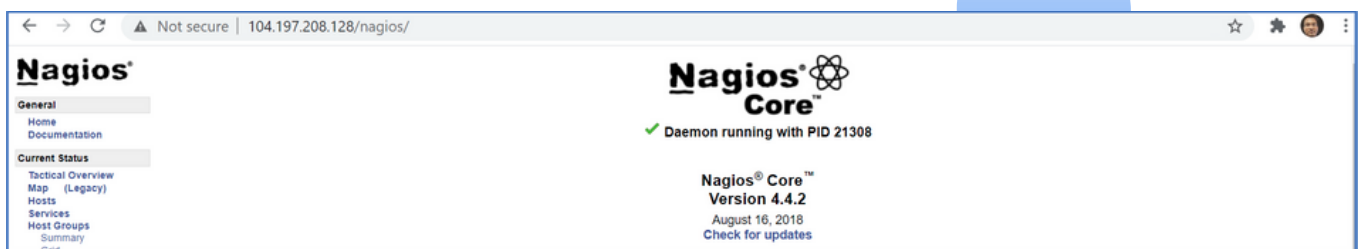
Password



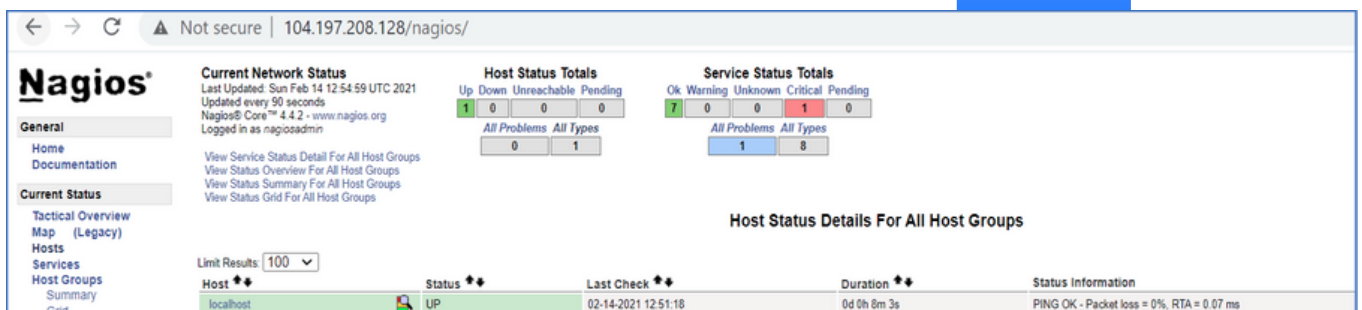
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# Task 3

b. After entering the user id nagiosadmin & password that you set earlier, you will land on a page as shown below:



Click on host.



We are all set with the Nagios installation on Master.



**CLOUD TRAIN**

ACCELERATE YOUR GROWTH

# Exercise 2

## Tasks

1. Add a host to Nagios master configuration for monitoring
  - a. Install apache2 on the client host and make sure it's running
  - b. Add the host and service definitions in the master machine to monitor HTTP service
  - c. Restart the Nagios service on the master node
  - d. Refresh the Nagios page and check if the newly added host is available under monitoring as below



# Task 1

1. Add a host to Nagios master configuration for monitoring
  - a. Install apache2 on client host and make sure its running
  - b. Add the host and service definitions in the master machine to monitor HTTP service
  - c. Restart the Nagios service on master node
  - d. Refresh the Nagios page and check if newly added host is available under monitoring as below

**Nagios®**

Current Network Status  
Last Updated: Sun Feb 14 13:43:53 UTC 2021  
Updated every 50 seconds  
Nagios® Core™ 4.4.2 - view 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 |
|----|---------|---------|----------|---------|
| 5  | 0       | 0       | 1        | 0       |

All Problems: 1 All Types: 9

**Service Status Details For All Hosts**

| Host      | Service         | Status   | Last Check          | Duration      | Attempt | Status Information  |
|-----------|-----------------|----------|---------------------|---------------|---------|---|
| localhost | Current Load    | OK       | 02-14-2021 13:42:33 | 0d 0h 56m 20s | 1/4     | OK - load average: 0.14, 0.21, 0.23   |
|           | Current Users   | OK       | 02-14-2021 13:43:11 | 0d 0h 55m 42s | 1/4     | USERS OK - 1 users currently logged in  |
|           | HTTP            | OK       | 02-14-2021 13:43:48 | 0d 0h 55m 5s  | 1/4     | HTTP OK: HTTP/1.1 200 OK - 11152 bytes in 0.001 second response time                                |
|           | PING            | OK       | 02-14-2021 13:39:26 | 0d 0h 54m 27s | 1/4     | PING OK - Packet loss = 0%, RTA = 0.11 ms   |
|           | Root Partition  | OK       | 02-14-2021 13:40:03 | 0d 0h 53m 50s | 1/4     | DISK OK - free space: / 5619 MB (57.73% inode=92%)  |
|           | SSH             | OK       | 02-14-2021 13:40:41 | 0d 0h 53m 12s | 1/4     | SSH OK - OpenSSH_7.6p1 Ubuntu-4ubuntu0.3 (protocol 2.0)   |
|           | Swap Usage      | CRITICAL | 02-14-2021 13:39:18 | 0d 0h 52m 35s | 4/4     | SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size. |
|           | Total Processes | OK       | 02-14-2021 13:41:56 | 0d 0h 51m 57s | 1/4     | PROCS OK: 46 processes with STATE = RSZDT   |
|           | slave1          | OK       | 02-14-2021 13:42:06 | 0d 0h 3m 1s+  | 1/3     | HTTP OK: HTTP/1.1 200 OK - 11152 bytes in 0.003 second response time                                |
|           | HTTP            | OK       | 02-14-2021 13:42:06 | 0d 0h 3m 1s+  | 1/3     | HTTP OK: HTTP/1.1 200 OK - 11152 bytes in 0.003 second response time                                |



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

# Task 1

## Solution:

Here we will add monitoring Apache HTTP service on remote client:

**Perform following steps on target machine that you need to be monitored by Nagios**

a. Login to target host as ubuntu user and Install apache web server on the client machine

```
sudo su - ubuntu
```

```
sudo apt update
```

```
ubuntu@slave1:~$ sudo apt update
Hit:1 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://us-central1.gce.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Hit:4 https://packages.cloud.google.com/apt kubernetes-xenial InRelease
Fetched 252 kB in 1s (457 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
```



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

## Task 1

b. Run the following two commands after that.

`sudo apt install apache2`

```
ubuntu@slavel:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  libnumal
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 1729 kB of archives.
After this operation, 6985 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

c. Now, check if the web server is up and running.

`sudo systemctl status apache2`

```
ubuntu@slavel:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Drop-In: /lib/systemd/system/apache2.service.d
            └─apache2-systemd.conf
   Active: active (running) since Sun 2021-02-14 12:58:05 UTC; 8s ago
     Main PID: 985 (apache2)
       Tasks: 55 (limit: 4671)
    CGroup: /system.slice/apache2.service
            └─985 /usr/sbin/apache2 -k start
              └─987 /usr/sbin/apache2 -k start
                └─988 /usr/sbin/apache2 -k start

Feb 14 12:58:05 slavel systemd[1]: Starting The Apache HTTP Server...
Feb 14 12:58:05 slavel systemd[1]: Started The Apache HTTP Server.
```



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

## Task 1

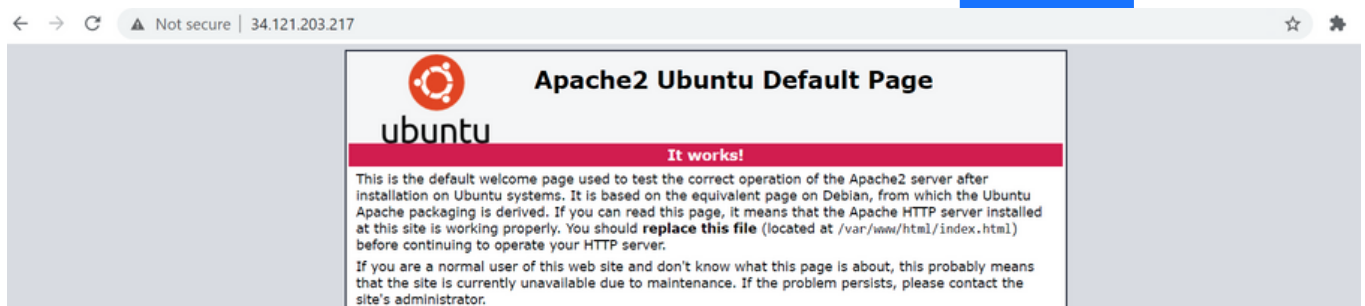
d. Run the following command if apache service is not running.

`sudo systemctl start apache2`

```
ubuntu@ip-172-31-26-104:~$ sudo systemctl start apache2
ubuntu@ip-172-31-26-104:~$
```

e. Open browser and enter the following URL. Get the Client machine Public IP from GCP console:

`http://CLIENT_IP/`





# Task 1

## Add the host and service definitions in the master machine

f. Create the host config file with host and service definitions.

```
sudo vim /usr/local/nagios/etc/servers/hosts.cfg
```

```
## Default Linux Host Template ##
define host{
name                linux-box          ; Name of this template
use                 generic-host      ; Inherit default values
check_period        24x7
check_interval      5
retry_interval      1
max_check_attempts  10
check_command       check-host-alive
notification_period  24x7
notification_interval 30
notification_options d,r
contact_groups      admins
register            0                  ; DONT REGISTER THIS - ITS
A TEMPLATE
}
```



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

# Task 1

```
## Default
define host{
use          linux-box      ; Inherit default values from a template
host_name    slave1         ; The name we're giving to this server
alias        CentOS 6       ; A longer name for the server
address      10.128.0.60    ; IP address of Remote Linux host
}

define service {
use          generic-service ; Inherit default values from a template
host_name    slave1
service_description HTTP
check_command check_http
```



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

# Task 1

```
## Default Linux Host Template ##
define host{
    name                linux-box                ; Name of this template
    use                  generic-host              ; Inherit default values
    check_period         24x7
    check_interval       5
    retry_interval       1
    max_check_attempts   10
    check_command         check-host-alive
    notification_period   24x7
    notification_interval 30
    notification_options  d,r
    contact_groups        admins
    register              0                      ; DONT REGISTER THIS - ITS A TEMPLATE
}

## Default
define host{
    use                  linux-box                ; Inherit default values from a template
    host_name            slave1                   ; The name we're giving to this server
    alias                CentOS 6                 ; A longer name for the server
    address              10.128.0.60              ; IP address of Remote Linux host
}

define service {
    use                  generic-service          ; Inherit default values from a template
    host_name            slave1
    service_description HTTP
    check_command         check_http
}
```



# CLOUD TRAIN

ACCELERATE YOUR GROWTH

## Task 1

g. Check the nagios configuration file status before starting nagios again.

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

```
ubuntu@master:/usr/local/nagios/etc$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg  
  
Nagios Core 4.4.2  
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors  
Copyright (c) 1999-2009 Ethan Galstad  
Last Modified: 2018-08-16  
License: GPL  
  
Website: https://www.nagios.org  
Reading configuration data...  
  Read main config file okay...  
  Read object config files okay...  
  
Running pre-flight check on configuration data...  
  
Checking objects...  
  Checked 8 services.  
  Checked 2 hosts.  
  Checked 1 host groups.  
  Checked 0 service groups.  
  Checked 1 contacts.  
  Checked 1 contact groups.  
  Checked 24 commands.  
  Checked 5 time periods.  
  Checked 0 host escalations.  
  Checked 0 service escalations.  
  
Checking for circular paths...  
  Checked 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
```





**CLOUD TRAIN**  
ACCELERATE YOUR GROWTH

# Task 1

h. Now with the given command make the required configurations.

`sudo service nagios restart`

```
ubuntu@master:/usr/local/nagios/etc$ sudo service nagios restart
```

i. Now go to browser, enter `http://masterIP/nagios/`. There click on Services. You can see a new HTTP service added with our last PING service in the Linux\_Host\_001 client.

**Nagios** Current Network Status  
Last Updated: Sun Feb 14 13:35:10 UTC 2021  
Updated every 50 seconds  
Nagios® Core™ 4.4.2 - www.nagios.org  
Logged in as nagiosadmin

**Host Status Totals**

| Up | Down | Unreachable | Pending |
|----|------|-------------|---------|
| 2  | 0    | 0           | 0       |

All Problems All Types

**Service Status Totals**

| Ok | Warning | Unknown | Critical | Pending |
|----|---------|---------|----------|---------|
| 2  | 0       | 0       | 1        | 0       |

All Problems All Types

**Host Status Details For All Host Groups**

| Host      | Status | Last Check          | Duration      | Status Information                        |
|-----------|--------|---------------------|---------------|---|
| localhost | UP     | 02-14-2021 13:31:18 | 0d 0h 48m 14s | PING OK - Packet loss = 0%, RTA = 0.08 ms |
| slave1    | UP     | 02-14-2021 13:32:27 | 0d 0h 7m 43s  | PING OK - Packet loss = 0%, RTA = 0.64 ms |

**Nagios** Current Network Status  
Last Updated: Sun Feb 14 13:43:53 UTC 2021  
Updated every 50 seconds  
Nagios® Core™ 4.4.2 - www.nagios.org  
Logged in as nagiosadmin

**Host Status Totals**

| Up | Down | Unreachable | Pending |
|----|------|-------------|---------|
| 2  | 0    | 0           | 0       |

All Problems All Types

**Service Status Totals**

| Ok | Warning | Unknown | Critical | Pending |
|----|---------|---------|----------|---------|
| 5  | 0       | 0       | 1        | 0       |

All Problems All Types

**Service Status Details For All Hosts**

| Host      | Service         | Status   | Last Check          | Duration      | Attempt | Status Information  |
|-----------|-----------------|----------|---------------------|---------------|---------|---|
| localhost | Current Load    | OK       | 02-14-2021 13:42:33 | 0d 0h 56m 20s | 1/4     | OK - load average: 0.14, 0.21, 0.23   |
| localhost | Current Users   | OK       | 02-14-2021 13:43:11 | 0d 0h 55m 42s | 1/4     | USERS OK - 1 users currently logged in  |
| localhost | HTTP            | OK       | 02-14-2021 13:43:48 | 0d 0h 55m 5s  | 1/4     | HTTP OK: HTTP/1.1 200 OK - 11152 bytes in 0.001 second response time                                |
| localhost | PING            | OK       | 02-14-2021 13:39:26 | 0d 0h 54m 27s | 1/4     | PING OK - Packet loss = 0%, RTA = 0.11 ms   |
| localhost | Root Partition  | OK       | 02-14-2021 13:40:03 | 0d 0h 53m 50s | 1/4     | DISK OK - free space: / 5619 MB (57.73% inode=92%)  |
| localhost | SSH             | OK       | 02-14-2021 13:40:41 | 0d 0h 53m 12s | 1/4     | SSH OK - OpenSSH_7.6p1 Ubuntu-4ubuntu0.3 (protocol 2.0)   |
| localhost | Swap Usage      | CRITICAL | 02-14-2021 13:39:18 | 0d 0h 52m 36s | 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       | 02-14-2021 13:41:56 | 0d 0h 51m 57s | 1/4     | PROCS OK: 46 processes with STATE = RSZDT   |
| slave1    | HTTP            | OK       | 02-14-2021 13:42:06 | 0d 0h 3m 1s+  | 1/3     | HTTP OK: HTTP/1.1 200 OK - 11152 bytes in 0.003 second response time                                |

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