1. สร้างไฟล์ sys_mon.bash และจัดเก็บในไดเร็คทอรี่ Desktop
   #!/bin/bash
   echo "System Load: $(uptime)"
   echo "Free Memory: $(free -h | grep Mem | awk '{print $43')"
   echo "Free Disk Space: S(df-h/| grep / awk '(print $4}')"
   [สคริปต์นี้ตรวจสอบและแสดงผลอะไรบ้าง] => ANS แสดงโหลดของระบบ หน่วยความจำว่าง และพื้นที่ดิสก์ว่าง
2. chmod +x sys_mon.bash [คำสั่งนี้ใช้เพื่ออะไร ?] => ANS ทำให้สคริปต์นี้เป็น executable
3. สั่งให้ script ทำงานทุก ๆ 10 นาที

```
babyearn@babyearn:~/Desktop$ nano sys_mon.bash
babyearn@babyearn:~/Desktop$ more sys_mon.bash
#!/bin/bash
echo "System Load: $(uptime)"
echo "Free Memory: $(free -h | grep Mem | awk '{print $4}')"
echo "Free Disk Space: $(df -h / | grep / | awk '{print $4}')"
babyearn@babyearn:~/Desktop$ chmod +x sys_mon.bash
babyearn@babyearn:~/Desktop$ pwd
/home/babyearn/Desktop
babyearn@babyearn:~/Desktop$ crontab -e
no crontab for babyearn - using an empty one
crontab: installing new crontab
babyearn@babyearn:~/Desktop$
```

```
babyearn@babyearn: ~/Desktop
 GNU nano 7.2                                  /tmp/crontab.5wwMZt/crontab *
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
*/10 * * * * /home/babyearn/Desktop/sys_mon.bash
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
```

1. สร้างไฟล์ failed_ssh.bash และจัดเก็บในไดเร็คทอรี่ Desktop

```
#!/bin/bash
LOG_FILE="/var/log/auth.log"
EMAIL="your-email@example.com"
FAILED_ATTEMPTS=$(grep "Failed password" "S{LOG_FILE}" | WC-l)
if [ "SEFAILED_ATTEMPTS?" -gt 0 1; then
        echo "There have been $(FAILED_ATTEMPTS) failed SSH login attempts." | mail -
s "SSH Login Alert" "SEMAIL}"
fi
```

[สคริปต์นี้ตรวจสอบและแสดงผลอะไรบ้าง] => ANS ตรวจสอบจำนวนครั้งของการพยายามเข้าสู่ระบบ SSH ที่ล้มเหลว และส่งอีเมลแจ้งเตือนถ้ามีการพยายามที่ล้มเหลวเกิดขึ้น

2. chmod +x failed _ssh.bash

3.สั่งให้ script ทำงานทุกๆ 10 นาที ใน crontab

```
*/10 * * * * /home/korakoch/Desktop/failed ssh.bash
```

```
babyearn@babyearn:~/Desktop$ nano failed_ssh.bash
babyearn@babyearn:~/Desktop$ more failed_ssh.bash
#!/bin/bash
LOG_FILE="/var/log/auth.log"
EMAIL="your-email@example.com"
FAILED_ATTEMPTS=$(grep "Failed password" "${LOG_FILE}" | wc -l)

if [ "${FAILED_ATTEMPTS}" -gt 0 ]; then
    echo "There have been ${FAILED_ATTEMPTS} failed SSH login attempts." | mail -s "SSH Login Alert" "${EMAIL}"
fi
babyearn@babyearn:~/Desktop$ chmod +x failed_ssh.bash
babyearn@babyearn:~/Desktop$ crontab -e
crontab: installing new crontab
babyearn@babyearn:~/Desktop$
```

```
babyearn@babyearn: ~/Desktop
  GNU nano 7.2                                  /tmp/crontab.5wwMZt/crontab *
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
*/10 * * * * /home/babyearn/Desktop/failed_ssh.bash
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
```

- Show examples of logs in your computer
  - wtmp

```
babyearn@babyearn:~/Desktop$ last
babyearn tty2         tty2             Tue Nov  5 06:48   still logged in
babyearn seat0        login screen     Tue Nov  5 06:48   still logged in
reboot   system boot  6.8.0-48-generic Tue Nov  5 06:43   still running
reboot   system boot  6.8.0-48-generic Tue Nov  5 06:41   still running
reboot   system boot  6.8.0-48-generic Tue Nov  5 06:31   still running
babyearn tty2         tty2             Tue Nov  5 06:25 - 06:31  (00:05)
babyearn seat0        login screen     Tue Nov  5 06:25 - down   (00:05)
reboot   system boot  6.8.0-48-generic Tue Nov  5 06:19 - 06:31  (00:12)
reboot   system boot  6.8.0-48-generic Tue Nov  5 05:38 - 06:31  (00:53)
babyearn tty2         tty2             Tue Nov  5 04:44 - 05:38  (00:53)
babyearn seat0        login screen     Tue Nov  5 04:44 - down   (00:53)
reboot   system boot  6.8.0-48-generic Tue Nov  5 04:40 - 05:38  (00:57)
babyearn tty2         tty2             Fri Nov  1 14:38 - crash (3+14:01)
babyearn seat0        login screen     Fri Nov  1 14:38 - crash (3+14:01)
reboot   system boot  6.8.0-45-generic Fri Nov  1 14:29 - 05:38 (3+15:08)
reboot   system boot  6.8.0-45-generic Wed Oct 30 07:17 - 05:38 (5+22:20)
babyearn tty2         tty2             Tue Oct 29 06:13 - crash (1+01:03)
babyearn seat0        login screen     Tue Oct 29 06:13 - crash (1+01:03)
reboot   system boot  6.8.0-45-generic Tue Oct 29 06:08 - 05:38 (6+23:29)
babyearn tty2         tty2             Tue Oct 29 05:34 - crash  (00:34)
babyearn seat0        login screen     Tue Oct 29 05:34 - crash  (00:34)
reboot   system boot  6.8.0-45-generic Tue Oct 29 05:30 - 05:38 (7+00:07)
reboot   system boot  6.8.0-45-generic Tue Oct 29 05:13 - 05:38 (7+00:24)
reboot   system boot  6.8.0-45-generic Tue Oct 29 04:12 - 05:38 (7+01:26)
babyearn tty2         tty2             Tue Oct 22 05:07 - crash (6+23:04)
babyearn seat0        login screen     Tue Oct 22 05:07 - crash (6+23:04)
reboot   system boot  6.8.0-45-generic Tue Oct 22 05:02 - 05:38 (14+00:35)
babyearn tty2         tty2             Tue Oct 22 04:08 - crash  (00:54)
babyearn seat0        login screen     Tue Oct 22 04:08 - crash  (00:54)
reboot   system boot  6.8.0-45-generic Tue Oct 22 04:02 - 05:38 (14+01:35)
reboot   system boot  6.8.0-45-generic Tue Oct 22 03:58 - 05:38 (14+01:39)
reboot   system boot  6.8.0-45-generic Tue Oct 22 03:53 - 05:38 (14+01:45)
babyearn tty2         tty2             Tue Oct 15 05:45 - crash (6+22:07)
babyearn seat0        login screen     Tue Oct 15 05:45 - crash (6+22:07)
reboot   system boot  6.8.0-45-generic Tue Oct 15 05:17 - 05:38 (21+00:20)
babyearn tty2         tty2             Tue Oct  1 05:44 - crash (13+23:33)
babyearn seat0        login screen     Tue Oct  1 05:44 - crash (13+23:33)
reboot   system boot  6.8.0-41-generic Tue Oct  1 05:40 - 05:38 (34+23:58)
reboot   system boot  6.8.0-41-generic Tue Oct  1 03:27 - 05:38 (35+02:10)
babyearn tty2         tty2             Thu Sep 26 15:28 - crash (4+11:59)
babyearn seat0        login screen     Thu Sep 26 15:28 - crash (4+11:59)
reboot   system boot  6.8.0-41-generic Thu Sep 26 15:21 - 05:38 (39+14:16)
babyearn tty2         tty2             Tue Sep 24 02:31 - crash (2+12:50)
babyearn seat0        login screen     Tue Sep 24 02:31 - crash (2+12:50)
reboot   system boot  6.8.0-41-generic Tue Sep 24 02:24 - 05:38 (42+03:13)
babyearn tty2         tty2             Tue Sep 17 14:55 - crash (6+11:29)
babyearn seat0        login screen     Tue Sep 17 14:55 - crash (6+11:29)
reboot   system boot  6.8.0-41-generic Tue Sep 17 14:51 - 05:38 (48+14:46)
babyearn tty2         tty2             Tue Sep 17 14:39 - crash  (00:11)
babyearn seat0        login screen     Tue Sep 17 14:39 - crash  (00:11)
reboot   system boot  6.8.0-41-generic Tue Sep 17 14:33 - 05:38 (48+15:04)
babyearn tty2         tty2             Tue Sep 17 08:36 - crash  (05:56)
babyearn seat0        login screen     Tue Sep 17 08:36 - crash  (05:56)
reboot   system boot  6.8.0-41-generic Tue Sep 17 08:32 - 05:38 (48+21:05)
reboot   system boot  6.8.0-41-generic Tue Sep 17 08:30 - 05:38 (48+21:08)
reboot   system boot  6.8.0-41-generic Tue Sep 17 08:27 - 05:38 (48+21:10)
babyearn tty2         tty2             Tue Sep 17 06:39 - crash  (01:48)
babyearn seat0        login screen     Tue Sep 17 06:39 - crash  (01:48)
reboot   system boot  6.8.0-41-generic Tue Sep 17 06:32 - 05:38 (48+23:05)
babyearn tty2         tty2             Tue Sep 17 06:26 - crash  (00:06)
babyearn seat0        login screen     Tue Sep 17 06:26 - crash  (00:06)
reboot   system boot  6.8.0-41-generic Tue Sep 17 06:20 - 05:38 (48+23:17)
```

```
babyearn seat0        login screen     Thu Aug  8 17:16 - crash  (09:02)
reboot   system boot  6.8.0-31-generic Thu Aug  8 17:14 - 05:35 (4+12:21)
babyearn tty2         tty2             Thu Aug  8 16:58 - 17:08  (00:10)
babyearn seat0        login screen     Thu Aug  8 16:58 - down   (00:10)
reboot   system boot  6.8.0-31-generic Thu Aug  8 16:45 - 17:08  (00:23)
reboot   system boot  6.8.0-31-generic Thu Aug  8 14:04 - 16:45  (02:40)

wtmp begins Thu Aug  8 14:04:54 2024
```

- syslog

```
babyearn@babyearn:~/Desktop$ tail /var/log/syslog
2024-11-05T07:11:05.590751+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 31 with keysym 31 (keycode a).
2024-11-05T07:11:05.590762+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 36 with keysym 36 (keycode f).
2024-11-05T07:11:05.590775+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 32 with keysym 32 (keycode b).
2024-11-05T07:11:05.590798+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 38 with keysym 38 (keycode 11).
2024-11-05T07:11:05.590811+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 37 with keysym 37 (keycode 10).
2024-11-05T07:11:05.590871+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 37 with keysym 37 (keycode 10).
2024-11-05T07:11:05.590892+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 36 with keysym 36 (keycode f).
2024-11-05T07:11:05.590904+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 34 with keysym 34 (keycode d).
2024-11-05T07:11:05.590915+00:00 babyearn gnome-shell[2302]: Window manager warning: Overwriting existing binding of keysym 35 with keysym 35 (keycode e).
2024-11-05T07:11:22.534597+00:00 babyearn spice-vdagentd: invalid message size for VDAgentMonitorsConfig
babyearn@babyearn:~/Desktop$
```

- auth.log

```
babyearn@babyearn:~/Desktop$ tail /var/log/auth.log
2024-11-05T07:09:37.286100+00:00 babyearn sudo: pam_unix(sudo:session): session closed for user root
2024-11-05T07:09:44.741729+00:00 babyearn sudo: babyearn : TTY=pts/0 ; PWD=/home/babyearn/Desktop ; USER=root ; COMMAND=/usr/bin/systemctl status rsyslog
2024-11-05T07:09:44.742556+00:00 babyearn sudo: pam_unix(sudo:session): session opened for user root(uid=0) by babyearn(uid=1000)
2024-11-05T07:09:44.765799+00:00 babyearn sudo: pam_unix(sudo:session): session closed for user root
2024-11-05T07:10:09.206598+00:00 babyearn sudo: babyearn : TTY=pts/0 ; PWD=/home/babyearn/Desktop ; USER=root ; COMMAND=/usr/bin/tail /var/log/syslog
2024-11-05T07:10:09.207439+00:00 babyearn sudo: pam_unix(sudo:session): session opened for user root(uid=0) by babyearn(uid=1000)
2024-11-05T07:10:09.225145+00:00 babyearn sudo: pam_unix(sudo:session): session closed for user root
babyearn@babyearn:~/Desktop$
```

- ติดตั้ง Nagios ตามขั้นตอนที่ปรากฏใน Lecture Slide

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (1/10)

- **อัปเดตระบบและชุดซอฟต์แวร์ระบบ**

  $sudo apt update && apt upgrade -y

- **ติดตั้งชุดซอฟต์แวร์และไลบรารี่ที่จำเป็น**

  $sudo apt install autoconf gcc libc6 make wget unzip apache2 apache2-utils php libgd-dev libmcrypt-dev libssl-dev bc gawk dc build-essential snmp libnet-snmp-perl gettext

```
babyearn@babyearn:~/Desktop$ sudo apt update && apt upgrade -y
Hit:1 http://ports.ubuntu.com/ubuntu-ports noble InRelease
Hit:2 http://ports.ubuntu.com/ubuntu-ports noble-updates InRelease
Hit:3 http://ports.ubuntu.com/ubuntu-ports noble-backports InRelease
Hit:4 http://ports.ubuntu.com/ubuntu-ports noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
73 packages can be upgraded. Run 'apt list --upgradable' to see them.
E: Could not open lock file /var/lib/dpkg/lock-frontend - open (13: Permission denied)
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontend), are you root?
babyearn@babyearn:~/Desktop$ sudo apt install autoconf gcc libc6 make wget unzip apache2
apache2-utils php libgd-dev libmcrypt-dev libssl-dev bc gawk dc build-
essential snmp libnet-snmp-perl gettext
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gcc is already the newest version (4:13.2.0-7ubuntu1).
libc6 is already the newest version (2.39-0ubuntu8.3).
libc6 set to manually installed.
make is already the newest version (4.3-4.1build2).
make set to manually installed.
wget is already the newest version (1.21.4-1ubuntu4.1).
wget set to manually installed.
unzip is already the newest version (6.0-28ubuntu4.1).
unzip set to manually installed.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils automake autotools-dev libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 m4
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom autoconf-archive gnu-standards autoconf-doc libtool gettext m4-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils autoconf automake autotools-dev libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 m4
0 upgraded, 12 newly installed, 0 to remove and 73 not upgraded.
Need to get 3,070 kB of archives.
After this operation, 17.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 libapr1t64 arm64 1.7.2-3.1ubuntu0.1 [106 kB]
Get:2 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libaprutil1t64 arm64 1.6.3-1.1ubuntu7 [93.9 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libaprutil1-dbd-sqlite3 arm64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:4 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libaprutil1-ldap arm64 1.6.3-1.1ubuntu7 [9,046 B]
Get:5 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 apache2-bin arm64 2.4.58-1ubuntu8.4 [1,319 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 apache2-data all 2.4.58-1ubuntu8.4 [163 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 apache2-utils arm64 2.4.58-1ubuntu8.4 [96.3 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 apache2 arm64 2.4.58-1ubuntu8.4 [90.2 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 m4 arm64 1.4.19-4build1 [240 kB]
Get:10 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 autoconf all 2.71-3 [339 kB]
Get:11 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 autotools-dev all 20220109.1 [44.9 kB]
Get:12 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 automake all 1:1.16.5-1.3ubuntu1 [558 kB]
Fetched 3,070 kB in 7s (450 kB/s)
Selecting previously unselected package libapr1t64:arm64.
(Reading database ... 242492 files and directories currently installed.)
Preparing to unpack .../00-libapr1t64_1.7.2-3.1ubuntu0.1_arm64.deb ...
Unpacking libapr1t64:arm64 (1.7.2-3.1ubuntu0.1) ...
Selecting previously unselected package libaprutil1t64:arm64.
Preparing to unpack .../01-libaprutil1t64_1.6.3-1.1ubuntu7_arm64.deb ...
Unpacking libaprutil1t64:arm64 (1.6.3-1.1ubuntu7) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:arm64.
Preparing to unpack .../02-libaprutil1-dbd-sqlite3_1.6.3-1.1ubuntu7_arm64.deb ...
Unpacking libaprutil1-dbd-sqlite3:arm64 (1.6.3-1.1ubuntu7) ...
Selecting previously unselected package libaprutil1-ldap:arm64.
Preparing to unpack .../03-libaprutil1-ldap_1.6.3-1.1ubuntu7_arm64.deb ...
Unpacking libaprutil1-ldap:arm64 (1.6.3-1.1ubuntu7) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../04-apache2-bin_2.4.58-1ubuntu8.4_arm64.deb ...
Unpacking apache2-bin (2.4.58-1ubuntu8.4) ...
Selecting previously unselected package apache2-data.
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (2/10)

- เพิ่มผู้ใช้งานและกลุ่มสำหรับชุดซอฟต์แวร์ nagios

  $sudo useradd –m –s /bin/bash nagios

  $sudo groupadd nagcmd

  $sudo usermod -a -G nagcmd nagios

  $sudo usermod -a -G nagcmd www-data

```
babyearn@babyearn:~/Desktop$ sudo useradd -m -s /bin/bash nagios
babyearn@babyearn:~/Desktop$ sudo groupadd nagcmd
groupadd: group 'nagcmd' already exists
babyearn@babyearn:~/Desktop$ sudo usermod -a -G nagcmd nagios
babyearn@babyearn:~/Desktop$ sudo usermod -a -G nagcmd www-data
babyearn@babyearn:~/Desktop$
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (3/10)

- ดาว์นโหลดโปรแกรม nagios core ไปไว้ที่ไดเร็คทอรี่ /tmp

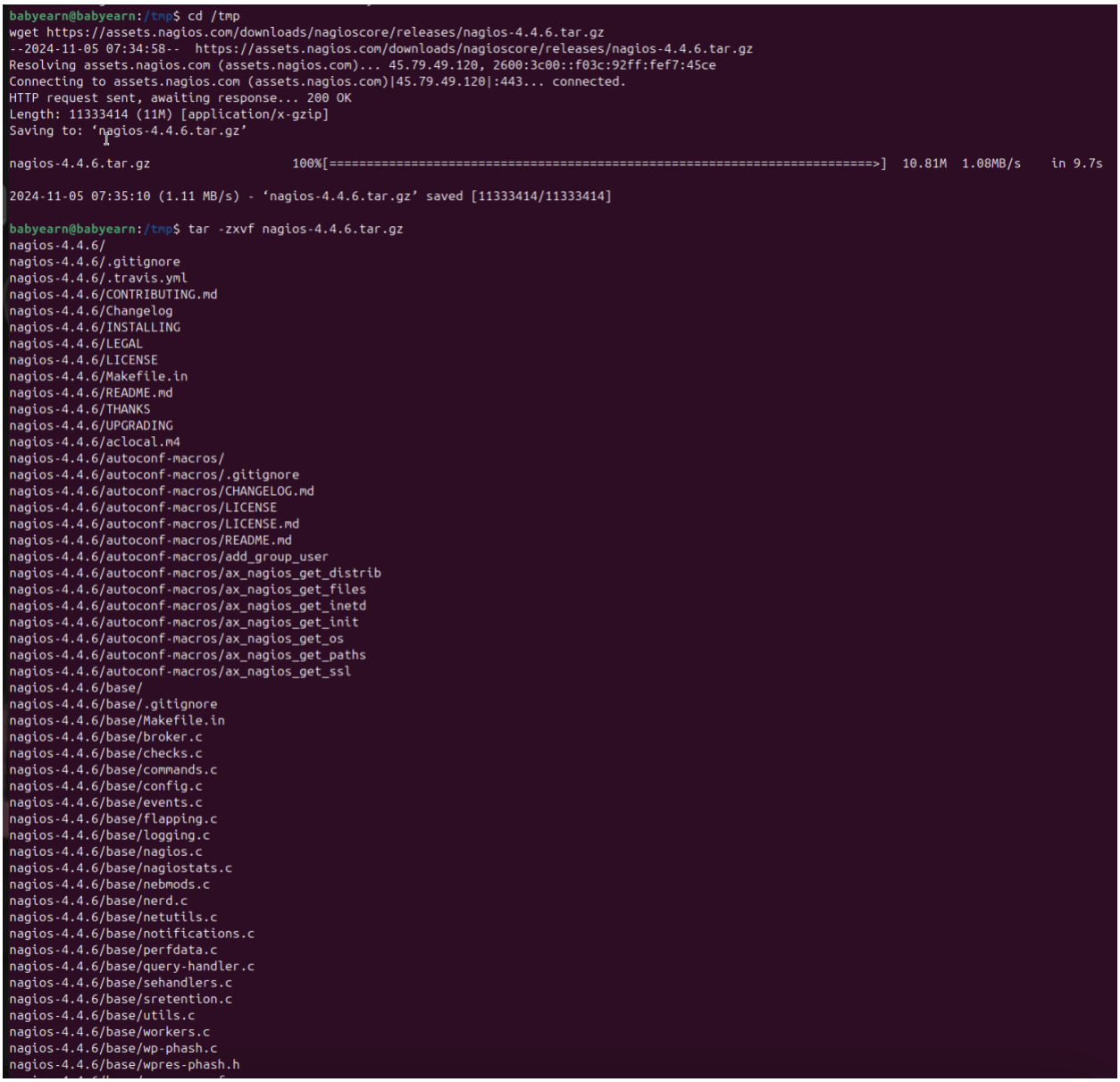
  $cd /tmp

  $wget https://tinyurl.com/44yfwyem

- Extract ไฟล์

  $tar –zxvf nagios-4.5.7.tar.gz

  $cd nagios-4.5.7



```
nagios-4.4.6/xdata/.gitignore
nagios-4.4.6/xdata/Makefile.in
nagios-4.4.6/xdata/xcddefault.c
nagios-4.4.6/xdata/xcddefault.h
nagios-4.4.6/xdata/xodtemplate.c
nagios-4.4.6/xdata/xodtemplate.h
nagios-4.4.6/xdata/xpddefault.c
nagios-4.4.6/xdata/xpddefault.h
nagios-4.4.6/xdata/xrddefault.c
nagios-4.4.6/xdata/xrddefault.h
nagios-4.4.6/xdata/xsddefault.c
nagios-4.4.6/xdata/xsddefault.h
babyearn@babyearn:/tmp$ cd nagios-4.4.6
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (4/10)

- Configure และ Compile ชุดซอฟต์แวร์ Nagios

  $./configure --with-nagios-group=nagios --with-command-group=nagcmd

  $make all

```
babyearn@babyearn:/tmp/nagios-4.4.6$ ./configure --with-nagios-group=nagios --with-command-group=nagcmd
checking for a BSD-compatible install... /usr/bin/install -c
checking build system type... aarch64-unknown-linux-gnu
checking host system type... aarch64-unknown-linux-gnu
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether make sets $(MAKE)... yes
checking whether ln -s works... yes
checking for strip... /usr/bin/strip
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for ANSI C header files... yes
checking whether time.h and sys/time.h may both be included... yes
checking for sys/wait.h that is POSIX.1 compatible... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for memory.h... yes
checking for strings.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for unistd.h... yes
```

```
NOTE: If you can't get the configure script to recognize the GD libs
      on your system, get over it and move on to other things.  The
      CGIs that use the GD libs are just a small part of the entire
      Nagios package.  Get everything else working first and then
      revisit the problem.  Make sure to check the nagios-users
      mailing list archives for possible solutions to GD library
      problems when you resume your troubleshooting.

**********************************************************************


checking ltdl.h usability... no
checking ltdl.h presence... no
checking for ltdl.h... no
checking dlfcn.h usability... yes
checking dlfcn.h presence... yes
checking for dlfcn.h... yes
checking for dlopen in -ldl... yes
checking for extra flags needed to export symbols...  -Wl,-export-dynamic
checking for linker flags for loadable modules... -shared
checking for traceroute... /usr/sbin/traceroute
checking for type va_list... yes
checking for perl... /usr/bin/perl
checking for unzip... /usr/bin/unzip
configure: creating ./config.status
config.status: creating html/index.php
config.status: creating Makefile
config.status: creating lib/Makefile
config.status: creating base/Makefile
config.status: creating common/Makefile
config.status: creating contrib/Makefile
config.status: creating cgi/Makefile
config.status: creating html/Makefile
config.status: creating module/Makefile
config.status: creating worker/Makefile
config.status: creating worker/ping/Makefile
config.status: creating xdata/Makefile
config.status: creating subst
config.status: creating pkginfo
config.status: creating startup/openrc-init
config.status: creating startup/default-init
config.status: creating startup/default-service
config.status: creating startup/upstart-init
config.status: creating t/Makefile
config.status: creating t-tap/Makefile
config.status: creating include/config.h
config.status: creating lib/snprintf.h
config.status: creating lib/iobroker.h

Creating sample config files in sample-config/ ...


*** Configuration summary for nagios 4.4.6 2020-04-28 ***:

 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):  /usr/sbin/traceroute


Review the options above for accuracy.  If they look okay,
type 'make all' to compile the main program and CGIs.
```

```
babyearn@babyearn:/tmp/nagios-4.4.6$ make all
cd ./base && make
make[1]: Entering directory '/tmp/nagios-4.4.6/base'
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o nagios.o nagios.c
nagios.c: In function ‘main’:
nagios.c:611:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  611 |                         asprintf(&mac->x[MACRO_PROCESSSTARTTIME], "%llu", (unsigned long long)program_start);
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
nagios.c:841:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  841 |                         asprintf(&mac->x[MACRO_EVENTSTARTTIME], "%llu", (unsigned long long)event_start);
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
nagios.c: In function ‘nagios_core_worker’:
nagios.c:176:17: warning: ignoring return value of ‘read’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  176 |                 read(sd, response + 3, sizeof(response) - 4);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
nagios.c: In function ‘test_path_access’:
nagios.c:122:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  122 |                 asprintf(&path, "%s/%s", p, program);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o broker.o broker.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o nebmods.o nebmods.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o ../common/shared.o ../common/shared.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o query-handler.o query-handler.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o workers.o workers.c
workers.c: In function ‘handle_worker_result’:
workers.c:801:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  801 |                         asprintf(&error_reason, "timed out after %.2fs", tv_delta_f(&wpres.start, &wpres.stop));
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
workers.c:804:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  804 |                         asprintf(&error_reason, "died by signal %d%s after %.2f seconds",
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  805 |                                  WTERMSIG(wpres.wait_status),
      |                                  ~~~~~~~~~~~~~~~~~~~~~~~~~~~
  806 |                                  WCOREDUMP(wpres.wait_status) ? " (core dumped)" : "",
      |                                  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  807 |                                  tv_delta_f(&wpres.start, &wpres.stop));
      |                                  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
workers.c:810:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  810 |                         asprintf(&error_reason, "is a non-check helper but exited with return code %d",
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  811 |                                  WEXITSTATUS(wpres.wait_status));
      |                                  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
workers.c: In function ‘handle_worker_check’:
workers.c:618:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  618 |                 asprintf(&cr->output, "(No output on stdout) stderr: %s", wpres->outerr);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o checks.o checks.c
checks.c: In function ‘get_service_check_return_code’:
checks.c:376:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  376 |                 asprintf(&svc->plugin_output, "(Service check timed out after %.2lf seconds)", svc->execution_time);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
checks.c:429:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  429 |                 asprintf(&svc->plugin_output, "(Return code of %d for service '%s' on host '%s' was out of bounds)",
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  430 |                         cr->return_code,
      |                         ~~~~~~~~~~~~~~~
  431 |                         svc->description,
      |                         ~~~~~~~~~~~~~~~~
  432 |                         svc->host_name);
      |                         ~~~~~~~~~~~~~~~
checks.c: In function ‘get_host_check_return_code’:
checks.c:467:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  467 |                 asprintf(&hst->plugin_output, "(Host check timed out after %.2lf seconds)", hst->execution_time);
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
checks.c:523:17: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  523 |                 asprintf(&hst->plugin_output, "(Return code of %d for host '%s' was out of bounds)",
      |                 ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  524 |                         cr->return_code,
      |                         ~~~~~~~~~~~~~~~
  525 |                         hst->name);
      |                         ~~~~~~~~~~
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o config.o config.c
config.c: In function ‘read_main_config_file’:
config.c:140:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  140 |                         asprintf(&error_message, "NULL variable");
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
config.c:145:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  145 |                         asprintf(&error_message, "malloc() error");
      |                         ^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
config.c:152:25: warning: ignoring return value of ‘asprintf’ declared with attribute ‘warn_unused_result’ [-Wunused-result]
  152 |                         asprintf(&error_message, "NULL value");
```

```
*** Compile finished ***

If the main program and CGIs compiled without any errors, you
can continue with testing or installing Nagios as follows (type
'make' without any arguments for a list of all possible options):

  make test
     - This runs the test suite

  make install
     - This installs the main program, CGIs, and HTML files

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

  make install-daemoninit
     - This will initialize the init script
       in /lib/systemd/system

  make install-groups-users
     - This adds the users and groups if they do not exist

  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
       You'll have to modify these sample files before you can
       use Nagios.  Read the HTML documentation for more info
       on doing this.  Pay particular attention to the docs on
       object configuration files, as they determine what/how
       things get monitored!

  make install-webconf
     - This installs the Apache config file for the Nagios
       web interface

  make install-exfoliation
     - This installs the Exfoliation theme for the Nagios
       web interface

  make install-classicui
     - This installs the classic theme for the Nagios
       web interface


*** 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.

babyearn@babyearn:/tmp/nagios-4.4.6$
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (5/10)

- ติดตั้งชุดซอฟต์แวร์ Nagios Core และ Web interface

$sudo make install

$sudo make install-commandmode

$sudo make install-init

$sudo make install-config

$sudo /usr/bin/install -c -m 644 sample-config/httpd.conf /etc/apache2/sites-available/nagios.conf

```
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo make install
[sudo] password for babyearn:
cd ./base && make install
make[1]: Entering directory '/tmp/nagios-4.4.6/base'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagios /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagiostats /usr/local/nagios/bin
make[1]: Leaving directory '/tmp/nagios-4.4.6/base'
cd ./cgi && make install
make[1]: Entering directory '/tmp/nagios-4.4.6/cgi'
make install-basic
make[2]: Entering directory '/tmp/nagios-4.4.6/cgi'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/sbin
for file in *.cgi; do \
        /usr/bin/install -c -s -m 775 -o nagios -g nagios $file /usr/local/nagios/sbin; \
done
make[2]: Leaving directory '/tmp/nagios-4.4.6/cgi'
make[1]: Leaving directory '/tmp/nagios-4.4.6/cgi'
cd ./html && make install
make[1]: Entering directory '/tmp/nagios-4.4.6/html'
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/media
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/stylesheets
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/contexthelp
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/docs
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/docs/images
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/js
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/images
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/images/logos
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/includes
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/ssi
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/angularjs
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/angularjs/angular-1.3.9
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/angularjs/ui-utils-0.2.3
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/bootstrap-3.3.7
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/bootstrap-3.3.7/css
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/d3
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/share/spin
/usr/bin/install -c -m 664 -o nagios -g nagios robots.txt /usr/local/nagios/share
rm -f /usr/local/nagios/share/index.html
rm -f /usr/local/nagios/share/main.html
rm -f /usr/local/nagios/share/side.html
rm -f /usr/local/nagios/share/map.html
rm -f /usr/local/nagios/share/rss-*
rm -rf /usr/local/nagios/share/include/rss
/usr/bin/install -c -m 664 -o nagios -g nagios jsonquery.html /usr/local/nagios/share
/usr/bin/install -c -m 664 -o nagios -g nagios graph-header.html /usr/local/nagios/share
/usr/bin/install -c -m 664 -o nagios -g nagios histogram.html /usr/local/nagios/share
/usr/bin/install -c -m 664 -o nagios -g nagios histogram-form.html /usr/local/nagios/share
/usr/bin/install -c -m 664 -o nagios -g nagios histogram-graph.html /usr/local/nagios/share
```

```
make[1]: Leaving directory '/tmp/nagios-4.4.6'
babyearn@babyearn:/tmp/nagios-4.4.6$ 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 ***

babyearn@babyearn:/tmp/nagios-4.4.6$ 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
babyearn@babyearn:/tmp/nagios-4.4.6$ 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.

babyearn@babyearn:/tmp/nagios-4.4.6$ sudo /usr/bin/install -c -m 644 sample-config/httpd.conf /etc/apache2/sites-available/nagios.conf
babyearn@babyearn:/tmp/nagios-4.4.6$
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (6/10)

- ติดตั้งชุด Ubuntu Plugins

  $sudo apt update

  $sudo apt install nagios-plugins

  $sudo cp /usr/lib/nagios/plugins/* /usr/local/nagios/libexec/

- ปรับปรุงการตั้งค่าของชุดซอฟต์แวร์ Nagios

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

  $sudo systemctl restart nagios

  $sudo systemctl restart apache2

```
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo apt update
[sudo] password for babyearn:
Hit:1 http://ports.ubuntu.com/ubuntu-ports noble InRelease
Get:2 http://ports.ubuntu.com/ubuntu-ports noble-updates InRelease [126 kB]
Hit:3 http://ports.ubuntu.com/ubuntu-ports noble-backports InRelease
Hit:4 http://ports.ubuntu.com/ubuntu-ports noble-security InRelease
Fetched 126 kB in 5s (24.4 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
73 packages can be upgraded. Run 'apt list --upgradable' to see them.
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo apt install nagios-plugins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'monitoring-plugins' instead of 'nagios-plugins'
The following additional packages will be installed:
  libdbi1t64 libmysqlclient21 libnet-snmp-perl libpq5 libradcli4 liburiparser1 monitoring-plugins-basic monitoring-plugins-common
  monitoring-plugins-standard python3-gpg python3-ldb python3-markdown python3-samba python3-talloc python3-tdb rpcbind samba-common samba-common-bin
  samba-dsdb-modules smbclient snmp
Suggested packages:
  libcrypt-des-perl libdigest-hmac-perl libio-socket-inet6-perl icinga2 nagios-plugins-contrib fping postfix | sendmail-bin | exim4-daemon-heavy
  | exim4-daemon-light qstat python-markdown-doc heimdal-clients python3-dnspython cifs-utils
The following NEW packages will be installed:
  libdbi1t64 libmysqlclient21 libnet-snmp-perl libpq5 libradcli4 liburiparser1 monitoring-plugins monitoring-plugins-basic monitoring-plugins-common
  monitoring-plugins-standard python3-gpg python3-ldb python3-markdown python3-samba python3-talloc python3-tdb rpcbind samba-common samba-common-bin
  samba-dsdb-modules smbclient snmp
0 upgraded, 22 newly installed, 0 to remove and 73 not upgraded.
Need to get 7,532 kB of archives.
After this operation, 49.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 rpcbind arm64 1.2.6-7ubuntu2 [46.1 kB]
Get:2 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libdbi1t64 arm64 0.9.0-6.1build1 [25.5 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 libmysqlclient21 arm64 8.0.39-0ubuntu0.24.04.2 [1,246 kB]
Get:4 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libnet-snmp-perl all 6.0.1-7 [86.8 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 libpq5 arm64 16.4-0ubuntu0.24.04.2 [139 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 libradcli4 arm64 1.2.11-1build3 [40.2 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 liburiparser1 arm64 0.9.7+dfsg-2build1 [35.4 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-gpg arm64 1.18.0-4.1ubuntu4 [206 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-ldb arm64 2:2.8.0+samba4.19.5+dfsg-4ubuntu9 [42.4 kB]
Get:10 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-markdown all 3.5.2-1 [72.0 kB]
Get:11 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-tdb arm64 1.4.10-1build1 [15.1 kB]
Get:12 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-talloc arm64 2.4.2-1build2 [12.9 kB]
Get:13 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 python3-samba arm64 2:4.19.5+dfsg-4ubuntu9 [2,804 kB]
Get:14 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 samba-common all 2:4.19.5+dfsg-4ubuntu9 [64.1 kB]
Get:15 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 samba-common-bin arm64 2:4.19.5+dfsg-4ubuntu9 [1,269 kB]
Get:16 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 samba-dsdb-modules arm64 2:4.19.5+dfsg-4ubuntu9 [319 kB]
Get:17 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 smbclient arm64 2:4.19.5+dfsg-4ubuntu9 [488 kB]
Get:18 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 snmp arm64 5.9.4+dfsg-1.1ubuntu3 [179 kB]
Get:19 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 monitoring-plugins-common arm64 2.3.5-1ubuntu3 [30.1 kB]
Get:20 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 monitoring-plugins-basic arm64 2.3.5-1ubuntu3 [258 kB]
Get:21 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 monitoring-plugins-standard arm64 2.3.5-1ubuntu3 [144 kB]
Get:22 http://ports.ubuntu.com/ubuntu-ports noble/universe arm64 monitoring-plugins all 2.3.5-1ubuntu3 [10.7 kB]
Fetched 7,532 kB in 15s (506 kB/s)
Selecting previously unselected package rpcbind.
(Reading database ... 243482 files and directories currently installed.)
Preparing to unpack .../00-rpcbind_1.2.6-7ubuntu2_arm64.deb ...
Unpacking rpcbind (1.2.6-7ubuntu2) ...
Selecting previously unselected package libdbi1t64:arm64.
Preparing to unpack .../01-libdbi1t64_0.9.0-6.1build1_arm64.deb ...
Unpacking libdbi1t64:arm64 (0.9.0-6.1build1) ...
Selecting previously unselected package libmysqlclient21:arm64.
Preparing to unpack .../02-libmysqlclient21_8.0.39-0ubuntu0.24.04.2_arm64.deb ...
Unpacking libmysqlclient21:arm64 (8.0.39-0ubuntu0.24.04.2) ...
Selecting previously unselected package libnet-snmp-perl.
```

```
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo cp /usr/lib/nagios/plugins/* /usr/local/nagios/libexec/
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

Nagios Core 4.4.6
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Last Modified: 2020-04-28
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
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl restart nagios
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl restart apache2
babyearn@babyearn:/tmp/nagios-4.4.6$
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (7/10)

- ปรับตั้งค่า Apache web server และเปิดการใช้งานโมดูล cgi rewrite

  $sudo ln -s /etc/apache2/sites-available/nagios.conf /etc/apache2/sites-enabled/

  $sudo a2enmod cgi rewrite

- ตั้งพาสเวิร์ดสำหรับชุดซอฟต์แวร์ Nagios

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

```
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo ln -s /etc/apache2/sites-available/nagios.conf /etc/apache2/sites-enabled/
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo a2enmod cgi rewrite
Your MPM seems to be threaded. Selecting cgid instead of cgi.
Enabling module cgid.
Enabling module rewrite.
To activate the new configuration, you need to run:
  systemctl restart apache2
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
babyearn@babyearn:/tmp/nagios-4.4.6$
```

ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (8/10)

- เพิ่มบริการและใช้งานชุดซอฟต์แวร์

  $sudo systemctl enable nagios

  $sudo systemctl enable apache2

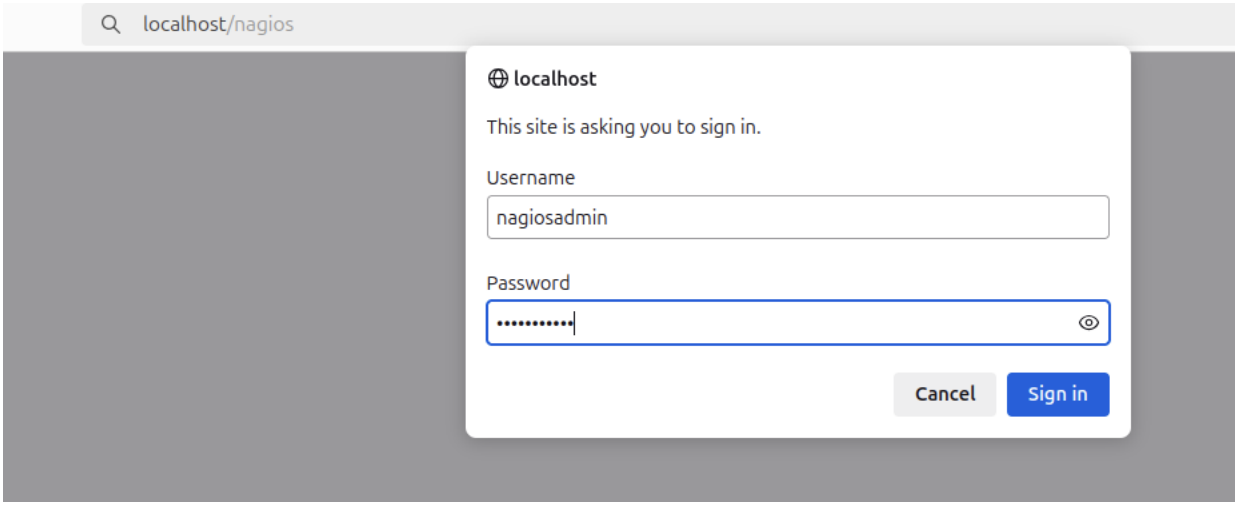
  $sudo systemctl restart nagios

  $sudo systemctl restart apache2

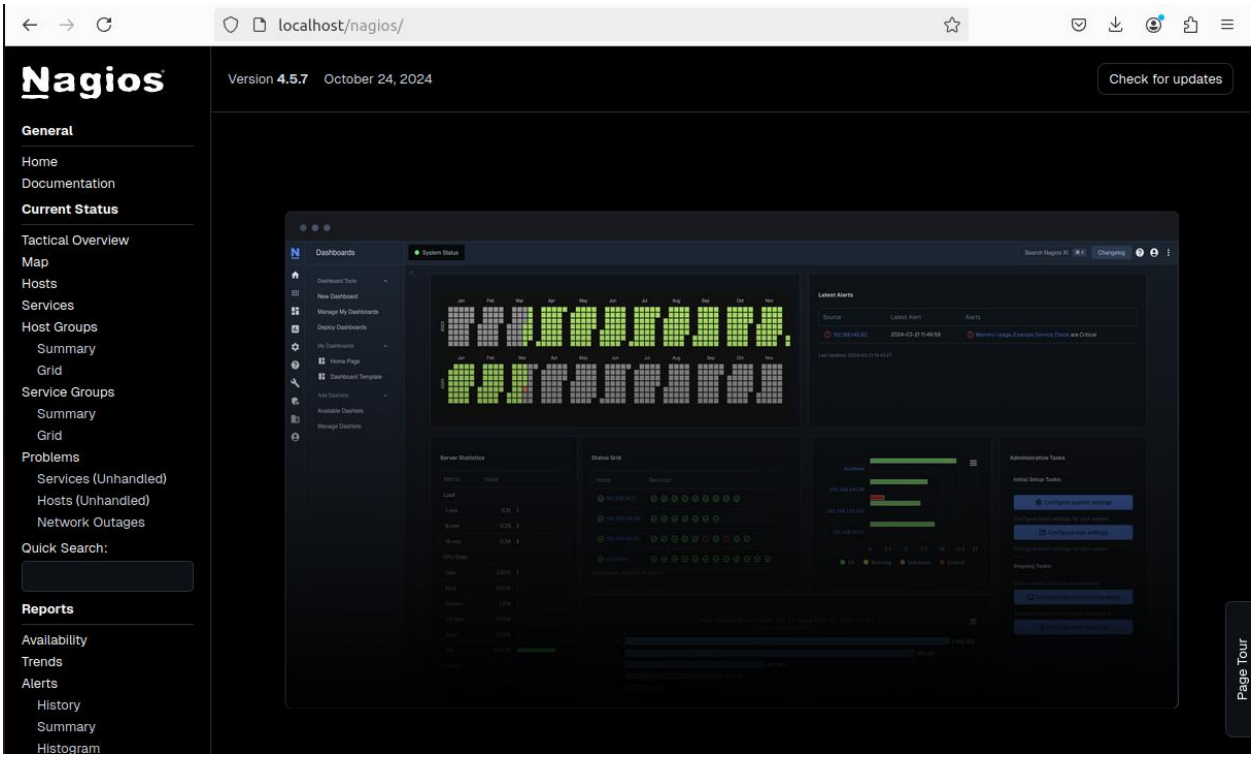
```
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl enable nagios
Created symlink /etc/systemd/system/multi-user.target.wants/nagios.service → /usr/lib/systemd/system/nagios.service.
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl restart nagios
babyearn@babyearn:/tmp/nagios-4.4.6$ sudo systemctl restart apache2
babyearn@babyearn:/tmp/nagios-4.4.6$
```

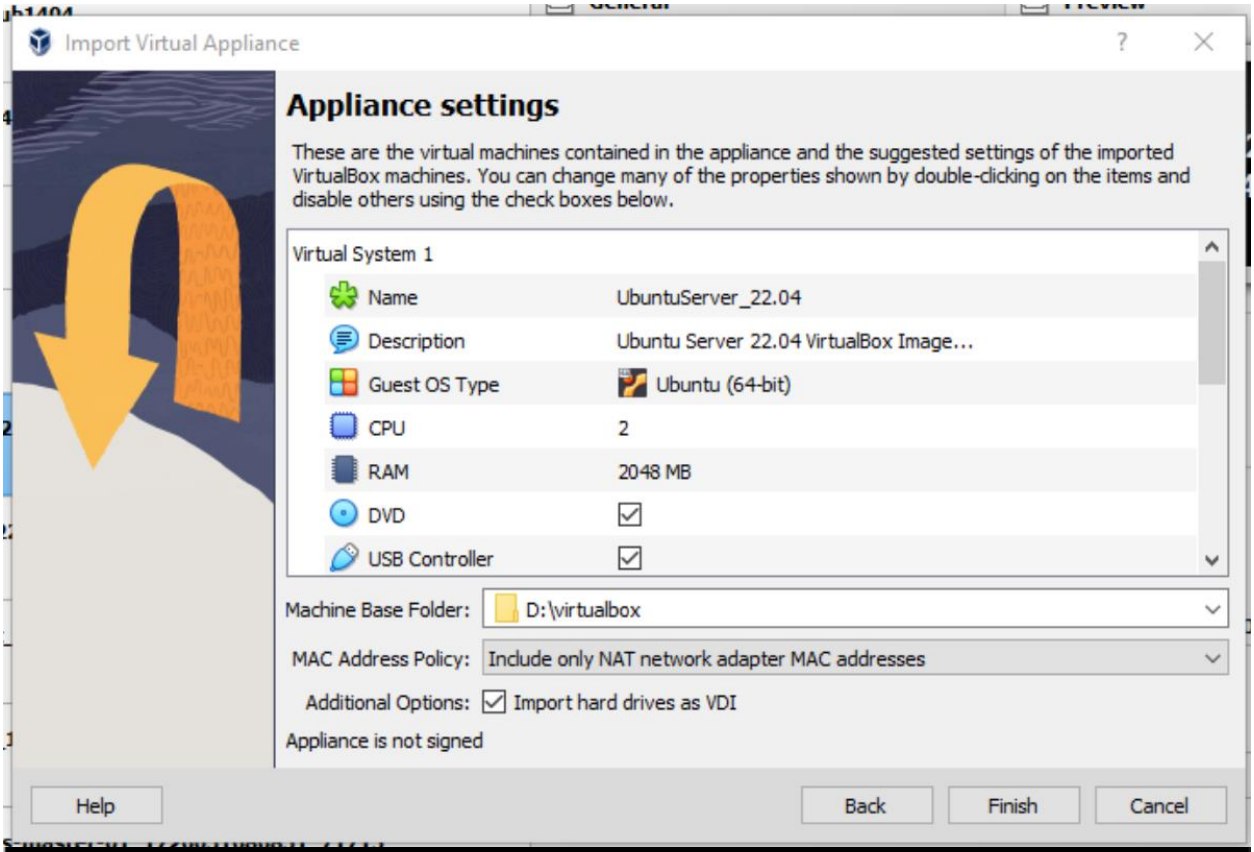
ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (9/10)

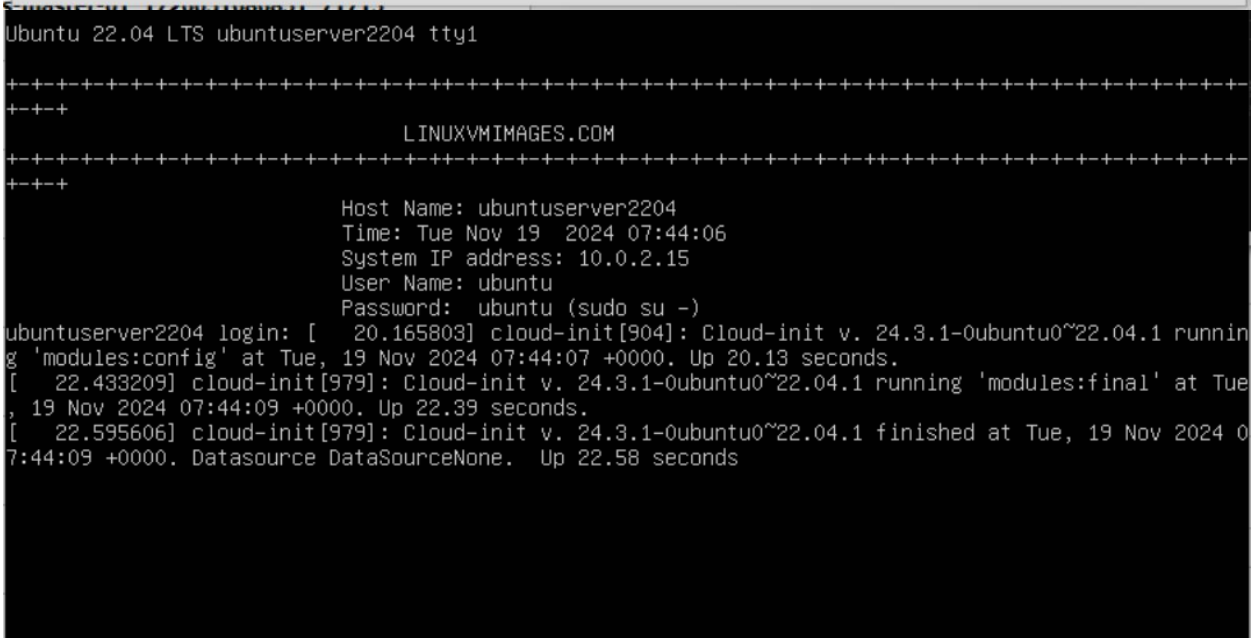
- เรียกใช้งานซอฟต์แวร์ได้จากเว็บบราวเซอร์
  - เปิดเว็บบราวเซอร์
  - Browse http://localhost/nagios [หรือ http://IP_Address/nagios]
  - Login ด้วย username: nagiosadmin และรหัสผ่านพาสเวิร์ดที่กำหนดไว้

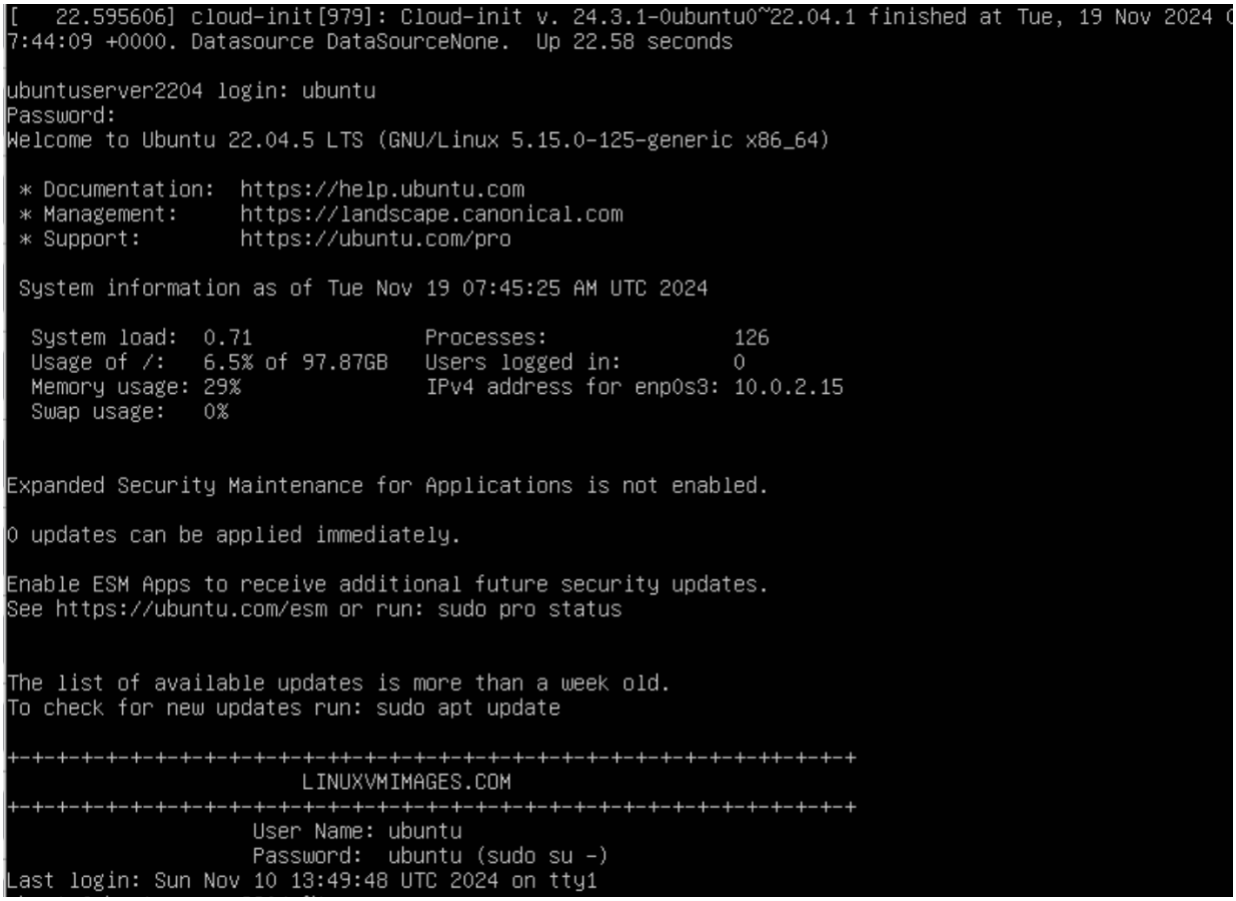


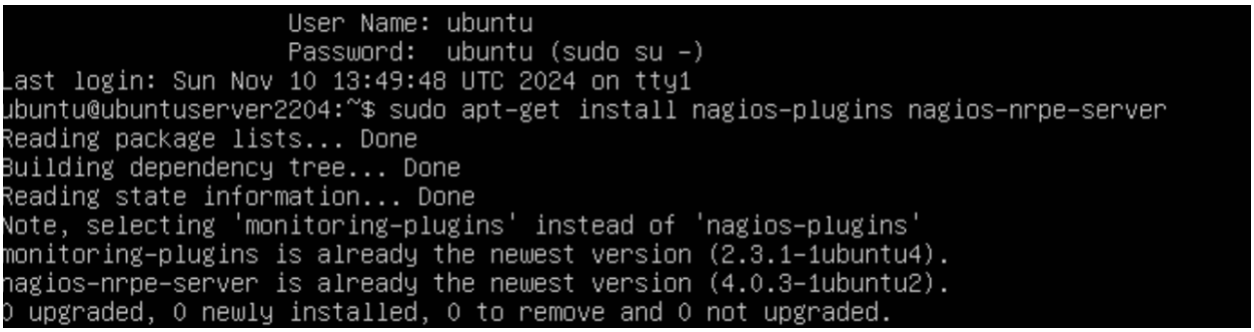
ขั้นตอนการติดตั้งและปรับตั้งค่า Nagios (10/10)




Import Virtual Appliance
Appliance settings
These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.
Virtual System 1
Name
UbuntuServer_22.04
Description
Ubuntu Server 22.04 VirtualBox Image...
Guest OS Type
Ubuntu (64-bit)
CPU
2
RAM
2048 MB
DVD
USB Controller
Machine Base Folder:
D:\virtualbox
MAC Address Policy:
Include only NAT network adapter MAC addresses
Additional Options:
Import hard drives as VDI
Appliance is not signed
Help
Back
Finish
Cancel


Ubuntu 22.04 LTS ubuntuserver2204 tty1
LINUXVMIMAGES.COM
Host Name: ubuntuserver2204
Time: Tue Nov 19 2024 07:44:06
System IP address: 10.0.2.15
User Name: ubuntu
Password: ubuntu (sudo su -)
ubuntuserver2204 login: [20.165803] cloud-init[904]: Cloud-init v. 24.3.1-0ubuntu0~22.04.1 runnin
g 'modules:config' at Tue, 19 Nov 2024 07:44:07 +0000. Up 20.13 seconds.
[22.433209] cloud-init[979]: Cloud-init v. 24.3.1-0ubuntu0~22.04.1 running 'modules:final' at Tue
, 19 Nov 2024 07:44:09 +0000. Up 22.39 seconds.
[22.595606] cloud-init[979]: Cloud-init v. 24.3.1-0ubuntu0~22.04.1 finished at Tue, 19 Nov 2024 0
7:44:09 +0000. Datasource DataSourceNone. Up 22.58 seconds





แก้ไขคอนฟิกกูเรชันไฟล์ .... โดยแทนที่ [IP Address]

... ด้วยไอพีแอดเดรสของ Nagios Core Server

allowed_host=127.0.0.1, [IP Address]

คำสั่งสำหรับการเปิด text editor?

§sudo nano /etc/nagios/nrpe.cfg

```
nrpe_user=nagios



# NRPE GROUP
# This determines the effective group that the NRPE daemon should run as.
# You can either supply a group name or a GID.
#
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd

nrpe_group=nagios



# ALLOWED HOST ADDRESSES
# This is an optional comma-delimited list of IP address or hostnames
# that are allowed to talk to the NRPE daemon. Network addresses with a bit mask
# (i.e. 192.168.1.0/24) are also supported. Hostname wildcards are not currently
# supported.
#
# Note: The daemon only does rudimentary checking of the client's IP
# address.  I would highly recommend adding entries in your /etc/hosts.allow
# file to allow only the specified host to connect to the port
# you are running this daemon on.
#
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd

allowed_hosts=127.0.0.1, nagios_core_IP_address_



# COMMAND ARGUMENT PROCESSING
```

ตรวจสอบ root filesystem โดยใช้คำสั่ง df -h

```
ubuntu@ubuntuserver2204:~$ df -h
Filesystem                         Size  Used Avail Use% Mounted on
tmpfs                              197M  1.1M  196M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv   98G  6.4G   87G   7% /
tmpfs                              982M     0  982M   0% /dev/shm
tmpfs                              5.0M     0  5.0M   0% /run/lock
/dev/sda2                          2.0G  240M  1.6G  14% /boot
tmpfs                              197M  4.0K  197M   1% /run/user/1000
```

แก้ไขคอนฟิกกเรชันไฟล์สำหรับการเฝ้าตรวจดิสก์ โดยเปลี่ยนจาก Command[check_hda/-.....dev/hda1 เป็น Command[check_hda1]...../dev/map.....

```
# The following examples use hardcoded command arguments...
# This is by far the most secure method of using NRPE

command[check_users]=/usr/lib/nagios/plugins/check_users -w 5 -c 10
command[check_load]=/usr/lib/nagios/plugins/check_load -r -w .15,.10,.05 -c .30,.25,.20
command[check_hda1]=/usr/lib/nagios/plugins/check_disk -w 20% -c 10% -p /dev/mapper_
command[check_zombie_procs]=/usr/lib/nagios/plugins/check_procs -w 5 -c 10 -s Z
command[check_total_procs]=/usr/lib/nagios/plugins/check_procs -w 150 -c 200
```

ตรวจสอบไอพีแอดเดรสของโฮสต์ด้วยคำสั่ง Sip address เปลี่ยน server_address=ผลลัพธ์ที่ได้จากคำสั่ง ip address

```
# SERVER ADDRESS
# Address that nrpe should bind to in case there are more than one interface
# and you do not want nrpe to bind on all interfaces.
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd

server_address=127.0.0.1
```

รีสตาร์ทเซอร์วิส

```
ubuntu@ubuntuserver2204:~$ sudo service nagios-nrpe-server restart
```

- การเฝ้าตรวจโฮสต์ต่างๆ ที่ติดตั้ง NRPE เรียบร้อยแล้วจะต้องมีการสร้างไฟล์คอนฟิกกูเรชั่นบน Nagios core สำหรับเครื่องนั้นๆ ทุกครั้ง
- ไฟล์คอนฟิกกูเรชันจะต้องถูกจัดเก็บในไดเร็คทอรี/ust/local/nagios/etc/servers/
- ชื่อไฟล์จะต้องสอดคล้องกับชื่อเครื่องนั้นๆ โดยในแล็บนี้คือ ubuntuserver2204 ชื่อไฟล์จึงควรเป็น ubuntuserver2204.cfg
- สร้างไฟล์ ubuntuserver2204.cfg
- $sudo nano /usr/local/nagios/etc/servers/ubuntuserver2204.cfg

```
  GNU nano 6.2              /usr/local/nagios/etc/servers/ubuntuserver2
define host{
                use             linux-server
                host_name       ubuntuserver2204
                alias           my_vm_server
                address         192.168.1.12
                max_check_attempts      5
                check_period    24x7
                notification_interval   30
                notification_period     24x7
}
define service{
                use             generic-service
                host_name       ubuntuserver2204
                service_description     PING
                check_command   eck_ping!100.0,20%!500.0,60%
}
define service{
                use             generic-service
                host_name       ubuntuserver2204
                service_description     SSH
                check_command   check_ssh
                notifications_enable    0
}

define service{
                use             generic-service
                host_name       ubuntuserver2204
                service_description     HTTP
                check_command   check_http
                notification_enabled    0
}
```