

Assignment - 9

AIM: Installation of Nagios on Ubuntu System

LO1: To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements.

LO5: To understand concept of containerization and analyze the containerization of OS images and deployment of applications over Docker.

THEORY:

What is Nagios?

Nagios is an open source IT system monitoring tool. It was designed to run on the Linux operating system and can monitor devices running Linux, Windows and Unix OSes.

Nagios software runs periodic checks on critical parameters of application, network and server resources. For example, Nagios can monitor memory use, disk use and microprocessor load, as well as the number of currently running processes and log files. Nagios also can monitor services such as Simple Mail Transfer Protocol (SMTP), Post Office Protocol 3, Hypertext Transfer Protocol (HTTP) and other common network protocols. Nagios initiates active checks, while passive checks come from external applications connected to the monitoring tool.

Originally released in 1999 as NetSaint, Nagios was developed by Ethan Galstad and subsequently refined by numerous contributors as an open source project. Nagios Enterprises, a company based around the Nagios Core technology, offers multiple products, such as Nagios XI, Log Server, Network Analyzer and Fusion.

How Nagios works

Users can choose to work in the command-line interface or select a web-based graphical user interface in some versions of Nagios and from third parties. Nagios' dashboard provides an overview of the critical parameters monitored on assets.

Based on the parameters and thresholds defined, Nagios can send out alerts if critical levels are reached. These notifications can be sent through email and text messages. An authorization system enables administrators to restrict access.

Nagios runs both agent-based and agentless configurations. Independent agents are installed on any hardware or software system to collect data that is then reported back to the management server. Agentless monitoring uses existing protocols to emulate an agent. Both approaches can monitor file system use, OS metrics, service and process states. Examples of Nagios agents include Nagios Remote Data Processor (NRDP), Nagios Cross Platform Agent and NSClient++.

Nagios plugins

Nagios can also run remote scripts and plugins using the Nagios Remote Plugin Executor (NRPE) agent. NRPE enables remote monitoring of system metrics such as system load, memory and disk

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use. It consists of the check_nrpe plugin, which is stored on the local monitoring machine, and NRDP, which runs on the remote machine. Nagios uses a plugin to consolidate data from the NRPE agent before it goes to the management server for processing. NRPE can also communicate with Windows agents to monitor Windows machines.

Nagios supports plugins that are stand-alone add-ons and extensions so users can define targets and which target parameters to monitor. Nagios plugins process command-line arguments and communicate commands with Nagios Core.

There are around 50 plugins developed and maintained by Nagios, while there are over 3,000 from the community. These plugins are categorized into lists including hardware, software, cloud, OSes, security, log files and network connections. As an example, when used in conjunction with environmental-sensing systems, a Nagios plugin can share data on environmental variables, such as temperature, humidity or barometric pressure.

Nagios tools

Nagios has proven popular among small and large businesses, as well as internet service providers, educational institutions, government agencies, healthcare institutions, manufacturing companies and financial institutions.

Users can choose among free and paid options, depending on the needed services and support.

Nagios Core

The service that was originally known as Nagios is now referred to as Nagios Core. Core is freely available as an open-source monitoring software for IT systems, networks and infrastructure. Core contains a wide array of infrastructure monitoring through allowing plugins to extend its monitoring capabilities. It is the base for paid Nagios monitoring systems.

Nagios Core has an optional web interface, which displays network status, notifications and log files. Core can notify its user when there are server or host issues. Additionally, Core can monitor network services such as SMTP, HTTP and Ping.

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Activities Terminal Sep 26 14:03
lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

lab1002@lab1002-HP-280-G3-MT:~$ sudo apt update
[sudo] password for lab1002:
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1,012 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [802 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [493 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [227 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 DEP-11 Metadata [100 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [15.6 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [900 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted i386 Packages [31.9 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [145 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [528 B]
Get:15 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [984 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/main i386 Packages [328 kB]
Get:17 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [169 kB]
Get:18 http://security.ubuntu.com/ubuntu jammy-security/main amd64 DEP-11 Metadata [43.0 kB]
Get:19 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [11.3 kB]
Get:20 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [884 kB]
Get:21 http://security.ubuntu.com/ubuntu jammy-security/restricted i386 Packages [31.5 kB]
Get:22 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [142 kB]
Get:23 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [532 B]
Get:24 http://security.ubuntu.com/ubuntu jammy-security/universe i386 Packages [559 kB]
Get:25 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [785 kB]
Get:26 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [143 kB]
Get:27 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [655 kB]
Get:28 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [215 kB]
Get:29 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 DEP-11 Metadata [289 kB]
Get:30 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 DEP-11 Metadata [40.0 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.7 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [36.5 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
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Building dependency tree... Done
Reading state information... Done
192 packages can be upgraded. Run 'apt list --upgradable' to see them.
lab1002@lab1002-HP-280-G3-MT:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  firefox linux-headers-6.2.0-33-generic linux-image-6.2.0-33-generic linux-modules-6.2.0-33-generic
  linux-modules-extra-6.2.0-33-generic
The following packages have been kept back:
  gjs libgjs0g
The following packages will be upgraded:
  alsa-ucm-conf apparmor apport apport-gtk apt apt-utils base-files bind9-dnsutils bind9-host bind9-libs cups cups-bsd cups-client
  cups-common cups-core-drivers cups-daemon cups-ipp-utils cups-ppdc cups-server-common distro-info distro-info-data dpkg evince
  evince-common fwupd fwupd-signed gdm3 gir1.2-adw-1 gir1.2-gdm-1.0 gir1.2-gnomedesktop-3.0 gir1.2-gtk-4.0 gir1.2-mutter-10 gir1.2-pango-1.0
  gnome-control-center gnome-control-center-data gnome-control-center-faces gnome-desktop3-data gnome-remote-desktop gnome-session-canberra
  gnome-settings-daemon gnome-settings-daemon-common gnome-shell gnome-shell-common gnome-shell-extension-ubuntu-dock in-config
  intramfs-tools intramfs-tools-bin intramfs-tools-core iptables isc-dhcp-client isc-dhcp-common libadwaita-1.0 libapparmor1
  libapt-pkg6.0 libcb-bin libc6 libc6-dbg libcanberra-gtk3-0 libcanberra-gtk3-module libcanberra-pulse libcanberra0 libcupsl2 libcupsinage2
  libegl-mesa0 libevdev2 libevview3-3 libffprnt-2.2 libfwupd2 libfwupdplugin5 libgbm1 libgdm1 libgl1-amber-dri libgl1-mesa-dri
  libglapi-mesa libglx-mesa0 libgnome-bg-4.1 libgnome-desktop-3-19 libgnome-desktop-4-1 libgpgme11 libgpgmepp6 libgssapi-krb5-2 libgtk-4-1
  libgtk-4-bin libgtk-4-common libidn2 libinput-bin libinput10 libip4tc2 libip6tc2 libk5crypto3 libkrb5-3 libkrb5support0 libldap-2.5-0
  libldap-common libmbim-glib4 libmbim-proxy libmm-glib0 libmutter-10-0 libnautilus-extension1a libnetplan0 libnss-systemd libpam-systemd
  libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpangoxft-1.0-0 libpcsc-lite1 libpulse-mainloop-glib0 libpulse0 libpulsedsp
  libqmi-glib5 libqmi-proxy librasl2-2 librasl2-modules librasl2-modules-db librasl2-modules-gssapi-mit librasl2-modules-libsnmp-base librasl2-modules-libsnmp40
  librasl2-modules-libsystemd0 libudev1 libunwind8 libwbclient0 libwebp7 libwebpdemux2 libwebpmux3 libxatracker2 libxtables12 linux-firmware
  linux-generic-hwe-22.04 linux-headers-generic-hwe-22.04 linux-image-generic-hwe-22.04 locales mesa-vulkan-drivers modemmanager
  mutter-common nautilus nautilus-data netplan.io openssh-client pulseaudio pulseaudio-module-bluetooth pulseaudio-utils python-apt-common
  python3-apport python3-apt python3-debian python3-distro-info python3-distupgrade python3-macaronbakery python3-problem-report
  python3-software-properties python3-speech python3-tz samba-libs software-properties-common software-properties-gtk speech-dispatcher
  speech-dispatcher-audio-plugins speech-dispatcher-espeak-ng systemd systemd-hwe-hwdb systemd-oom systemd-sysv systemd-timesyncd tcpdump
  thermald tzdata ubuntu-advantage-tools ubuntu-desktop ubuntu-desktop-minimal ubuntu-drivers-common ubuntu-minimal
  ubuntu-release-upgrader-core ubuntu-release-upgrader-gtk ubuntu-standard udev ufw update-notifier update-notifier-common xserver-common
  xserver-xephyr xserver-xorg-core xserver-xorg-Legacy xserver-xorg-video-amdgpu yaru-theme-gnome-shell yaru-theme-gtk yaru-theme-icon
  yaru-theme-sound
190 upgraded, 6 newly installed, 0 to remove and 2 not upgraded.
```


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Its output will be used to detect bootable binaries on them and create new boot entries.
Found Windows Boot Manager on /dev/sda2@EFI/Microsoft/Boot/bootmgfw.efi
Adding boot menu entry for UEFI Firmware Settings ...
done
Processing triggers for initramfs-tools (0.140ubuntu13.4) ...
update-initramfs: Generating /boot/initrd.img-6.2.0-33-generic
Processing triggers for libc-bin (2.35-0ubuntu3.3) ...
lab1002@lab1002-HP-280-G3-MT: $ sudo apt install wget apache2 php libapache2-mod-php build-essential unzip openssl libssl-dev
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.
openssl is already the newest version (3.0.2-0ubuntu1.10).
openssl set to manually installed.
unzip is already the newest version (6.0-26ubuntu3.1).
unzip set to manually installed.
The following packages were automatically installed and are no longer required:
  linux-headers-6.2.0-32-generic linux-hwe-6.2.0-32 linux-image-6.2.0-32-generic linux-modules-6.2.0-32-generic
  linux-modules-extra-6.2.0-32-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils binutils binutils-common binutils-x86-64-linux-gnu dpkg-dev fakeroot g++ g++-11 gcc gcc-11
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libapache2-mod-php8.1 libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap libasan6 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl
  libfakeroot libfile-fcntllock-perl libgcc-11-dev libitm1 liblsan0 libnsl-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1
  linux-libc-dev lto-disabled-list make manpages-dev php-common php8.1 php8.1-cli php8.1-common php8.1-opcache php8.1-readline rpcsvc-proto
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom binutils-doc debian-keyring g++-multilib g++-11-multilib gcc-11-doc
  gcc-multilib autoconf automake libtool flex bison gcc-doc gcc-11-multilib gcc-11-locales php-pear glbc-doc git bzr libssl-doc
  libstdc++-11-doc make-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils binutils binutils-common binutils-x86-64-linux-gnu build-essential dpkg-dev fakeroot g++
  g++-11 gcc gcc-11 libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libapache2-mod-php libapache2-mod-php8.1
  libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libasan6 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0
  libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libfakeroot libfile-fcntllock-perl libgcc-11-dev libitm1 liblsan0 libnsl-dev libquadmath0
  libssl-dev libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev lto-disabled-list make manpages-dev php php-common php8.1
  php8.1-cli php8.1-common php8.1-opcache php8.1-readline rpcsvc-proto
```

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Activities Terminal Sep 26 14:04 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.3) ...
Processing triggers for php8.1-cli (8.1.2-1ubuntu2.14) ...
Processing triggers for libapache2-mod-php8.1 (8.1.2-1ubuntu2.14) ...
lab1002@lab1002-HP-280-G3-MT: $ sudo useradd nagios
lab1002@lab1002-HP-280-G3-MT: $ sudo groupadd nagcmd
lab1002@lab1002-HP-280-G3-MT: $ sudo usermod -a -G nagcmd nagios
lab1002@lab1002-HP-280-G3-MT: $ sudo usermod -a -G nagcmd www-data
lab1002@lab1002-HP-280-G3-MT: $ wget https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
--2023-09-26 13:58:03-- https://github.com/NagiosEnterprises/nagioscore/archive/nagios-4.4.6.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)|20.207.73.82|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/NagiosEnterprises/nagioscore/tar.gz/refs/tags/nagios-4.4.6 [following]
--2023-09-26 13:58:03-- https://codeload.github.com/NagiosEnterprises/nagioscore/tar.gz/refs/tags/nagios-4.4.6
Resolving codeload.github.com (codeload.github.com)... 20.207.73.88
Connecting to codeload.github.com (codeload.github.com)|20.207.73.88|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/x-gzip]
Saving to: 'nagios-4.4.6.tar.gz'

nagios-4.4.6.tar.gz [ 10.81M 10.0MB/s in 1.1s]

2023-09-26 13:58:05 (10.0 MB/s) - 'nagios-4.4.6.tar.gz' saved [11333431]

lab1002@lab1002-HP-280-G3-MT: $ tar -zxvf nagios-4.4.6.tar.gz
nagioscore-nagios-4.4.6/
nagioscore-nagios-4.4.6/.gitignore
nagioscore-nagios-4.4.6/.travis.yml
nagioscore-nagios-4.4.6/CONTRIBUTING.md
nagioscore-nagios-4.4.6/Changelog
nagioscore-nagios-4.4.6/INSTALLING
nagioscore-nagios-4.4.6/LLEGAL
nagioscore-nagios-4.4.6/LICENSE
nagioscore-nagios-4.4.6/Makefile.in
nagioscore-nagios-4.4.6/README.md
nagioscore-nagios-4.4.6/THANKS
```

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```
Activities Terminal Sep 26 14:04 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6
$ cd nagioscore-nagios-4.4.6
$ ./configure --with-httpd-conf=/etc/apache2/sites-enabled
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
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 forunistd.h... yes
checking arpa/inet.h usability... yes
checking arpa/inet.h presence... yes
checking for arpa/inet.h... yes
checking ctype.h usability... yes
checking ctype.h presence... yes
checking for ctype.h... yes
```

```
Activities Terminal Sep 26 14:05 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6
Web Interface Options:
-----
HTML URL: http://localhost/nagios/
CGI URL: http://localhost/nagios/cgi-bin/
Traceroute (used by WAP):

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

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ make all
cd ./base && make
make[1]: Entering directory '/home/lab1002/nagioscore-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 nebmodes.o nebmodes.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));
    |         ^~~~~~
```


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```
Activities Terminal Sep 26 14:05 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

Enjoy.

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install
cd ./base && make install
make[1]: Entering directory '/home/lab1002/nagioscore-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 /usr/local/nagios/bin
/usr/bin/install -c -s -m 774 -o nagios -g nagios nagiosstats /usr/local/nagios/bin
make[1]: Leaving directory '/home/lab1002/nagioscore-nagios-4.4.6/base'
cd ./cgi && make install
make[1]: Entering directory '/home/lab1002/nagioscore-nagios-4.4.6/cgi'
make install-basic
make[2]: Entering directory '/home/lab1002/nagioscore-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 '/home/lab1002/nagioscore-nagios-4.4.6/cgi'
make[1]: Leaving directory '/home/lab1002/nagioscore-nagios-4.4.6/cgi'
cd ./html && make install
make[1]: Entering directory '/home/lab1002/nagioscore-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/sst
/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
```

```
Activities Terminal Sep 26 14:09 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

make[1]: Leaving directory '/home/lab1002/nagioscore-nagios-4.4.6'
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-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
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-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.

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-commandmode
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/var/rw
chmod g+ws /usr/local/nagios/var/rw

*** External command directory configured ***

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-exfoliation

*** Exfoliation theme installed ***
NOTE: Use 'make install-classicut' to revert to classic Nagios theme

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$
```

NAME – Bhuvan Sawant

BATCH – T22

ROLL NO – 110

```
Activities Terminal Sep 26 14:11 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

/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.

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-commandmode
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/var/rw
chmod g+s /usr/local/nagios/var/rw

*** External command directory configured ***

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-exfoliation

*** Exfoliation theme installed ***
NOTE: Use 'make install-classicui' to revert to classic Nagios theme

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/apache2/sites-enabled/nagios.conf
if [ 0 -eq 1 ]; then \
    ln -s /etc/apache2/sites-enabled/nagios.conf /etc/apache2/sites-enabled/nagios.conf; \
fi

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

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-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
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$
```

```
Activities Terminal Sep 26 14:13 lab1002@lab1002-HP-280-G3-MT: ~/nagioscore-nagios-4.4.6

*** 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.

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-commandmode
/usr/bin/install -c -m 775 -o nagios -g nagios -d /usr/local/nagios/var/rw
chmod g+s /usr/local/nagios/var/rw

*** External command directory configured ***

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-exfoliation

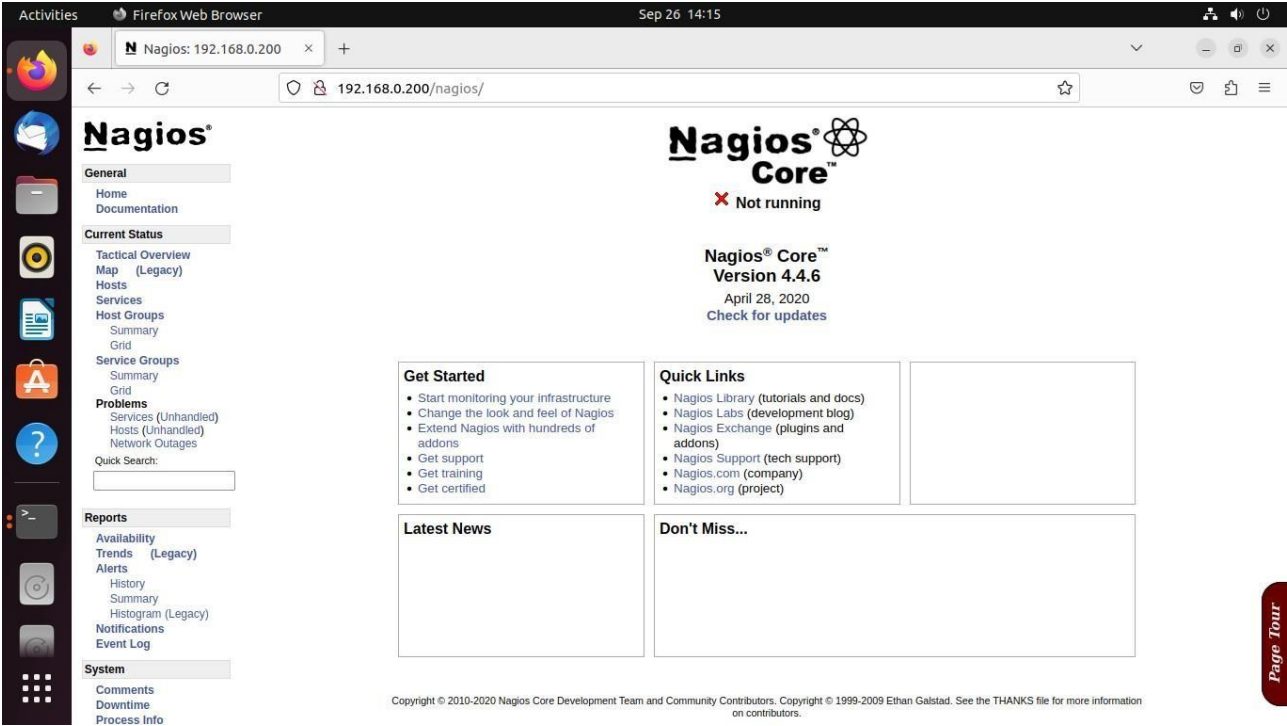
*** Exfoliation theme installed ***
NOTE: Use 'make install-classicui' to revert to classic Nagios theme

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/apache2/sites-enabled/nagios.conf
if [ 0 -eq 1 ]; then \
    ln -s /etc/apache2/sites-enabled/nagios.conf /etc/apache2/sites-enabled/nagios.conf; \
fi

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

lab1002@lab1002-HP-280-G3-MT:~/nagioscore-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
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo a2enmod rewrite
Enabling module rewrite.
To activate the new configuration, you need to run:
systemctl restart apache2
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo systemctl restart apache2
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo systemctl start nagios
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$ sudo systemctl enable nagios
Created symlink /etc/systemd/system/multi-user.target.wants/nagios.service → /lib/systemd/system/nagios.service.
lab1002@lab1002-HP-280-G3-MT:~/nagioscore-nagios-4.4.6$
```

NAME – Bhuvan Sawant
BATCH – T22
ROLL NO – 110



CONCLUSION: Here, we studied about Nagios and successfully installed Nagios on ubuntu system.