Academic Year: 2021-22 Semester: V
Class / Branch: TE IT
Subject: Advanced Devops Lab (ADL)
Subject Lab Incharge: Prof.Manjusha Kashilkar

EXPERIMENT NO. 09
Aim: To Understand Continuous monitoring and Installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

Theory:

Continuous monitoring is a process to detect, report, respond all the attacks which occur in its infrastructure. Once the application is deployed into the server, the role of continuous monitoring comes in to play. The entire process is all about taking care of the company's infrastructure and respond appropriately.

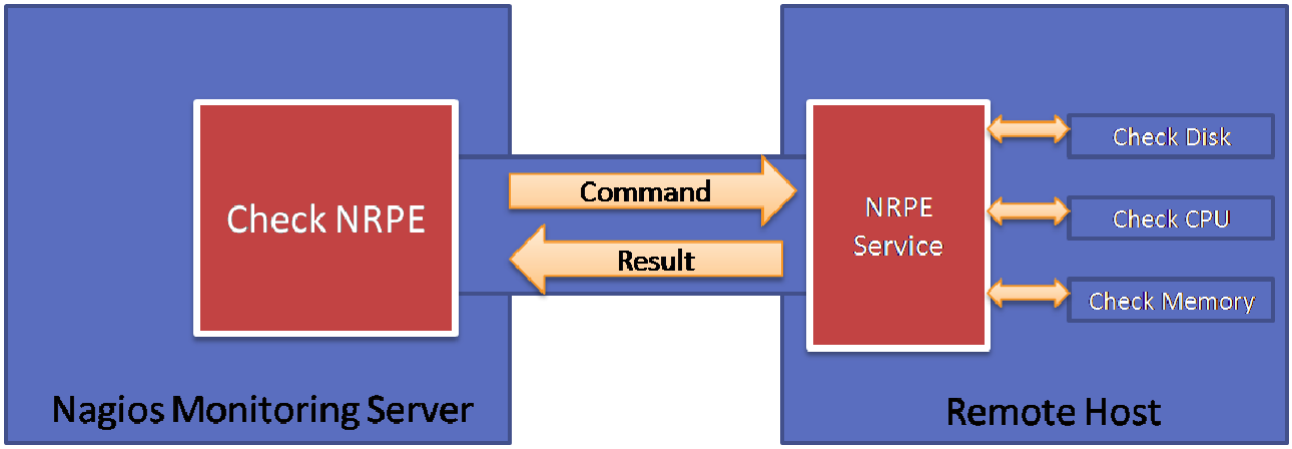
Why We Need Nagios tool?
Here, are the important reasons to use Nagios monitoring tool:

- Detects all types of network or server issues
- Helps you to find the root cause of the problem which allows you to get the permanent solution to the problem
- Active monitoring of your entire infrastructure and business processes
- Allows you to monitors and troubleshoot server performance issues
- Helps you to plan for infrastructure upgrades before outdated systems create failures
- You can maintain the security and availability of the service
- Automatically fix problems in a panic situation

- Nagios is the most popular, open source, powerful monitoring system for any kind of infrastructure. It enables organizations to identify and resolve IT infrastructure problems before they affect critical business processes. Nagios has the capability of monitoring application, services, entire IT infrastructure.

- NRPE is known as **Nagios Remote Plugin Executor**. The NRPE add-on is designed to execute plugins on remote Nix systems. In this setup, NRPE daemon is installed on the remote system to which services need to monitor through Nagios server.
- NRPE runs as a daemon on remote systems and waits for Nagios requests. When Nagios server needs to check the status of any resources or applications to that remote host, sends

and commands signal, which command definition is stored on NRPE service. NRPE takes Nagios server request and execute the command on the local system and sends the result back to Nagios.



1 - Pre-requisite

First requirement is to install Apache and PHP first. Use the following commands to complete it. And use commands to install required packages for Nagios.

manjusha@apsit:~$ sudo apt-get update
manjusha@apsit:~$ sudo apt-get install wget build-essential unzip openssl libssl- dev
manjusha@apsit:~$ sudo apt-get install apache2 php libapache2-mod-php php-gd libgd-dev

2 – Create Nagios User

Create a new user account for Nagios in your system and assign a password.
manjusha@apsit:~$ sudo adduser nagios

Now create a group for Nagios setup “nagcmd” and add nagios user to this group. Also, add nagios user in the Apache group.

manjusha@apsit:~$sudo groupadd nagcmd
manjusha@apsit:~$sudo usermod -a -G nagcmd nagios
manjusha@apsit:~$sudo usermod -a -G nagcmd www-data

Step 3 – Install Nagios Core Service

After installing required dependencies and adding user accounts and Nagios core installation. Download latest Nagios core service from the official site.

manjusha@apsit:~$cd /opt/

manjusha@apsit:~$sudo wget https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.3.tar.gz
manjusha@apsit:~$sudo tar xzf nagios-4.4.3.tar.gz

After extracting naviate to nagios source directory and install using make command.

manjusha@apsit:~$cd nagios-4.4.3

manjusha@apsit:~$sudo ./configure --with-command-group=nagcmd
manjusha@apsit:~$sudo make all
manjusha@apsit:~$sudo make install
manjusha@apsit:~$sudo make install-init
manjusha@apsit:~$sudo make install-daemoninit

manjusha@apsit:~$sudo make install-config
manjusha@apsit:~$sudo make install-commandmode
manjusha@apsit:~$sudo make install-exfoliation

Now copy event handlers scripts under libexec directory. These binaries provides multiple events triggers for your Nagios web interface.

manjusha@apsit:~$sudo cp -R contrib/eventhandlers/ /usr/local/nagios/libexec/

manjusha@apsit:~$sudo chown -R nagios:nagios/usr/local/nagios/libexec/eventhandlers

Step 4 – Setup Apache with Authentication

Now create an Apache configuration file for your Nagios server as below:

manjusha@apsit:~$sudo nano /etc/apache2/conf-available/nagios.conf

Add below lines to nagios.conf 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"

<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>

To setup apache authentication for user **nagiosadmin**

manjusha@apsit:~$sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

Enable Apache configuration and restart Apache service to make the new settings take effect.

manjusha@apsit:~$sudo a2enconf nagios manjusha@apsit:~$sudo a2enmod cgi rewrite
manjusha@apsit:~$sudo service apache2 restart

Step 5 – Installing Nagios Plugins
After installing and configuring Nagios core service, Download latest nagios-plugins source and install using following commands.
manjusha@apsit:~$cd /opt
manjusha@apsit:~$sudo wget http://www.nagios-plugins.org/download/nagios-plugins- 2.2.1.tar.gz
manjusha@apsit:~$sudo tar xzf nagios-plugins-2.2.1.tar.gz manjusha@apsit:~$cd nagios-plugins-2.2.1

Now compile and install Nagios plugins
manjusha@apsit:~$sudo ./configure --with-nagios-user=nagios --with-nagios- group=nagios --with-openssl
manjusha@apsit:~$sudo make
manjusha@apsit:~$sudo make install

Step 6 – Verify Settings
Use the Nagios commands to verify the Nagios installation and configuration file. After successfully verify start the Nagios core service.
manjusha@apsit:~$/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg
manjusha@apsit:~$ sudo service nagios start

Also configure Nagios to auto start on system boot.

Step 7 – Access Nagios Web Interface
Access your nagios setup by access nagios server using hostname or ip address followed by /nagios.
http://127.0.0.1/nagios/
Prompting for Apache Authentication Password –
username: nagiosadmin
Password : 123456 (which you enter while configuration)

Nagios After login screen –

We have successfully installed and configured Nagios Monitoring Server core service in our system now we need to install NRPE on all remote Linux systems to monitor with Nagios.

Conclusion: Write your own findings.