Server Documentation

Server 1: Nagios/DNS

Installing Nagios

Step 1 - Download and extract the Nagios core
cd ~
wget https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.2.0.tar.gz
tar -xzf nagios*.tar.gz
cd nagios-4.2.0

Step 2 - Compile Nagios
./configure --with-nagios-group=nagios --with-command-group=nagcmd
make all
sudo make install
sudo make install-commandmode
sudo make install-init
sudo make install-config
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/apache2/sites-available/nagios.conf
cp -R contrib/eventhandlers/ /usr/local/nagios/libexec/
chown -R nagios:nagios /usr/local/nagios/libexec/eventhandlers

Step 3 - Install the Nagios Plugins
cd ~
wget https://nagios-plugins.org/download/nagios-plugins-2.1.2.tar.gz
tar -xzf nagios-plugins*.tar.gz
cd nagios-plugin-2.1.2/
./configure --with-nagios-user=nagios --with-nagios-group=nagios --with-openssl
make
make install

Step 4 - Configure Nagios
vim /usr/local/nagios/etc/nagios.cfg
uncomment - cfg_dir=/usr/local/nagios/etc/servers
mkdir -p /usr/local/nagios/etc/servers
vim /usr/local/nagios/etc/objects/contacts.cfg

Configuring Apache
Step 1 - enable Apache modules
sudo a2enmod rewrite
sudo a2enmod cgi
sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

Step 2 - enable the Nagios virtualhost
sudo ln -s /etc/apache2/sites-available/nagios.conf /etc/apache2/sites-enabled/
Step 3 – Edit Nagios File
cd /etc/init.d/
cp /etc/init.d/skeleton /etc/init.d/nagios
vim /etc/init.d/Nagios
Add the following:
DESC="Nagios"
NAME=nagios
DAEMON=/usr/local/nagios/bin/$NAME
DAEMON_ARGS="-d /usr/local/nagios/etc/nagios.cfg"
PIDFILE=/usr/local/nagios/var/$NAME.lock

Step 4. Start Nagios and Apache
chmod +x /etc/init.d/nagios
service apache2 restart
service nagios start

Configure Nagios with Agents

Install Nagios Plugin

Step 1 – Install NRPE and Plugins
sudo apt-get update
sudo apt-get install nagios-nrpe-server nagios-plugins

Step 2 – Configure NRPE Client
//Add Nagios Server host
 allowed_hosts=127.0.0.1

Step 3 – Start NRPE Server
sudo /etc/init.d/nagios-nrpe-server restart

ADD WebServer / MySQL File to Monitor
cd /usr/local/Nagios/etc/servers
//update below files with IP address of the instances
Add webserver.cfg
Add MySQL.cfg
Add LocalAgent.cfg
Cd /usr/local/Nagios/etc/objects
//Replace below files:
Commands.cfg
Contacts.cfg
Cd /usr/local/Nagios/etc
//Replace below files:
Nagios.cfg

Cd /usr/local/Nagios/libexec
//Add below files:
Check_DNS_uptime
Check_nrpe
Cd /etc/Nagios/
//Replace below file:
Nrpe.cfg

Restart Nagios NRPE Server
sudo /etc/init.d/nagios-nrpe-server restart

INSTALL DNS SERVER

Step 1. Install DNS
sudo apt-get install bind9 dnsutils bind9-doc

Step 2. Configure Bind
cd /etc/bind

Add named.conf.local
Add named.con.options
Add db.facebook.com
Add db.google.com
Add db.31

Step 3. Add nameserver to Resolve

Sudo vi /etc/resolv.conf
Add "nameserver ipaddress"

Step 4. Restart BIND9

sudo /etc/init.d/bind9 start

Install POSTFIX and SENDMAIL

Step 1. Install Postfix
sudo apt-get update
sudo DEBIAN_PRIORITY=low apt-get install postfix

//follow on prompt direction to configure email

Step 2. Start Postfix
sudo systemctl restart postfix

Install Sendmail

Step 1. Download sendmail package
sudo apt-get install sendmail

Step 2. Configure /etc/hosts
127.0.0.1 localhost localhost.localdomain yourhost

Step 3. Send Mail
sudo sendmailconfig

Server 2: WebServer

Install Apache2

Step 1. Install apache package
sudo apt-get update
sudo apt-get install apache2

Step 2. Start Apache
sudo service apache2 restart

Install Nagios Plugin

Step 1 – Install NRPE and Plugins
sudo apt-get update
sudo apt-get install nagios-nrpe-server nagios-plugins

Step 2 – Configure NRPE Client
//Add Nagios Server host
 allowed_hosts=127.0.0.1

Step 3 – Start NRPE Server
sudo /etc/init.d/nagios-nrpe-server restart

Server 3: MySQL

Step 1. Install MySQL package
sudo apt-get update
sudo apt-get install mysql-server

Step 2. Start MySQL
sudo service mysql restart

Install Nagios Plugin

Step 1 – Install NRPE and Plugins
sudo apt-get update
sudo apt-get install nagios-nrpe-server nagios-plugins

Step 2 – Configure NRPE Client
//Add Nagios Server host
 allowed_hosts=127.0.0.1

Step 3 – Start NRPE Server
sudo /etc/init.d/nagios-nrpe-server restart

SQL BACKUP SCRIPT
copy sqldump.sh to home directory
Crontab –e
Add according to the time you would like to schedule
0 1 * * * /home/ubuntu/sqldump.sh >/dev/null

USAGE:

DNS Server:

Nslookup www.google.com
Nslookup www.facebook.com
Nslookup www.yahoo.com

Nagios Server:

Go to below URL:
Localhost/Nagios

SQL Server:
Mysql –u root –p
Show databases;

Apache Server:
Go to main page:
localhost

FILE EXPLANATIONS

DNS SERVER

//Located Under /Nagios/bind

db.google.com

- Forward zone file
- Redirects www.google.com to localhost
- Resolves Google.com to local IP address 127.0.0.1 using DNS Server

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db.facebook.com

- Forward zone file
- www.facebook.com has been blocked. IP range of facebook has been blacklisted.
- Resolves facebook.com to unknown address

---

db.31

- Reverse zone file
- Blocks IP Address Range 31.13.71/24 NOTE: facebook.com resolves to an IP address 31.13.71.36 (real IP of facebook) 31.13.71.36 is part of the block list and it will resolve to a blocked domain.

named.conf.local, named.conf.options, named.conf.default-zones

- named.conf.local - contains my zones
- named.conf.options - contains the configurations
- named.conf.default-zones - contains the local zones

NAGIOS Service

localhost.cfg , commands.cfg , nrpe.cfg , nagios.cfg , LocalAgent.cfg, Webserver.cfg, MySQL.cfg

- localhost.cfg - contains default services configurations
- LocalAgent.cfg - contains DNS service configuration (Acts as an Agent with NRPE)
- Webserver.cfg - contains apache2 service configuration (Acts as an Agent with NRPE)
- MySQL.cfg - contains mySQL service configuration (Acts as an Agent with NRPE)
- nagios.cfg - contains defualt configurations for schedule checks on host, services
- nrpe.cfg - nagios plugin server which contains commands to my added services for my Agent

- commands.cfg - contains default commands to default services

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SQL BACKUP SCRIPT

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sqldump.sh

- sqldump.sh - shell script that connects to the sql database and backups all the databases. It is written to rotate 7 days of data.

BASIC Procedures

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Documentation
                --- Nagios/DNS Server
                --Nagios/DNS Server
                - Installation
                Below URL contains instruction to install Nagios Server:
                        https://tecadmin.net/install-nagios-monitoring-server-on-ubuntu/#
                Below URL contains instructions to install Nagios NRPE Agent:

                        https://tecadmin.net/install-nrpe-on-ubuntu/
                Below URL contains instructions to install DNS Server:

                        https://www.ostechnix.com/install-and-configure-dns-server-ubuntu-16-
                04-lts/
                - Nagios Server Configuration
                Nagios.cfg - Added MySQL and Webserver host to monitor.
                Commands.cfg - Added NRPE command to activate NRPE installed plugins.
                LocalAgent.cfg - Created this file to perform DNS Server service checks.
                                Services: Ping and DNS Service Uptime
                                Notification: Added Notification entry to send email when
                Services or Host is                         down/up.
                MySQL.cfg - Created this file to perform SQL Server service checks.
                                Services: Ping and SQL Server Active
                                Notification: Added Notification entry to send email when
                Services or Host is                                         down/up.
```

Webserver.cfg - Created this file to perfrom Webserver Service checks.

           Services: Ping and apache2 service Active

           Notification: Added Notification entry to send email when Services or Host is down/up.

- DNS Server Configuration

named.conf.local - Listed all the forward zones and reverse zones found below to resolve.

named.conf.options - added google forwarders to resolve names/ip.

db.google.com - Created this file to resolve google.com to localhost

db.facebook.com - Created this file to resolve facebook.com to unknown host

db.31 - Created this file to blocklist facebook.com IPs.

-- POSTFIX and mailx

Installed POSTFIX and MailX to send email.

Below URL to install and configure email:

https://www.digitalocean.com/community/tutorials/how-to-install-and-configure-postfix-on-ubuntu-16-04

--- Web Server

Installation

Nagios NRPE Agent needs to be installed using link above.

Apache2 Installation URL -

https://www.digitalocean.com/community/tutorials/how-to-install-the-apache-web-server-on-ubuntu-16-04

Nrpe.cfg - Modified this file to allow Nagios/DNS Server host to connect.

--- MySQL Server

Nagios NRPE Agent needs to be installed using link above.

MySQL Installation URL - https://www.digitalocean.com/community/tutorials/how-to-install-mysql-on-ubuntu-16-04

Nrpe.cfg - Modified this file to allwo Nagios/DNS Server host to connect.

sqldump.sh - Created this script to backup all the databases and rotate the backup 7 days.

Added the sqldump.sh to crontab to run every day.

Command - Crontab -e

All of the URL posted above were followed step by step to install and configure the servers.