Monitor Remote Linux Systems With Nagios

On Remote Linux System

Nagios Remote Plugin Executor (abbreviated as NRPE) plugin allows you to monitor applications and services running on remote Linux / Windows hosts. This NRPE Add-on helps Nagios to monitor local resources like CPU, Memory, Disk, Swap, etc. of the remote host.

Install NRPE Add-on & Nagios Plugins

CentOS / RHEL

NRPE Server and Nagios plugins are available in the EPEL repository for CentOS / RHEL. So, configure the EPEL repository your CentOS / RHEL system.

**### CentOS 8 / RHEL 8 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rpm

**### CentOS 7 / RHEL 7 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

**### CentOS 6 / RHEL 6 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-6.noarch.rpm

Use the following command to install NRPE Add-on and Nagios plugins.

yum install -y nrpe nagios-plugins-all

Ubuntu / Debian

Use the following command to install NRPE Add-on and Nagios plugins.

sudo apt update

sudo apt install -y nagios-nrpe-server nagios-plugins

Configure NRPE Add-on

Modify the NRPE configuration file to accept the connection from the Nagios server, Edit the /etc/nagios/nrpe.cfg file.

**### CentOS / RHEL ###**

vi /etc/nagios/nrpe.cfg

**### Ubuntu / Debian ###**

sudo nano /etc/nagios/nrpe.cfg

Add the Nagios servers IP address, separated by comma like below.

allowed\_hosts=**192.168.0.10**

Configure Nagios Checks

The /etc/nagios/nrpe.cfg file contains the basic commands to check the attributes (CPU, Memory, Disk, etc.architecure) and services (HTTP, FTP, etc.) on remote hosts.

The path to Nagios plugins may change depends on your operating system architecture (i386 or x86\_64).

CentOS / RHEL

vi /etc/nagios/nrpe.cfg

Below command lines let you monitor logged in users, system load, root filesystem usage, swap usage and the total number of the process with the help of Nagios plugins.

# COMMAND DEFINITIONS

...

...

command[**check\_users**]=**/usr/lib64/nagios/plugins/check\_users** -w 5 -c 10

command[**check\_load**]=**/usr/lib64/nagios/plugins/check\_load** -w 15,10,5 -c 30,25,20

command[**check\_root**]=**/usr/lib64/nagios/plugins/check\_disk** -w 20% -c 10% -p /

command[**check\_swap**]=**/usr/lib64/nagios/plugins/check\_swap** -w 20% -c 10%

command[**check\_total\_procs**]=**/usr/lib64/nagios/plugins/check\_procs** -w 150 -c 200

Ubuntu / Debian

sudo nano /etc/nagios/nrpe.cfg

Below command lines let you monitor logged in users, system load, root filesystem usage, swap usage and the total number of the process with the help of Nagios plugins.

ADVERTISEMENT

# COMMAND DEFINITIONS

...

...

command[**check\_users**]=**/usr/lib/nagios/plugins/check\_users** -w 5 -c 10

command[**check\_load**]=**/usr/lib/nagios/plugins/check\_load** -w 15,10,5 -c 30,25,20

command[**check\_root**]=**/usr/lib/nagios/plugins/check\_disk** -w 20% -c 10% -p /

command[**check\_swap**]=**/usr/lib/nagios/plugins/check\_swap** -w 20% -c 10%

command[**check\_total\_procs**]=**/usr/lib/nagios/plugins/check\_procs** -w 150 -c 200

In the above command definition -w stands for ***warning*** and -c stands for ***critical***.

Test Nagios Checks

For example, execute the below command in another terminal to see the check result.

**Ubuntu 18.04:**

/usr/lib/nagios/plugins/check\_procs -w 150 -c 200

**Output:**

PROCS WARNING: 190 processes | procs=190;150;200;0;

Nagios plugin will count running processes and will warn you if the process count is more than 150, or it will report you critical if the process count is more than 200, and at the same time, the output will state OK if the count is below 150.

You can adjust the alert level as per your requirements.

Change warning to 200 and critical to 250 for testing purposes. Now you will see an OK message.

/usr/lib/nagios/plugins/check\_procs -w 200 -c 250

**Output:**

PROCS OK: 189 processes | procs=189;200;250;0;

These command definitions have to be entered on a template file on the Nagios server host to enable the monitoring.

Restart the NRPE service.

**### CentOS / RHEL ###**

systemctl start nrpe

systemctl enable nrpe

**### Ubuntu / Debian ###**

sudo systemctl restart nagios-nrpe-server

Firewall

Configure the firewall so that the Nagios server can able to reach the NRPE server running on a remote Linux host. Run these commands on a remote Linux machine.

FirewallD

firewall-cmd --permanent --add-port=5666/tcp

firewall-cmd --reload

IP Tables

iptables -I INPUT -p tcp --dport 5666 -m conntrack --ctstate NEW,ESTABLISHED -j ACCEPT

iptables -I OUTPUT -p tcp --sport 5666 -m conntrack --ctstate ESTABLISHED -j ACCEPT

/etc/init.d/iptables save

On Nagios Server

Install NRPE plugin

This NRPE plugin provides check\_nrpe plugin which contacts the NRPE server on remote machines to check the services or resource.

CentOS / RHEL

Nagios NRPE plugin is available in the EPEL repository for CentOS / RHEL. So, configure the EPEL repository your CentOS / RHEL system.

**### CentOS 8 / RHEL 8 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rpm

**### CentOS 7 / RHEL 7 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

**### CentOS 6 / RHEL 6 ###**

rpm -ivh https://dl.fedoraproject.org/pub/epel/epel-release-latest-6.noarch.rpm

Use the following command to install the NRPE plugin on your machine.

yum -y install nagios-plugins-nrpe

Ubuntu / Debian

Use the following command to install the NRPE plugin on your machine.

sudo apt install -y nagios-nrpe-plugin

Edit Configuration

Edit the Nagios configuration file to include all .cfg files inside the /usr/local/nagios/etc/servers directory.

ADVERTISEMENT

**### CentOS / RHEL ###**

vi /usr/local/nagios/etc/nagios.cfg

**### Ubuntu / Debian ###**

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

Add or uncomment the following line.

cfg\_dir=/usr/local/nagios/etc/servers

Create a configuration directory.

**### CentOS / RHEL ###**

mkdir /usr/local/nagios/etc/servers

**### Ubuntu / Debian ###**

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

Add Command Definition

Now it’s time to configure the Nagios server to monitor the remote client machine, and You’ll need to create a command definition in Nagios object configuration file to use the check\_nrpe plugin.

Open the commands.cfg file.

CentOS / RHEL

vi /usr/local/nagios/etc/objects/commands.cfg

Add the following Nagios command definition to the file.

# .check\_nrpe. command definition

define command{

command\_name check\_nrpe

command\_line /usr/lib64/nagios/plugins/check\_nrpe -H $HOSTADDRESS$ -t 30 -c $ARG1$

}

Ubuntu / Debian

sudo nano /usr/local/nagios/etc/objects/commands.cfg

Add the following Nagios command definition to the file.

# .check\_nrpe. command definition

define command{

command\_name check\_nrpe

command\_line /usr/lib/nagios/plugins/check\_nrpe -H $HOSTADDRESS$ -t 30 -c $ARG1$

}

Add a Linux host to Nagios server

Create a client configuration file /usr/local/nagios/etc/servers/client.cfg to define the host and service definitions of remote Linux host.

**### CentOS / RHEL ###**

vi /usr/local/nagios/etc/servers/client.cfg

**### Ubuntu / Debian ###**

sudo nano /usr/local/nagios/etc/servers/client.cfg

Copy the below content to the above file.

You can also use the following template and modify it according to your requirements. The following template is for monitoring logged in users, system load, disk usage (/ – partition), swap, and total process.

define host{

use linux-server

host\_name client

alias client

address **172.274.0.20**

}

define hostgroup{

hostgroup\_name linux-server

alias Linux Servers

members client

}

define service{

use local-service

host\_name client

service\_description SWAP Uasge

check\_command check\_nrpe!**check\_swap**

}

define service{

use local-service

host\_name client

service\_description Root / Partition

check\_command check\_nrpe!**check\_root**

}

define service{

use local-service

host\_name client

service\_description Current Users

check\_command check\_nrpe!**check\_users**

}

define service{

use local-service

host\_name client

service\_description Total Processes

check\_command check\_nrpe!**check\_total\_procs**

}

define service{

use local-service

host\_name client

service\_description Current Load

check\_command check\_nrpe!**check\_load**

}

Verify Nagios for any errors.

**### CentOS / RHEL ###**

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

**### Ubuntu / Debian ###**

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

Restart the Nagios server.

**### CentOS / RHEL ###**

systemctl restart nagios

**### Ubuntu / Debian ###**

sudo systemctl restart nagios

Check Nagios Monitoring

Go and check the Nagios web interface to view the new services we added just now.

Monitor Remote Linux Systems With Nagios – Hosts List

Within a minute, you should start seeing the status on the services page.

Monitor Remote Linux Systems With Nagios – Monitor Services