Monitor Remote Linux Systems With Nagios Monitoring Tool

## **NRPE Plugin**

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.

## **On Remote Linux System**

Switch to the root user.

sudo su -

### **Install NRPE Add-on & Nagios Plugins**

NRPE and Nagios plugins are not available in the base repository of CentOS 7. So, you need [configure EPEL repository on CentOS 7](https://www.itzgeek.com/how-tos/linux/centos-how-tos/enable-epel-repository-for-centos-7-rhel-7.html).

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

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

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

yum install -y nrpe nagios-plugins-all

### **Configure NRPE Add-on**

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

vi /etc/nagios/nrpe.cfg

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

allowed\_hosts=**192.168.1.10 # nagios-server public ip**

### **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. Below command lines let you monitor attributes with the help of Nagios plugins.

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

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

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 /dev/mapper/centos-root

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

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.

Tested on 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 when the process count is more than 150, or it will report you critical when 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 purpose. Now you can 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 template file on the Nagios server host to enable the monitoring.

Restart the NRPE service.

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

systemctl start nrpe

systemctl enable nrpe

## **On Nagios Server**

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

### **Install NRPE plugin**

Use the following command to install the check\_nrpe plugin on your machine.

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

yum -y install nagios-plugins-nrpe

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

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

Add or uncomment the following line.

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

Create a configuration directory.

mkdir /usr/local/nagios/etc/servers

### **Configure Nagios Server**

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.

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

Add the following Nagios command definition to the file.

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

# .check\_nrpe. command definition

define command{

command\_name check\_nrpe

command\_line /usr/lib64/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.itzgeek.local.cfg to define the host and service definitions of remote Linux host.

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

Copy the below content to the above file.

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

define host{

use linux-server

host\_name client.itzgeek.local

alias client.itzgeek.local

address 192.168.1.20

}

define hostgroup{

hostgroup\_name linux-server

alias Linux Servers

members client.itzgeek.local

}

define service{

use local-service

host\_name client.itzgeek.local

service\_description SWAP Uasge

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

}

define service{

use local-service

host\_name client.itzgeek.local

service\_description Root / Partition

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

}

define service{

use local-service

host\_name client.itzgeek.local

service\_description Current Users

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

}

define service{

use local-service

host\_name client.itzgeek.local

service\_description Total Processes

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

}

define service{

use local-service

host\_name client.itzgeek.local

service\_description Current Load

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

}

Replacing a value

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sed -i.bak 's/<old-value>/<new-value>/g' <file-path>

sed -i.bak 's/client.itzgeek.local/ec2-15-206-88-24.ap-south-1.compute.amazonaws.com/g' /usr/local/nagios/etc/servers/client.itzgeek.local.cfg

sed -i.bak 's/192.168.1.20/15.206.88.24/g' /usr/local/nagios/etc/servers/client.itzgeek.local.cfg

Verify Nagios for any errors.

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

Restart the Nagios server.

systemctl restart nagios

## **Monitor the remote machine**

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

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

## **Monitor Apache Service**

IN NODE

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1. Install apach httpd

yum install httpd -y

systemctl enable httpd

(still httpd not started)

2. create custom plugin

vi /usr/lib64/nagios/plugins/check\_apache

#!/bin/bash

service=httpd #mysql,tree,git

if (( $( ps -ef | grep -v grep | grep $service | grep root | wc -l ) > 0 ))

then

echo "$service is running!!!";

exit 0;

else

#echo "need to start $service";

exit 2;

fi

paste following in ps -ef | grep -v grep | grep $service | grep root | wc -l in terminal

check output , it is giving output as zero (0).

also check for the ps -ef | grep httpd

you will get

root 1872 20535 0 08:11 pts/1 00:00:00 grep --color=auto httpd

3. Assign execute mod to check\_apache plugin

ll /usr/lib64/nagios/plugins/check\_apache

chmod +x /usr/lib64/nagios/plugins/check\_apache

ll /usr/lib64/nagios/plugins/check\_apache

4. Add check\_apache command

vi /etc/nagios/nrpe.cfg

:/check\_

command[check\_apache]=/usr/lib64/nagios/plugins/check\_apache

save and quit

6. Directly paste following in terminal

/usr/lib64/nagios/plugins/check\_apache

you will get output as "need to start apache"

7. restart nrpe

systemctl restart nrpe

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