## Purpose

This document describes how to monitor hosts with Nagios XI by using the Nagios Remote Plugin Executor (NRPE) and the NRPE configuration wizard. The NRPE wizard allows for custom NRPE configurations, compared to the Linux Server wizard it is more advanced.

Target Audience

This document is intended for Nagios XI administrators who want to monitor hosts using the NRPE agent and configuration wizard to create custom NRPE monitoring configurations. The examples in this documentation require a moderate level of Linux operating system competence.

NRPE Overview

NRPE is a monitoring agent and protocol that is often used to monitor Linux and Unix machines with Nagios.
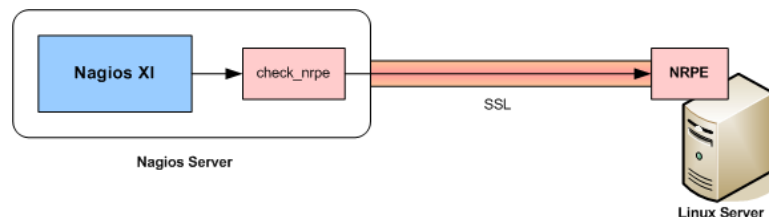
The NRPE addon consists of two parts:

- The `check_nrpe` plugin that runs on the Nagios XI server

- The NRPE agent that runs on the remote Linux/Unix server, processes requests from the client, and returns status information back to Nagios XI

Note: The NRPE protocol is supported by various Windows agents as well, so this documentation can be generally applied to monitoring Windows machines using NRPE. However, the configuration examples provided below are specific to the NRPE server that runs on Linux/Unix machines. The following documentation is applicable to monitoring Windows using NRPE:

Monitoring Windows Using NSClient++

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NRPE Agent Installation

There are several methods commonly used for installing the NRPE agent on your hosts.

Nagios XI Linux NRPE Agent

Nagios Enterprises provides a custom distribution of the NRPE agent and Nagios Plugins for Linux, this greatly simplifies the steps involved to start monitoring your Linux machines. The agent is configured ready to be used with the Nagios XI Linux Server configuration wizard.

While this distribution of the agent is oriented towards the **Linux Server** configuration wizard it can also be used by the **NRPE** configuration wizard. The **Linux Server** configuration wizard is a much simpler wizard to use and but does not allow as much customization that the **NRPE** configuration wizard provides. The following documentation is available for the **Linux Server** configuration wizard:

Monitoring Linux Using NRPE and Linux Server Monitoring Wizard

Install NRPE Manually From Source

If your operating system is not supported by the Linux NRPE Agent referenced above then you can install NRPE manually from source. Please refer to the following documentation to install NRPE from source:

How To Install NRPE v3 From Source

Existing NRPE Installations

If you were previously using Nagios Core to monitor Linux/Unix machines, you likely have NRPE already installed and configured on these machines. Nagios XI can monitor these machines using your existing NRPE setup. You may need to update the required configuration files to allow your Nagios XI server to communicate, one of the following files will contain the required settings:

```
/etc/xinetd.d/nrpe
/usr/local/nagios/etc/nrpe.cfg
```

The following KB article explains the different setting for each file:

NRPE - How to allow connections from check_nrpe

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NRPE Agent Configuration

When you run the NRPE configuration wizard, you will be required to provide the name of the NRPE commands (called "command directives") you want executed on the remote agent and arguments for those commands (if applicable). This guide will demonstrate several examples of these commands however for more detailed information please refer to the following KB article:

NRPE - Agent And Plugin Explained

Command directives will be defined in either the `/usr/local/nagios/etc/nrpe.cfg` file OR in any .cfg file in the `/usr/local/nagios/etc/nrpe/` directory.

Static vs Dynamic Command Directives

Here are two similar command directives:

Static

This configuration example is included when you install NRPE from source:

```
command[check_total_procs]=/usr/local/nagios/libexec/check_procs -w 150 -c 200
```

Dynamic

This configuration example is included when you install the Nagios XI Linux NRPE Agent:

```
command[check_procs]=/usr/local/nagios/libexec/check_procs $ARG1$
```

You can see that the same plugin is being used (`check_procs`) however the static example has the warning and critical thresholds defined whereas the dynamic example us using an argument that the Nagios XI server provides.

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The following table shows the differences between the two methods:

Static	Dynamic
Command directives are absolute and require you to manually change them if required (such as changing thresholds)	Command directives can receive arguments from the Nagios XI server, allowing you adjust arguments without touching the remote agent
Helps enforce monitoring standards	Allows for flexible monitoring configurations
Adds additional administrative overhead if not used in conjunction with a change control system	Less administrative overhead when changes are required
Less chance of being compromised by an exploit	Could be compromised by an exploit

The next step will demonstrate how these different methods can be used in the NRPE configuration wizard.

Running The NRPE Configuration Wizard

To begin using the NRPE wizard navigate via the top menu bar to **Configure** > **Run a configuring wizard** and select the **NRPE** wizard. In the following screenshot you can see how the search field allows you to quickly find a wizard.

On Step 1 you will be asked to supply the **address** of the machine running the NRPE agent.

You will also have to select the **Operating System**, in this case it is CentOS.

Click Next to progress to step 2.

Configuration Wizard: NRPE - Step 1

Server Information

IP Address: `10.25.13.37`
The IP address or FQDNS name of the server you'd like to monitor.

Operating System: `Linux - CentOS`
The operating system running on the server you'd like to monitor.

❮ Back   Next ❯

On step 2 you will configure all of the options for monitoring.

To start off with make sure a valid **Host Name** has been entered.

The NRPE Agent section can be ignored because you have already installed it.

Under Server Metrics you can see that I've un-checked the Ping box as I'm not interested in a ping service.

The next page discusses the NRPE commands.

Configuration Wizard: NRPE - Step 2

Server Details

IP Address: `10.25.13.37`

Operating System: CentOS

Host Name: `10.25.13.37`
The name you'd like to have associated with this host.

NRPE Agent

Specify options that should be used to communicate with the remote NRPE agent.

Agent Download: 💾 Download Agent

Agent Install Instructions: 📄 Agent Installation Instructions

SSL Encryption: `Enabled (Default)`
Determines whether or not data between the Nagios XI server and NRPE agent is encrypted. **Note**: Legacy NRPE installations may require that SSL support be disabled.

Server Metrics

Specify which services you'd like to monitor for the server.

☐ **Ping**
Monitors the server with an ICMP Ping. Useful for watching network latency and general uptime.

Earlier in the documentation you were shown the difference between static and dynamic commands, these screenshots show how the wizard can be used for either method.

Static

NRPE Commands

Specify any remote NRPE commands that should be monitored on the server. Multiple command arguments should be separated with a space.

	Display Name	Remote NRPE Command	Command Args
☑	Total Processes	check_total_procs	

As you can see above, only the **Remote NRPE Command** field needs to be populated as the arguments for this command directive as statically defined on the NRPE agent.

Dynamic

NRPE Commands

Specify any remote NRPE commands that should be monitored on the server. Multiple command arguments should be separated with a space.

	Display Name	Remote NRPE Command	Command Args
☑	Total Processes	check_procs	'-w 150 -c 200'

In the dynamic example above, both the **Remote NRPE Command** and **Command Args** fields have been populated. You will notice that the arguments have been enclosed in single quotes as the remote command directive is configured to only accept one argument (`$ARG1$`). For more detailed information on arguments and how they are passed to the agent please refer to the following KB article:

[NRPE - Agent And Plugin Explained](#)

Click Next and then complete the wizard by choosing the required options in Step 3 – Step 5. To finish up, click on **Finish** in the final step of the wizard. This will create the new hosts with **Total Processes** service and begin monitoring.

Once the wizard applies the configuration, click the **View status details for *<your host>*** link to see the new service that was created. Regardless of which method used above the output is the same because they are executing the same commands on the NRPE host.

⬇ Host	⬍ Service	⬍ Status	⬍ Duration	⬍ Attempt	⬍ Last Check	⬍ Status Information
10.25.13.37	Total Processes	Ok	1m 31s	1/5	2017-10-11 16:57:13	PROCS OK: 90 processes

Nagios XI Service Definition Differences

The following screenshots show the differences between the static (left) and dynamic (right) methods in the services that are created by the wizards.

Check command

check_nrpe

Command view

`$USER1$/check_nrpe -H $HOSTADDRESS$ -t 30 -c $ARG1$ $ARG2$`

$ARG1$	check_total_procs
$ARG2$	

Check command

check_nrpe

Command view

`$USER1$/check_nrpe -H $HOSTADDRESS$ -t 30 -c $ARG1$ $ARG2$`

$ARG1$	check_procs
$ARG2$	-a '-w 150 -c 200'

You can see in the static definition that the $ARG2$ field is not populated, this is because you are not passing any arguments to the remote NRPE agent. In the dynamic definition the $ARG2$ field begins with "-a", this is how the check_nrpe plugin knows that it needs to send arguments to the remote NRPE agent.

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Configuring NRPE To Accept Arguments

Earlier in this documentation the differences between static and dynamic commands were explained. If you installed NRPE from source then by default static commands are used. The following KB article explains how to configure NRPE to accept arguments and use dynamic commands:

Configuring NRPE Commands To Accept Arguments

Further Reading

NRPE can be used on many operating systems to provide you with a custom monitoring solution that meets your needs. This of course can present you with some troubleshooting hurdles, the following KB articles will help with your troubleshooting.

Agent And Plugin Explained

Packet Size Explained

v3 check_nrpe Config File

General Troubleshooting Tips

Architecture

v3 Enhanced Security

v3 Compatibility With Previous Versions

Knowledgebase Troubleshooting Articles

Finishing Up

This completes the documentation on monitoring hosts using NRPE with Nagios XI.

If you have additional questions or other support related questions, please visit us at our Nagios Support Forums:

https://support.nagios.com/forum

The Nagios Support Knowledgebase is also a great support resource:

https://support.nagios.com/kb

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