

How To Monitor vSphere In Nagios XI 2024



If you are transitioning from the VMware Wizard to the new vSphere wizard, see [Overcoming lack of VMware SDK with VMware wizard.](#)

Purpose

This document describes the process of monitoring vSphere components in Nagios XI.

Target Audience

This document is intended for use by Nagios users and administrators.

Installation Overview

In order to monitor vSphere with Nagios XI, you will need to run the following commands on your Nagios XI server:

```
pip install --upgrade pip
```

```
pip install --upgrade setuptools wheel
```

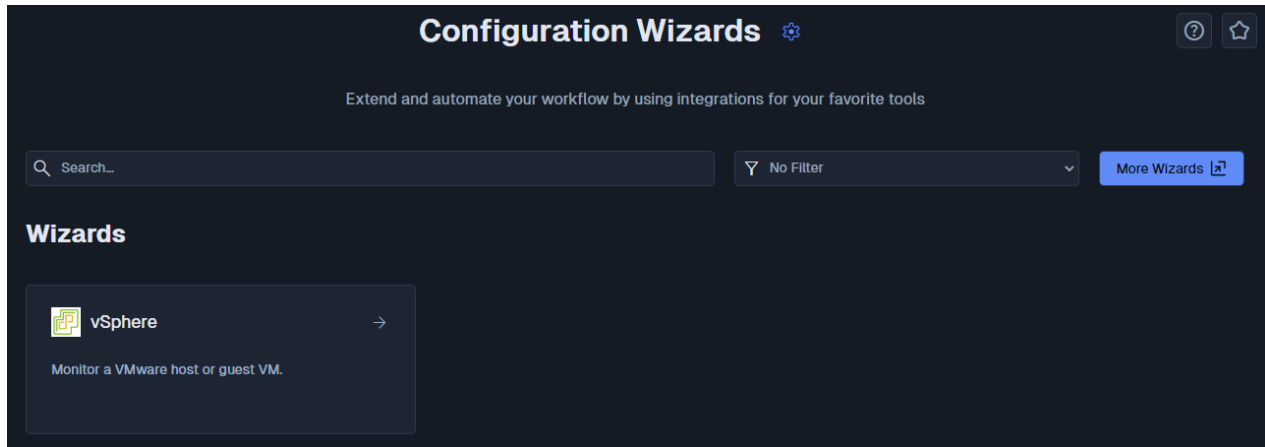
```
pip install pyVmomi
```

```
pip install --upgrade pyvim
```

Using The vSphere Wizard

1. To begin using the vSphere wizard navigate to **Configure > Run a configuring wizard**, and select the vSphere wizard. In the following screenshot you can see how the search field allows you to quickly find a wizard.

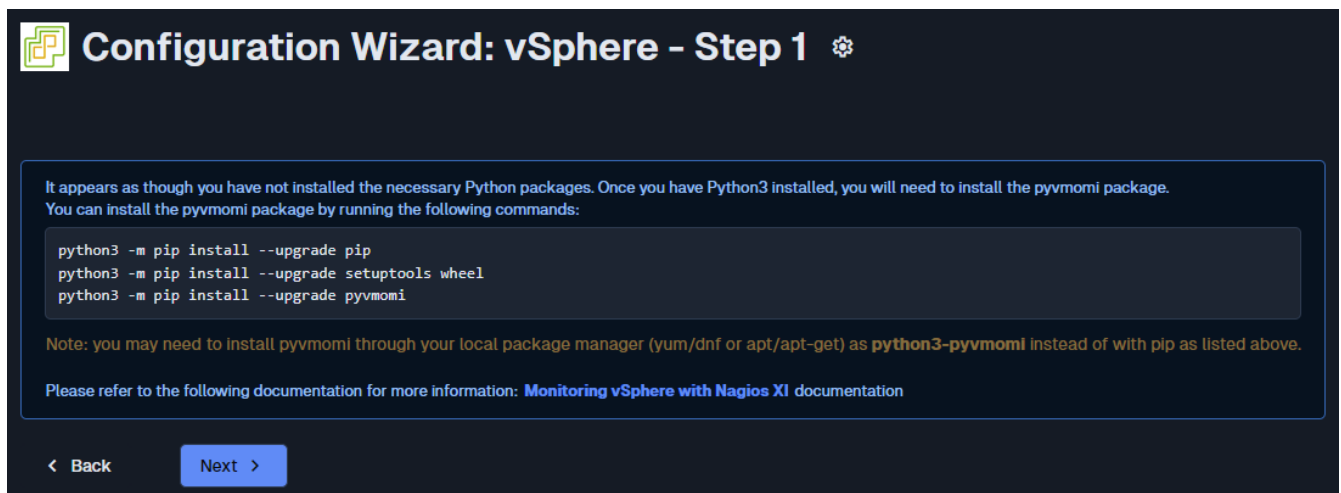
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On Step 1 you will need to select the Monitoring Mode:

2. Monitor the VMware host

- This allows you to monitor the ESX / ESXi host.
- If you haven't installed the needed python packages, it will prompt you to install them before you continue.



- On step 1 you will need to provide the address, username and password for the ESX / ESXi host.

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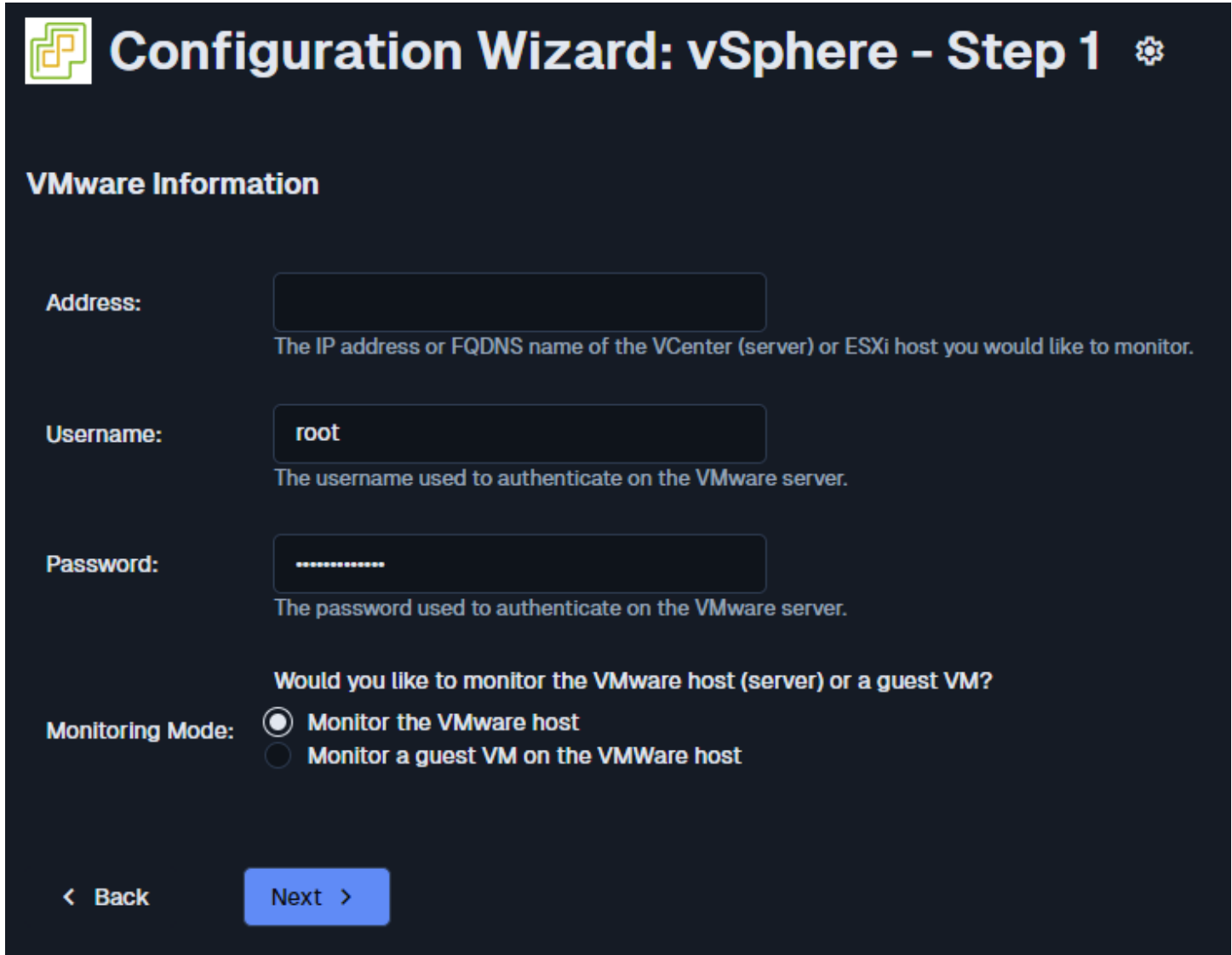
- The options on step 2 will allow you to monitor the CPU Usage, Datastore Usage, Input/Output, Memory, Networking, Services and VM Status.

3. Monitor a guest VM on the VMware host

- This is for monitoring the virtual machines (VM or also called guests).
- The options on step 2 will allow you to select which VMs you want to monitor. You will have the choice of monitoring the the CPU Usage, Input/Output, Memory, Networking and VM Status for all the VMs you choose to monitor.
- On Step 2 you will need to provide the address, username and password for the ESX / ESXi host OR the vCenter server (if you have one).
- ESX(i) host vs vCenter Server:
 - When you have a vCenter server, it provides the ability to communicate to all the VM's in the environment
 - Providing credentials for a vCenter server on step 1 will allow you to monitor ALL of the VMs in the environment. This means that you don't need to provide credentials for each ESX(i) host (you don't need to run the wizard for each ESX(i) host). In addition to this, if a VM is migrated from one ESX (i) host to another there is no configuration steps required, vCenter knows which ESX(i) host the VM is running on.
 - Providing credentials for an ESX(i) host on step 1 will allow you to monitor ALL of the VMs on that specific ESX(i) host. This means that you will need to run the wizard for each ESX(i) host in your environment. In addition to this, if a VM is migrated from this ESX(i) host to another, you will need to go into Core Configuration Manager update the service definitions for that VM. If the ESX(i) host is a member of a vCenter DRS cluster, it is recommended to monitor the VM's using the vCenter address and credentials.

Because the wizard has two different monitoring modes, you will be shown the different options available when running the wizard

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The screenshot shows the 'Configuration Wizard: vSphere - Step 1' interface. It features a dark blue background with white text. At the top left is a green and white icon of a square with a plus sign. The title 'Configuration Wizard: vSphere - Step 1' is in white, followed by a gear icon. Below the title is the section 'VMware Information'. There are three input fields: 'Address:' (empty), 'Username:' (containing 'root'), and 'Password:' (containing '*****'). Each field has a descriptive text below it. Below the password field is a question: 'Would you like to monitor the VMware host (server) or a guest VM?'. Underneath this question are two radio button options: 'Monitor the VMware host' (selected) and 'Monitor a guest VM on the VMware host'. At the bottom left is a '< Back' link, and at the bottom right is a blue 'Next >' button.

Configuration Wizard: vSphere - Step 1 ⚙️

VMware Information

Address:
The IP address or FQDNS name of the VCenter (server) or ESXi host you would like to monitor.

Username:
The username used to authenticate on the VMware server.

Password:
The password used to authenticate on the VMware server.

Monitoring Mode: Monitor the VMware host
 Monitor a guest VM on the VMware host

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Monitor the VMware host

4. Enter the Address, Username and Password of your ESX / ESXi host.
5. Select Monitor the VMware Host.
6. Click Next to go to Step 2.

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Configuration Wizard: vSphere - Step 2

VMware Details

VMware Mode: Host

Address:

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

Monitored Metrics Datastores

VMware Host Metrics

Select the metrics you'd like to monitor on each of the hosts you select. The fields below take multiple values. See the [documentation](#).

<input checked="" type="checkbox"/>	Metric		Warning Threshold		Critical Threshold
<input checked="" type="checkbox"/>	CPU Usage ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	Memory ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	Networking ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	Input / Output ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	Datastore Free ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	VM Status ?	▲	<input type="text"/>	●	<input type="text"/>
<input checked="" type="checkbox"/>	Services ?	▲	<input type="text"/>	●	<input type="text"/>

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

8. Make sure a valid Host Name has been entered.

9. Then select the VMware Host Metrics from the available list.

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Note: Currently, critical and warning thresholds will not be thrown for non-numeric values. Future versions of this wizard will allow for non-numeric thresholds to function correctly. The below examples use non-numeric values (Disconnected, Down, etc...). Be aware that currently, these examples will not throw critical or warning alerts for these values.

Options available with examples:

Important Notes:

You will need to enter comma-separated values for the warning and critical values. You will need to enter the same number of comma-separated values as there are values being monitored.

- For example, Memory usage on hosts has 6 monitored values, so if we want to put thresholds on each of these values there should be 6 values in the threshold field (50,450,10,10,10,20000).
- If you only want to put thresholds on the first two monitored values, you can leave it as two inputs (50, 450). However if you want to put a threshold for the first and last values, then you will need spaces for all 6 values (50,,,,,20000).
- If your list of values in the threshold field is shorter than the number of monitored values, the wizard will add thresholds in order and put no thresholds for the remaining values.
- If your list of values in the threshold field is greater than the number of monitored values, the wizard will add thresholds to all of the values and ignore the excess values over the number of monitored values.

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Metric	Monitored Values	Example Thresholds
CPU Usage	Usage (Mhz), Usage (%), Highest Host CPU Usage (%)	30,200
Memory	Usage (MB), Usage (%), Overhead (MB), Swap (MB), Memctl (MB)	30,200,10,10,5,5000
Networking	Receive (MBps), Send (MBps), nics connected, bad nics	5,5,3
Input / Output	Commands Aborted, Bus Resets, Read latency, Write latency,	1,0.5,0.1

Metric	Monitored Values	Example Thresholds
	Kernel, Device, Queue	
Datastore Usage	Space free for each datastore listing them in order	400000,250000
VM Status	State of the VM, connection if its running or disconnected, and uptime of the vm	Down,Disconnected,50d
Services	Displays whether the services are up or down.	Down,Down,Down,Down,Down,Up,Up,Down,...etc

11. You can select the Datastores tab to monitor specific datastores.

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Monitored Metrics Datstores

Datstores Selection

Specify which datstores you'd like to monitor on the VMware host (server).

<input type="checkbox"/>	Datstores	Data Used	Data Total	Percentage in Use
<input type="checkbox"/>	-boot-qa5	372953.32 MB	374467.46 MB	(99.6%)
<input type="checkbox"/>	-secondary-qa5	21998130.43 MB	22000701.54 MB	(99.99%)
<input type="checkbox"/>	primary-qa5	18983809.97 MB	22000701.54 MB	(86.29%)
<input type="checkbox"/>	-boot-qa2	372953.32 MB	374467.46 MB	(99.6%)
<input type="checkbox"/>	-primary-qa2	21066572.37 MB	22000701.54 MB	(95.75%)
<input type="checkbox"/>	-boot-qa3	372953.32 MB	374467.46 MB	(99.6%)
<input type="checkbox"/>	-primary-qa3	20113835.16 MB	22000701.54 MB	(91.42%)
<input type="checkbox"/>	boot-qa1	372953.32 MB	374467.46 MB	(99.6%)
<input type="checkbox"/>	primary-qa1	20790579.82 MB	22000701.54 MB	(94.5%)

[< Back](#) [Next >](#) [✔ Finish with Template](#)

10. Once you've finished selecting the metrics and inputting thresholds, click **Next** and then complete the wizard by choosing the required options in Step 3 – Step 5.

11. To finish up, click on **Finish** in the final step of the wizard.

This will create the new hosts and services and begin monitoring.

Once the wizard applies the configuration, click the View status details for xxxxx link to see the new host and services that were created.

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Showing 1-9 of 9 total records

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Host ↓	Service ↓	Status ↓	Duration ↓	Attempt ↓	Last Check ↓	Status Information ↓
● ESXi	CPU Usage for vSphere Host	● Ok	🕒 N/A	1/5	2024-12-02 21:50:05	OK: cpu usage=16725.00 MHz (13.28%), highest host CPU usage=29.72%
	Datastore boot-qa5 for vSphere Host	● Ok	🕒 N/A	1/5	2024-12-02 21:50:10	OK: boot-qa5=374467.46 MB
	Datastore primary-qa5 for vSphere Host	● Ok	🕒 N/A	1/5	2024-12-02 21:50:15	OK: primary-qa5=22000701.54 MB
						OK: boot-qa5(free)=372953.32 MB (99.6%), secondary-qa5(free)=21998130.43 MB (99.99%)

Monitor a guest VM on the VMware host

Configuration Wizard: vSphere - Step 1

VMware Information

Address:
The IP address or FQDNS name of the VCenter (server) or ESXi host you would like to monitor.

Username:
The username used to authenticate on the VMware server.

Password:
The password used to authenticate on the VMware server.

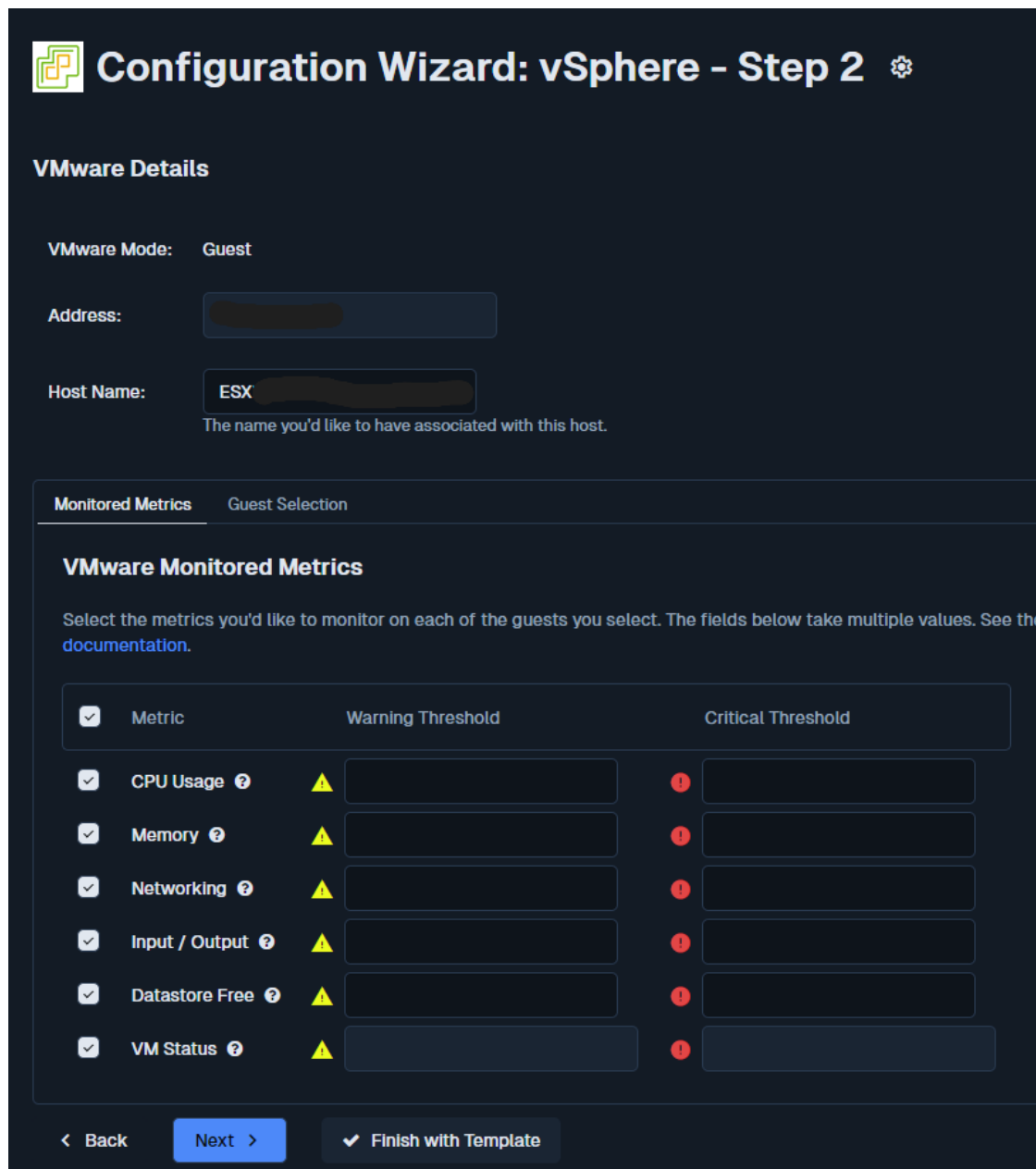
Would you like to monitor the VMware host (server) or a guest VM?

Monitoring Mode: Monitor the VMware host
 Monitor a guest VM on the VMware host

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4. Enter the Address, Username and Password of your ESX / ESXi host OR vCenter Server.
5. Select Monitor a guest VM on the VMware host.
6. Click Next to go to Step 2.



Configuration Wizard: vSphere - Step 2

VMware Details

VMware Mode: Guest

Address:

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

Monitored Metrics Guest Selection

VMware Monitored Metrics

Select the metrics you'd like to monitor on each of the guests you select. The fields below take multiple values. See the [documentation](#).

<input checked="" type="checkbox"/> Metric		Warning Threshold		Critical Threshold
<input checked="" type="checkbox"/> CPU Usage ?	⚠	<input type="text"/>	!	<input type="text"/>
<input checked="" type="checkbox"/> Memory ?	⚠	<input type="text"/>	!	<input type="text"/>
<input checked="" type="checkbox"/> Networking ?	⚠	<input type="text"/>	!	<input type="text"/>
<input checked="" type="checkbox"/> Input / Output ?	⚠	<input type="text"/>	!	<input type="text"/>
<input checked="" type="checkbox"/> Datastore Free ?	⚠	<input type="text"/>	!	<input type="text"/>
<input checked="" type="checkbox"/> VM Status ?	⚠	<input type="text"/>	!	<input type="text"/>

< Back Next > ✓ Finish with Template

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7. On step 2 make sure a valid Host Name has been entered.

There are two tabs you need to select options on.

8. The **Monitored Metrics** tab is selected by default. Select the VMware Guest Metrics from the available list. A service for each metric will be created for each guest selected on the Guest Selection tab.



Note: Currently, critical and warning thresholds will not be thrown for non-numeric values. Future versions of this wizard will allow for non-numeric thresholds to function correctly. The below examples use non-numeric values (Disconnected, Down, etc...). Be aware that currently, these examples will not throw critical or warning alerts for these values.

Options available with examples:

Important Notes:

You will need to enter comma-separated values for the warning and critical values. You will need to enter the same number of comma-separated values as there are values being monitored.

- For example, Memory usage on hosts has 6 monitored values, so if we want to put thresholds on each of these values there should be 6 values in the threshold field (50,450,10,10,10,20000).
- If you only want to put thresholds on the first two monitored values, you can leave it as two inputs (50, 450). However if you want to put a threshold for the first and last values, then you will need spaces for all 6 values (50,,,,,20000).
- If your list of values in the threshold field is shorter than the number of monitored values, the wizard will add thresholds in order and put no thresholds for the remaining values.
- If your list of values in the threshold field is greater than the number of monitored values, the wizard will add thresholds to all of the values and ignore the excess values over the number of monitored values.

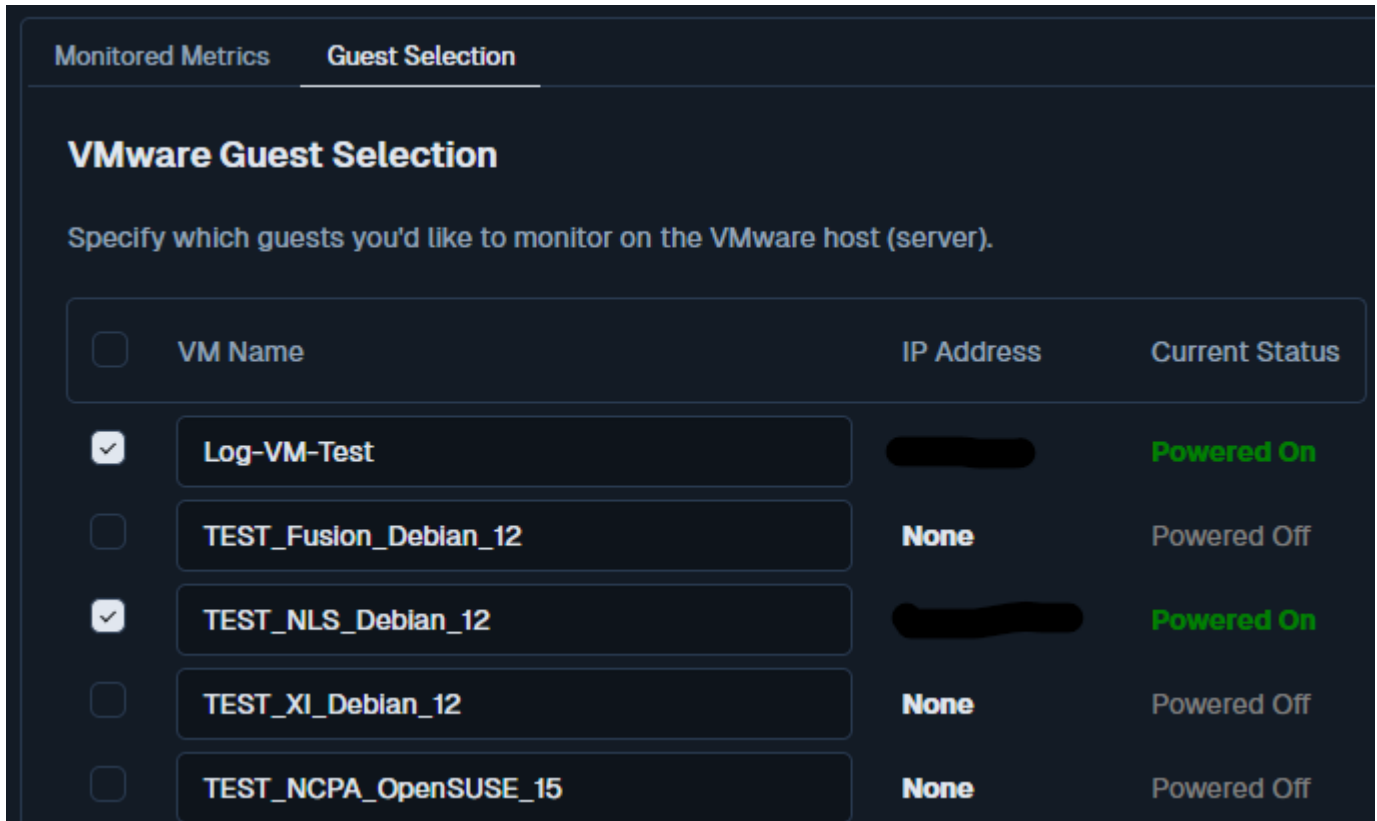
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Metric	Monitored Values	Example Thresholds
CPU Usage	Usage (Mhz), Usage (%), Highest Host CPU Usage (%)	30,350,50
Memory	Usage (MB), Usage (%), Overhead (MB), Swap (MB), Memctl (MB)	30,200,10,10,5,5000
Networking	Receive (MBps), Send (MBps), nics connected, bad nics	5,5
Input / Output	Commands Aborted, Bus Resets, Read latency, Write latency, Kernel, Device, Queue	5,5,5

Metric	Monitored Values	Example Thresholds
VM Status	State of the VM, Connection if its running or disconnected, console, maxcpu in MHz, Max memory in MB, Tools?, any config issues	DOWN,red,Disconnected,1,3300:,3500:,down,1

9. After selecting the required metrics click the **Guest Selection** tab.

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Monitored Metrics Guest Selection

VMware Guest Selection

Specify which guests you'd like to monitor on the VMware host (server).

<input type="checkbox"/>	VM Name	IP Address	Current Status
<input checked="" type="checkbox"/>	Log-VM-Test	[REDACTED]	Powered On
<input type="checkbox"/>	TEST_Fusion_Debian_12	None	Powered Off
<input checked="" type="checkbox"/>	TEST_NLS_Debian_12	[REDACTED]	Powered On
<input type="checkbox"/>	TEST_XI_Debian_12	None	Powered Off
<input type="checkbox"/>	TEST_NCPA_OpenSUSE_15	None	Powered Off

10. On the Guest Selection tab a list of all the available guests on the ESX(i) host or vCenter server will be displayed.

11. Select which guests you want to monitor by checking the left hand check box. The powered on guests will automatically have the checkbox selected.

12. Once you've finished selecting the metrics click Next and then complete the wizard by choosing the required options in Step 3 – Step 5.

13. To finish up, click on Finish in the final step of the wizard. This will create the new host and services and begin monitoring.

Once the wizard applies the configuration, click the View status details for xxxxx link to see the new host and services that were created.

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Showing 1-6 of 6 total matches for 'log-vm' Page 1 / 1 15 Per Page Go log-vm

Host ↓	Service ↓	Status ↓	Duration ↓	Attempt ↓	Last Check ↓	Status Information ↓
● ESX. [REDACTED]	Log-VM-Test CPU Usage	● Ok	🕒 N/A	1/5	2024-12-03 09:13:54	OK: Log-VM-Testcpu usage=67.0 Mhz (83.00%), wait=79678.00 ms, ready=49.00 ms
	Log-VM-Test Datastore Free	● Ok	🕒 N/A	1/5	2024-12-03 09:14:01	OK: primary-qa1=20723029.51 MB free
	Log-VM-Test Input / Output	● Ok	🕒 N/A	1/5	2024-12-03 09:14:06	OK: usage=0.00 MB/s, read=0.00 MB/s, write=0.00 MB/s
	Log-VM-Test Memory	● Ok	🕒 N/A	1/5	2024-12-03 09:14:19	OK: mem usage=3805.18 MB (4.99%), overhead=193.18 MB, active=209.71 MB, swapped=0.00 MB, swapin=0.00 MB, swapout=0.00 MB, memctl=0.00 MB
	Log-VM-Test Networking	● Ok	🕒 N/A	1/5	2024-12-03 09:14:15	OK: receive=0.00 MBps, send=0.00 MBps
	Log-VM-Test VM Status	● Ok	🕒 N/A	1/5	2024-12-03 09:14:11	OK: state=UP, status=green, connection=Running, console=1, maxcpu=7988 MHz, maxmem=4096 MB, tools=ok, has no config issues

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More Information:

[Using Configuration Wizards](#)

Finishing Up

This completes the documentation on understanding users and contacts in 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>