

The Industry Standard in IT Infrastructure Monitoring

Purpose

This document will walk you through the steps on how to get the VMware Virtualization Wizard installed and running on your Nagios XI system in order to efficiently and effectively monitor your virtual environment. This document will include instructions for the following:

- How to set up a vMA appliance for the box293_check_vmware plugin
- Installation of the VMware vMA Settings Manager Component
- Configuration and Testing of the vMA Host
- Adding and Testing vCenter or ESX(i) Host
- Installation of the VMware Virtualization Wizard
- Running the Wizard to Monitor your environment

Target Audience

This document is intended for use by Nagios XI Administrators who wish to monitor their VMware Virtualization environment(s).

Important Note

Throughout this document there are references to your vCenter or ESX(i) host(s). If you have a vCenter server, you only need to provide settings / credentials for this vCenter server. You will not need to add settings / credentials for each ESX(i) host that this vCenter server manages.

Note: The only time you would add settings / credentials for ESX(i) servers is if you **DO NOT** have a vCenter server.

box293_check_vmware Plugin

The first step that we need to complete is to deploy a vMA appliance to run the box293_check_vmware plugin AND to configure Nagios XI to talk to this appliance.

These steps are documented clearly in the [box293_check_vmware manual](#) starting on page 6. The plugin and manual are both located on the Nagios Exchange:

http://exchange.nagios.org/directory/Plugins/Operating-Systems/*-Virtual-Environments/VMWare/box293_check_vmware/details

Use the [manual](#) to perform the following steps:

- Deploy vMA Appliance
- Transfer the box293_check_vmware plugin to the vMA
- Create directory for ssh certificates AND configure plugin permissions
- Configure Nagios server
- Create Certificates
- Configure vMA Credentials
- Plugin Test From Nagios Host

Please complete all of these steps before continuing.

VMware vMA Settings Manager - Install

Now we will install the VMware vMA Settings Manager component.

- Download the component from the Nagios Exchange website:
 - <http://exchange.nagios.org/directory/Addons/Components/VMware-vMA-Settings-Manager/details>

- In your Nagios XI interface, login as an Administrator
- Click the **Admin** menu
- On the left pane under System Extensions click **Manage Components**
- Click the **Browse** button
 - Navigate to the VMware vMA Settings Manager component you downloaded and open it
- Click the **Upload Component** button
- The screen will refresh and say **Component installed**
- Scroll down the page and you will see the component listed like so:

<p>VMware vMA Settings Manager This component is used for defining how this Nagios XI host is configured to use the plugin <code>box293_check_vmware</code> (via a vMA host). It is required for the VMware Virtualization Wizard.</p> <p>Configuration Steps REQUIRED: Establish an SSH session to this Nagios XI host as user <code>root</code> Type <code>mkdir /var/www/.ssh</code> and press Enter Type <code>cp /home/nagios/.ssh/known_hosts /var/www/.ssh/</code> and press Enter Type <code>cp /home/nagios/.ssh/id_dsa /var/www/.ssh/</code> and press Enter Type <code>setfacl -R -m u:apache:r-x /var/www/.ssh/</code> and press Enter Type <code>exit</code> and press Enter</p> <p>After performing those steps refresh the Manage Components page and this message will disappear.</p> <p>Version: 2014-08-08 Date: 2014-08-08 Author: Troy Lea, Nagios Enterprises, LLC</p>	User			2014-08-08
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You can see here that there are some configuration steps required:

- Establish an SSH session to your Nagios XI host as **root**
 - Type `mkdir /var/www/.ssh` and press **Enter**
 - Type `cp /home/nagios/.ssh/known_hosts /var/www/.ssh/` and press **Enter**
 - Type `cp /home/nagios/.ssh/id_dsa /var/www/.ssh/` and press **Enter**
 - Type `setfacl -R -m u:apache:r-x /var/www/.ssh/` and press **Enter**
 - Type `exit` and press **Enter**

VMware vMA Settings Manager - Configure vMA Host

Now we will configure the VMware vMA Settings Manager component.

This records the required address of the vMA appliance along with the vCenter or ESXi host(s) which the wizard requires when it runs.

- Return to the Nagios XI web interface.
- Click the **Admin** menu.
- On the left pane under System Extensions click **Manage Components**.
- Scroll down the page and you will see the component listed like so:

<p>VMware vMA Settings Manager This component is used for defining how this Nagios XI host is configured to use the plugin <code>box293_check_vmware</code> (via a vMA host). It is required for the VMware Virtualization Wizard.</p> <p>Version: 2014-08-08 Date: 2014-08-08 Author: Troy Lea, Nagios Enterprises, LLC</p>	User			2014-08-08
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- Click the **Configure** icon (spanner / screwdriver)
 - **NOTE:** When you followed the `box293_check_vmware` manual to **Transfer certificates to the vMA** you had to provide

either the *IP Address* or *DNS name* of the vMA appliance. You must use the **same** IP Address or DNS name of the vMA appliance here

- The first step is to define a **vMA host**.
- At the bottom of the screen, **tick the checkbox**.
- Type the **IP Address** or **DNS name** of the vMA appliance in the vMA Host Address field.
- Type a **Name** in the Name field.
- Click the **Apply Settings** button.

Add a vMA Host

To **add** a vMA Host:

- **Tick the checkbox**
- Type the **IP Address** or **DNS Name** of the vMA Host
 - **Note:** *DNS names are CaSe SeNsAtIvE*
- Type the **Name** it will be known as
- Click the **Apply Settings** button

Address Example: *192.168.1.233* or *vMA.domain.Local*

Name Example: *192.168.1.233* or *vMA Production*

	vMA Host Address	Name
<input checked="" type="checkbox"/>	192.168.207.120	vMA Production

VMware vMA Settings Manager - Test vMA Host

Now that we have added the vMA host we can perform a test to ensure SSH is correctly configured.

You will see the vMA host you just added:

- **Select the Test** radio button.
- In the *Select a vMA Host Test* list select **SSH Configuration**.
- Click the **Perform vMA Host Test** button.
- If everything is correctly configured then the result should return SSH Configuration is correct!

Defined vMA Hosts

The following is a list of vMA Hosts you have previously defined.

To **remove** vMA Host(s) from the list, **un-tick** the checkbox for that vMA Host and then click the **Apply Settings** button.

The **Default** radio button is the vMA Host that will automatically be selected when using the VMware Virtualization wizard.

	vMA Host Address	Name	Default	Test
<input checked="" type="checkbox"/>	192.168.207.120	vMA Production	<input type="radio"/>	<input checked="" type="radio"/>

To test a vMA Host:

- Select the host using the **Test** radio button to the right of the host
- Select the test **Type** from the drop down list below
- Click the **Perform vMA Host Test** button
- The results will be displayed below

Select a vMA Host Test

Test Results

SSH Configuration is correct!

VMware vMA Settings Manager - Add vCenter or ESX(i) Host

Now we need to add the vCenter or ESX(i) host to the VMware vMA Settings Manager component.

NOTE: When you followed the `box293_check_vmware` manual to **Configure vMA Credentials** you had to provide either the *IP Address* or *DNS name* of the vCenter or ESX(i) host

- You must you the **same** IP Address or DNS name of the vMA appliance here.

- Click the **VMware Settings** tab.
- At the bottom of the screen, **Tick** the **checkbox**.
- Type the **IP Address** or **DNS name** of the vCenter server or ESX(i) Host.
- Select the **Type** of host from the drop-down menu.
- Click the **Apply Settings** button.

VMware Settings - Add

To **add** a VMware Server:

- **Tick** the checkbox
- Type the **IP Address** or **DNS Name** of the VMware Server
 - **Note:** *DNS names are CaSe SeNsAtIvE*
- Select the **Type** from the drop down list
- Click the **Apply Settings** button

Address Example: *192.168.1.211* or *vCenter.domain.Local*

Address of vCenter Server OR ESX(i) Host	Type
<input checked="" type="checkbox"/> <input type="text" value="192.168.5.132"/>	<input type="text" value="vCenter Server"/>

VMware vMA Settings Manager - Test vCenter or ESX(i) Host

Now that we have added the vCenter or ESX(i) host host we can perform a test to ensure the credentials are correctly configured.

Under *VMware Settings* you will see the vCenter or ESX(i) host you just added:

- **Select** the **Test** radio button.
- In the *Select a VMware Test* list select **Credentials**
- Click the **Perform VMware Test** button.
- If everything is correctly configured then the result should return **Credentials tested OK!**

VMware Settings

The following is a list of VMware Servers you have previously defined.

To **remove** VMware Server(s) from the list, **un-tick** the checkbox for that VMware Server and then click the **Apply Settings** button.

The **Default** radio button is the VMware Server that will automatically be selected when using the VMware Virtualization wizard.

Address of vCenter Server OR ESX(i) Host	Type	Default	Test
<input checked="" type="checkbox"/> <input type="text" value="192.168.5.132"/>	<input type="text" value="vCenter Server"/>	<input type="radio"/>	<input checked="" type="radio"/>

To test a VMware server:

- Select the server using the **Test** radio button to the right of the server
- Select the test **Type** from the drop down list below
- Click the **Perform VMware Test** button
- The results will be displayed below

Select a VMware Test

Click the button to execute the test

Test Results

Credentials tested OK!

This completes all the steps required for the VMware vMA Settings manager.

VMware Virtualization Wizard - Install

Now we will install the VMware Virtualization Wizard.

- Download the wizard from the Nagios Exchange:
<http://exchange.nagios.org/directory/Addons/Configuration/Configuration-Wizards/VMware-Virtualization-Wizard/details>

- Login to the Nagios XI web interface as an Administrator.
- Click the **Admin** menu.
- On the left pane under System Extensions click **Manage Config Wizards**

- Click the **Browse** button.
 - Navigate to the VMware Virtualization Wizard you downloaded and open it
- Click the **Upload Wizard** button.
- The screen will refresh and say **Wizard installed**.

VMware Virtualization Wizard - Run

Now you can run the VMware Virtualization Wizard to add objects to monitor.

- Click the **Configure** menu.
- Click **Run the Monitoring Wizard**.
- Find **VMware Virtualization Wizard** in the list.
- Click it (or you can select the radio button and click **Next** at the bottom of the page).
- You can see the vMA and VMware settings we populated previously.

vMA and VMware Detected Settings

vMA Host: vMA Production

vCenter Server OR ESX(i) Host: 192.168.5.132 = vCenter Server

Check Type: Hosts

Hosts

Retrieve Hosts

Click **Next** to continue.

Back Next

- For this example, we will select the **Check Type Hosts**.
- Click the **Retrieve Hosts** button.

Wait while the hosts are retrieved from the vCenter server. The screen is updated with a list of hosts. You can see in the screen shot that we have selected both hosts (Select Host) check boxes. These hosts have not been monitored by Nagios XI before so new Nagios host objects need to be created, which you need to provide a name and address for.

Hosts

Retrieve Hosts

Select Host	Power State	Maintenance Mode	Host Name	Nagios Host Object	Nagios Host Object Existing or Name & Address
<input type="checkbox"/>					
<input checked="" type="checkbox"/>	On	No	192.168.5.32	New	Name: OLD Host Address: 192.168.5.32
<input checked="" type="checkbox"/>	On	No	192.168.5.34	New	Name: NEW Host Address: 192.168.5.34

Click **Next** to continue.

Back Next

- Click **Next**.

On the next screen you are presented with blue tabs that allow you to select different monitoring checks. For example the screen shot here shows the CPU tab selected. Each check type (for example CPU Info) can be selected for each different host. This allows you to define individual monitoring for different hosts. If you define specific check options for one host, you can propagate these options to all the other hosts for this check type.

- Navigate through all the different tabs until you have selected all of the checks you want to monitor.
- Click **Next** when you are finished.
- Continue through the wizard steps to select the remaining wizard options to determine your Check Interval, Notification Settings, etc.

Once you have finished and Nagios XI has begun checking your system, you should see the check results on the Service Detail page in the Nagios XI interface. On the next page is a sample screenshot of what your dashboard will look like after running the VMware Virtualization Wizard.

Host Checks

Hosts CPU Datastore Guest Snapshots License Me Physical NIC Status Storage Adapter Switch Virtual NI

CPU Info

192.168.5.32 Select the Host whose options you want to propagate to all other Hosts

Propagate Common Options Click the button to Propagate

Select All Hosts Min 1380 1500 Max Randomize Check Interval

Select Host	Host Name	Check Interval	Retry Interval	Number Retries
<input type="checkbox"/>	192.168.5.32	1380	20	3
Return As				
	CPU GHz			
<input type="checkbox"/>	192.168.5.34	1479	20	3
Return As				
	CPU GHz			

NEW Host	CPU Info	Ok	10m 11s	1/3	2014-10-23 09:50:34	OK: Intel(R) Xeon(R) CPU X5660 @ 2.80GHz, 12 cores @ 2.8GHz
	CPU Usage	Ok	12m 8s	1/5	2014-10-23 09:58:22	OK: Host CPU {Free: 28.7 GHz} {Used: 4.8 GHz} {Total: 33.5 GHz}
	Host Status	Warning	5m 17s	3/5	2014-10-23 09:59:22	WARNING: Host has a YELLOW status {Remote Tech Support Mode ENABLED}
	Host Version	Ok	4m 2s	1/3	2014-10-23 09:56:43	OK: VMware ESXi 5.0.0 build-469512
	License Status	Ok	4m 0s	1/3	2014-10-23 09:56:45	OK: Licensed {Version: VMware vSphere 5 Essentials} {Key: NJ48K-44292-J8V4X-088RM-3XR6H}
	Memory Usage	Ok	9m 3s	1/5	2014-10-23 09:56:20	OK: Host Memory {Free: 52.5 GB} {Used: 43.5 GB} {Total: 96 GB}
	pNIC Status - All pNICs	Critical	3m 59s	1/3	2014-10-23 09:56:46	CRITICAL: NICs {Total: 6, Connected: 1, Disconnected: 5}, [vmmnic1 'Spare pNIC', Driver: bnx2, NOT Connected], [vmmnic4 'Spare pNIC', Driver: igb, NOT Connected], [vmmnic5 'Spare pNIC', Driver: igb, NOT Connected], [vmmnic0 on Local vSwitch vSwitch0', Driver
	pNIC Usage - All pNICs	Ok	9m 52s	1/5	2014-10-23 09:55:33	OK: [vmmnic1 {Rate (Rx:0 kBps / 0%)(Tx:0 kBps / 0%)} {Packets (Rx:0)(Tx:0)} {Packet Errors (Rx:0)(Tx:0)}], [vmmnic4 {Rate (Rx:0 kBps / 0%)(Tx:0 kBps / 0%)} {Packets (Rx:0)(Tx:0)} {Packet Errors (Rx:0)(Tx:0)}], [vmmnic5 {Rate (Rx:0 kBps / 0%)(Tx:0 kBps / 0%)}]
	Storage Adapter Info - All HBAS	Ok	3m 57s	1/3	2014-10-23 09:56:48	OK: [2 port SATA IDE Controller (ICH9) (vmhba0) {Driver: ata_piix}], [Dell PERC 6/i Integrated (vmhba1) {Driver: megaraid_sas}], [2 port SATA IDE Controller (ICH9) (vmhba32) {Driver: ata_piix}]
	Storage Adapter Performance - vmhba0 vmhba1 vmhba32	Ok	9m 41s	1/5	2014-10-23 09:55:42	OK: [2 port SATA IDE Controller (ICH9) (vmhba0) {Rate (Read:0 kBps / 0%)(Write:0 kBps / 0%)} {Averaged Number of (Reads:0) (Writes:0)} {Total Latency (Read:0 ms)(Write:0 ms)}], [Dell PERC 6/i Integrated (vmhba1) {Rate (Read:411 kBps / 10%)(Write:4,108 kBp
	Switch Status - All Switches	Ok	3m 55s	1/3	2014-10-23 09:56:50	OK: [vSwitch0 {Local}], Ports {Total: 128} {Available: 115}, MTU: {1,500}, NICs: {Total: 1, Connected: 1} [vmmnic0, Driver: bnx2, 1,000 MB, Full Duplex], [vSwitch1 {Local}], Ports {Total: 128} {Available: 127}, MTU: {1,500}, NICs: {No Physical NICs}]
	vNIC Status - All vNICs	Ok	9m 11s	1/3	2014-10-23 09:51:34	OK: {[Management Network (vmmk0 on Local vSwitch vSwitch0)} {MTU: 1,500} {Roles: Management}]

VMware Virtualization Wizard - Summary

At this point you can re-run the wizard as often as you require.

The VMware Virtualization Wizard can be used to monitor vCenter clusters, hosts, datastores and guests.

The wizard allows you to take advantage of the multitude of options that the box293_check_vmware plugin provides. If you require clarification on what the checks and options do please refer to the [manual](#) as it has exhaustive options.

Final Thoughts

For any support related questions please visit the [Nagios Support Forums](#) at:

<http://support.nagios.com/forum/>