Purpose

This document describes how to increase the size of the Nagios XI virtual machine (VM) disk. This documentation is specifically for the Nagios XI VM's available for download from the Nagios Enterprises website.

Target Audience

This document is intended for use by Nagios XI Administrators who require more space on their Nagios XI installation and are running Nagios XI from a VMware VM image. These steps are also applicable to a Hyper-V or VirtualBox VM.

This documentation is specifically for the CentOS 6 VM that Nagios XI was previously distributed on. If you have a CentOS 7 VM then please refer to the following documentation:
Resizing The VM Disk Size For CentOS 7

Important!

The actions required to resize the virtual machine are potentially destructive by nature. We strongly recommended that you make proper backups of your Nagios XI installation before proceeding.

A snapshot of your virtual machine is one method to provide a way to "go back" if something goes wrong. However a snapshot can only be done once you add extra disk space to the virtual hard disk (the first step in this document). It is not possible to take a snapshot before adding the extra disk space, the VMware technology does not provide that capability. It is recommended that you shutdown and power the VM off before taking a snapshot.

Resizing The Virtual Disk

The first step is to modify the amount of disk space VMware is allocating to your Nagios XI image. If you are using Hyper-V or VirtualBox then these settings will be slightly different from the steps below.

It is recommended that you shutdown and power the VM off before resizing the virtual disk.

The virtual disk size setting you need can be found under:

(Your VM) > **Summary** > **Commands** > **Edit Settings** > **Hardware** > **Hard Disk 1** > **Capacity** > **New Size**. For VMware Player, the disk size setting can be found using the following options on the overview page:

(Your VM) > **Edit virtual machine settings** > **Hardware** > **Hard Disk (SCSI)** > **Utilities** > **Expand** > **Maximum disk size**.

Power the VM back on after increasing the disk space.

Terminal Access

The remaining instructions require you to establish a terminal session to your Nagios XI server as the root user.

Resizing The Partition / Filesystem

There are two methods available for resizing the partition and filesystem:

- [Automated With Script](#)

- [Manually](#)

Each method produces the same result, it is entirely up to you as to which method you use.

Automated With Script

The following commands will automatically resize the partition and filesystem on your VM. Once the script has completed it will automatically restart the Nagios XI server.

```
cd /tmp
wget https://assets.nagios.com/downloads/common/scripts/extend_vm_disk.sh
sh extend_vm_disk.sh
```

You will see output similar to the following:

```
This script will extend your disk partition and filesystem.
This script will ONLY work with the Nagios XI provided OVA VM image
If you have modified your partitioning or your filesystem please don't execute this script
Your Nagios XI server will reboot with the extended filesystem
Do you want to continue running this script? [y/n]
```

After the server reboots and you login as the root user in a terminal session you will see the following message:

```
Your root / partition and filesystem have been resized
Your disk size is now 85.9GB,
And your / filesystem is 77GB
The results of all commands are in /var/log/vm_resize.log
```

This completes the automatic steps for increasing the VM disk size. You should log into the Nagios XI interface to ensure everything is working OK.

If you took a snapshot of your VM before proceeding you should now shutdown the VM and delete the snapshot as it is no longer required for roll-back purposes.

Manually

Follow these steps to manually resize the VM partition and filesystem.

Resizing The Partition

You need to modify the Linux partition table within the XI virtual machine to recognize that the disk size has changed. This can be done using the `fdisk` utility, which is a partition editor. For the virtual machine provided by Nagios Enterprises:

- `sda1` is used for the **boot** partition

- `sda2` is the device for all logical volumes, this is the partition you need to edit

Start `fdisk` by executing the following command:

```
fdisk /dev/sda
```

You should print the current partition table so you can keep track of your changes as you go.

```
Command (m for help): p
```

Take a screenshot or copy the screen contents into a text file in case you want to reference it later.

To resize a partition, you actually "delete" it and then add a new one with the new size, making sure to place the beginning of the new partition at the same sector/cylinder as the old one started. This process is NOT destructive, your data still remains on the disk. These first steps are for deleting the partition:

```
Command (m for help): d
Partition number (1-4): 2
```

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These next steps re-create the partition:

```
Command (m for help): n
Command action
    e   extended
    p   primary partition (1-4)
p
Partition number (1-4): 2
```

You should be able to accept the defaults for the start and end point (just press **Enter**). Double-check that they make sense when compared to the information printed earlier.

These steps configure the partition type to LVM:

```
Command (m for help): t
Partition number (1-4): 2
Hex code (type L to list codes): 8e
Changed system type of partition 2 to 8e (Linux LVM)
```

At this point you are done making your changes, and just need to write them to the disk. It is a good idea to print (**p**) the new partition table to ensure you entered things correctly. Once thing look okay, you can commit (write) the partition table to disk:

```
Command (m for help): w
The partition table has been altered!
```

The write command will exit the `fdisk` program. You will now need to reboot the virtual machine to allow the kernel to recognize the new partition table, execute the following command:

```
reboot
```

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Resizing The Physical Volume (PV)

The CentOS system installed in the virtual machine image we ship uses Logical Volume Management (LVM) for its partitions. If you have never worked with LVM before and want to better understand the terminology herein, visit:

https://en.wikipedia.org/wiki/Logical_volume_management

http://www.tldp.org/HOWTO/LVM-HOWTO/

In order to make use of the newly increased disk space, LVM needs to be told that it is there and should be used. For this step you will adjust the size of the physical volume to match the new size of the partition. Establish a terminal session to your Nagios XI server and then execute the following command:

```
pvresize /dev/sda2
```

Resizing The Logical Volume (LV)

The next step is to resize the logical volume to use the new space available in the LVM physical volume. Execute the following command:

```
lvresize /dev/mapper/VolGroup-lv_root /dev/sda2
```

Resizing The Filesystem

The last step is to change the filesystem residing on the logical volume so that it knows to put files in that space. Execute the following command:

```
resize2fs /dev/mapper/VolGroup-lv_root
```

You're done! You can confirm the disk resize worked by using `df -h` to display a summary of filesystem size and usage.

If you took a snapshot of your VM before proceeding you should now shutdown the VM and delete the snapshot as it is no longer required for roll-back purposes.

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Further Reading

The following KB article provides more information on causes as to why your virtual machine may be running out of disk space:

Running Out Of Disk Space On The Nagios XI VM

Finishing Up

This completes the documentation on how to resize the virtual machine disk size 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

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