



Citrix XenServer ® 6.0 Quick Start Guide

Published Thursday, 15 September 2011
1.0 Edition



Citrix XenServer ® 6.0 Quick Start Guide

Copyright © 2011 Citrix Systems, Inc. All Rights Reserved.
Version: 6.0

Citrix, Inc.
851 West Cypress Creek Road
Fort Lauderdale, FL 33309
United States of America

Disclaimers

This document is furnished "AS IS." Citrix, Inc. disclaims all warranties regarding the contents of this document, including, but not limited to, implied warranties of merchantability and fitness for any particular purpose. This document may contain technical or other inaccuracies or typographical errors. Citrix, Inc. reserves the right to revise the information in this document at any time without notice. This document and the software described in this document constitute confidential information of Citrix, Inc. and its licensors, and are furnished under a license from Citrix, Inc.

Citrix Systems, Inc., the Citrix logo, Citrix XenServer and Citrix XenCenter, are trademarks of Citrix Systems, Inc. and/or one or more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries. All other trademarks and registered trademarks are property of their respective owners.

Trademarks

Citrix®
XenServer ®
XenCenter ®



Contents

Welcome	1
Installing XenServer and XenCenter	3
Installing the XenServer Host	3
Installing XenCenter	5
Connecting XenCenter to the XenServer Host	5
Activating XenServer	6
Creating Virtual Machines	7
Creating a Windows 7 (32-bit) VM	7
Making VM Templates	11
Creating a VM Template from an Existing VM	11
Creating a VM Template from a VM Snapshot	12
Creating VMs from a VM Template	12
Creating a Pool of XenServer Hosts	13
Creating a Pool	13
Setting Up Shared Storage for the Pool	14
Copying VMs to Shared Storage	15
Migrating Running VMs between Hosts in a Pool	17
A. System Requirements	19
System Requirements	19
XenServer Host System Requirements	19
XenCenter System Requirements	20
Supported Guest Operating Systems	20
Pool Requirements	20



Welcome

The XenServer Quick Start Guide steps through the installation and configuration essentials to get XenServer and its graphical, Windows-based user interface, XenCenter, up and running. After installation, it takes you through the process of creating Windows virtual machines (VMs) and then making customized virtual machine templates from which you can quickly create multiple, similar VMs. Finally, this guide demonstrates how to create a pool of hosts, which provides the foundation to migrate running VMs between hosts using XenMotion.

Focusing on the most basic deployment scenarios, this guide aims to get you set up quickly.

This guide is primarily intended for new users of XenServer and XenCenter. It is intended for those who wish to administer XenServer using XenCenter. For information on how to administer XenServer using the Linux-based `xe` commands through the XenServer Command Line Interface (CLI), please refer to the *XenServer Administrator's Guide*.

This guide will take you through:

- **Installing XenServer and XenCenter**
 - Installing XenServer on a physical host
 - Installing XenCenter
 - Connecting XenCenter to the XenServer host
 - Activating XenServer
- **Creating Virtual Machines**
 - Creating a Windows VM
 - Making VM templates: from an existing VM and from a VM snapshot
 - Creating VMs from VM templates
- **Creating a Pool of XenServer Hosts**
 - Creating a pool of hosts
 - Setting up shared storage for the pool
 - Copying VMs to shared storage
 - Migrating running VMs between hosts in a pool (XenMotion)

Terminology and Abbreviations

- *Host* — a physical computer that runs XenServer
- *Virtual Machine (VM)* — a computer composed entirely of software that can run its own operating system and applications as if it were a physical computer; a VM behaves exactly like a physical computer and contains its own virtual (software-based) CPU, RAM, hard disk and network interface card (NIC)
- *Pool* — a single managed entity that binds together multiple XenServer hosts and their VMs
- *Storage Repository (SR)* — a storage container in which virtual disks are stored

XenServer Major Components

XenServer is a complete server virtualization platform, optimized for both Windows and Linux virtual servers, with all the capabilities required to create and manage a virtual infrastructure.

XenServer runs directly on server hardware without requiring an underlying operating system, which results in an efficient and scalable system. XenServer works by abstracting elements from the physical machine (such as hard drives, resources and ports) and allocating them to the virtual machines (VMs) running on it.



XenServer lets you create VMs, take VM disk snapshots and manage VM workloads.

XenCenter is a graphical, Windows-based user interface. XenCenter allows you to manage XenServer hosts, pools and shared storage, and to deploy, manage and monitor VMs from your Windows desktop machine.

The XenCenter *Help* is also a great resource for getting started with XenCenter.

Installing XenServer and XenCenter

This chapter steps through installing XenServer on a single physical host, installing XenCenter on a Windows computer, and connecting them to form the infrastructure for creating and running virtual machines (VMs).

To get started, you need at least two separate physical computers: one to be the XenServer host and the other to run the XenCenter application. The XenServer host computer is dedicated entirely to the task of running XenServer — hosting VMs — and is **not** used for other applications. The computer that runs XenCenter can be any general-purpose Windows computer that satisfies the hardware requirements and can be used to run other applications too. For a detailed description of the system requirements, see [Appendix A, System Requirements](#).

You will also need the main XenServer installation CD, which contains the basic packages required to set up XenServer on your host and install XenCenter on your Windows computer. If you do not have the installation CD, you can download a digital copy and burn it to a CD. To download the installer, visit www.citrix.com/xenserver.

In this chapter, you will:

- **Install the XenServer host**
- **Install XenCenter**
- **Connect XenCenter to the XenServer host**
- **Activate XenServer**

Installing the XenServer Host

To install the XenServer host:

1. Insert the main installation CD into the DVD drive of the host computer.

Warning:

Installing XenServer will overwrite data on any hard drives that you select to use for the installation. Back up any data that you wish to preserve before proceeding.

2. Restart the machine.
3. Boot from the DVD drive (if necessary, see your hardware vendor documentation for information on changing the boot order).
4. Following the initial boot messages and the **Welcome to XenServer** screen, select your keyboard layout for the installation.

Tip:

Throughout the installation, quickly advance to the next screen by pressing **F12**. For general help, press **F1**.

5. When the **Welcome to XenServer Setup** screen is displayed, select **Ok**.
6. Read and accept the XenServer End User License Agreement (EULA).

Note:

If you now see a **System Hardware** warning screen and suspect that hardware virtualization assist support is available on your system, check the support site of your hardware manufacturer for BIOS upgrades.

7. Select **Ok** to perform a clean installation.



Note:

If this is an upgrade, see the *XenServer Installation Guide* for details.

8. If you have multiple hard disks, choose a Primary Disk for the installation. Select **Ok**.

Choose which disk(s) you would like to use for virtual machine storage. Choose **Ok**.

9. Select **Local media** as your installation source.

Note:

For information on using HTTP, FTP, or NFS as your installation source, see the *XenServer Installation Guide*.

10. When prompted about if you would like to install any supplemental packs, choose **No** to continue.
11. Select **Skip Verification**, and then choose **Ok**.

Note:

If you encounter problems during installation, it is recommended that you verify the installation source.

12. Set and confirm a root password, which the XenCenter application will use to connect to the XenServer host.
13. Set up the primary management interface that will be used to connect to XenCenter.

If your computer has multiple network interface cards (NICs), select the NIC which you wish to use for management.

14. Configure the Management NIC IP address with a static IP address or to use DHCP.
15. Specify the hostname and the DNS configuration, manually or automatically via DHCP.

If manually configuring the DNS, enter the IP addresses of your primary (required), secondary (optional), and tertiary (optional) DNS servers in the fields provided.

16. Select your time zone — the geographical area and then city.
17. Specify how you would like the server to determine local time: using NTP or manual time entry. Choose **Ok**.

If using NTP, you can then specify if the DHCP sets the time server, or enter at least one NTP server name or IP address in the fields below.

18. Select **Install XenServer**.
19. If you elected to set the date and time manually, you are prompted to do so.
20. From the **Installation Complete** screen, eject the installation CD from the drive, and then select **Ok** to reboot the server.

After the server reboots, XenServer displays **xconsole**, a system configuration console.

Note:

Make note of the IP address displayed. You will use this when you connect XenCenter to the host.



Installing XenCenter

To install XenCenter:

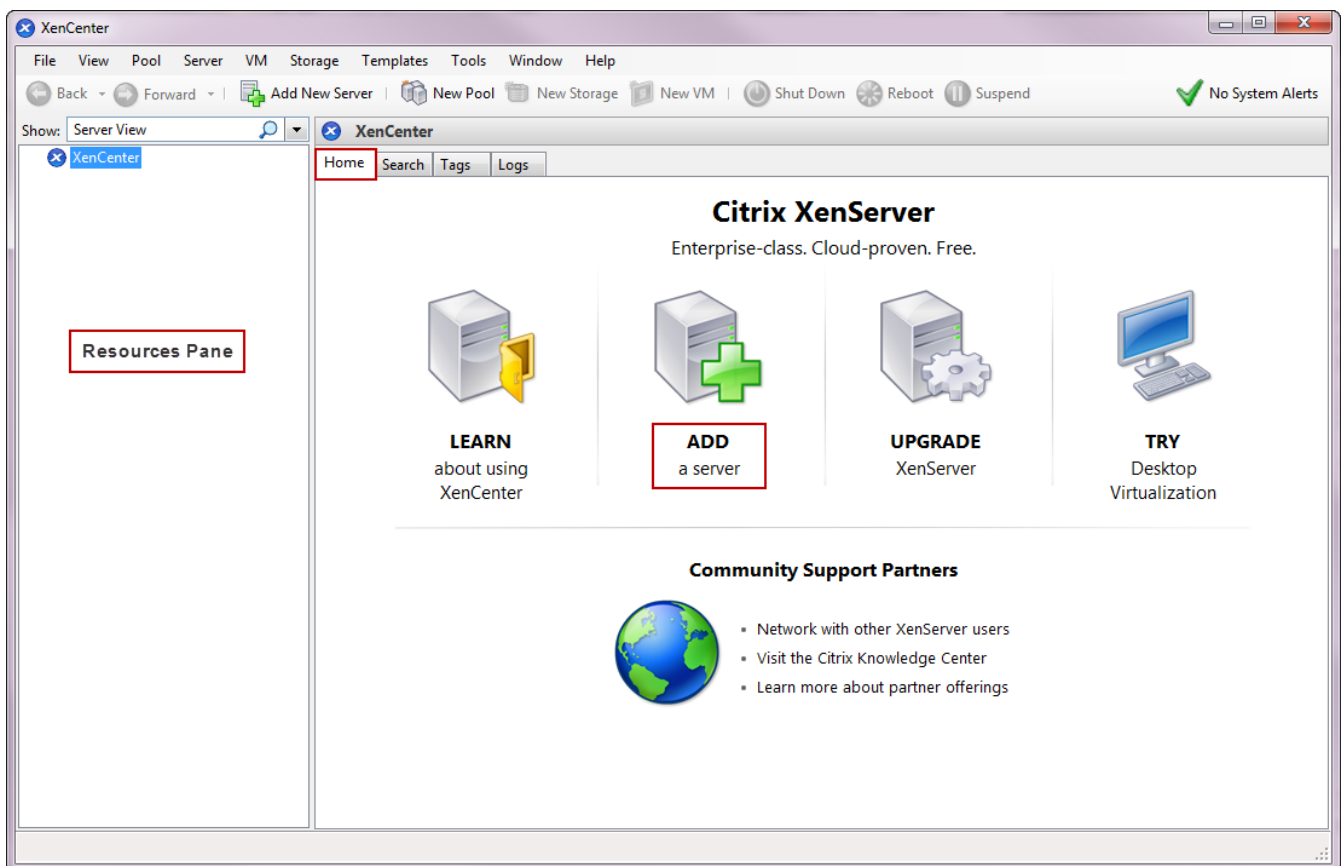
1. Insert the main installation CD into the DVD drive of the computer which you want to run XenCenter.
2. Open the `client_install` folder on the CD. Double-click `XenCenter.msi` to begin the installation.
3. Follow the Setup wizard, which allows you to modify the default destination folder and then to install XenCenter.

Connecting XenCenter to the XenServer Host

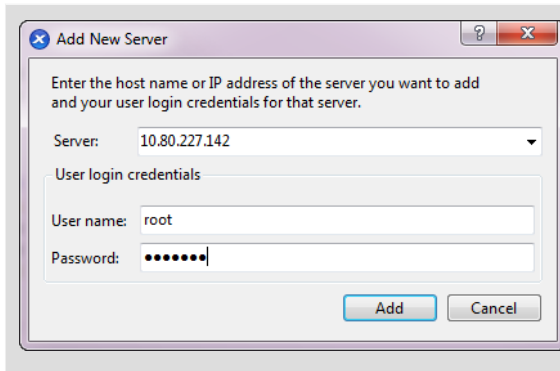
To connect XenCenter to the XenServer host:

1. Launch XenCenter.

The program opens to the **Home** tab.



2. Click the **ADD a server** icon to open the **Add New Server** dialog box.



In the **Server** field, enter the IP address of the host.

Enter the root username and password that you set during XenServer installation.

Choose **Add**.

Note:

The first time you add a new host, the **Save and Restore Connection State** dialog box appears. This enables you to set your preferences for storing your host connection information and automatically restoring server connections.

Activating XenServer

XenServer is available for free production use with no restrictions or time limits — all you need to do is activate the product within 30 days of first installing it to register your intent to use it with Citrix. Activation only takes a few minutes. After activation, you will be issued with an activation key which you can install on the host from within XenCenter. To request an activation key, go to the **Tools** menu, and select **License Manager**. For details on upgrading to XenServer Advanced Edition and higher, see the *XenCenter Help* or the *XenServer Installation Guide*.

XenServer Advanced Edition offers features, including:

- **High Availability (HA):** with HA enabled, XenServer continually monitors the health of hosts in a pool and automatically moves protected VMs to a healthy host if the current one fails
- **XenConvert** enables Physical to Virtual (P2V) and Virtual to Virtual (V2V) Conversion, which means that you can take a server or desktop workload from a physical machine or an existing virtual machine and convert it to a XenServer VM
- **Dynamic Memory Control (DMC)** guarantees performance and permits greater density of VMs per server by adjusting the memory of running VMs, keeping the amount of memory allocated to each VM between specified minimum and maximum memory values

Creating Virtual Machines

Through XenCenter, you can create virtual machines in a number of ways, according to your deployment needs. Whether you need to deploy individual VMs with distinct configurations and features or groups of multiple, similar VMs, XenCenter can get you up and running in a just a few steps.

This chapter focuses on a few methods by which to create Windows VMs. To get you started quickly, the procedures use the simplest setup of XenServer: a single XenServer host with local storage (once you have connected XenCenter to the XenServer host, storage is automatically configured on the local disk of the host).

Once you have created and customized your new VM, this chapter then demonstrates how to convert that existing VM into a VM template. A VM template preserves your customizations so that you can always use it to create new VMs to the same (or to similar) specifications. It also simplifies and hastens the process of creating multiple VMs at a time.

You can also create a VM template from a snapshot of an existing VM. A snapshot is a record of a running VM at a point in time. It saves the storage, configuration and networking information of the original VM, which makes it useful for backup purposes. Snapshots provide a fast way to make VM templates, and without replacing the original, existing VM. This chapter demonstrates how to take a snapshot of an existing VM and then how to convert that snapshot into a VM template.

Finally, this chapter describes how to create new VMs from a VM template.

In this chapter, you will:

- **Create a Windows VM**
- **Make a VM template from:**
 - **An existing VM**
 - **A VM snapshot**
- **Create VMs from a VM template**

Creating a Windows 7 (32-bit) VM

Note:

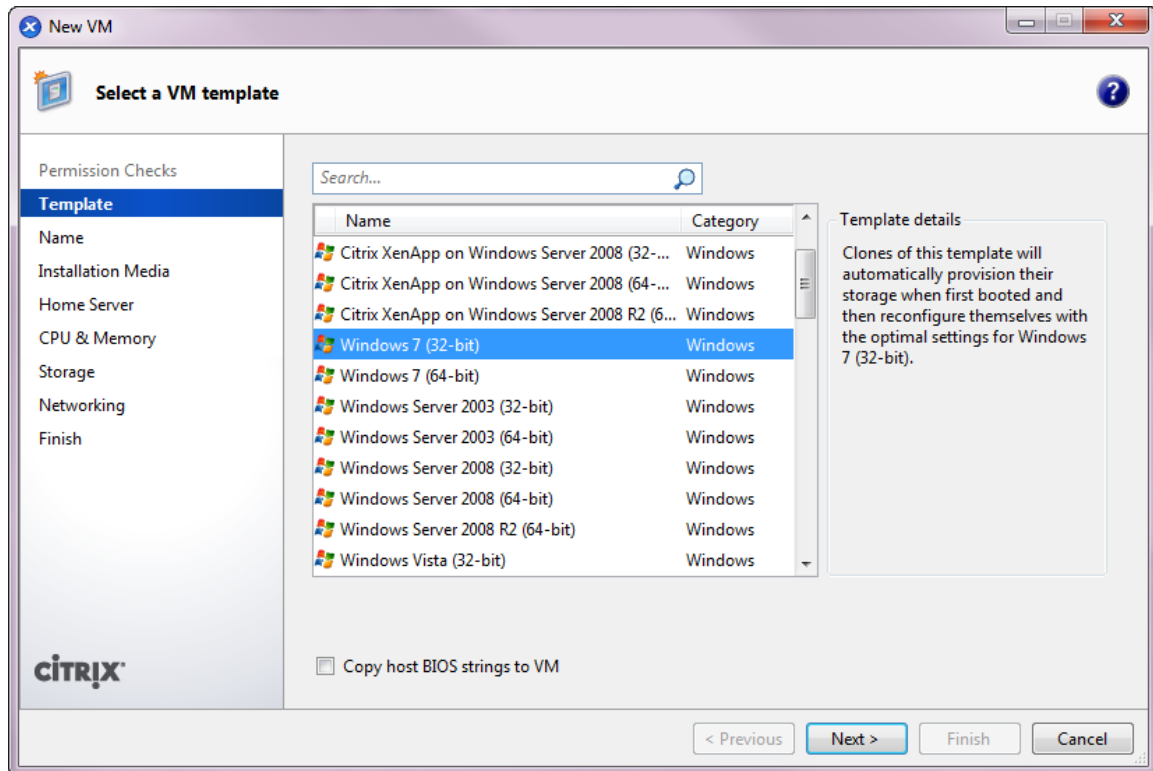
The following procedure provides an example of creating Windows 7 (32-bit) VM. The default values may vary depending on the operating system that you choose.

To create a Windows VM:

1. On the toolbar, click the **New VM** button to open the New VM wizard.



The New VM wizard allows you to configure the new VM, adjusting various parameters for CPU, storage and networking resources.



2. Select a VM template and click **Next**.

Each template contains the setup information needed to create a new VM with a specific guest operating system (OS), and with optimum storage. This list reflects the templates that XenServer currently supports.

Note:

If the OS that you intend to install on your new VM is compatible only with the original hardware (for example, an OS installation CD that was packaged with a specific computer), check the **Copy host BIOS strings to VM** box.

3. Enter a name for and optional description of the new VM.
4. Choose the source of the OS media to install on the new VM.

Installing from a CD/DVD is the simplest option for getting started. To do so, choose the default installation source option (DVD drive), insert the disk into the DVD drive of the XenServer host, and choose **Next** to proceed.

XenServer also allows you to pull OS installation media from a range of sources, including a pre-existing ISO library. An ISO image is a file that contains all the information that an optical disc (CD, DVD, and so on) would contain. In this case, an ISO image would contain the same OS data as a Windows installation CD.

To attach a pre-existing ISO library, click **New ISO library** and indicate the location and type of ISO library. You can then choose the specific operating system ISO media from the drop-down list.

5. The VM will run on the installed host. Choose **Next** to proceed.
6. Allocate processor and memory resources.

For a Windows 7 VM, the default is 1 virtual CPU and 2048 MB of RAM. You may also choose to modify the defaults. Select **Next** to continue.

Note:

Each OS will have different configuration requirements which will be reflected in the templates.

7. Configure storage for the new VM.

Click **Next** to select the default allocation (24 GB) and configuration, or you may wish to:

- a. Change the name, description or size of your virtual disk by clicking **Properties**.
- b. Add a new virtual disk by selecting **Add**.

Note:

When you create a pool of XenServer hosts, as you do in the next chapter, you can configure shared storage at this point if creating a new VM.

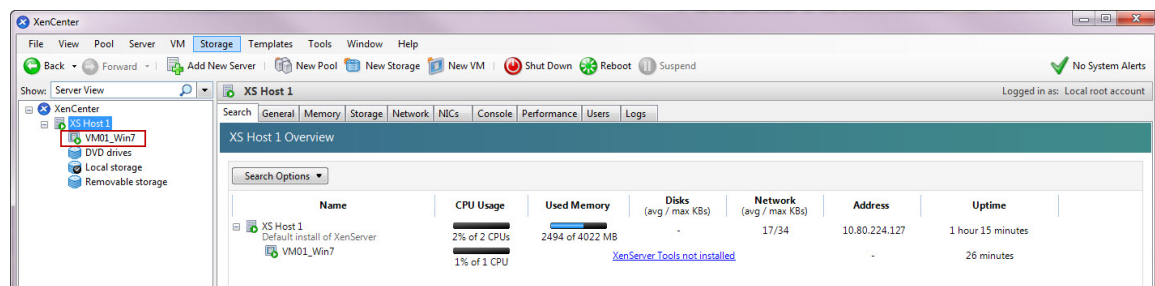
8. Configure networking on the new VM.

Click **Next** to select the default network interface card (NIC) and configurations, including an automatically-created unique MAC address for each NIC, or you may wish to:

- a. Change the physical network, MAC address or quality-of-service (QoS) priority of the virtual disk by clicking **Properties**.
- b. Add a new virtual NIC by selecting **Add**.

9. Review settings, and then click **Finish** to create the new VM and return to the **Search** tab.

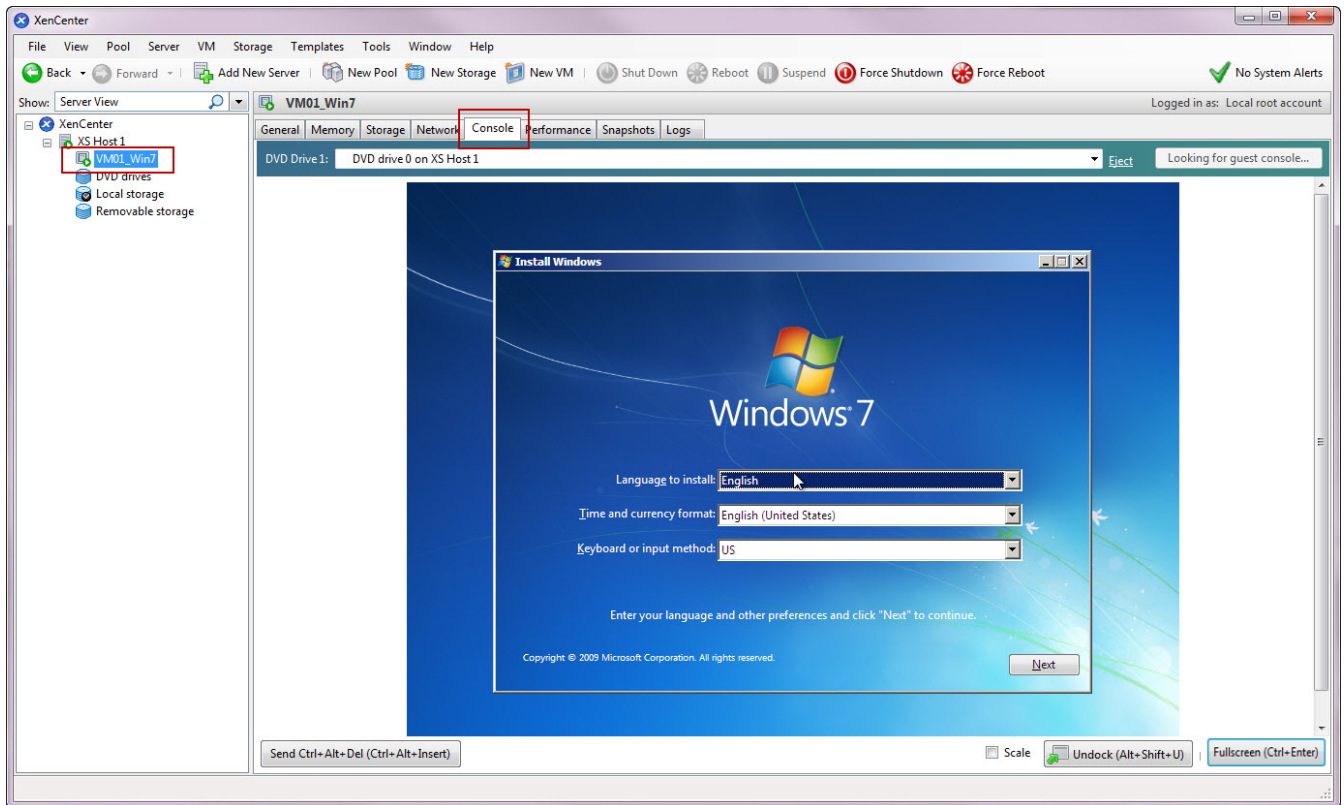
An icon for your new VM appears under the host in the **Resources** pane.



On the **Resources** pane, select the VM, and then click the **Console** tab to see the VM console.

10. Follow the OS installation screens and make your selections.

The following shows a sample a Windows 7 (32-bit) installation from DVD/CD.



11. Once the OS installation completes and the VM reboots, install the XenServer Tools.

XenServer Tools provide high-speed I/O for enhanced disk and network performance. XenServer Tools must be installed on each VM in order for the VM to have a fully-supported configuration. A VM will function without them, but performance will be significantly hampered. XenServer Tools also enable certain functions and features, including cleanly shutting down, rebooting, suspending and live migrating VMs.

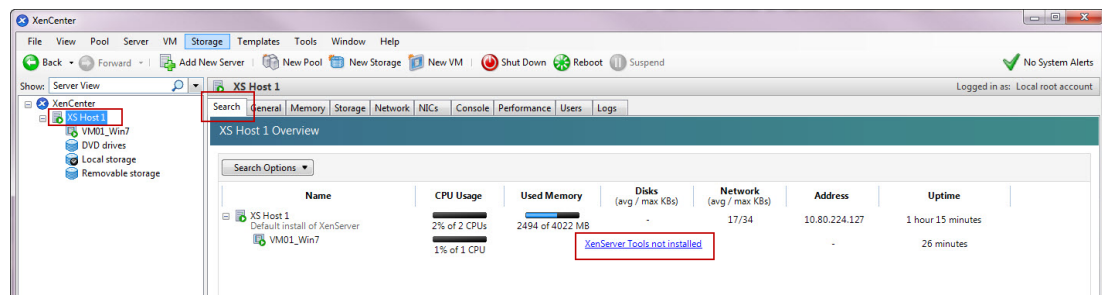
Warning:

You must install XenServer Tools for each Windows VM. Running Windows VMs without XenServer Tools is *not* supported.

To install XenServer Tools:

- a. On the **Resources** pane, select the XenServer host and then the **Search** tab.

The **XenServer Tools not installed** blue status text appears next to the new VM.



- b. Click the text to open the XenServer Tools setup wizard on the VM console.
- c. Click the **Install XenServer Tools** button, and then **Run Xensetup.exe**.
- d. When prompted, click **Yes** to allow the program to make changes to the computer.

- e. Accept the License Agreement, and click **Next** to continue.
- f. Choose a destination folder and click **Install**.
- g. Select **Reboot now**, and then **Finish** to complete the installation.

Once you have installed the XenServer Tools, you can go ahead and customize your VM by installing applications and performing any other configurations. If you would like to create multiple VMs with similar specifications, you can do so quickly by making a template from the existing VM and then creating new VMs from that template. The next section describes how to make VM templates.

Making VM Templates

There are a number of ways to make a VM template from an existing Windows VM, each with its individual benefits. This section focuses on two methods: converting an existing VM into a template, and creating a template from a snapshot of a VM. In both cases, the VM template preserves the customized configuration of the original VM or VM snapshot and can then be used to quickly create new, similar VMs. This section demonstrates how to make new VMs from these templates.

Before you create a template from an existing VM or VM snapshot, Citrix recommends that you run the Windows utility `Sysprep` on the original VM. In general, running `Sysprep` prepares an operating system for disk cloning and restoration. Windows OS installations include many unique elements per installation (including, Security Identifiers and computer names), and these elements must stay unique and not be copied to new VMs. If copied, confusion and problems are likely to arise. Running `Sysprep` avoids these problems by allowing the generation of new, unique elements for the new VMs.

Note:

Running `Sysprep` may not be as necessary for basic deployments or test environments as it is for production environments.

For more information about `Sysprep`, see your Windows documentation. It is also best to refer to your product documentation for a detailed procedure of running this utility, as it will differ depending on the version of Windows installed.

To give a general idea of the procedure:

1. On the VM Primary Disk (C :), create a new folder called `Sysprep`.
2. Insert the Windows operating system DVD/CD into the DVD drive of the XenServer host. From the VM console, browse to the `\Support\Tools` folder. Copy the contents of the `Deploy.cab` file to the newly-created `\Sysprep` folder on the VM.
3. Open a command prompt, and enter `cd Sysprep` to change to the `Sysprep` folder.
4. Enter `Sysprep`. This runs the `Sysprep` tool. The VM will shut down when it completes.

Creating a VM Template from an Existing VM

To create a VM template from an existing VM:

Warning:

When you create a new template from an existing VM, the original VM will be *replaced* by the new template. The VM will no longer exist.

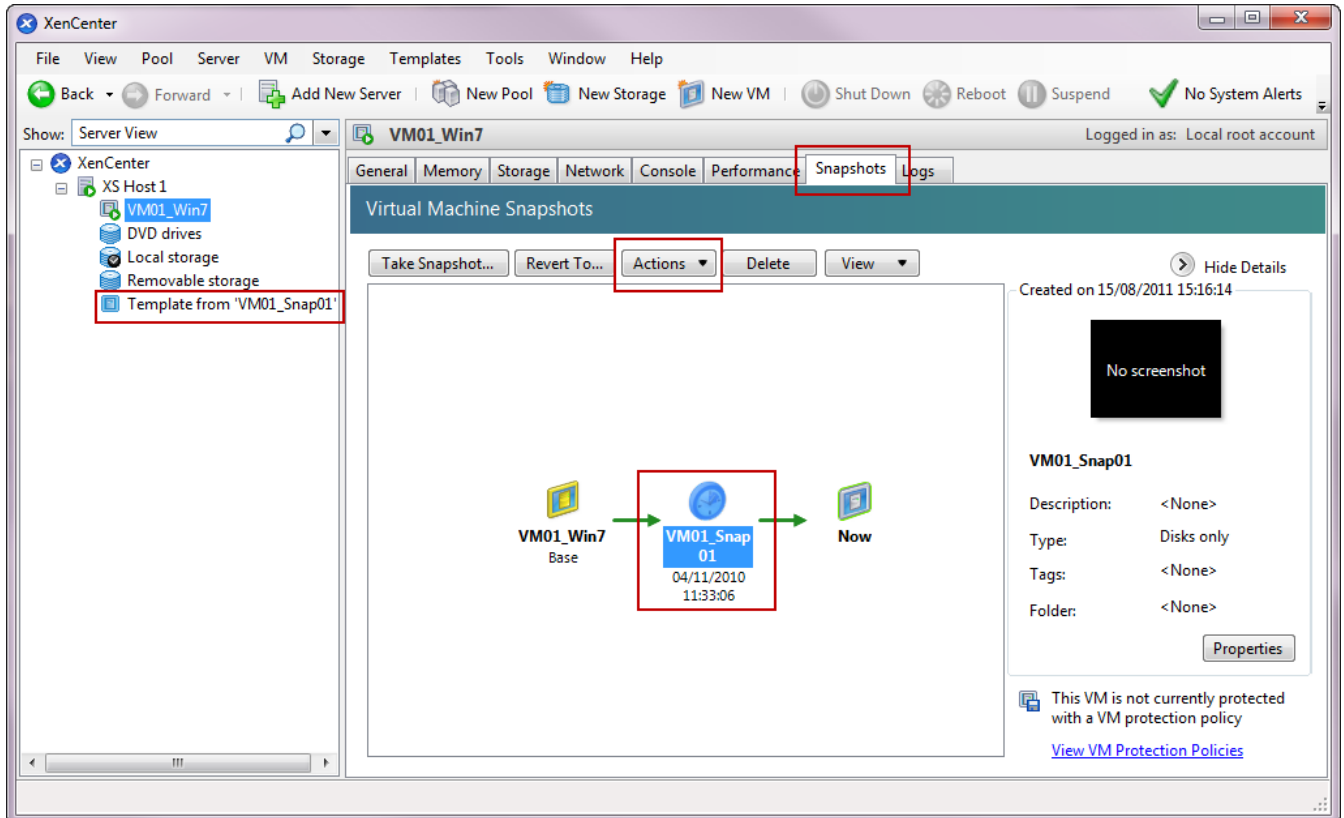
1. Shut down the VM that you wish to convert.
2. On the **Resources** pane, right-click the VM, and select **Convert to Template**.
3. Click **Convert** to confirm.

Once you create the template, the new VM template appears in the **Resources** pane, replacing the existing VM.

Creating a VM Template from a VM Snapshot

To create a template from a snapshot of a VM:

1. On the **Resources** pane, select the VM. Click the **Snapshots** tab, and then **Take Snapshot**.
2. Enter a name for and optional description of the new snapshot. Click **Take Snapshot**.
3. Once the snapshot finishes and the icon displays in the **Snapshots** tab, select the icon.



4. On the **Actions** drop-down list, choose **Save as a Template**.
5. Enter the name of the template, and then click **Create**.

Creating VMs from a VM Template

To create a new VM from a customized VM template:

1. In the **Resources** pane, right-click the template, and select **New VM wizard...**
The New VM wizard opens.
2. Follow the New VM wizard to create a VM from the selected template.

Note:

When the wizard prompts you for an OS installation media source, select the default and continue.

The new VM will appear in the **Resources** pane.

If you are using a template created from an existing VM, you also have the option to select **Quick Create**. This option does not take you through the New VM wizard, but rather instantly creates and provisions a new VM using all the configuration settings specified in your template.

Creating a Pool of XenServer Hosts

A pool is comprised of multiple XenServer host installations, bound together as a single managed entity. When combined with shared storage, a pool enables VMs to be started on *any* XenServer host in the pool that has sufficient memory, and then dynamically moved between hosts while running (XenMotion), and with minimal downtime. If an individual XenServer host suffers a hardware failure, you can restart the failed VM(s) on another host in the same pool.

If the High Availability (HA) feature (only available to XenServer Advanced Edition or higher) is enabled, protected VMs are *automatically* moved in the event of a host failure.

To create a pool, you first need to install XenServer on a second host, and then connect XenCenter to the new host. For information about installing XenServer and XenCenter, see [Installing XenServer and XenCenter](#). To get you started quickly, this section focuses on creating *homogeneous* pools. Within a homogeneous pool, all hosts must have compatible processors and be running the same version of XenServer, under the same type of XenServer product license. For a full list of homogeneous pool requirements, see [the section called “Pool Requirements”](#).

Note:

Heterogeneous pool creation is available to XenServer Advanced Edition or higher. For a description of heterogeneous pool technology, see [the section called “Pool Requirements”](#).

Once you have created a pool, this chapter then steps you through setting up shared storage. While XenServer accommodates many storage solutions, this chapter focuses on two common types — NFS and iSCSI — to get you up and running quickly.

Finally, this chapter demonstrates how to use XenMotion to live migrate VMs between hosts in the pool.

In this chapter, you will:

- **Create a pool of hosts**
- **Set up shared storage for the pool**
- **Copy VMs to shared storage**
- **Use XenMotion for live migration of VMs between hosts**

Creating a Pool

To create a pool:

1. On the toolbar, click the **New Pool** button.

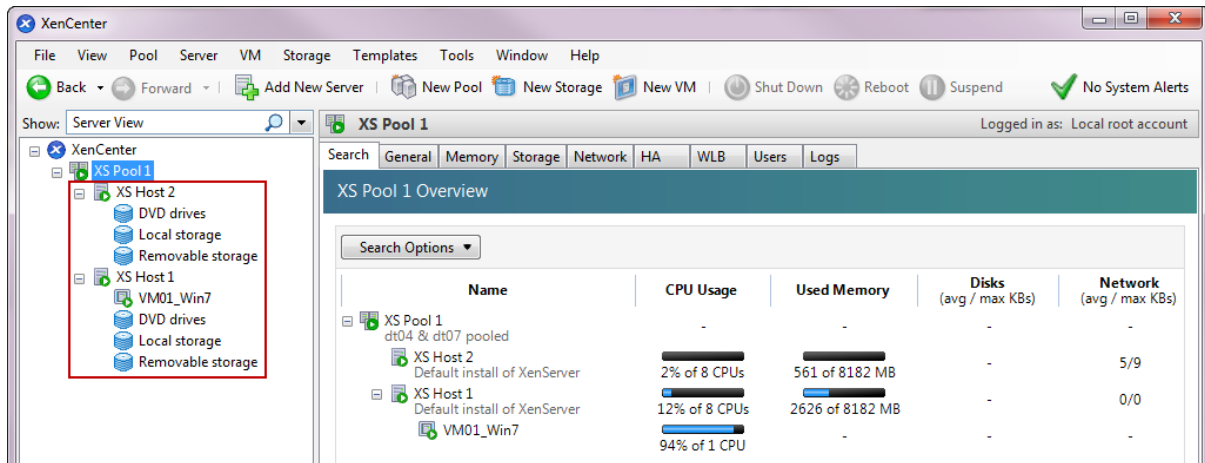


2. Enter a name for and optional description of the new pool.
3. Nominate the pool master by selecting a host from the **Master** list.

The default host should be adequate for getting started.

4. Select the second host to place in the new pool from the **Additional members** list.
5. Click **Create Pool**.

The new pool appears in the **Resources** pane.



Setting Up Shared Storage for the Pool

To set up shared storage between hosts in a pool, you need to create a new storage repository. A XenServer storage repository (SR) is a storage container in which virtual disks are stored. SRs, like virtual disks, are persistent, on-disk objects that exist independently of XenServer. SRs can exist on different types of physical storage devices, both internal and external, including local disk devices and shared network storage. A number of different types of storage are available when you create a new SR, including:

- NFS VHD storage
- Software iSCSI storage
- Hardware HBA storage

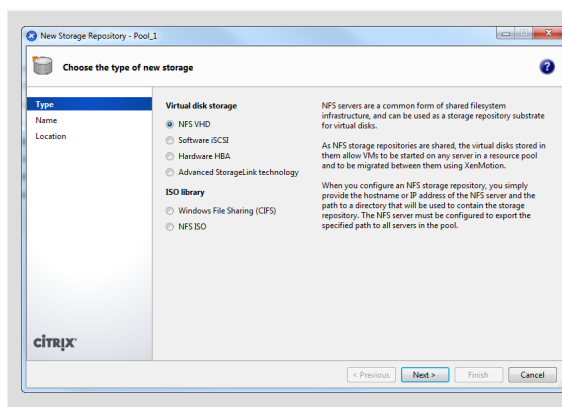
This section steps through setting up two types of shared SRs for a pool of hosts: NFS and iSCSI. Before you create a new SR, you need to configure your NFS or iSCSI storage. Setup differs depending on the type of storage solution that you use, so it is best to refer to your vendor documentation for details. In all cases, to be part of a pool, the servers providing shared storage must have static IP addresses or be DNS addressable.

To create a new shared NFS or iSCSI storage repository:

1. On the **Resources** pane, select the pool. On the toolbar, click the **New Storage** button.



The New Storage Repository wizard opens.



Under **Virtual disk storage**, choose NFS VHD or Software iSCSI as the storage type.

Choose **Next** to continue.

2. If you choose NFS:
 - a. Enter a name for the new SR and the name of the share where it is located. Click **Scan** to have the wizard scan for existing NFS SRs in the specified location.

Note:

The NFS server must be configured to export the specified path to all XenServer hosts in the pool.

- b. Click **Finish**.

The new SR appears in the **Resources** pane, within the pool.

- 3. If you choose iSCSI:

- a. Enter a name for the new SR and then the IP address or DNS name of the iSCSI target.

Note:

The iSCSI storage target must be configured to enable every XenServer host in the pool to have access to one or more LUN(s).

- b. If you have configured the iSCSI target to use CHAP authentication, enter the User and Password.
- c. Click the **Discover IQNs** button, and then choose the iSCSI target IQN from the Target IQN list.

Warning:

The iSCSI target and all servers in the pool must have *unique* IQNs.

- d. Click the **Discover LUNs** button, and then choose the LUN on which to create the SR from the Target LUN list.

Warning:

Each individual iSCSI storage repository must be contained entirely on a single LUN, and may not span more than one LUN. Any data present on the chosen LUN will be destroyed.

- e. Click **Finish**.

The new SR appears in the **Resources** pane, within the pool.

The new shared SR now becomes the default SR for the pool.

Copying VMs to Shared Storage

Now that you have configured shared storage, you are almost ready to use XenMotion to move running VMs between hosts in the pool. Before you can live migrate VMs, you need to copy the existing VMs to the newly-created shared storage.

To copy VMs to shared storage:

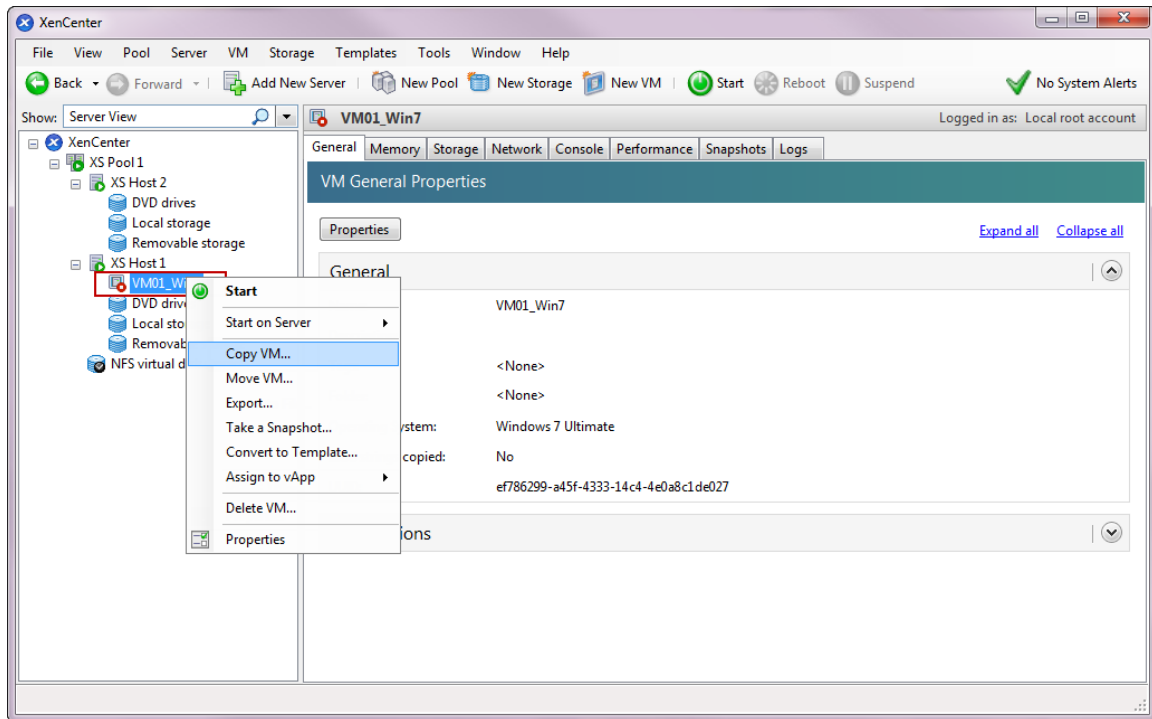
- 1. If you have not already run the *Sysprep* utility on the VM that you wish to copy, do so now.

See the procedure for running *Sysprep* in [the section called “Making VM Templates”](#) for details.

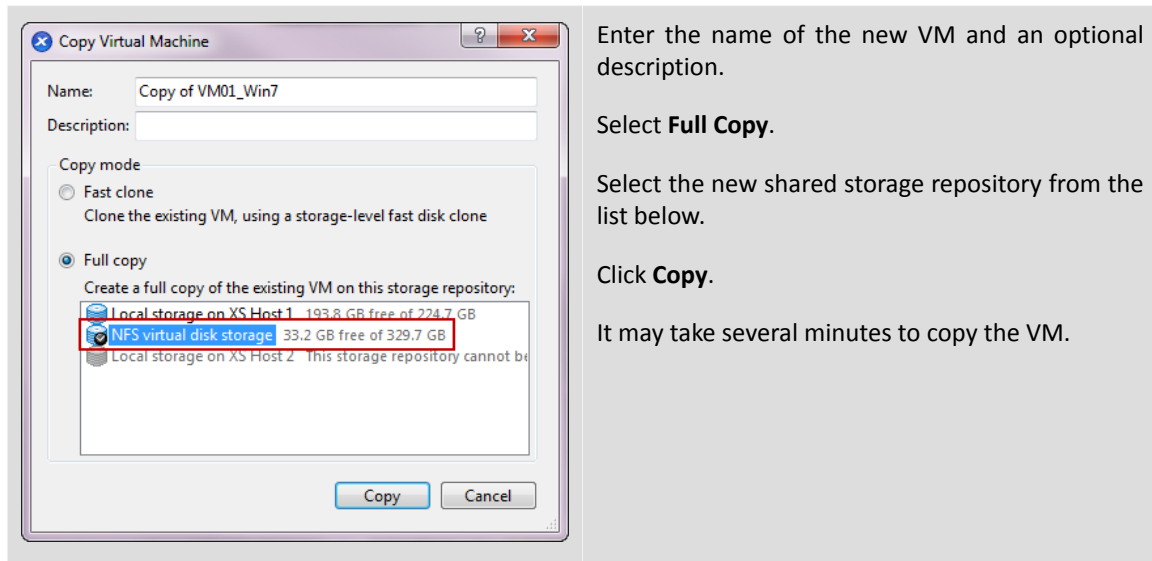
- 2. Shut down the VM if it is running: on the **Resources** pane, select the VM icon, and from the toolbar, select **Shut Down**.



- 3. Once the VM shuts down, right-click the VM icon in the **Resources** pane, and select **Copy VM**.



The Copy Virtual Machine dialog box is displayed.



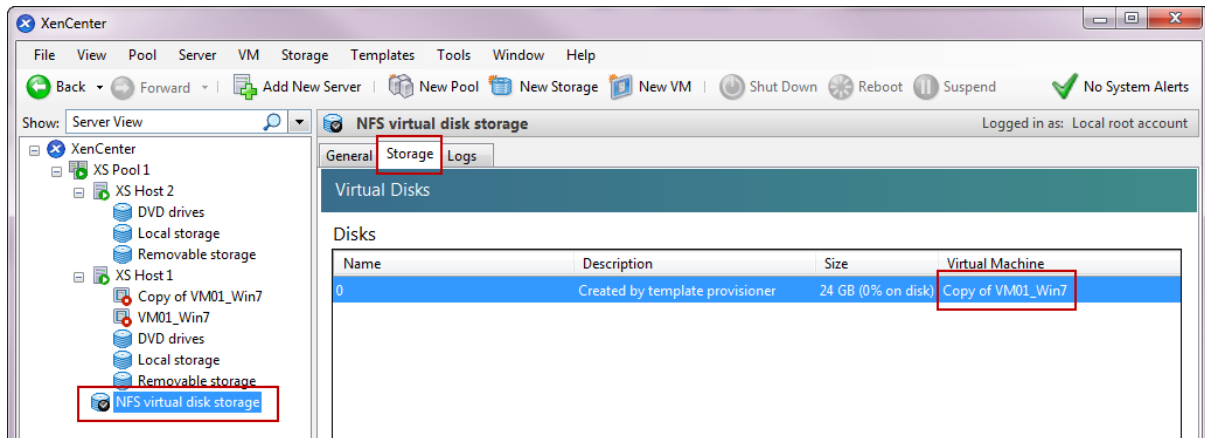
The new VM copy appears in the **Resources** pane.

If you now select the shared storage icon in the **Resources** pane and click the **Storage** tab, you will see that the new VM copy is listed under the **Virtual Disks** of the SR.

Note:

The copy may take some time, as this process copies the whole VM disk from one SR to another.

Copying VMs within the same SR can be performed more quickly, as you can choose to carry out a fast clone rather than a full copy.



Migrating Running VMs between Hosts in a Pool

Using XenMotion, you can move a running VM from one host to another in the same pool, and with virtually no service interruption. Where you decide to migrate a VM to depends on how you configure the VM and pool.

To migrate a running VM using XenMotion:

1. On the **Resources** pane, select the VM that you want to move.

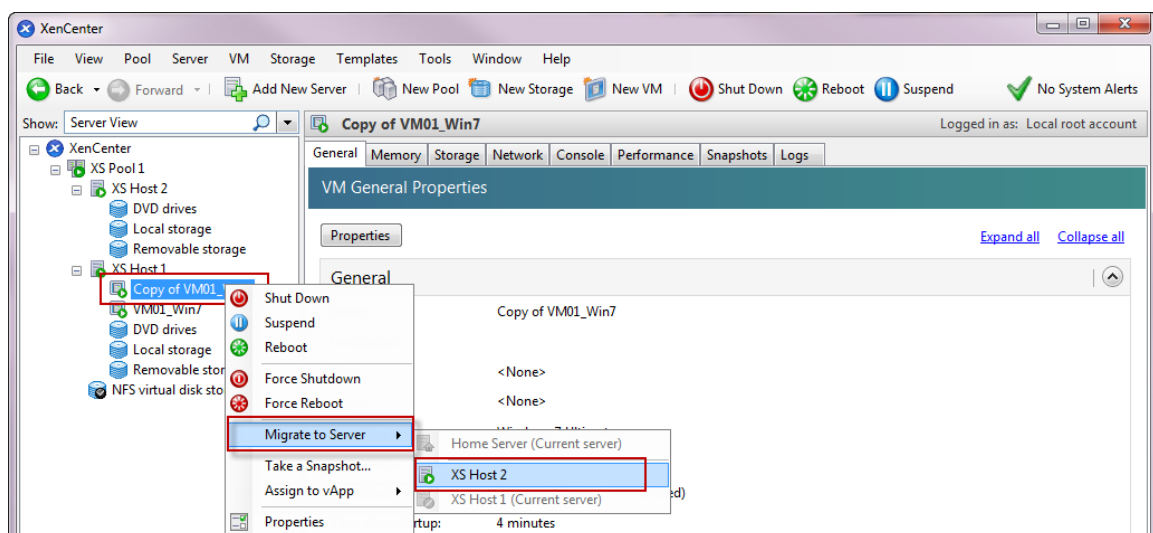
Note:

Make sure that the VM you migrate does not have local storage.

2. Right-click the VM icon, point to **Migrate to Server**, and then select the new VM host.

Tip:

You can also drag and drop the VM onto the target server.



3. The migrated VM displays under the new host in the **Resources** pane.

The screenshot shows the XenCenter application window. The left sidebar displays a tree view of the environment, with 'Copy of VM01_Win7' under 'XS Host 2' highlighted with a red box. The main pane shows the 'XS Pool 1 Overview' with a table of resource usage.

Name	CPU Usage	Used Memory	Disks (avg / max KBs)	Network (avg / max KBs)
XS Pool 1 dt04 & dt07 pooled	-	-	-	-
XS Host 2 Default install of XenServer	2% of 8 CPUs	2626 of 8182 MB	-	6/11
Copy of VM01_Win7	1% of 1 CPU	417 of 2048 MB	8/16	0/0
XS Host 1 Default install of XenServer	0% of 8 CPUs	2626 of 8182 MB	-	1/1
VM01_Win7	1% of 1 CPU	390 of 2048 MB	0/0	1/1
NFS virtual disk storage NFS SR [lork:/mnt/vo10/nfs1/scra...	-	-	-	-



Appendix A. System Requirements

System Requirements

XenServer requires at least two separate physical x86 computers: one to be the XenServer host and the other to run the XenCenter application. The XenServer host computer is dedicated entirely to the task of running XenServer — hosting VMs — and is **not** used for other applications. The computer that runs XenCenter can be any general-purpose Windows computer that satisfies the hardware requirements and can be used to run other applications too.

XenServer Host System Requirements

While XenServer will generally be deployed on server-class hardware, XenServer is also compatible with many models of workstations and laptops. For a comprehensive XenServer hardware compatibility list, see hcl.vmd.citrix.com. The following describes the recommended XenServer hardware specifications.

The XenServer host should be a 64-bit x86 server-class machine devoted to hosting VMs. This machine should run an optimized and hardened Linux partition with a Xen-enabled kernel which controls the interaction between the virtualized devices seen by VMs and the physical hardware.

XenServer can make use of:

- up to 1 TB of RAM
- up to 16 NICs
- up to 64 logical processors

The system requirements for the XenServer host are:

CPU(s)	<p>One or more 64-bit x86 CPU(s), 1.5 GHz minimum, 2 GHz or faster multicore CPU recommended</p> <p>To support VMs running Windows, an Intel VT or AMD-V 64-bit x86-based system with one or more CPU(s) is required.</p> <p>Note:</p> <p>To run Windows VMs, hardware support for virtualization must be enabled on the XenServer host. This is an option in the BIOS. It is possible your BIOS might have virtualization support disabled. Consult your BIOS documentation for more details.</p> <p>To support VMs running supported paravirtualized Linux, a standard 64-bit x86-based system with one or more CPU(s) is required.</p>
RAM	2 GB minimum, 4 GB or more recommended
Disk Space	<p>Locally attached storage (PATA, SATA, SCSI) with 16 GB of disk space minimum, 60 GB of disk space recommended, or SAN via HBA (not via software) if installing with multipath boot from SAN (see http://hcl.vmd.citrix.com for a detailed list of compatible storage solutions).</p> <p>Product installation creates two 4 GB partitions for the XenServer host control domain.</p>
Network	<p>100 Mbit/s or faster NIC. One or more gigabit NIC(s) is recommended for faster P2V and export/import data transfers and VM live migration.</p> <p>For redundancy, multiple NICs are recommended. The configuration of NICs will differ depending on the storage type. See vendor documentation for details.</p>



XenCenter System Requirements

The system requirements for XenCenter are:

Operating System	Windows 7, Windows XP, Windows Vista, Windows Server 2003, Windows Server 2008, Windows Server 2008 R2 (all editions and versions)
.NET Framework	Version 3.5
CPU Speed	750 MHz minimum, 1 GHz or faster recommended
RAM	1 GB minimum, 2 GB or more recommended
Disk Space	100 MB minimum
Network	100Mb or faster NIC
Screen Resolution	1024x768 pixels, minimum

Supported Guest Operating Systems

For a list of supported VM operating systems, see the *XenServer Virtual Machine Installation Guide*.

Pool Requirements

This guide assumes that you are creating a homogeneous pool of XenServer hosts. A homogeneous pool requires that:

- The CPUs on all hosts in the pool be the same, in terms of vendor and model (except for stepping numbers)
- All CPU features that are exposed to the software be the same
- All CPUs have virtualization enabled (for running Windows VMs) or all CPUs have virtualization disabled (must be consistent across hosts in the pool)
- All hosts in the pool run the same version of XenServer software, at the same patch level
- All hosts in the pool have the same type of XenServer product license
- All hosts in the pool be configured with the same supplemental packs

Before a XenServer host joins a pool, it must also:

- Not be a member of an existing pool
- Have no shared storage configured
- Have no running or suspended VMs, or active operations on any VMs in progress (for example, shutting down)
- Have a static IP address or be DNS addressable (IP addresses can be assigned via DHCP, but it is not advisable with shared storage)
- Have a system clock synchronized with that of the pool master (for example, via NTP)
- Not have a bonded management interface (you can configure this once the host has successfully joined the pool)

XenServer hosts in resource pools may contain different numbers of physical network interfaces and have local storage repositories of varying size. In practice, it is often difficult to obtain multiple servers with the exact same CPUs, and so minor variations are permitted. If you are sure that it is acceptable in your environment for hosts with varying CPUs to be part of the same resource pool, then you can force join a pool together using the CLI. For information on forcing the joining operation, see the *XenServer Administrator's Guide*.



Note:

Servers providing shared NFS or iSCSI storage for the pool must have a static IP address or be DNS addressable.

Heterogeneous Pools

Heterogeneous pool creation is made possible by leveraging technologies in recent Intel (FlexMigration) and AMD (Extended Migration) CPUs that provide CPU "masking" or "leveling". These features allow a CPU to be configured to *appear* as providing a different make, model, or functionality than it actually does. This enables you to create pools of hosts with disparate CPUs but still safely support live migrations.

Heterogeneous pool creation is only available to XenServer Advanced Edition and above. For details on creating heterogeneous pools, see the *XenServer Administrator's Guide*.