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XenServer Conversion Manager 7.3 Guide: Converting from VMware to XenServer
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Contents

Introduction

XenServer Conversion Manager allows you to:

- Convert multiple virtual machines using one simple wizard
- Map network settings between VMware and XenServer so your converted virtual machines will be up and running with the proper network settings
- Choose a storage location where you would like your new XenServer virtual machines to run

Getting started with XenServer Conversion Manager is easy. All you need to do is import the XenServer Conversion Manager Virtual Appliance into your XenServer host or pool, install the XenServer Conversion Manager Console on a Windows or a Linux machine, and follow a simple wizard.

Note: XenServer Conversion Manager does not remove or change your existing VMware environment. Virtual machines are duplicated onto your XenServer environment and not removed from VMware.

Note: XenServer Conversion Manager is available for XenServer Enterprise edition customers or those who have access to XenServer through their XenApp/XenDesktop entitlement. For more information about XenServer licensing, see the XenServer 7.3 Licensing FAQ. To upgrade, or to buy a XenServer 7.3 license, visit the Citrix website.

Understanding XenServer

Before you can convert your environment, it is recommended that you become familiar with XenServer concepts. For more information, refer to the *XenServer 7.3 Quick Start Guide.*

To successfully use XenServer Conversion Manager, you should be able to perform the following tasks:

- Setting up a basic XenServer environment, including installing XenServer. For more information, refer to the *XenServer 7.3 Quick Start Guide* and the *XenServer 7.3 Installation Guide*.
- Creating a network in XenServer, assigning an IP address to a NIC. This is discussed in this guide and also in the *XenServer 7.3 Quick Start Guide.*
- Connecting to storage. This is discussed in this guide and also in the *XenServer 7.3 Quick Start Guide.*

XenServer documentation is available from docs.citrix.com, Knowledge Center articles, and additionally, white papers are available from the Citrix Knowledge Center at https://www.citrix.com/products/xenserver/resources.html.

Comparing VMware and XenServer Terminology

The following table summarizes the approximate XenServer equivalent for common VMware features, concepts, and components:

VMware Term	XenServer Equivalent
VMware vSphere Client	XenCenter (the management console for XenServer)
Cluster / Resource Pool	Resource Pool
Data Store	Storage Repository
vMotion	XenMotion
Distributed Resource Scheduling (DRS)	Workload Balancing
High Availability (HA)	High Availability (HA)
vCenter Converter	XenConvert, XenServer Conversion Manager
Role Based Access Control (RBAC)	Role Based Access Control (RBAC)

Conversion Overview

XenServer Conversion Manager creates a copy of each targeted virtual machine and, when it has converted it to a XenServer VM with comparable networking and storage connectivity, it imports the VM into your XenServer pool or host. You can use XenServer Conversion Manager to convert as few as one or two virtual machines or perform batch conversions of an entire environment.

Note: Before converting the VMs from vSphere, you must shutdown the VMs (intended for conversion) on vSphere. The current version of XenServer Conversion Manager does not support converting a running VM with memory copied from vSphere to XenServer.

The XenServer Conversion Manager conversion process requires four items:

- **XenServer Conversion Manager Console**. XenServer Conversion Manager Console is the user interface where you set conversion options and control conversion. You can install the console on your Windows or a Linux local desktop. XenServer Conversion Manager requires a connection to XenServer and the XenServer Conversion Manager Virtual Appliance, which is a virtual appliance where the conversion is performed.

- **XenServer Conversion Manager Virtual Appliance**. The XenServer Conversion Manager Virtual Appliance is a pre-packaged virtual machine you import into the XenServer host or pool where you want to run the converted virtual machine(s). The virtual appliance converts the copies of the VMware virtual machines into the XenServer virtual-machine format and imports these copies into the XenServer pool or host.

- **XenServer standalone host or pool**. This host or pool is the XenServer environment where you want to run the converted virtual machines.

- **VMware server**. XenServer Conversion Manager requires a connection to a VMware server that manages the virtual machines you want to convert. This connection can be to a vCenter Server, ESXi Server, or ESX Server. The virtual machines are not removed from the VMware server. Instead, the XenServer Conversion Manager Virtual Appliance makes a copy of these virtual machines and converts them to XenServer virtual-machine format.

The following illustration shows the relationships between these components.
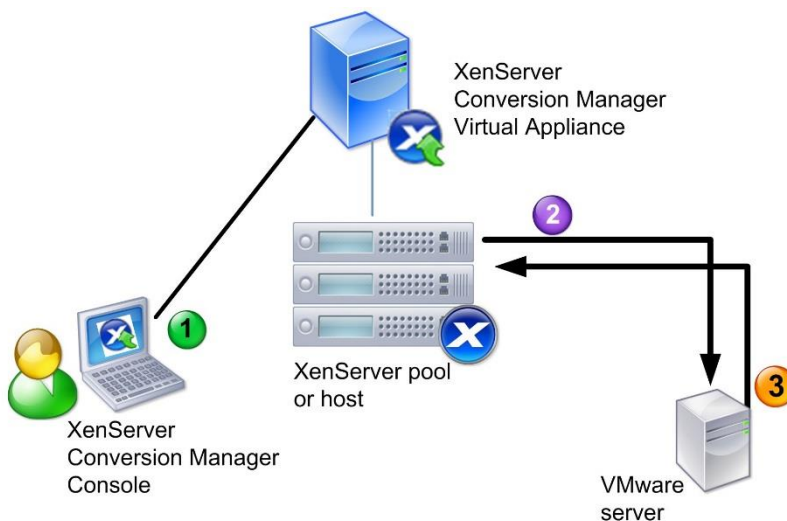
This illustration shows how (1) XenServer Conversion Manager communicates with XenServer Conversion Manager Virtual Appliance, (2) the XenServer Conversion Manager Virtual Appliance authenticates with the VMware server, and (3) the VMware server responds to the XenServer Conversion Manager Virtual Appliance during conversion.

The VMware server communicates with the XenServer Conversion Manager Virtual Appliance only when the appliance queries the VMware server for environment information (VMs and networks) and disk data throughout the conversion.

Summary of How to Convert Virtual Machines

You can configure the XenServer Conversion Manager and start to convert virtual machines in just a few easy steps:

1. Download the XenServer Conversion Manager Virtual Appliance and the XenServer Conversion Manager Console from the XenServer 7.3 Enterprise Edition page.
2. Import the XenServer Conversion Manager Virtual Appliance into XenServer using XenCenter.
3. Configure the XenServer Conversion Manager Virtual Appliance using XenCenter.
4. Install the XenServer Conversion Manager Console.
5. From the XenServer Conversion Manager Console, launch the conversion wizard and start to convert virtual machines.

The sections that follow explain these steps in detail. Information is also available in the XenServer Conversion Manager Help, which appears in the XenServer Conversion Manager Console.

Preparing Your Environment

Before you begin converting your VMware environment, you must create and prepare the target XenServer standalone host or environment, where you will ultimately run the converted VMware virtual machines. Preparing your environment might include the following activities:

1. Defining a strategy for the way in which you will convert your VMware environment. Do you just want to convert 1 or 2 VMs? Will you convert your entire environment? Will you create a pilot first to ensure your configuration is correct? Will you run both environments in parallel? Do you want to maintain your existing cluster design when you convert to XenServer?

2. Planning your networking configuration. Do you want to connect to the same physical networks? Do you want to simplify or change your networking configuration?

3. Installing XenServer on the hosts you want in the pool. Ideally, you should have the NICs on the hosts plugged in to their physical networks before you begin installation.

4. Creating a pool and performing any basic networking configuration. For example, you will need to:
   • Configure a network to connect to the VMware cluster on the XenServer host (if the cluster is not on the same network as the XenServer host).
   • Configure a network to connect to the storage array. That is, if you are using IP-based storage, create a XenServer network that connects to the physical network where the storage array resides.
   • Create a pool and add hosts to this pool.

5. (For shared storage and XenServer pools.) Preparing the shared storage where you want store the virtual disks and creating a connection to the storage, known as a Storage Repository (SR) on the pool.

6. (Optional.) Although not a requirement for conversion, you may want to configure the administrator accounts on the XenServer pool to match those on the VMware server. For information about configuring Role-based Access Control for Active Directory accounts, refer to the XenCenter Help or the *XenServer 7.3 Administrator's Guide*.

Installing XenServer and Creating a Pool

Before you can convert VMware virtual machines, you should create a XenServer pool (or a standalone host) where you would like to run the converted virtual machines. This pool must have networking configured so it can connect to the VMware server. You may also want to configure the same physical networks on the XenServer pool that you have in the VMware cluster or simplify your networking configuration. If you want to run the converted virtual machines in a pool, you must add the shared storage to the pool by creating a storage repository before conversion.

If you are new to XenServer, you can learn about XenServer basics, including basic installation and configuration, by reading the *XenServer 7.3 Quick Start Guide.*

XenServer Environment Considerations

Before installing XenServer and importing the virtual appliance, consider the following factors that may change your conversion strategy:

Selecting the host where you want to run the XenServer Conversion Manager Virtual Appliance. You must import the virtual appliance into the stand-alone host or into a host in the pool where you will eventually run the converted virtual machines.

For pools, you can run the virtual appliance on any host in the pool, provided its storage meets the storage requirements.

The storage configured for the pool or host where you want to run the converted virtual machines must meet specific requirements. If you want to run your newly converted virtual machines in a pool, their virtual disks must be stored on shared storage. However, if the converted virtual machines will run on a single standalone host (not a pool) their virtual disks can use local storage.

If you want to run the converted virtual machines in a pool, you must ensure to add the shared storage to the pool by creating a storage repository.

Guest operating systems supported for conversion. XenServer Conversion Manager supports converting VMware virtual machines running any of the Windows guest operating systems that XenServer supports. For a list of Windows guest operating systems supported by XenServer, see the Citrix *XenServer Virtual Machine User Guide*. The following Linux operating systems are also supported.

- RHEL 5.4/5.6/6.4/7.0
- CentOS 5.5/6.3/6.4/6.5/7.0
- SLES 11 SP1/SP2/SP3/SP4
- Ubuntu 12.04/14.04/16.04

Meeting Networking Requirements

To convert VMware virtual machines, the XenServer Conversion Manager Virtual Appliance needs connectivity to a physical network or VLAN that can contact the VMware server. (In the following sections, this network is referred to as the "VMware network.")

If the VMware server is on a different physical network than the hosts in the XenServer pool, you should add the network to XenServer before running the conversion wizard.

Mapping Your Existing Network Configuration

Existing VMware Networks

XenServer Conversion Manager includes features that can reduce the amount of manual networking configuration you need to perform after you convert from your existing VMware virtual machines to XenServer. For example, XenServer Conversion Manager will:

- Preserve virtual MAC addresses on the VMware virtual machines and re-use them in the resulting XenServer virtual machines. Preserving the MAC addresses associated with virtual network adapters (virtual MAC addresses) may:
    - Help preserve IP addresses in environments using DHCP
    - Be useful for software programs whose licensing references the virtual MAC addresses

- **Map (virtual) network adapters** XenServer Conversion Manager can map VMware networks onto XenServer networks so that after the virtual machines are converted, their virtual network interfaces will be connected accordingly. XenServer networks you can choose include standard physical networks (known as External Networks), VLANs, single-server private networks, and cross-server private networks.

    For example, if you map VMware 'Virtual Network 4' to XenServer 'Network 0,' then any virtual machine you converted that had a virtual adapter connected to VMware 'Virtual Network 4' will be connected to 'Network 0' once it is converted. XenServer Conversion Manager does not convert or migrate any hypervisor network settings; the wizard only alters a converted VM's virtual network interface connections based on the mappings provided.

    Note: You do not need to map all of your VMware networks on to the corresponding XenServer networks. However, if you prefer, you can change the networks the virtual machines use or reduce and/or consolidate the number of networks in your new XenServer configuration.

To gain the maximum benefit from these features, Citrix recommends the following:

- Before installing XenServer, plug the hosts into the networks on the switch (that is, the ports) that you would like to configure on the host.
- Ensure the XenServer pool can see the networks you would like to be detected. Specifically, plug the XenServer hosts into switch ports that can access the same networks as the VMware cluster.

Though it is easier to plug the XenServer NICs into the same (corresponding) networks as those on the VMware hosts, this is not required. If you would like to change the NIC/network association, you can plug a XenServer NIC into a different physical network.

Preparing for the XenServer Conversion Manager Networking Requirements

When you perform conversion, you must create a network connection to the network where the VMware server resides. XenServer Conversion Manager uses this connection for conversion traffic between the XenServer host and the VMware server.

To create this network connection, you must perform two tasks:

- When you import the XenServer Conversion Manager Virtual Appliance, you must specify the network you added for conversion traffic as a virtual network interface. You can do so by configuring **interface 1** so it connects to that network.

- Before you run the conversion wizard, you must add the network connecting VMware and XenServer to the XenServer host where you want to run the converted VMs.

By default, when you import the XenServer Conversion Manager Virtual Appliance, XenCenter creates one virtual network interface which is associated with Network 0 and NIC0 (also known as eth0). However, by default, XenServer Setup configures NIC0 as the *management interface*, a NIC used for XenServer management traffic. As a result, when adding a network for conversion, you may want to select a NIC other than NIC0. Selecting another network may improve performance in busy pools. For more information about the management interface, see the *XenCenter Help*, *Designing XenServer 6.1 Network Configurations*, or *XenServer Administrator's Guide*.

To add a network to XenServer

1. In the **Resource** pane in XenCenter, select the pool where you would like to run XenServer Conversion Manager.
2. Click the **Networking** tab.
3. Click **Add Network**.
4. On the **Select Type** page, select **External Network**, and click **Next**.
5. On the **Details** page, enter a meaningful name for the network (for example, "VMware network") and a description.
6. On the **Interface** page, specify the following:

   - **NIC**. Select the NIC that you want XenServer to use to create the network. You must select the NIC that is plugged in to the physical or logical network of the VMware server.

   - **VLAN**. If the VMware network is a VLAN, enter the VLAN ID (or "tag").
   - **MTU**. If the VMware network uses jumbo frames, enter a value for the Maximum Transmission Unit (MTU) between 1500 and 9216. Otherwise, leave the MTU box t its default value of 1500.
   Note: Do not select the **Automatically add this network to new virtual machines** check box.
7. Click **Finish**.

Meeting Storage Requirements

Before you convert batches of VMware virtual machines, you should consider your storage requirements. Converted virtual machine disks are stored on a XenServer storage repository.

This storage repository should be large enough to contain the virtual disks for all the converted virtual machines you want to run in that pool. For converted machines that will only run on a standalone host that is not in a pool, you can specify either local or shared storage as the location for the converted virtual disks. You must specify shared storage for converted machines running in pools.

To create a storage repository

1. In the **Resource** pane in XenCenter, select the pool where you intend to run the XenServer Conversion Manager Virtual Appliance.

2. Click the **Storage** tab.

3. Click **New SR** and follow the instructions in the wizard. For additional instructions, press **F1** to display the online help.

XenServer Requirements

You can run virtual machines converted with this release of XenServer Conversion Manager on the following versions of XenServer:

- XenServer 6.5 Service Pack 1
- XenServer 7.0
- XenServer 7.1
- XenServer 7.2
- XenServer 7.3

VMware Requirements

XenServer Conversion Manager can convert VMware virtual machines from the following versions of VMware:

- vCenter Server 4.0 and 4.1
- vSphere 4.0 and 4.1
- ESXi 5.0.0, 5.1.0, 5.5.0 and 6.0.0

Preparing to Import the Virtual Appliance

Before importing the virtual appliance, note the following information and make the appropriate changes to your environment, as applicable.

Downloading the Virtual Appliance

The XenServer Conversion Manager Virtual Appliance is packaged in an .xva format. You can download the virtual appliance from the [XenServer 7.3 Enterprise Edition page](). When downloading the file, save it to a folder on your local hard drive (typically, but not necessarily, on the computer where XenCenter is installed). After the .xva is on your hard drive, you can import it into XenCenter.

Note: XenServer Conversion Manager is available for XenServer Enterprise edition customers or those who have access to XenServer through their XenApp/XenDesktop entitlement. For more information about XenServer licensing, see the [XenServer 7.3 Licensing FAQ](). To upgrade, or to buy a XenServer 7.3 license, visit the [Citrix website]().

Virtual Appliance Prerequisites

The XenServer Conversion Manager Virtual Appliance requires a minimum of:

- XenServer 6.5 SP1, XenServer 7.0, XenServer 7.1, XenServer 7.2, XenServer 7.3
- Disk space: 30 GB of disk space

- Memory: 6.5 GB
- Virtual CPU allocation: 1 vCPU

Importing and Configuring the XenServer Conversion Manager Virtual Appliance

The XenServer Conversion Manager Virtual Appliance is a single pre-installed virtual machine designed to run on a XenServer host. Before importing it review the prerequisite information and considerations in the section called *Preparing to Import the Virtual Appliance*.

Importing the Virtual Appliance into XenServer

Import the XenServer Conversion Manager Virtual Appliance into the pool or host where you wish to run the converted virtual machines. To import the XenServer Conversion Manager Virtual Appliance, use the XenCenter's **Import** wizard.

To import the virtual appliance into XenCenter

1. Open XenCenter. Right-click on the pool (or host) into which you want to import the virtual appliance package, and select **Import**.
2. Browse to locate the virtual appliance package.
3. Select the pool or a *home server* where you want to run the XenServer Conversion Manager Virtual Appliance.

   Note: A home server is the host that provides the resources for a VM in a pool. XenServer attempts to start the VM on that host if it can, before trying other hosts. If you select a host, the XenServer Conversion Manager Virtual Appliance uses this host as its home server. If you select the pool, the virtual appliance will automatically start on the most suitable host in that pool.
4. Choose a storage repository on which to store the virtual disk for the XenServer Conversion Manager Virtual Appliance and then click **Import**. To add a storage repository to the pool, see the section called "Meeting Storage Requirements". You can choose either local or shared storage.
5. Make sure the network you want to use for conversion (the one that connects the VMware server to the XenServer host) is selected as the network associated with **interface 1** ("virtual NIC 1").
   - If the correct network does not appear beside interface 1, use the drop-down menu in the **Network** column to select a different network.
   - If you have not added the VMware network and it is on a different physical network than the pool, exit the wizard, add the network to the pool, and rerun the wizard. For more information, see **To add a network to XenServer**.

   Warning: Do NOT configure NIC0 to your customer network. NIC0 has to be assigned only to "Host internal management network".
6. Leave the **Start VM(s) after import** check box enabled, and click **Finish** to import the virtual appliance.

7. After importing the .xva file, the XenServer Conversion Manager Virtual Appliance appears in the **Resources** pane in XenCenter.

Configuring the XenServer Conversion Manager Virtual Appliance

After you finish importing the XenServer Conversion Manager Virtual Appliance, you must configure it before you can use it to convert VMware virtual machines by following the prompts in the XenCenter **Console** tab.

1. After importing the XenServer Conversion Manager Virtual Appliance, click the **Console** tab.
2. Enter **yes** to accept the terms of the license agreement. To decline the EULA, enter **no**.
3. Enter and confirm a new root password for the XenServer Conversion Manager Virtual Appliance. Citrix recommends selecting a strong password.
4. Enter a hostname for the XenServer Conversion Manager Virtual Appliance.
5. Enter the domain suffix for the virtual appliance. For example, if the fully qualified domain name (FQDN) for the virtual appliance will be citrix-migrate-vm.domain4.bedford4.ctx4, then enter domain4.bedford4.ctx4.
6. Enter **y** to use DHCP to obtain the IP address automatically for the XenServer Conversion Manager Virtual Appliance. Otherwise, enter **n** and then enter a static IP address, subnet mask, and gateway for the virtual machine.
7. Review the hostname and network setting and enter **y** when prompted. This completes the XenServer Conversion Manager Virtual Appliance configuration process.
8. When you have successfully configured the appliance, a login prompt appears. Enter the login credentials and press Enter to log in to the XenServer Conversion Manager Virtual Appliance.

After you finish configuring the XenServer Conversion Manager Virtual Appliance, continue on to install XenServer Conversion Manager Console, as explained in Installing the XenServer Conversion Manager Console.

Installing the XenServer Conversion Manager Console

After configuring the XenServer Conversion Manager Virtual Appliance, install the XenServer Conversion Manager Console on your local workstation. The XenServer Conversion Manager Console is the user interface where you perform most conversion tasks. From the XenServer Conversion Manager Console, you can launch a conversion wizard that lets you select VMware virtual machines for conversion.

Note: XenServer Conversion Manager is available for XenServer Enterprise edition customers or those who have access to XenServer through their XenApp/XenDesktop entitlement. For more information about XenServer licensing, see the [XenServer 7.3 Licensing FAQ](). To upgrade, or to buy a XenServer 7.2 license, visit the [Citrix website]().

System Requirements

Supported Guest Operating Systems

XenServer Conversion Manager supports converting VMware virtual machines running any of the Windows guest operating systems that XenServer supports. For a list of Windows guest operating systems supported by XenServer, see the *Citrix XenServer Virtual Machine User Guide*. The following Linux operating systems are also supported.

- RHEL 5.4/5.6/6.4/7.0
- CentOS 5.5/6.3/6.4/6.5/7.0
- SLES 11 SP1/SP2/SP3/SP4
- Ubuntu 12.04/14.04/16.04

Software Requirements

Microsoft .NET Framework 4.6

Hard Drive Space Required for Installation

10 MB

Installing the XenServer Conversion Manager Console

The XenServer Conversion Manager Console is usually installed on the same computer where you run XenCenter.

Note: Before installing the XenServer Conversion Manager Console, you should remove any other versions of the console from your computer.

To install the XenServer Conversion Manager Console

1. Right-click **convui_setup.exe**, and select **Run as administrator**.
2. On the **Welcome to the Citrix XenServer Conversion Manager Setup Wizard** page, click **Next**.
3. Review the license agreement and click **I Agree** to accept the terms of the agreement.
4. On the **Choose Install Location** page, choose where you want to install the XenServer Conversion Manager Console and click **Install**.

   Note: By default, the XenServer Conversion Manager Console is installed in `C:\Program Files (x86)\Citrix\XCM`.

5. Click **Finish**.

To remove the XenServer Conversion Manager Console

1. Open the Windows Control Panel.
2. Open **Programs and Features**.
3. Select **Citrix XenServer Conversion Manager**.
4. Click **Uninstall**.

Converting VMware Virtual Machines

When you convert VMware virtual machines, they are imported into the XenServer pool or standalone host where you are running the XenServer Conversion Manager Virtual Appliance. Converted virtual machines retain their original VMware settings for virtual processor and virtual memory.

Using XenServer Conversion Manager to convert virtual machines requires the following tasks:

1. Starting the XenServer Conversion Manager Console.
2. Connecting to a XenServer host.
3. Starting the wizard to a start new conversion job, which requires specifying VMware server credentials and selecting virtual machines and the storage repository.

Notes:

- XenServer Conversion Manager supports converting VMware virtual machines with different storage such as thin provisioning, thick provisioning, IDE and SCSI.
- XenServer Conversion Manager does not require the source virtual machines to have VMware Tools installed. You can perform conversion on VMware virtual machines regardless of whether or not they have VMware Tools installed.

Task 1: Starting the XenServer Conversion Manager Console

To start the XenServer Conversion Manager Console

1. From the Start menu, select **All Programs** > **Citrix** > **Citrix XenServer Conversion Manager**.

   Note: You can run only one instance of XenServer Conversion Manager per computer.

2. Continue on to **Connect to XenServer**.

Task 2: Connecting to a XenServer Host

When you start the XenServer Conversion Manager Console, you must connect it to a XenServer host.

Before you begin, ensure you have the credentials for the XenServer pool (or standalone host)—either the root account credentials or a Role-Based Access Control (RBAC) account with the Pool Admin role configured.

To connect to a XenServer host:

1. If the **Connect to XenServer** dialog does not appear when you start the XenServer Conversion Manager console, click the **Connect** button in the toolbar.
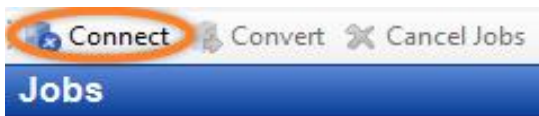
2. In the **Connect to XenServer** dialog, enter the following details:

   • **Server**. Enter the IP address or Fully Qualified Domain Name (FQDN) for the XenServer host where you imported the XenServer Conversion Manager Virtual Appliance. You can find the IP address by selecting the host, which is the first host listed for the pool in the XenCenter Resources pane, and clicking the **Search** tab.

   • **User name**. Enter the user name for a XenServer account for the pool (or standalone host). This account must be either the root account for the host or pool or have a RBAC role of Pool Admin.

     For detailed information about RBAC, see the *XenCenter Help* or the *XenServer Administrator's Guide*.

   • **Password**. Enter the password for that account and click **Connect**.

     After you successfully connect to the XenServer host, XenServer Conversion Manager displays the **Jobs** page.

Task 3: Starting a New Conversion Job

Before you start the conversion procedure make sure you have the following:

   • Credentials for the VMware server containing the virtual machines you want to convert. The conversion procedure requires you connect the XenServer Conversion Manager Console to the VMware server.

   • The XenServer pool (or host) that will run the converted virtual machines is connected to a storage repository. The storage repository must contain enough space for the converted virtual disks.

   • XenServer pool (or host) has networks that the converted virtual machines will use.

To convert VMware virtual machines

1. Click the **Convert** button in the Jobs screen.

2. On the **Credentials** page, enter the following and then click **Connect**:

Server. Enter the IP address or FQDN for the VMware server that contains the virtual machines you want to convert to XenServer.

User name. Enter a valid user name for this VMware server. This account must either be a VMware admin account or have a Root role.

Password. Enter the password for the user account you specified in the **User name** box.

3. On the **Storage Repository** page, select the storage repository you want to use during conversion. This storage repository is where the virtual machines and the virtual disks that you are creating will be stored permanently.
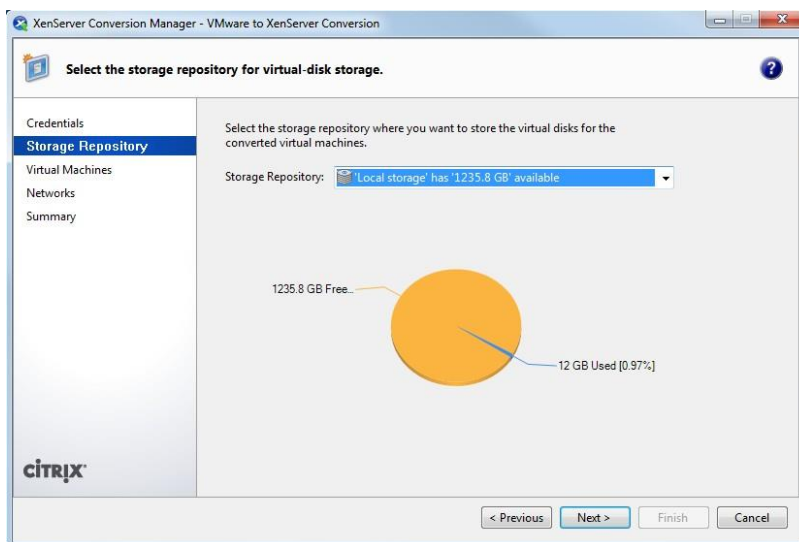
4. On the **Virtual Machines** page, select the VMware virtual machines you want to convert, and click **Next**.
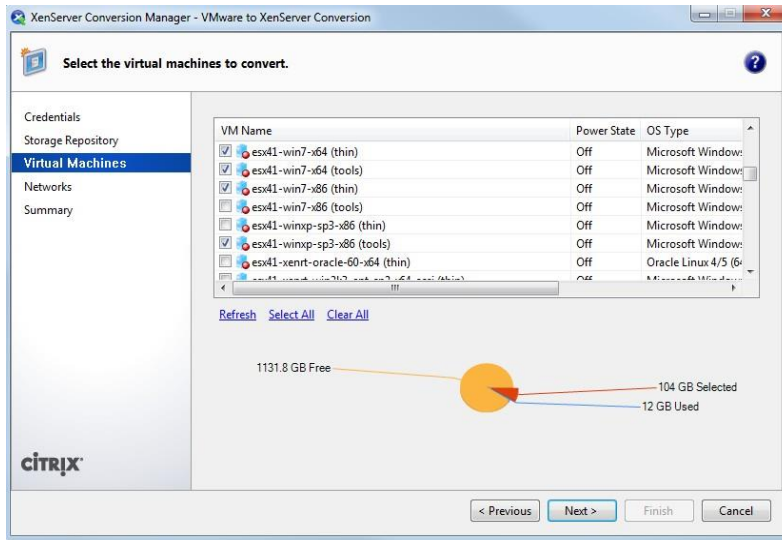
As you select virtual machines to convert, the red-pie wedge increases to indicate what proportion of the available storage the converted virtual machines' virtual disks will consume.

During conversion, XenServer Conversion Manager downloads and installs updated kernels for Linux VMs which are not updated. If there is no access to the Internet, XenServer Conversion Manager installs the kernel from the following location of the XenServer Conversion Manager appliance.

```
/opt/vpxxcm/conversion/linuxv2v/${distro}/
```

The following table lists the kernel versions for the various Linux operating systems supported during conversion.

| Operating System	32-bit/64-bit	Recommended Kernel Version Number
CentOS 5.5	32-bit	2.6.18-412(kernel-Xen)
CentOS 6.3	32-bit	2.6.32-642
CentOS 6.4	32-bit	2.6.32-642
CentOS 6.5	32-bit	2.6.32-642
RHEL 5.4	32-bit	2.6.18-164
RHEL 5.6	32-bit	2.6.18-412
RHEL 6.4	32-bit	2.6.32-642
SLES 11 SP1	32-bit	2.6.32.12
SLES 11 SP2	32-bit	3.0.13-0
SLES 11 SP3	32-bit	3.0.76-0
SLES 11 SP4	32-bit	3.0.101-63
Ubuntu 12.04	32-bit	Internet connection not needed to update Xen kernel
Ubuntu 14.04	32-bit	Internet connection not needed to update Xen kernel

Ubuntu 16.04	32-bit	Internet connection not needed to update Xen kernel
RHEL 5.4	64-bit	2.6.18-411
RHEL 5.6	64-bit	2.6.18-411
RHEL 6.4	64-bit	2.6.32-642
RHEL 7.0	64-bit	Internet connection not needed to update Xen kernel
CentOS 5.5	64-bit	2.6.18-412 (kernel-Xen)
CentOS 6.3	64-bit	2.6.32-642
CentOS 6.4	64-bit	2.6.32-642
CentOS 6.5	64-bit	2.6.32-642
CentOS 7.0	64-bit	Internet connection not needed to update Xen kernel
SLES 11 SP1	64-bit	2.6.32.12
SLES 11 SP2	64-bit	3.0.13-0
SLES 11 SP3	64-bit	3.0.76-0
SLES 11 SP4	64-bit	3.0.101-59
Ubuntu 12.04	64-bit	Internet connection not needed to update Xen kernel
Ubuntu 14.04	64-bit	Internet connection not needed to update Xen kernel
Ubuntu 16.04	64-bit	Internet connection not needed to update Xen kernel

5. *(Optional.)* On the **Networks** page, do one or more of the following tasks to specify how XenServer Conversion Manager converts the virtual network adapters in the virtual machines it is converting:

Change any of the XenServer networks the VMware network adapters are mapped to. XenServer Conversion Manager detects the virtual network adapters on the virtual machines being converted and lets you associate those adapters with networks in XenServer. After conversion, the new virtual machines will have virtual network interfaces that connect to the XenServer networks you specified in this step.

Accept the default network mappings. You can leave the networks on this page at their default settings.

Select the Preserve Virtual MAC Address check box. XenServer can automatically generate virtual MAC addresses when you create or import virtual machines. However, you may want to preserve the virtual MAC addresses on your VMware virtual machines to preserve IP addresses in environments using DHCP. For more information, see the section **Preparing for the XenServer Conversion Manager Networking Requirements**.
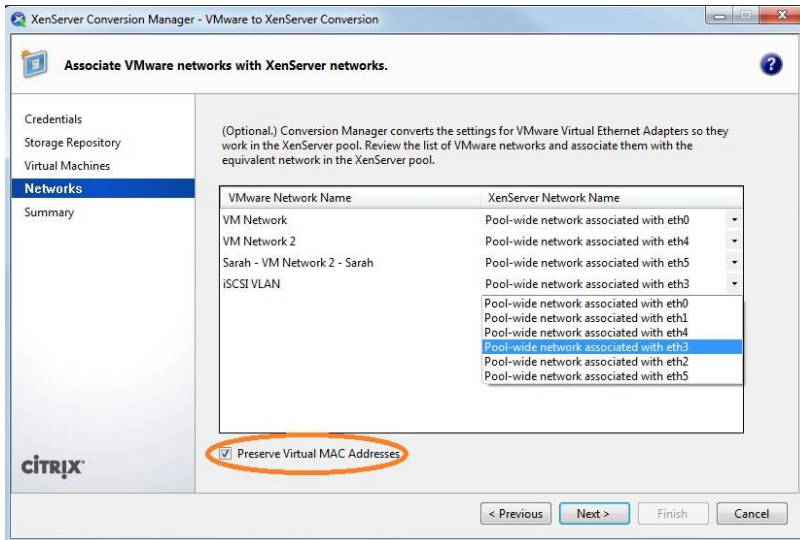
6. On the Summary page, review the conversion details and click Finish. While the conversion is in progress, the status appears in the **Jobs** page.
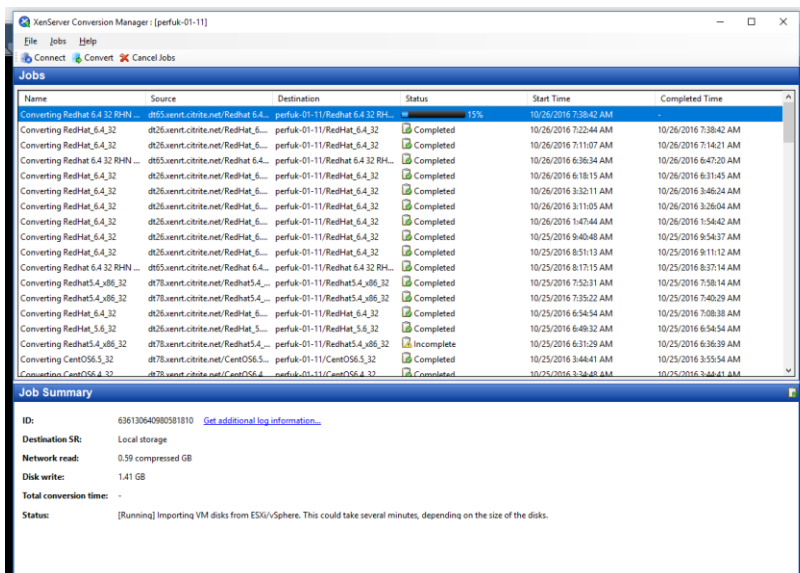
Note: Conversion from ESXi or vSphere can take several minutes depending on the size of the virtual disks.

Task 4: Steps After Conversion

After conversion, open XenCenter and perform the following steps on your newly converted virtual machines:

On Windows Machines

1. On Windows virtual machines, depending on your Microsoft licensing model, you may need to reactivate the virtual machine's Windows license as the Windows operating system perceives the conversion as a hardware change.

2. On Windows virtual machines, install XenServer Tools to obtain high-speed I/O for enhanced disk and network performance. XenServer Tools also enable certain functions and features, including cleanly shutting down, rebooting, suspending, and live migrating VMs.

   If you are working with a VM that does not have XenServer Tools installed, a Tools not installed message appears on the **General** tab in the Properties pane. For Windows VMs, you can double-click on this text to switch to the VM console, load the Tools ISO, and launch the Tools installation wizard.

   Note: XenServer Tools must be installed on each virtual machine for the virtual machine to have a fully supported configuration. Although virtual machines function without XenServer Tools, their performance can be impacted.

Enabling VNC On Linux Machines
On Linux virtual machines, perform the following steps to configure the VNC server.

Note: VNC password must have at least six characters.

For CentOS 5.5 and RHEL 5.4/5.6

1. Customize RHEL-based VMs firewall to open the VNC port using the following command:
   ```
   > system-config-securitylevel-tui
   ```
2. Select **Customize** and add **5900** to the **Other ports** list.
   Alternatively, you can disable the firewall until the next reboot by running the command:
   ```
   >service iptables stop
   ```
3. For Centos 5.5 and RHEL 5.4/5.6, if the VNC graphic console does not display properly, run:
   ```
   init 5
   ```
   Then check if the graphic console displays properly.

For CentOS 6.3/6.4/6.5 and RHEL 6.4

1. Set the VNC password
   ```
   >vncpasswd
   ```
2. Start the VNC server
   ```
   >service vncserver start
   ```
3. For firewall settings, open the file `/etc/sysconfig/iptables` and add the following line:
   ```
   -A INPUT -m state --state NEW -m tcp -p tcp --dport 5900 -j  ACCEPT
   ```
   Note: Add the above line after:
   ```
   -A INPUT -j REJECT --reject-with icmp-host-prohibited:
   ```
4. Enter the following command to restart iptables:

```
>service iptables restart
```

For SLES Linux Enterprise Server 11 SP1 to SP4

1. Set the VNC password in startup console.
   ```
   >vncpasswd
   ```
   Note: `Would you like to enter a view-only password(y/n)? n`
2. Configure the fire wall settings as follows:
   a. Open a text console on the VM and run the YaST utility:
      ```
      >yast
      ```
   b. Use the arrow keys to select **Security and Users** in the left menu, then tab to the right menu and use the arrow keys to select **Firewall**. Press **Enter**.
   c. In the **Firewall** screen, use the arrow keys to select **Custom Rules** in the left menu and then press **Enter**.
   d. Tab to the **Add** button in the **Custom Allowed Rules** section and then press **Enter**.
   e. In the **Source Network** field, enter **0/0**. Tab to the **Destination Port** field and enter **5900**.
   f. Tab to the **Add** button and then press **Enter**.
   g. Tab to the **Next** button and press **Enter**. In the **Summary** screen, Tab to the **Finish** button and press **Enter**. Finally, on the top-level YaST screen, Tab to the **Quit** button and press **Enter**.
3. Click **Switch to Graphical Console**.
4. If the Graphical Console does not display correctly, switch to **Text Console** and run command:
   `/etc/init.d/vncserver restart`.
5. Click **Switch to Graphical Console**.

Note:

- For other graphical console display issues, run: `/etc/init.d/vncserver restart.`
- Conversion of VMs with IDE disks are not supported for SLES 11 SP1 to SP4.

For Ubuntu 12.04, set the VNC password and log on.

Additional Conversion Tasks

This topic lists additional tasks you may want to perform when converting virtual machines. These tasks include clearing jobs, saving a summary of jobs, retrying jobs, cancelling jobs, and displaying the log file.

To clear all jobs

From the **Jobs** menu, select **Clear Jobs**.

To save a summary of jobs

From the **File** menu, click **Save Job Summary**.

To retry a job

Click **Retry jobs**.

Note: Retry jobs is only enabled for failed or cancelled jobs.

To cancel a job

Click **Cancel jobs**.

Note: Cancel jobs is only enabled for queued or running jobs.

To save the XenServer Conversion Manager application log file

1. From the **Help** menu, select **Save Support Log Files**.
2. When prompted, specify where you want to store the log files for XenServer Conversion Manager Console (XCMUI.log) and XenServer Conversion Manager Virtual Appliance (XCM.log) logs.

To display conversion details

1. Select the job in the XenServer Conversion Manager **Jobs** window.
2. In the **Job Summary** pane, click the **Get additional log information** link.

XenServer Conversion Manager Console retrieves the log from the XenServer Conversion Manager Virtual Appliance and displays the result in a text editor.

To get log details

Logs for both Windows and Linux guests are present in the `/var/log/conversion/convsvc.log` file. If conversion fails, click the **Get additional log information** button for details. For Linux VMs, additional logs are present in `/var/log/conversion/linuxxenfix.log`.

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Appendix A. Troubleshooting Conversion

This section provides information about troubleshooting the conversion process and converted virtual machines.

Problems Starting a Converted Virtual Machine

In general, conversion runs extremely smoothly and XenServer Conversion Manager converts virtual machines without any issues. However, in some rare cases, you may receive errors when attempting to open converted virtual machines. The following sections provide some guidance on resolving errors and other issues.

Blue Screen with Windows STOP code 0x0000007B

This stop code indicates that XenServer Conversion Manager was unable to configure a Windows device that is critical to boot in XenServer for the first time. Save the logs and send them to Citrix Technical Support for further guidance.

Windows Product Activation

Depending on your licensing model, an error message may appear when you attempt to start a Windows virtual machine prompting you to reactivate Windows. For more information, see the section Note: Conversion from ESXi or vSphere can take several minutes depending on the size of the virtual disks.

Task 4: Steps After Conversion.

Unable to Boot VMware SCSI Disk

If a VMware VM boots from a SCSI disk but also contains one or more IDE hard disks, the VM may not boot when you convert it to XenServer. This is because the migration process assigns the IDE hard disks lower device numbers than SCSI disks; however, XenServer boots from the hard disk assigned to device 0. To resolve this issue, rearrange the virtual-disk position in XenCenter so that the virtual machine boots from the virtual disk that contains the operating system.

To change the position of the virtual disk containing the operating system

1. In the XenCenter Resources pane, select the powered off guest virtual machine.
2. Select the **Storage** tab.
3. On the **Virtual Disks** page, select the virtual disk containing the operating system and then click **Properties**.
4. In the *<operatingsystem>* **Properties** dialog, click on the *<operatingsystem>* tab to display device options.
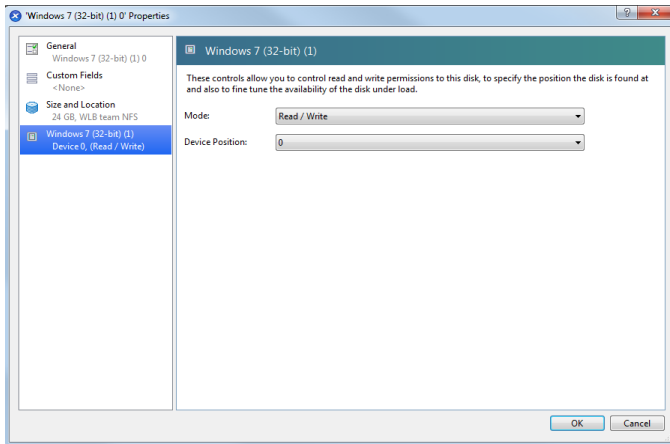
5. From the **Device Position** drop-down menu, select **0** and Click **OK**.

Problems During Conversion

If you see any errors when converting Linux VMs, delete the converted VM, reboot the XenServer Conversion Manager virtual appliance and retry. Logs of failed conversions are stored in `/var/log/xen-source.log`. If you contact Citrix support to raise any issues, we recommend that you provide the log file for troubleshooting.

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