



# XenClient Enterprise Engine Installation Guide

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## About this Guide

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This document provides information about installing and upgrading XenClient Enterprise Engine on a computer. It provides general installation guidelines and compatibility verification.

-  Subsequent updates to an Engine can be downloaded from XenClient Enterprise Synchronizer (the management application), from a CD/DVD, or USB media.

## Check for Compatibility

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XenClient Enterprise Engine runs on a wide variety of personal computers. Hardware requirements include:

- Intel or AMD dual-core processor with Intel-VT (VT-x) or AMD-V hardware virtualization technology.

-  Intel provides a tool to determine if the chip in your computer supports virtualization: <http://processorfinder.intel.com/>.

- 2 GB RAM; Citrix strongly recommends 4 GB to facilitate running multiple virtual machines simultaneously).
- 60 GB free disk space; running multiple operating systems may require significantly more disk space.

If you install onto the whole disk, the Engine uses the full hard drive, replacing any natively installed operating systems and files. The whole disk is available for the Engine and any virtual machines.

## Download and run the compatibility Checker

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Citrix makes it easy to determine if your computer will work with the Engine. Access the [XenClient specifications page](#) on the Citrix Web site to verify if your existing Windows machine supports the virtualization required to run the Engine. Click [here](#) for the hardware compatibility list.

## BIOS Settings

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To support the Engine, the system must support virtualization. BIOS settings must also be configured to match the following criteria:

**Virtualization:** enabled (checked)

**VT:** enabled (checked)

**Trusted Execution:** off (unchecked)

For Lenovo computers:

**Timer wake with battery:** enabled



You need to restart the computer for changes to the BIOS to take effect. On some systems, it may be necessary to power-down the computer for a few minutes, then restart.

## Installation Selections

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When you install the Engine, there are two decisions the user makes that affect how the Engine operates. This section will explain those choices and their effects. If you are not sure which option to select, check with your XenClient Administrator. These options include *encrypted disk*, and *installations using a whole disk, or unallocated space*.

### Encrypted Disk

---

You can encrypt the hard drive. This will encrypt all data on the hard drive so that it cannot be accessed unless the registered owner's password is entered. The user's password needs to be entered before the Engine can start. Once the user logs in, the hard drive is accessible and the user experiences no difference due to the encryption.

This is a strong security measure – the encrypted disk cannot be accessed without the proper authentication. The only cost is a very slight (few percent) increase in CPU use.

### Install Using Whole Disk or Unallocated Space

---

You can install the Engine onto *the whole disk*, or *into unallocated space* on a partitioned disk. When using these methods, consider the following:

- If you install onto the whole disk, the Engine uses the full hard drive, replacing any natively installed operating systems and files. The whole disk is available for Engine and any virtual machines. See *Installing the XenClient Enterprise Engine on a PC* on page 5 for details.
- If you install into unallocated space on a partitioned disk, you need to use a disk partitioning tool to remove space from existing partitions. The Engine is then installed into that unallocated space. The unallocated space must include enough space for the Engine and any expected virtual machines. The Engine co-exists with an existing operating system, instead of replacing it, however, only one operating system can be operational at a time. See *Dual Boot* later in this document for details.

## XenClient Enterprise Engine Installation

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Install the Engine on a personal computer using the steps in this section.

-  Installing the Engine on a computer can remove the native operating system and any data. **Before installing, back up any data from the computer that you want to preserve.**

You can install the Engine initially either through PXE Boot, a USB memory stick, or by installing from a CD or DVD.

1. Download the Engine Installation ISO file.

-  In some cases it may be necessary to check the validity of the ISO file by verifying the MD5 checksum. A number of free ware tools are available for calculating and comparing MD5 files (for example: [http://download.cnet.com/MD5-Checksum-Calculator/3000-2092\\_4-10964258.html](http://download.cnet.com/MD5-Checksum-Calculator/3000-2092_4-10964258.html)).

2. Use a utility to burn the ISO image file onto a bootable CD or DVD. Alternately, you can create a USB installer using UNetbootin.

There are a number of such utilities available as freeware or shareware.

-  Check the tool's settings to ensure that the CD or DVD is bootable.

## Installing the XenClient Enterprise Engine on a PC using a CD or DVD Media

---

To install the Engine on a PC, replacing the native operating system:

1. Load the XenClient Enterprise installation media into the laptop CD or DVD drive.
2. Read the first instruction screen and press the **Enter** key.
3. Read the License agreement. Use the arrow keys to scroll through the document. Press the **Enter** key to accept the License Agreement (or Esc to decline and end installation.)
4. If this installation will use the whole drive, use the tab key to select **Entire Disk** (or Stop to end installation) and press **Enter**.
5. Use the up and down arrow keys to select a language (keyboard) for installation and press the **Enter** key.
6. If you are installing over a previous Engine, you have the choice to upgrade the version or replace the old Engine, including all user information and virtual machines.

-  If you are replacing an existing Engine, the installation process restarts from the beginning after an old Engine version is removed.

7. Enter the computer name, and press the **Enter** key to move to the next screen. This computer will be identified on XenClient Enterprise Synchronizer primarily with this name.

To go back a step, use the Tab key to highlight the **Back** button and press **Enter**.

8. Enter the asset tag for the computer, and press **Enter**.
9. Use the arrow keys to select whether to use disk encryption, and press the **Enter** key to move to the next screen.
10. Your selections are displayed along with a warning that if you continue with a full disk installation, all data on the disk will be erased. If the summary is correct, enter **yes** and press the **Enter** key to install the Engine.

The Engine is installed, with a progress bar displayed. Once installed, the computer reboots.

## Installing the XenClient Enterprise Engine using a USB Memory Stick

---

This section describes how to configure a USB stick to become an installation device for an Engine. You should have at least a 2GB USB stick in order to install the Engine using this method. In addition, you will need to download the UNetbootin software from the Citrix Website in order to correctly use the instructions in this section.

### Creating a USB installer

---

First, download the current Engine ISO and UNetbootin from the Citrix download [portal](#).



If you retrieve the UNetbootin distribution from another location, ensure that it is at least version 549 or newer.

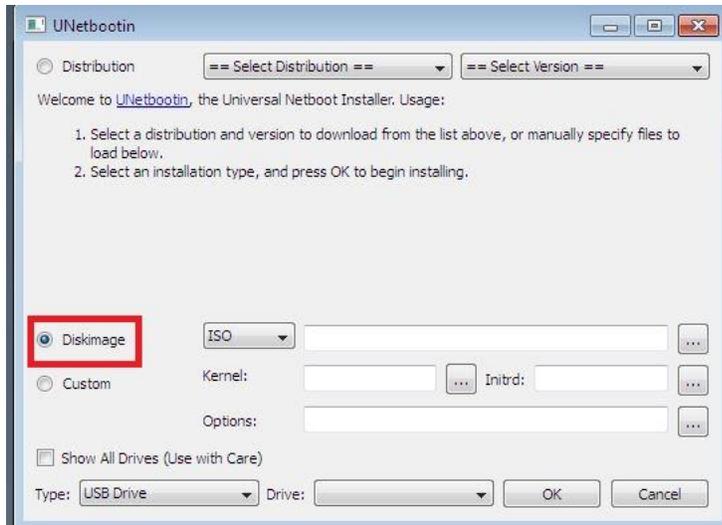


You will need to register on the site to gain access to the Downloads page.

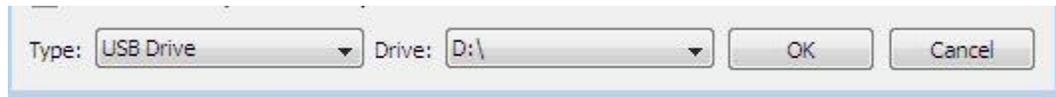
Once you have downloaded the ISO and UNetbootin you can begin the process of creating a USB installer.

To create a USB installer:

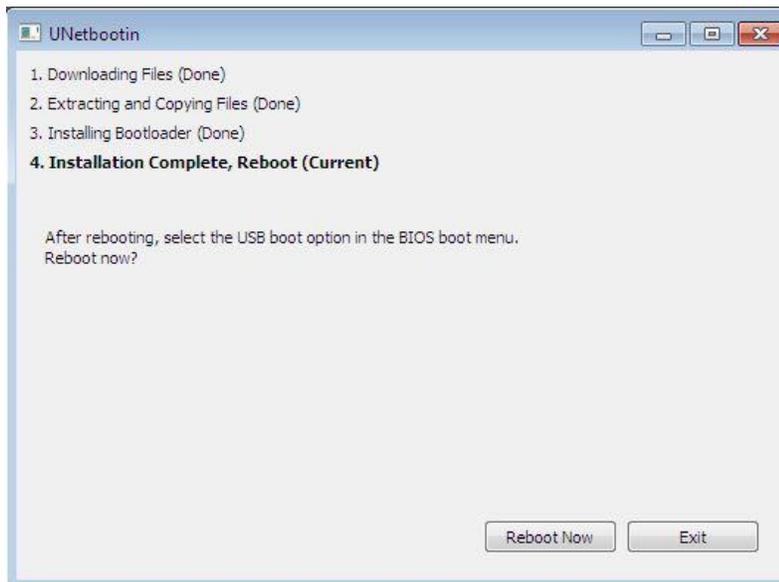
1. First open up UNetbootin and select **DiskImage**:



2. Select the ISO location; select the **Diskimage** radio button and browse to the location of the file.
3. Once you have selected the ISO location, use the drop-down menu to select the drive letter of the USB stick on which you are going to create the installer:



4. When you click **OK** you will see the progress of your installer being built.
5. Once the build is complete, click **Exit**.



After completing the UNetbootin process, you can now choose USB from the boot menu on your desktop or laptop and it will install the Engine.

## Installing using the USB Installer

---

Consider the following when installing using a USB drive:

- Ensure that the computer's BIOS setting enables booting from USB-based media.
- You can set your computer's boot sequence so that it boots automatically from any installed USB device; in the BIOS>BOOT configuration section, move the USB drive above the local disk in the machine boot order.



If you arrange the boot order so that the USB drive is the primary boot device, keep in mind that you must remove the USB stick containing the installer before you reboot the next time. Failure to do so may result in re-installing the Engine.

- If the boot order for the USB device is lower than local disk, or if it's not specified, select the boot order menu key, usually F12.

To install the Engine using the USB installer:

1. Shut down the computer.
2. Plug the USB drive into an available slot.
3. Restart the computer.



To boot from the USB drive, the boot order must be modified so that the local disk is below the USB drive upon booting the system.

4. Read and accept the end-user license agreement.
5. If this installation will use the whole drive, use the tab key to select **Entire Disk** (or Stop to end installation) and press **Enter**.
6. Use the up and down arrow keys to select a language (keyboard) for installation and press the **Enter** key.
7. If you are installing over a previous Engine, you have the choice to upgrade the version or replace the old version, including all user information and virtual machines.
8. Enter the computer name, and press the **Enter** key to advance to the next screen. This computer will be identified on Synchronizer primarily with this name.  
To go back a step, use the Tab key to highlight **Back**, and press **Enter**.
9. Enter the asset tag for the computer, and press **Enter**.
10. Use the arrow keys to select whether to use disk encryption, and press the **Enter** key to move to the next screen.
11. Your selections are displayed along with a warning that if you continue with a full disk installation, all data on the disk will be erased. If the summary is correct, enter **yes** and press the **Enter** key to install the Engine.

The Engine is installed, with a progress bar displayed. Once installed, the computer reboots.

12. Enter the fully qualified domain name (FQDN). Ask the IT Administrator if you do not have this information.
13. Enter your username and password. This identifies you at the selected Synchronizer, and registers the computer.

Once the Engine is installed, it can be updated automatically. When the user logs in, Synchronizer sends down any virtual machines assigned to the user.

## Dual Boot Installations

---

Dual Boot capability allows you to install the Engine as a second or third operating system on your computer. The Engine includes a multi-boot loader that allows a choice of starting a native operating system or the Engine; one of these must be a Windows OS. Access to non-windows guests may not be available while the Engine is installed.



There are numerous disk partition tools. For example, for Windows 7, use the native Disk Manager to create a partition. In general, partition fundamentals are similar between Windows 7/8; click [here](#) for specific information about creating a partition for Windows 8.

The following instructions for setting up dual boot have been tested on Windows 7 operating systems. The dual boot installation consists of two phases:

- In phase 1, you resize the partitions on the hard drive to create *unallocated* space (minimum 60GB). Install third party partitioning software to install the Engine on a machine with Windows XP; Windows 7 includes a partitioning tool. Use the instructions for Windows 7 if you have both Windows operating systems on your hard drive.



It may be necessary to perform a disk defrag before repartitioning a system that has been in use for an extended period of time. Failure to do so may result in the OS being unable to free up enough space to shrink the volume due to lack of a contiguous free space.

- In phase 2, you install the Engine to the unallocated space on the hard drive created in phase 1. The Engine can be installed from CD, DVD, USB storage device, or from a PXE server.

After installing, the user can select to boot either a native Windows operating system or the Engine each time the system is powered up.



The Engine and any VMs you plan to include need to fit in the unallocated space, so select the space accordingly.

## Resizing the Partitions on the Hard Drive to Create Unallocated Space

Use a partitioning tool for your operating system to resize the existing disk partitions to create enough (minimum 60 GB) unallocated space for the Engine and virtual machines.

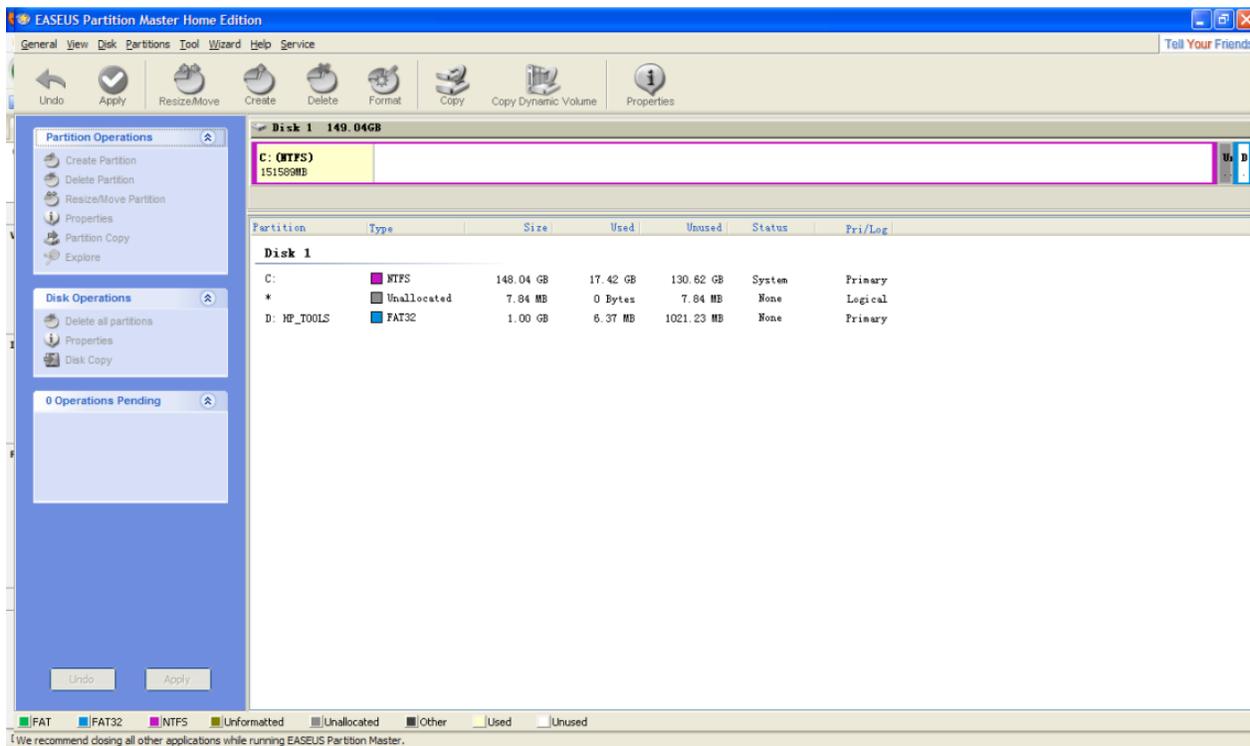
For Windows XP systems:

1. Install and run the partitioning software from within the native operating system.



These instructions use the EASEUS Partition Manager Home Edition. Other tools may operate slightly differently, but will use similar functions to produce the same results.

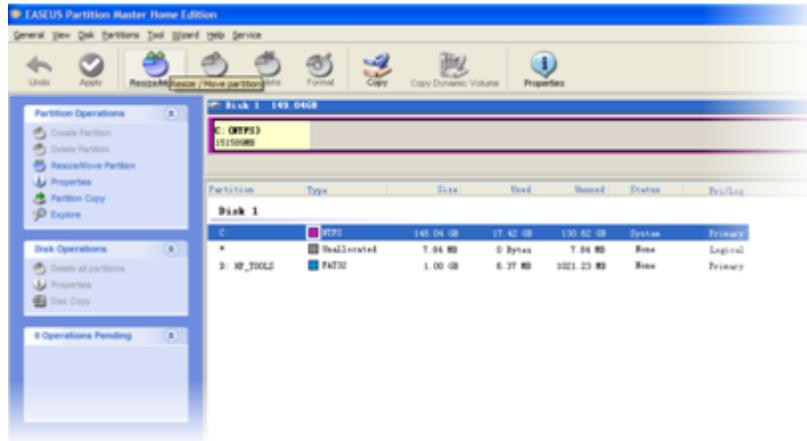
2. Start the partitioning tool.



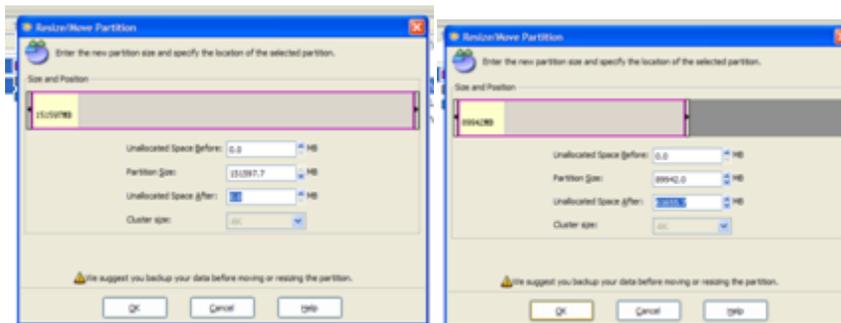
3. Choose the hard drive you want to change and select the **Resize** tool.



The Engine will **only** install on the first drive in the system.



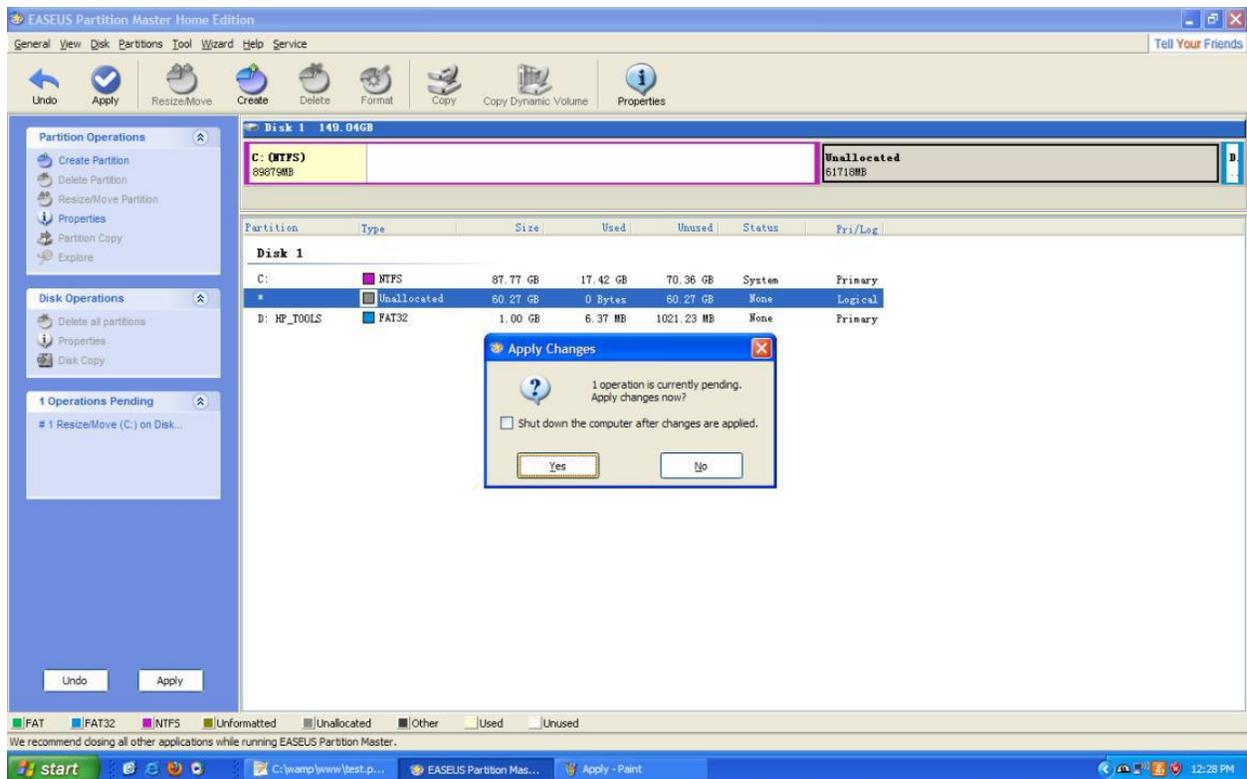
4. Resize the partitions so that there is at least 60 GB of unallocated space available. The Engine and any virtual machines you plan to include on the Engine need to fit in the unallocated space; **select adequate space for your expected use.**



5. Apply the changes and shut down the computer. Most partitioning software requests automatically restart upon completing modifications to the disk.

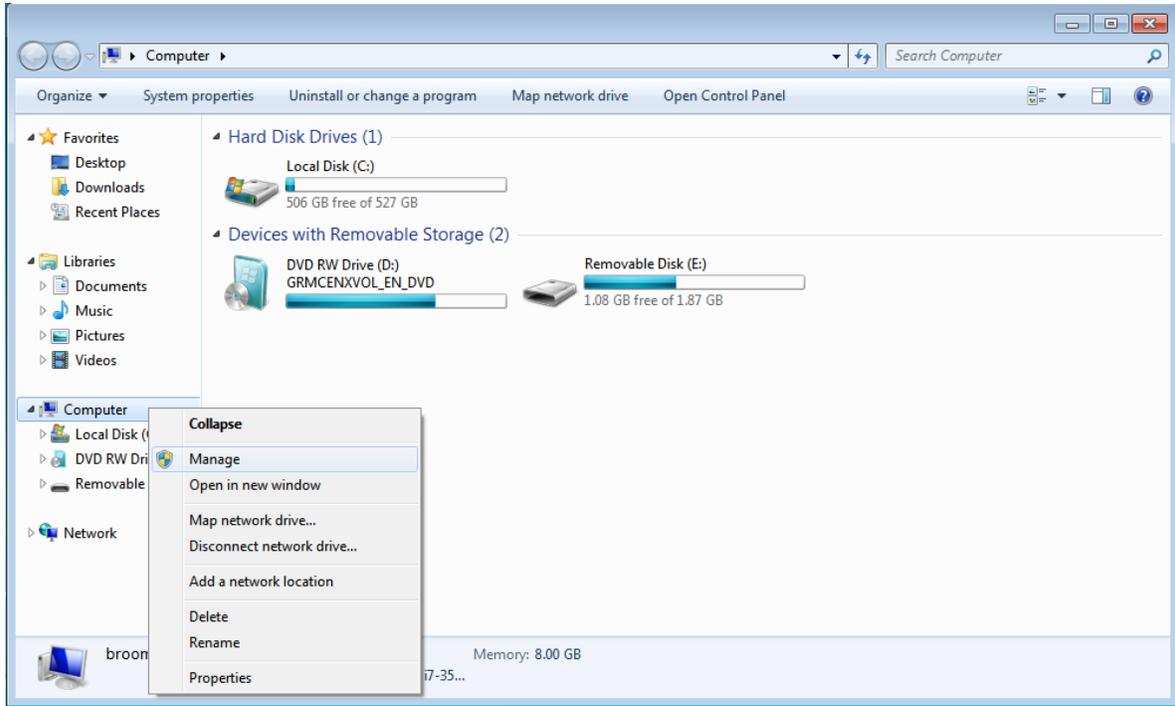


The hard drive will be modified when you select **Apply** and click **Yes** in the resulting confirmation dialog. Be sure to resize the partition to avoid loss of data.

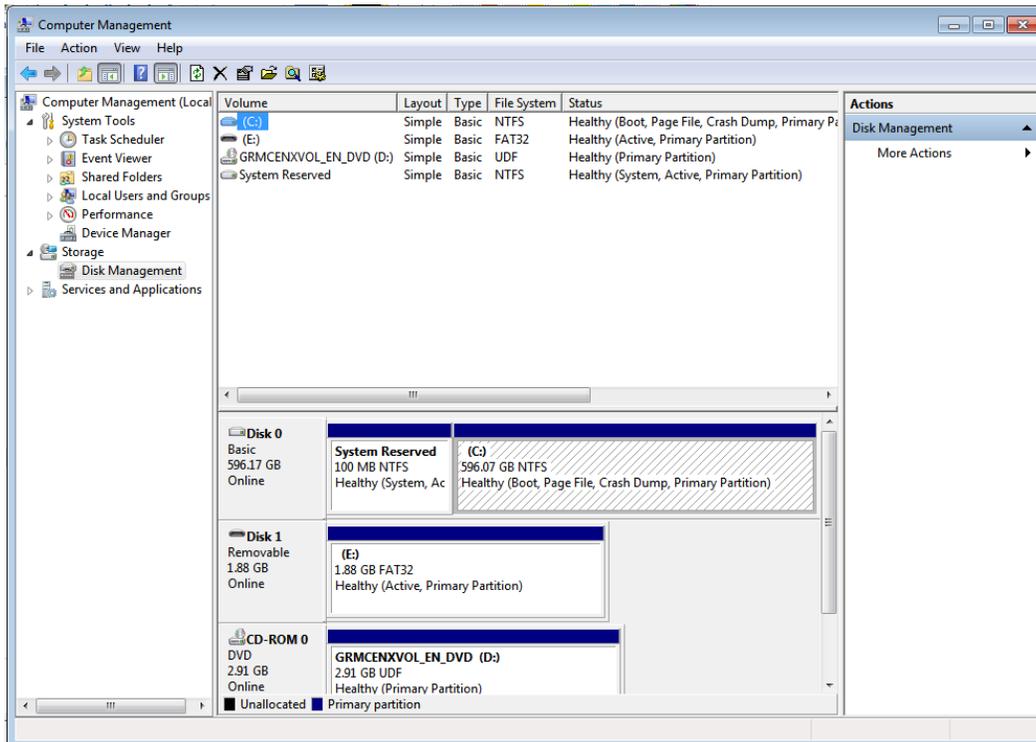


For Windows 7 systems:

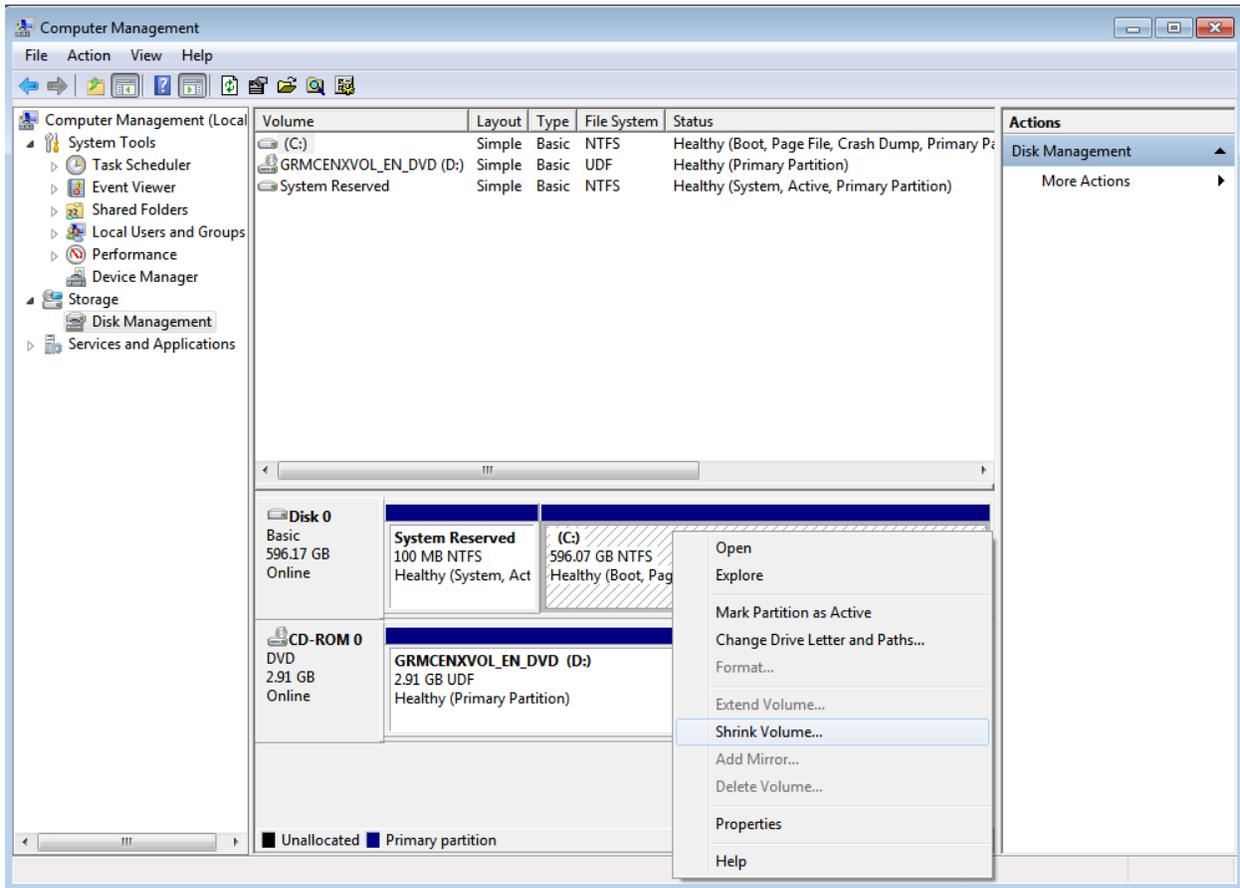
1. Open Windows Explorer.
2. Right-click on the **Computer** tab in the left panel and select **Manage**.



3. When the Manage window appears, select **Storage>Disk Management**.



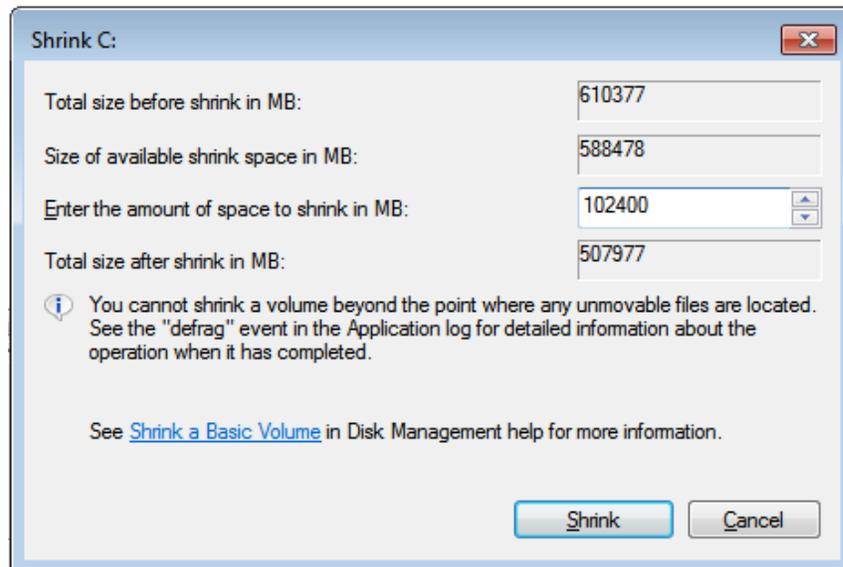
4. Right click on the disk where you want to install the Engine and select **Shrink Volume**.



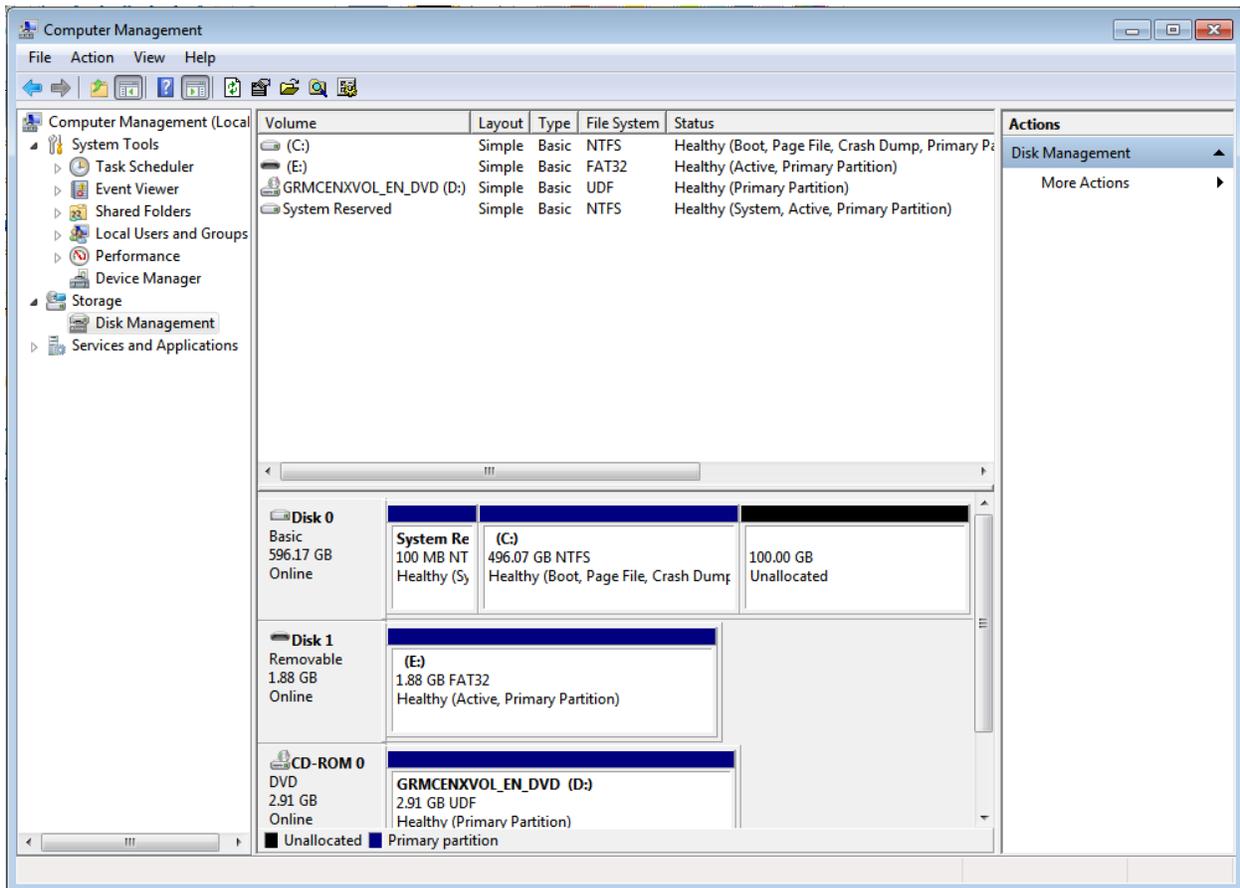
5. Enter the amount you want to shrink the volume in MB, then select **Shrink**.



The hard drive is modified when you click Shrink. Be sure to resize the partition to the proper amount. 10240=10GB.



6. The unallocated space now shows at least 59.99 GB in the Disk 0 partition.



### Installing the XenClient Enterprise Engine for Dual Boot

If you create unallocated space for the Engine to be installed into, the Engine and a native operating system can exist side by side on a computer. When you run the computer, you can select which operating system you want to use.

Before installing this way, create a partition on the hard drive. The Engine and any virtual machines will use the space within the partition, so size it accordingly. A practical minimum would be the total disk sizes of the VMs to be loaded, plus 10 GB.

1. Load the XenClient Enterprise installation media into the laptop CD or DVD drive.  
If your computer does not automatically boot from the CD/DVD Drive, access the boot menu, usually F12, to select the boot device.
2. Read the first instruction screen and press the **Enter** key.
3. Read the License agreement. Use the arrow keys to scroll through the document. Press the **Enter** key to accept the License Agreement (or Esc to decline and end installation.)

4. If the computer's hard drive has a partition and sufficient unallocated space, you can install the Engine in the unallocated space and leave any existing OS in place. Use the Tab key to select **Use Available Space** and press **Enter**.
5. Use the up and down arrow keys to select a language (keyboard) for installation and press **Enter**.
6. Enter the computer name, and press the **Enter** key to move to the next screen. This computer will be identified on the Synchronizer primarily with this name.

To go back a step, use the Tab key to highlight **Back**, and then press **Enter**.

7. Enter the asset tag for the computer, and press the **Enter** key to move to the next screen.
8. Use the arrow keys to select whether to use disk encryption, and press the Enter key to move to the next screen.
9. A summary of your selections are displayed. If the summary is correct, enter **yes** and press the **Enter** key to install the Engine.

The Engine is installed, with a progress bar displayed. Once installed, the computer reboots.

10. Enter the fully qualified domain name (FQDN). Ask your IT Administrator if you do not have this information.
11. Enter your username and password. This identifies you at the selected Synchronizer, and registers the computer.

Once the Engine is installed, it can be updated automatically. When the user logs in, the Synchronizer sends down any virtual machines assigned to the user.

## Using PXE Boot for XenClient Enterprise Engine Installations

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The **Preboot eXecution Environment** (PXE, or 'pixie') is an environment to boot computers using a network interface independent of available local data storage devices (like hard disks) or installed operating systems. In basic terms, PXE allows a computer to boot from a network server instead of the local hard disk.

When used by Citrix's implementation, a computer can download an updated Engine from a server, and boot that updated version. The new version is treated as an update, and retains information and virtual machines for the registered user. This topic addresses procedures for using PXE boot on the Engine.



For PXE boot procedures involving a virtual machine (i.e., a personal virtual machine), ensure that the NIC is in bridge mode so that the personal VM's DHCP service is used rather than the Engine's DHCP service in NAT mode.

The process below describes how to set up a PXE boot service to download and install the Engine.

## Installing a PXE Boot Server

---

Install a PXE server on a computer with a Web server.

There are several PXE boot servers available such as Windows RIS (Remote Installation Service), Redhat Linux PXE Boot service, and FOG Server. The example described below is for a Linux-based server, but all PXE boot services use a similar configuration.

1. Download the current Engine installer ISO.
2. Create a xenclient-VERSION NUMBER directory under the Web document root and copy the downloaded Engine ISO to it. Rename the file xenclientengine.iso.
3. Extract the following four files:
  - initrd.img
  - vmlinuz
  - mboot.c32
  - xen.gz
4. Copy the files to the PXE server:
  - Copy mboot.c32 to the tftboot root directory.
  - Create an Engine directory for the tftboot root directory and copy the rest of the three files (initrd.img, vmlinuz and xen.gz) to the directory.
5. Optionally create a list of clients to receive the Engine automatically, and put it in the list in an INI file called client.ini in the same Web document location as the xenclientengine.iso file (\$WEB\_ROOT/xenclient-5.0). See the information below for more information on client.ini formatting.



A sample client.ini file is provided in an appendix at the end of this document.

6. Add the following three lines to the /pxelinux.cfg/default file to boot the installer (xenclient-[version number] now appears as a boot option):



The third line beginning with **append** is a single long line containing several options separated into three groups with triple dashes (for example, ---). Ensure that this line is not broken into multiple lines when copying it into the configuration file.

```
LABEL xenclient-<VERSION NUMBER>
kernel mboot.c32
append xenclient-<VERSION NUMBER>/xen.gz dom0_mem=2048M --- xenclient-<VERSION
NUMBER> /vmlinuz boot=casper
webboot=http://<IP_address>/dom0/xenclientengine.iso ro quiet console=tty8
vc_config=http://<IP_address>/client.ini --- xenclient-<VERSION NUMBER>
/initrd.img ---
```

where *IP\_address* is the IP address of the PXE server containing the xenclientengine.iso (and client.ini file if used).



The “**vc\_config=**” parameter is optional. The `dom0_mem=2048M` line should only be used for XenClient Enterprise 4.1 installations; previous 4.0.x releases do not require this parameter.

7. Replace `IP_address` with the IP address of the PXE server containing the `xenclientengine.iso` (and the client list if used). IP addresses are required, instead of domain names, because DNS is not available in the `initramfs` at the time the image is downloaded.

## Unattended Engine Installation

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You can optionally supply a list of computers that should receive and install the Engine ISO when they are powered up and join the network. The PXEboot server recognizes their MAC addresses and sends them the ISO to install. The list of these client computers is stored in a CSV file named `client_list` that is stored with the Engine ISO.

A sample, annotated `client.ini` file can be found on the install media in **extra/ms-client.in**. This file is formatted into multiple `.INI` sections:

- [GLOBAL] – Settings in this section will apply to all machines connecting, regardless of their MAC address.
- [XX:XX:XX:XX:XX] (MAC address) – Settings in this section will override those set in GLOBAL.



The required parameters for **autoinstallation** and **autoregistration** are separate. You may do an auto install without an auto registration.

## Upgrading an Existing XenClient Enterprise Engine

---

This section provides information about upgrading an existing Engine. Upgrades can be installed from an installation CD, USB installer, or imported into Synchronizer’s Software Library and then downloaded into registered client computers.

To upgrade an Engine:

1. Download an update by Logging in to the [Citrix Customer Portal](#).
2. Click on the XenClient Enterprise Engine Upgrade Kit link.
3. Save the patch to either the Synchronizer file import folder on the server hosting Synchronizer (`c:\ProgramFiles\Citrix\Synchronizer\File Import by default`) or somewhere on your local network accessible from Synchronizer.
4. Import the update into the Synchronizer Software library:
  - a. Login to Synchronizer.
  - b. Select **Software Library** in the navigation panel; click **Import** in the Actions Panel.
  - c. In the Import Software panel:

- i. Enter a name and description to identify the update.
- ii. Click the XenClient Enterprise Update radio button for the type of software.
- iii. Specify the location and file to import:

Location	Your computer...	File import folder on the server
File	Browse to the file location and highlight the file	Select from the list of files in the import folder

5. Assign the update to the registered computers:
  - a. Click the **Software Library>XenClient Enterprise Engine Updates** in the navigation panel and select the update.
  - b. Click the **Computers** tab in the navigation panel to display a list of all computers registered with Synchronizer.
  - c. Fill the checkbox for each computer to receive the selected Engine update.
  - d. Click **Save**.



The new version of the Engine is downloaded by each selected computer when it contacts Synchronizer, and is used after the next reboot. Once the upgraded Engine has been distributed, stop and restart it before running virtual machines published on Synchronizer.

## Using an autoconfig file (client.ini File)

---

The XenClient Enterprise autoconfig file is comprised of multiple ini sections denoted by square brackets at the start of a line, such as [GLOBAL]. GLOBAL settings are processed first, and then overridden on a per MAC address section, allowing for per-machine basis control of autoinstall parameters. See the last section of this section for more information on the MAC address sections.

The autoconfig file allows for unattended Engine installations as well as automatic registration after install. The goal of this section is to acclimate you with the different options that can be specified in the XenClient Enterprise **client.ini** autoconfig file.

This document provides instructions on how to configure a PXE server to serve the autoconfig file to clients. See the section entitled *Using PXE Boot for XenClient Enterprise Engine Installations*, (more specifically, the subsection entitled *Installing a PXE Boot Server*) earlier in this guide. Without this configured, the autoconfig file will not be served to clients, and keywords such as @server@ and @principal@ will not be substituted when automatically registering client machines.

---

### File format notes for **client.ini**:

- Sections are case insensitive
- Keys are case insensitive
- Values are case sensitive
- Anything following a '#' symbol will be ignored (comment)
- Spaces in values are not supported
- All “examples” in this document should begin at the start of a line and not indented as is

shown here — indentation in this document is for readability purposes only

The **minimum parameters** to perform an auto install are:

```
name
assettag
encrypt
keyboard
```

The install can also perform an **auto-registration** upon first boot. The minimum parameters to perform this operation, in addition to the above, are:

```
username
password
server
port
```

This file is served up by the Synchronizer's **MgmtInfoSvc**, with appropriate substitutions (noted below) at:

```
https://@server@/MgmtInfoSvc
```

#### Registration & Installer Action

##### **Username/password:**

Specify the username to register with Synchronizer. If you want to register the computer to a real user, then you have a couple of choices:

- a. Supply the user's name and password.

Example:

```
username = mickey-mouse
password = <user's own password>
```

- b. Register-on-behalf-of. Use the syntax `<admin-name>|<username>` where `<admin-name>` is the logon name of a Synchronizer administrator and `<username>` is the user who will be registered to this computer.

Supply the administrative user's password, not the password of the user to which the computer is being registered.

Example:

```
username = Administrator|mickey-mouse
password = <Administrator's password>
```

If you want to register an unowned computer, you have a couple of choices. Both choices require you to provide the computer name followed by a dollar sign, instead of the user name to which the computer would have been registered.

Use the syntax `<admin-name>|<computer name>$`

- a. Supply the username and password of a Synchronizer administrator.

Example:

```
username = Administrator|mycomputer$
password = <Administrator's password>
```

- b. If open registration is enabled on the Synchronizer, you can use the substitutions `@principal@` and `@password@` which will be filled in by the **MgmtInfoSvc** with the name and password of a private account that can be used to anonymously register unowned computers.

**Example:**

```
username = @principal@|mycomputer$  
password = @password@
```

**Open registration:**

If set to true, register the computer without a user. To have MgmtInfoSvc provide this value, use the special case @computer\_reg@

**Example:**

```
computer_reg = @computer_reg@
```

**FQDN of Synchronizer:**

To have MgmtInfoSvc provide this value, use the special case @server@

**Usage:**

```
server = <valid FQDN>
```

**Example:**

```
server = @server@
```

**Synchronizer port to use:**

Port to connect (usually 443). To have MgmtInfoSvc provide this value, use the special case @port@

**Usage:**

```
port = <valid port number>
```

**Example:**

```
port = 443
```

**Installer action:**

**Supported actions:**

uninstall

install - this action tries to find a free partition and unallocated disk space from which to carve a partition into which it installs. The installer will perform a dual boot installation, keeping other OSs in place.

wipeinstall - this action will cause the entire disk contents to be erased during engine installation. Make sure you have made a backup of your drive. This operation is destructive and can't be undone.

**Usage:**

```
action = <uninstall/install/wipeinstall>
```

**Example:**

```
action = wipeinstall
```

## Language & Keyboard Layout

**Language used by the installer:**

Use the 2 letter acronym from the choices below. If not specified, the default is en (English).

**Supported languages:**

en - English

es - Spanish

fr - French

it - Italian

de - German

ja - Japanese

zh - Simplified Chinese

Usage:

```
lang = <two character language code>
```

Example:

```
lang = en
```

### **Keyboard layout:**

Two character keyboard code from the following list:

us - English (United States)

gb - English (United Kingdom)

be - Belgian

dk - Danish

nl - Dutch

fi - Finnish

fr - French

ca - French (Canada)

sf - French (Switzerland)

de - German

sg - German (Switzerland)

hu - Hungarian

is - Icelandic

it - Italian

jp - Japanese

no - Norwegian

pl - Polish

pt - Portuguese

br - Portuguese (Brazil)

ru - Russian

es - Spanish

se - Swedish

tr - Turkish (Q-keyboard)

Usage:

```
kb = <two letter keyboard code>
```

Example:

```
kb = us
```

### **Installation & Configuration**

#### **Disk encryption:**

If set to 'yes', XenClient Engine system and data files will be encrypted.

Usage:

```
encrypt = <yes/no>
```

Example:

```
encrypt = no
```

#### **Machine name:**

This parameter names the physical machine at install time

Note that this cannot be changed later. An uninstall/reinstall is required to change the computer name.

Usage:

```
name = <valid hostname>
```

**Notes:**

Composed of the letters a-z (case insensitive), the numerals 0-9, and a hyphen, which must not be at the start or end of the name. The whole name must also be less than 64 characters long.

**Special Note:**

The name / asset tag can be automated via special keywords surrounded by @ symbols, which will be replaced by their corresponding DMI info from the motherboard, or alternately from information provided in DHCP options.

If there are spaces in these values, they will be converted to dashes. Periods are removed.

Note that not all manufacturers fill in all of these values.

**Available DMI keywords:**

@bios-vendor@  
@bios-version@  
@bios-release-date@  
@system-manufacturer@  
@system-product-name@  
@system-version@  
@system-serial-number@  
@baseboard-manufacturer@  
@baseboard-product-name@  
@baseboard-version@  
@baseboard-serial-number@  
@baseboard-asset-tag@  
@chassis-manufacturer@  
@chassis-version@  
@chassis-serial-number@  
@chassis-asset-tag@  
@processor-manufacturer@  
@processor-version@

**Available DHCP keywords:**

@dhcp-device@  
@dhcp-ipv4addr@  
@dhcp-ipv4broadcast@  
@dhcp-ipv4netmask@  
@dhcp-ipv4gateway@  
@dhcp-ipv4dns0@  
@dhcp-ipv4dns1@  
@dhcp-hostname@  
@dhcp-dnsdomain@  
@dhcp-nisdomain@  
@dhcp-rootserver@  
@dhcp-rootpath@  
@dhcp-filename@

**Usage:**

name = <valid computer name>

**Example:**

name = @system-product-name@-@system-serial-number@

**Computer asset tag:**

assettag is composed of alphanumeric characters, not inclusive of the following:

```
^"\/\[\]<>() : ; , | = + * ? &
```

(Also see special note above)

Usage:

```
assettag = <valid asset tag>
```

Example:

```
assettag = @system-serial-number@
```

**Control MAC address matching:**

If set to yes, and no MAC address section matches, do not continue with auto-install

Usage:

```
require_mac_match = <yes/no>
```

Example:

```
require_mac_match = yes
```

**Hardware compatibility check:**

Runs the hardware compatibility checks if this flag is set to 'yes'.

Usage:

```
check_hardware_compatibility = <yes/no>
```

Example:

```
check_hardware_compatibility = yes
```

**Auto-reboot after installation:**

If set to 'yes' (default) when the installation is complete, the installer will reboot the system. If set to 'no' then a screen is displayed from which a reboot can be requested.

Usage:

```
auto_reboot_when_installation_completes = <yes/no>
```

Example:

```
auto_reboot_when_installation_completes = no
```

**NOTE:** Only set one of the following two values to “yes” in order to avoid unexpected behavior.

**\* Continue an unattended install upon warning:**

If set to 'yes', the installer will continue upon encountering any non-fatal warnings if running in unattended mode.

Usage:

```
continue_on_warning = <yes/no>
```

Example:

```
continue_on_warning = no
```

**\* Abort an unattended install upon warning:**

If set to 'yes', the installer will abort upon encountering any non-fatal warnings if running in unattended mode.

Usage:

```
abort_on_warning = <yes/no>
```

Example:

```
abort_on_warning = no
```

**Import VMs into Engine:**

When this flag is set to 'yes' (default), the installer will import the VMs into the engine. If set to 'no', the installer will not import VMs. VMs to be imported should be placed in the

```
directory /nxtop-import
Usage:
    import_vms_into_engine = <yes/no>
Example:
    import_vms_into_engine = no
```

#### Screen display pause:

When the installer is run in automated mode, the answer to its questions come from this file. They are used to answer the normally visible user screens. By default, those screens are not shown. If you would like to show the screens for a specified amount of time before moving on to the next question, set the variable below to the number of seconds to display the screen for.

A value of 0 means don't display the screens.

```
Usage:
    screen_display_pause = <0 or higher>
Example:
    screen_display_pause = 10
```

#### Per MAC address section overrides:

Denoting sections by MAC address will allow configuration to be overridden on a per-MAC address basis.

```
Usage:
    [XX:XX:XX:XX:XX:XX]
    name      =
    assettag  =
    encrypt   =
    username  =
    password  =
Example:
    [a2:10:44:ef:ff:73]
    name      = @system-product-name@-@system-serial-number@
    assettag  = @system-serial-number@
    encrypt   = no
    username  = mickey-mouse
    password  = <user password>
```

## Sample client.ini File

---

This section provides an example of the client.ini file. The most up-to-date example should be copied from the installation media (install/extra/client.ini).

```
#
# XenClient Enterprise install autoconfig file
#
# The XenClient Enterprise autoconfig file is comprised of multiple ini
# "sections" - denoted by square brackets at the start of a line,
# such as GLOBAL
#
# GLOBAL settings are processed first, and then overridden
# on a per MAC address section, allowing for a per-machine control
# of autoinstall parameters.
#
```

```

# Minimum parameters to perform an auto install are:
#   name
#   assettag
#   encrypt
#   keyboard
#
# The install can also perform an auto-registration upon
# first boot. The minimum parameters to perform this
# operation, (in addition to the above) are:
#   username
#   password
#   server
#   port
#
# This file is served up by the Synchronizer's MgmtInfoSvc, with
# appropriate substitutions (noted below) at:
#   https://@server@/MgmtInfoSvc
#
# File format notes:
#   Sections are case insensitive
#   Keys are case insensitive
#   Values are case sensitive
#   Anything following a '#' symbol will be ignored
#   Spaces in values are not supported
#
#####
# Begin GLOBAL Section
#####
[GLOBAL]

#####
# Autoinstallation/Autoregistration control
#####

#
# Username:
# Username to register with Synchronizer. The password
# provided in the 'password' keyword below must be that of the
# user.
#   Example:
#   username = mickey-mouse
#
# If you would like register a computer for a particular user
# and you don't know his/her password, you can use the
# register-on-behalf-of feature. In this case, the 'password'
# keyword below must be that of any Synchronizer administrator
#
#   Example:
#   username = Administrator|mickey-mouse
#
# Finally, if you would like MgmtInfoSvc to automatically fill
# the username, then use this special syntax to indicate so.
#
#   Example:
#   username = @principal@
username = @principal@

#
# Synchronizer password for username:
# To have MgmtInfoSvc provide this value, use
# the special case @password@
password = @password@

```

```

#
# Open registration:
# If set to true, register the computer without a user
#   To have MgmtInfoSvc provide this value, use
#   the special case @computer_reg@
computer_reg = @computer_reg@

#
# FQDN of Synchronizer, or @server@
# To have MgmtInfoSvc provide this value, use
# the special case @server@
server = @server@

#
# Synchronizer port to use:
# port to connect (usually 443)
# To have MgmtInfoSvc provide this value, use
# the special case @port@
port = @port@

#
# Installer action:
# Supported actions:
#   uninstall
#   install - this action tries to find a free partition and unallocated
#             disk space from which to carve a partition into which it
#             installs. The installer will perform a dual boot
installation,
#             keeping other OSs in place.
#   wipeinstall - this action will cause the entire disk contents to be
#                 erased during engine installation. Make sure you have
#                 made a backup of your drive. This operation is
#                 destructive and can't be undone.
action = install

# Language used by the installer. Use the 2 letter acronym from the choices
below.
# If not specified, the default is en (English)
#
#   en - English
#   es - Spanish
#   fr - French
#   it - Italian
#   de - German
#   ja - Japanese
#   zh - Simplified Chinese
#
lang = en

#
# Keyboard layout for XenClient Engine:
#   two character keyboard code from the following list:
#   us English (United States)
#   gb English (United Kingdom)
#   be Belgian
#   dk Danish
#   nl Dutch
#   fi Finnish
#   fr French
#   ca French (Canada)
#   sf French (Switzerland)
#   de German

```

```

#           sg German (Switzerland)
#           hu Hungarian
#           is Icelandic
#           it Italian
#           jp Japanese
#           no Norwegian
#           pl Polish
#           pt Portuguese
#           br Portuguese (Brazil)
#           ru Russian
#           es Spanish
#           se Swedish
#           tr Turkish (Q-keyboard)
kb = us

#
# Disk Encryption:
# If set to 'yes', XenClient engine system and data files will be encrypted.
encrypt = no

#
# Machine Name:
# This parameter names the physical machine at install time
# Note that this cannot be changed later. An uninstall, and reinstall
# is required to change the computer name.
#
# name = <valid hostname>
#       Composed of the letters a-z (case insensitive),
#       the numerals 0-9, and a hyphen, which must not be
#       at the start or end of the name. The whole name
#       must also be less than 64 characters long.
#
# Special Note:
# The name / asset tag can be automated via special keywords
# surrounded by @ symbols, which will be replaced
# by their corresponding DMI info from the motherboard,
# or alternately from information provided in DHCP options.
#
# If there are spaces in these values, they will be
# converted to dashes. Periods are removed.
# Note that not all manufacturers fill in all of these values.
#
# Available DMI keywords:
#   @bios-vendor@
#   @bios-version@
#   @bios-release-date@
#   @system-manufacturer@
#   @system-product-name@
#   @system-version@
#   @system-serial-number@
#   @baseboard-manufacturer@
#   @baseboard-product-name@
#   @baseboard-version@
#   @baseboard-serial-number@
#   @baseboard-asset-tag@
#   @chassis-manufacturer@
#   @chassis-version@
#   @chassis-serial-number@
#   @chassis-asset-tag@
#   @processor-manufacturer@
#   @processor-version@
# Available DHCP keywords:
#   @dhcp-device@
#   @dhcp-ipv4addr@

```

```

#           @dhcp-ipv4broadcast@
#           @dhcp-ipv4netmask@
#           @dhcp-ipv4gateway@
#           @dhcp-ipv4dns0@
#           @dhcp-ipv4dns1@
#           @dhcp-hostname@
#           @dhcp-dnsdomain@
#           @dhcp-nisdomain@
#           @dhcp-rootserver@
#           @dhcp-rootpath@
#           @dhcp-filename@
#
name = @system-product-name@-@system-serial-number@

# Computer Asset tag:
#   assettag = Composed of alphanumeric characters, not
#             inclusive of the following: ^"\/\[\]<>():;|,|=+*&
#             Also see special note above
assettag = @system-serial-number@

#
# Control MAC address matching:
#   If set to yes, and no MAC address section matches, do not
#   continue with auto-install
require_mac_match = no

# Runs the hardware compatibility checks if this flag is set to 'yes'.
#check_hardware_compatibility = yes

# If set to 'yes' (default) when the installation is complete, the installer
# will reboot the system.  If set to 'no' then a screen is displayed
# from which a reboot can be requested.
#auto_reboot_when_installation_completes = no

# After the engine software is installed, the system will be rebooted into
# into the engine by default.  In a multi-booted system, you can
# override this behavior by specifying the string identifying the OS.
# Possible values are:
#   Engine
#   Windows 7
#   Windows Vista
#   Windows Server 2008 R2
#   Windows Server 2008
#   Windows XP
#   Windows 2000
#   Windows NT
#   <any string specified in osprober.ini in the partition>
#
# Do not enclose in quotes
#boot_default_entry = Engine

# Set this key to one of the valid values for boot_default_entry in order
# to boot into this OS once.  Subsequent reboots will go to boot_default_entry
# Do not enclose in quotes
#boot_once_entry = Windows 7

# If set to 'yes', the installer will continue upon encountering any non-fatal
# warnings if running in unattended mode.
#
#continue_on_warning = no

# If set to 'yes', the installer will abort upon encountering any non-fatal
# warnings if running in unattended mode.

```

```

#
#abort_on_warning = no

#####
# Recovery partition control
#####

# This flag is used only when 'action' is set to 'install' and unallocated
# space meeting the minimum installation requirements is not found on disk.
# In this case, the installer will examine the existing partitions for free
# space and reduce the partition to free up the space for use by the installer.
# If set to 'no' and no unallocated space is found, then the installer
# cannot continue and will abort. Also, if after shrinking the existing
# partitions enough unallocated space can't be created, then the installer
# will abort.
#shrink_partitions_if_no_disk_space_is_found = yes

# This flag is used only when 'action' is set to 'install'
# If set to 'yes', this will cause the installer to always shrink a
# partition first (before looking for unallocated space) and then
# determine if enough unallocated space exists to proceed.
#always_shrink_partitions_first = no

# This value can be set to the preferred size that the installer should
# attempt to obtain when it shrinks the NTFS partitions. By default the system
# will shrink as much as it can - leaving approximately 10% of available space
# for NTFS. If this is set to a numeric value, then the installer will
# attempt to obtain that much space in gigabytes. If it is set to a non-numeric
# value, then the assumption is that the user wants the maximum possible shrink
# (same as if it is not set at all)
#preferred_engine_partition_size_gb=max

# This value can be set to the minimum size that the installer should require
# when shrinking the NTFS partition. This value cannot be less than the
# system minimum (currently 8GB + the size of the recovery partition). If set
# to a numeric value, the system will not install unless there is at least this
# much disk space available for shrinking. If set to a non-numeric value,
# the system minimum will be used. If both a minimum and a preferred size
# are specified, then the system will attempt to get the preferred, but
# if that much space is not available, will use a smaller size as long
# as it exceeds the minimum.
#minimum_engine_partition_size_gb=min

# If set to 'yes'. this flag will cause an engine partition to be allocated
# and created from the available disk space. If no space can be allocated OR
# no free primary partition can be found, then installation will not continue,
# unless overridden by 'continue_on_no_space_for_recovery_partition'
#create_engine_recovery_partition = yes

# If set to 'yes' (default) the recovery partition will be marked as hidden.
# If set to 'no' it will be marked as visible.
#
# When visible, a partition will be automounted by Windows and assigned a drive
# letter, which may allow someone to make undesirable changes to the recovery
# partition
#hide_recovery_partition = yes

# If set to 'yes', this flag will cause any VMs in the nxdtop-import directory
# of the installation media to be copied to the recovery partition.
# If set to no (default), the recovery partiton will contain ONLY the files
# needed to reinstall the engine itself. No VMs are copied.
#copy_vms_to_recovery_partition = yes

```

```

# If 'create_engine_recovery_partition' is set to yes but no space or primary
# partition can be allocated the installation will fail unless this flag
# is set to 'yes'.  If set to 'yes', installation will continue but not
# create a recovery partition.
#continue_on_no_space_for_recovery_partition = yes

# When this flag is set to 'yes' (default), the installer will import the VMs
# into the engine.  If set to 'no', the installer will not import VMs.
# VMs to be imported should be placed in the directory /nxtop-import
#import_vms_into_engine = no

# When the installer is run in automated mode, the answer to its questions
# come from this file.  They are used to answer the normally visible user
# screens.  By default, those screens are not shown.  If you would
# like to show the screens for a specified amount of time before
# moving on to the next question, set the variable below to the number
# of seconds to display the screen for.
# A value of 0 means don't display the screens.
#screen_display_pause=10

# Recover disk partitions on first boot.
# Under special circumstances, an installation may want to preserve
# present disk partitions during installation but then upon the engine
# first booting up, the user may want to reclaim the space taken up by
# those partitions.
# Set to "yes" to enable this feature.  The default is "no"
#
# WARNING: This is a destructive operation that can't be undone.  It is
# an advanced feature that should only be used under Citrix's customer
# support guidance.
#reclaim_all_disk_partitions_on_first_boot=yes

#####
# Begin per MAC address section overrides
#####

#[XX:XX:XX:XX:XX:XX]
#name =
#assettag =
#encrypt =
#username =
#password =

```