

Glossary of Virtualization (and Computing) Terms

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This document is intended for someone new to virtualization or who needs to understand the terminology used when discussing virtualization. Other links of interest include [A Beginner's Guide to VMware Fusion](#) and [Frequently Asked Questions about VMware Fusion](#). Note: This glossary of virtualization is aimed towards x86, VMware, and specifically Fusion.

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Term	Meaning
ACE	A VMware product that provides a way to secure and manage virtual machines, for example in the workplace. The proper name is "VMware ACE".
AMD-V	AMD's implementation of virtualization <i>hardware assist</i>
Binary Translation	A virtualization technique pioneered by VMware in the late '90s for the x86 architecture where the instruction stream is inspected and non-virtualizable machine instructions are replaced with "safe" code. Contrast with <i>hardware assist</i> .
Boot Camp virtual machine	Using an existing Boot Camp installation as a virtual machine. Contrast with <i>normal virtual machine</i> .
console window	The window on the host which allows you to interact with the guest. Note: Not really applicable to a <i>Unity</i> situation, this is mainly single-window mode.
Converter	A VMware product that converts a physical (or virtual) Windows machine to a virtual machine. The proper name is "VMware Converter".
core	Computational unit. There may be multiple cores in a <i>socket</i> . Note this is a generic term, <i>not</i> to be confused with Intel's Core (Solo, Duo, etc.) product line.
COW disk	Copy-On-Write disk. Part of a snapshot, and keeps track of disk changes since the snapshot was taken.
CPU	Central Processing Unit. Depending on context, might refer to a <i>core</i> or a <i>socket</i> .
ESXi	A free VMware virtualization software product aimed at businesses and enterprise. Unlike Player/Fusion/Workstation/Server, does not run on top of another OS. The proper name is "VMware ESXi".

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file-based disk	A virtual disk where the contents are stored in a file (or multiple files, for split disks). Contrast with <i>raw disk</i> .
Fusion	A VMware hosted virtualization software product. Runs on Mac OS X <i>hosts</i> . The proper name is "VMware Fusion".
fullscreen	A view mode where the guest display takes up an entire physical monitor (or more). Contrast with <i>single-window</i> and <i>Unity</i> .
guest	The operating system that runs in a virtual machine. There can be multiple guests per physical machine, but only one per virtual machine. Contrast with <i>host</i> .
grab	To direct input (i.e. keyboard and mouse) to a virtual machine, for example by clicking in a console window. Contrast with <i>ungrab</i> .
hard ungrab	Forced ungrab, such as by pressing ctrl-cmd (by default) in Fusion.
hardware assist	A virtualization technique where the CPU allows software to specify instructions (e.g. non-virtualizable ones) to cause traps (thus making them virtualizable). Examples on the x86 architecture include <i>VT-x</i> and <i>AMD-V</i> . Contrast with <i>Binary Translation</i> .
host	The OS that has direct control of the hardware. There is only one host per physical machine. What the virtualization software runs on; e.g. for Fusion, the host is OS X. Contrast with <i>guest</i> .
HGFS	Abbreviation for "Host-Guest File System". VMware's name for the guest-visible aspect of a <i>Shared Folder</i> .
hypervisor	Software that controls virtual machines, managing resources and ensuring that guests are properly isolated.
Importer	A companion program for Fusion 1.x that translates third-party virtual machines (e.g. Parallels, VirtualPC) to a format that Fusion understands. As of Fusion 2, this functionality is built in to Fusion. The proper name is "VMware Importer".
NIC	Network Interface Card. What a computer uses to talk to the network; can be wired or wireless.
Player	A free VMware hosted virtualization software product aimed at end users. Has fewer features than Workstation or Fusion. Runs on Windows and Linux <i>hosts</i> . The proper name is "VMware Player".
pNIC	Physical <i>NIC</i> ; what the host uses to talk to the network.

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vNIC	Virtual <i>NIC</i> ; what we present to a guest. Our vNICs always appear as wired devices to the guest, even if the pNIC is a wireless device.
network share	A method for accessing one computer's filesystem from another computer; not restricted to virtualization. Well-known examples include NFS and SMB/CIFS. Does not require VMware Tools, but does require a network connection. Contrast with <i>Shared Folder</i> .
normal virtual machine	For example, what you get when you create a new virtual machine with all defaults. A normal virtual machine is portable between computers. A normal virtual machine does not have things such as <i>raw disks</i> .
Operating System	Software that controls the hardware and runs other programs. Well-known examples include Windows and OS X.
OS	Abbreviation for <i>operating system</i> .
partition	noun: A self-contained region of a hard disk that usually contains a filesystem. verb: to create a partition A partition is not the same as a virtual machine, nor do you have to partition your Mac's hard drive to create a virtual machine.
physical machine	A computer that (for example) you could touch or throw out a window. Contrast with <i>virtual machine</i> .
raw disk	A virtual disk where the contents are stored directly on a partition on the physical machine. Not safe to use with snapshots or suspending. For example, a Boot Camp virtual machine uses a raw disk. Contrast with <i>file-based disk</i> .
Shared Folder	In the context of VMware, a specific method for accessing the host filesystem from the guest using VMware <i>Tools</i> . Does not require a network connection. Contrast with <i>network share</i> .
single window	A view mode where the guest's display appears in a single host window. This is the default view in Fusion. Contrast with <i>Unity</i> and <i>fullscreen</i> .
SMP	Symmetric MultiProcessing. Using multiple cores at once.
vSMP	Virtual Symmetric MultiProcessing. Using multiple cores in one virtual machine.
snapshot	A way to save all state (disk, RAM, CPU) of a virtual machine (note this does not include network, since that is external). As long as you don't delete the snapshot (or underlying base disks), you can return to this state.

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	Useful for testing purposes or for remembering a known-good setup.
socket	A (physical) computational unit, e.g. something you would plug a CPU into. A computer may have multiple sockets, a socket may have multiple <i>cores</i> . Can also refer to a particular type of communication method between programs.
soft ungrab	Automatic ungrab, such as when your mouse leaves the console window.
Tools	Optional software installed in the guest that improves performance and usability. The proper name is "VMware Tools".
ungrab	To direct input (i.e. keyboard and mouse) away from a virtual machine. See also <i>soft ungrab</i> and <i>hard ungrab</i> . Contrast with <i>grab</i> .
Unity	A view mode where guest windows appear to be on the host, e.g. you can interleave them with host windows. Requires VMware Tools; not available for all guests. Contrast with <i>single-window</i> and <i>fullscreen</i> .
virtual machine	A "computer" that exists only in software. Contrast with <i>physical machine</i> .
virtual machine monitor	Another name for a <i>hypervisor</i> .
VM	Common abbreviation for <i>virtual machine</i> .
VMware	Company that makes virtualization (and related) software.
VT-x	Intel's implementation of virtualization <i>hardware assist</i> for x86. All Intel Macs have this.
Workstation	A VMware hosted virtualization software product aimed at developers and testers, with a number of features that Fusion does not have. Runs on Windows and Linux <i>hosts</i> . The proper name is "VMware Workstation".