Brief

**Licensing Windows Vista for Use with Virtual Machine Technologies January 2009**

**Enterprise Agreement (EA) & EA Subscription ♦ Select License ♦ Select Plus ♦ Open Value & Open Value Subscription ♦ Open License**

**Summary**

This licensing brief is an overview of Microsoft licensing updates for the desktop PC operating system, including updates and clarifications on how to use the Windows Vista® operating system products with virtual machine (VM) technologies such as Microsoft® Virtual PC and Microsoft Hyper-V™ technology.

The updates covered in this licensing brief are described in the context of Windows Vista Upgrade licenses and Software Assurance purchased under Microsoft Volume Licensing. However, some updates may also apply to licenses acquired from other channels, such as original equipment manufacturers (OEMs), and full-package products (FPPs). Please review the license terms that accompany the products to determine which updates apply to the software you are using.

Note: Definitions of certain terms are included at the end of this licensing brief, which can be helpful in understanding virtual machine technology and your use rights for Windows Vista products.

**What’s New in This Brief**

* This brief replaces a previous version published in September 2007.
* Significant changes in this new version include:
  + Use rights updates to Windows Vista Enterprise Centralized Desktop (VECD) for Software Assurance and VECD including local and home use
  + Additional niche use scenarios (contractor-owned and employee-owned PCs)

**Details**

**Virtual Machine Technology on x86 and x64 Hardware Platforms**

With virtual machine technology, you can run multiple operating system environments on a single physical hardware system (for example, a PC) (Figure 1). Before VM technology existed, you could run only one operating system environment on a PC at a time because every operating system was a physical one.[[1]](#footnote-2) However, current technologies such as Microsoft Virtual PC add a “virtual” layer on top of the physical operating system, which makes it possible to run multiple operating system environments on the same PC. VM technology allocates virtualized hardware resources to virtual hardware systems or virtual machines. Virtual operating system environments run on virtual machines.

Physical Hardware System

(

“PC”

)

Operating System (“OS”)

Virtual Machine

(“VM”)

Technology

Physical

Operating System

Environment

Virtual

Operating System

Environments

Virtual HW

System

Virtual HW

System

Allocates

Virtual

Resources

Virtual

-

Processors

-

RAM

-

Network card

-

Etc.

.

Physical

-

Processors

-

RAM

-

Network card

-

Etc.

.

OS

Application

OS

Application

**Figure 1:** Physical and virtual hardware and operating system environments

**Updates to Licensing for Microsoft Desktop Operating System Products**

Microsoft is updating the licensing use rights for Windows Vista products so that you can take advantage of the benefits and capabilities of VM technology. If you do not use VM technology or license versions of Windows Vista that grant virtualization use rights, these updates and clarifications do not significantly affect your use of Windows® operating system products.

**Updated Licensing Overview**

The following is an overview of the updated desktop PC operating system licensing models and clarifications to existing licensing policies.

| **Products** | **Summary** |
| --- | --- |
| * Windows Vista Business Upgrade (Volume Licensing Upgrade License) * Windows Vista Enterprise * Windows Vista Ultimate (for Software Assurance) | * Before you use an eligible Windows Vista licensed product, you must assign or allocate that license to a PC. That PC is referred to as the “licensed device.” * Use terms specify the maximum number of copies of the software per license that you may run on or remotely access from the licensed device at a time. * Copies may be run either directly on the physical hardware or in virtual machines (or otherwise emulated hardware systems). * You may run on the licensed device at any one time one copy, or instance, of the software directly on the hardware (the physical operating system environment) **and** up to four instances of the software in virtual machines. You may create and store an unlimited number of copies (for example, copies in VMs) for use on any licensed device. * Each hardware partition or blade is a separate physical hardware system and therefore requires a separate license. * In most cases, you may not reassign licenses for desktop PC operating system products within your organization. * PCs without a hard drive (or diskless PCs) are treated the same as traditional PCs for the purposes of licensing. |
| * Windows VECD * Windows VECD for Software Assurance | * VECD for Software Assurance and VECD are licensed on a per-device, non-perpetual, subscription basis. * Before you run any instance of the software under a license, you must assign that license to a device. That device is referred to as the “licensed device.” A hardware partition or blade is considered to be a separate device. * You may create and store an unlimited number of copies of the software on a network server or storage media for use on any VECD licensed device. * You may remotely access from the licensed device, at any one time: one running instance of the software in one physical operating system environment, or up to four running instances of the software in virtual machines or otherwise emulated hardware systems. * If you are using Windows Vista Business, you can choose to run the permitted instances locally in a virtual machine on the licensed device. |

Your review of these changes should not substitute for careful review and understanding of your rights and obligations as described in your Microsoft Volume Licensing agreement. The updates to the licensing models generally apply to all desktop PC operating system products covered by the October 1, 2006, Purchase Use Rights (PUR) and beyond. These updates do not apply to a Windows XP Professional license. However, they do apply to the use of Windows XP Professional in place of licensed copies of Windows Vista under Volume Licensing prior version rights. Customers should consult their Volume License agreements for further details regarding downgrade rights. For further detail, please see PUR at <http://www.microsoft.com/licensing>/.

**Virtualization Use Rights for Windows Vista Enterprise and Windows Vista Ultimate**

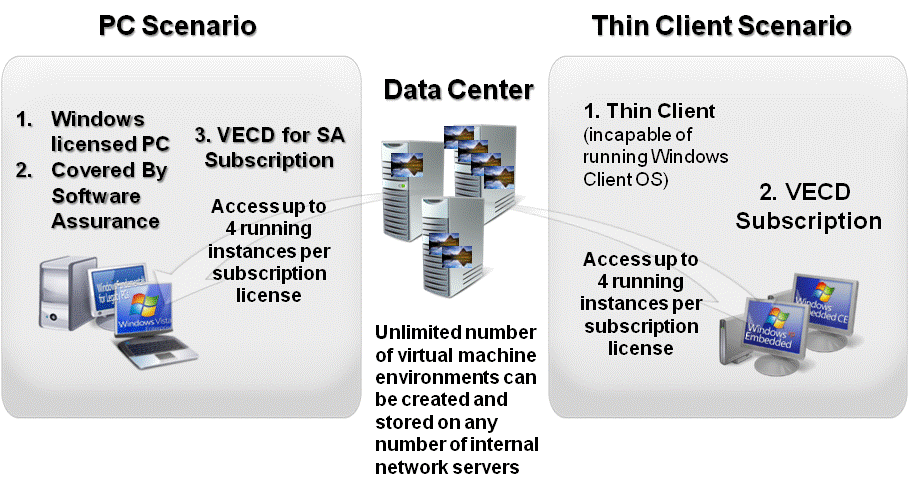
For each device licensed for Windows Vista Upgrade with Software Assurance:

* **Installation rights:** Customers may install unlimited copies of the software on the licensed device. However, at any one time, they may **run no more than one instance directly on the physical hardware and no more than four instances in virtual machines**. Despite the allowance of more than one copy, **use of the software is limited to one user at a time**.
* **Host operating system:** If customers use all five permitted instances, the instances running directly on the physical hardware may be used solely to:
* Run the hardware virtualization product.
* Manage and service the virtual (or otherwise emulated) hardware systems on that device.
* **Alternative installations:** Customers may install and use a second instance on the licensed device in a separate hard-drive partition. Choosing this option forfeits the right to run four virtualized instances.
* **Editions:** Customers may use Windows Vista Business, Windows Vista Enterprise, or Windows Vista Ultimate or a prior version for any instance running in a virtual machine. Likewise, customers electing the alternative right to run a second copy in a hard-drive partition, or otherwise choosing not to invoke the virtual machine rights, may use prior versions in place of a permitted copy or copies. (Please refer to your agreement and Product List for full information on prior version rights for Windows.) However, customers must use Windows Vista Enterprise, Windows Vista Ultimate, or third-party software (for example, VMWare or Xen) to run the hardware virtualization product and to service the virtual machine environments described above. No other versions of Windows Vista or prior versions of the operating system are permitted for that purpose. See figure below.

**Figure 2:** Virtualization use rights for operating systems versions

**Virtualization Use Rights for Windows VECD and Windows VECD for Software Assurance**

Microsoft Volume Licensing features two products that you can use to license the Windows desktop PC operating system for use in virtual machine environments. For traditional PCs licensed for Windows Vista with Software Assurance use VECD for Software Assurance. For thin clients, use VECD. See Figure 3 in this brief. Both VECD and the VECD for Software Assurance products are licensed on a per-device, non-perpetual subscription basis and include a “Work at Home” license.



**Figure 3:** Virtualization use rights in PC and thin-client scenarios

**Windows Vista Enterprise Centralized Desktop for Software Assurance**

VECD for Software Assurance is a Windows Vista Enterprise license for customers who want to procure VECD for their Software Assurance-covered traditional PCs (or similarly licensed diskless PCs). To be eligible for **VECD for Software Assurance,** the licensed PC in question must be currently covered with Software Assurance for Windows Vista.

Customers may acquire a **VECD for Software Assurance** subscription license if they meet the following criteria:

* Currently have or plan to have an Enterprise Agreement (EA), Select License Agreement, Open Value, or Campus and School Agreement (CASA).
* Have covered their identified/target workstations with Software Assurance for Windows Vista.

On meeting the above criteria, customers can purchase a license for the Windows Vista Enterprise Centralized Desktop for Software Assurance licenses through Microsoft Volume Licensing.

**Windows Vista Enterprise Centralized Desktop**

Customers may acquire a VECD for thin-client license if they meet the following criteria:

* Currently have or plan to have an Enterprise Agreement, Select License Agreement, Open Value, or School Agreement.
* Have or plan to have thin clients or PCs as the primary accessing device but do not have Software Assurance for Windows Vista on those devices.

On meeting the above criteria, customers can purchase a license for the Windows Vista Enterprise Centralized Desktop licenses through Microsoft Volume Licensing. The use rights for this offering are noted above.

**Installation and Use Rights:**

* **Remote Access**: Customers may install unlimited copies of the software on a network server or remote storage device (for example, storage area network [SAN]). However, at any one time, they may **run no more than four instances in virtual machines** (or otherwise emulated hardware systems) and remotely access from the licensed device. Despite the allowance of more than one instance, use of the software is **limited to one user at a time.**
* **Local Access:** Customers may store a copy of the software on a portable storage device (for example, DVD, USB) and run one or more of the permitted instances locally in a virtual operating system environment on the Windows VECD licensed device assigned a Windows Vista Business license.
* **Home Use:** The primary user of the corresponding VECD for Software Assurance or VECD licensed device may remotely access or locally run an instance of the software in a virtual operating system environment on a single home device. Local home use under the “Work At Home” license is limited to an assigned a license for any edition of Windows XP or Windows Vista, and on which that software is installed.

**Frequently Asked Questions**

**Can I install multiple copies of the operating system with my Windows Vista Business Upgrade license?**

You can install multiple copies of the operating system only if the desktop PC licensed for Windows Vista Business is covered with Software Assurance. The right to install and use additional copies of the software is granted under Windows Vista Enterprise or Windows Vista Ultimate (available in Software Assurance) use rights.

**What is the difference between the virtualization use rights in Windows Vista Enterprise versus VECD versus the remote boot right in Software Assurance?**

The difference in the configurations is summarized as follows:

Summary of Flexible Computing Offerings

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Windows Vista Enterprise** | **Windows Vista Enterprise using Diskless PCs** | **Windows VECD** |
| **Where is the operating system installed?** | On the licensed desktop PC | On an internal network server or network storage device (for example, SAN) | On an internal network server or network storage device (for example, SAN) |
| **Where does the operating system run or execute its code?** | On the licensed desktop PC | On the licensed desktop PC | On an internal network server or in an emulated hardware system on the VECD licensed device |
| **Where is the presentation of the operating system?** | On the licensed desktop PC | On the licensed desktop PC | On a licensed desktop PC or thin client over a remote connection |

**If I install and run four additional copies of the operating system, do I have to use Windows Vista Enterprise as the host operating system?**

No. You may use a third-party product to host the four virtual machine environments. However, if you use a Windows operating system, it must be Windows Vista Enterprise or Windows Vista Ultimate (available in Software Assurance).

**Can I store my virtual machine in a .vhd file on removable storage media and open the .vhd file on another PC?**

Yes, as long as both PCs are licensed for Windows VECD and are not already running more than three copies of the software.

**Are there any unique restrictions when running the operating system in a virtual machine?**

No unique restrictions exist when running the operating system in a virtual machine. However, we advise against playing or accessing content or using applications protected by other digital, information, or enterprise rights management technology or other rights management services or using full-volume disk drive encryption.

**Can other users remotely access virtual machines that I’m not using on my PC while I’m using my PC?**

No. The use of the software is limited to one user at any given time.

**Can I remotely access multiple VMs running on my Windows Vista Enterprise PC as the primary user from multiple devices at the same time?**

No. The use rights only permit one remote access connection at a time to the licensed device.

**What is the difference between Windows VECD for Software Assurance and VECD?**

VECD for Software Assurance is for traditional PCs that are already licensed for Windows Vista and have Software Assurance, while VECD is for licensing thin clients or PCs that are not covered with Software Assurance.

**Can my VECD license be re-assigned to another device?**

Yes. You may reassign your license, but not on a short-term basis (defined as within 90 days of the last assignment) except if there is a permanent hardware failure of the licensed device. In this case, the VECD license can be re-assigned sooner to a replacement device. In the case of VECD for Software Assurance, you may reassign your license to any other licensed device for which you have active Windows Software Assurance coverage.

**Can the four VMs I’m licensed to run on a server be shared with other users under a single VECD license?**

No. The four VMs permitted under each VECD license may be remotely accessed only from the licensed device. More users can use the licensed device but not at any one time.

**Can I continue to order or use VECD for Software Assurance after my agreement (and corresponding Software Assurance) has expired?**

No. VECD for Software Assurance (the license intended for traditional PCs licensed for Windows Vista with Software Assurance) may not be ordered or used after the expiration of Software Assurance coverage. The license is only available for PCs with active Windows Software Assurance coverage. VECD (for thin clients or Windows PCs without Software Assurance) may be procured under any valid EA, Select, Open Value or CASA enrollment. However, the subscription co-terminates with the enrollment and may not be extended beyond the expiration date without the renewal of the agreement.

**What if I cannot find VECD SKUs on my pricelist?**

VECD stock-keeping units (SKUs) may not show up on all program pricelists at this time, as special contract amendments may be required to execute VECD orders in some of the available programs (such as Enterprise Agreements). Please consult your Microsoft licensing specialist or licensing executive for support.

**Can I acquire Microsoft Desktop Optimization Pack (MDOP) for my VECD licensed devices?**

Yes. Software Assurance is inherently included with your VECD SKU, which qualifies you for an MDOP purchase.

**How do I license my employee and contractor owned PCs so that they have access to my centralized desktop PC environment?**

Employee- and contractor-owned devices can be licensed with Windows VECD, which enables them to remotely access your centralized desktop PC environment. Additionally, for devices with a pre-assigned Windows Vista Business license, they may run the permitted instances locally in a virtual machine on the Windows VECD licensed device.

**What is the difference between the Remote Desktop License (RDL) and VECD?**

Generally, RDL is the license for blade PC environment (Windows Vista Blade PC Edition) not to access desktop virtual machine environments on the server. Please refer following VL brief for detail of RDL. [Desktop Operating Systems—Licensing in Blade PC Environments](http://download.microsoft.com/download/7/8/5/7855930A-7660-4971-8230-189E9CD06366/rdl_licensing.doc) (Microsoft Word file, 286 KB)

**Definitions**

**Device:** A device is a physical hardware system. A hardware partition or blade is considered to be a separate physical hardware system and, therefore, is a separate device.

**Assigning a license:** To assign a license means simply to designate that license to one device. The purpose of this designation is to avoid sharing a license across multiple devices at the same time.

**Figure D1:** Assigning a license



License for

Software “Z”

PC Licensed

for Software “Z”

**Operating system environment**: An operating system environment is one instance of an operating system and instances of applications, if any, configured to run on that operating system instance. The two types of operating system environments are physical and virtual. A physical operating system environment is configured to run directly on a physical hardware system. A virtual operating system environment is configured to run on a virtual (or otherwise emulated) hardware system. A physical hardware system can have either or both of the following:

* one physical operating system environment
* one or more virtual operating system environments

**Figure D2:** Different types of operating system environments on a PC

**Application**

**Application**

**Physical Hardware System**

**(**

**“PC”**

**)**

**Physical OS Environment**

**Physical Hardware System**

**(**

**“PC”**

**)**

**Operating System**

**(**

**“OS”**

**)**

**Virtual Machine**

**(**

**“VM”**

**)**

**Technology**

**OS**

**OS**

**Application**

**Application**

**Physical**

**OS**

**Environment**

**Virtual**

**OS**

**Environment**

**Virtual**

**OS**

**Environment**

**Physical Hardware System**

**(**

**“PC”**

**)**

**OS**

**OS**

**Application**

**Application**

**Primary**

**Virtual**

**OS**

**Environment**

**Hypervisor**

**Virtual**

**OS**

**Environment**

**Operating System (“OS”)**

1. Hardware partitioning technology can also be used to run multiple operating system environments on a physical hardware system. However, this technology is primarily available on high-end systems. [↑](#footnote-ref-2)