

Microsoft Special Report

Microsoft Virtualization Licensing Options & Strategies

Miro Consulting, Inc.

Fall 2012



THE WORLD'S SOFTWARE LICENSE management expert

Miro Consulting Inc.

167 Main Street
Woodbridge, NJ 07095
T: 732.738.8511 ext. 1210
F: 732.738.8466
info@miroconsulting.com

Media and Marketing Contact:

Yin Chang
973.474.2330
ychang@miroconsulting.com

Contents

Desktop Virtualization.....	2
Windows Server Virtualization.....	3
SQL Server Virtualization.....	3
Software Assurance and Virtualization Rights.....	4
Summary.....	4
Who is Miro Consulting?.....	4

Microsoft Virtualization

How does Microsoft address virtualization from a licensing perspective? Unfortunately, this question does not have a simple answer. When this particular question is asked, the question leads to many other questions before an answer can be given. The product, the version, the edition, the license metric, and the status of Software Assurance all play enormous roles in determining the freedom and constraints for Microsoft customers.

Desktop Virtualization

Desktop Virtualization is mainly used for three key business reasons:

- **Remote workers:** To give employees the flexibility to work anywhere.
- **Compliance:** To help managers improve compliance by centralizing control and managing access to confidential information across the organization.
- **Control:** To allow IT pros to manage physical and virtual assets through a single, centralized platform.

Microsoft provides some choices relating to its virtualization technologies dependent on objectives: whether they are trying to virtualize applications and get a handle on application and lifecycle management, or if they are trying to solve problems, such as like Windows XP compatibility or the security of their data.

Software management, hardware imaging and refreshment, and BYOD (the “edge devices”) are not only cost containment strategies, they can be key business differentiators. By ensuring anytime, anywhere access, executives, account managers, and technicians are able to remain connected to the information they require.

This connectivity introduces a multitude of devices that must be managed, utilized, and, in some cases, transported. This introduces the problem of multiple versions, because licensing all these different devices results in excess cost.

Desktop virtualization eases these problems by standardizing the system, the applications, and/or the data store, and creates the management structure to govern it. Naturally, an investment is required. Strategies – and licensing – that involve Virtual Desktop Access (“VDA”) and Application Virtualization (“APP-V”) can ensure that

- only authorized software is deployed and maintained at the proper level
- the programs are easily accessible
- the supporting infrastructure is scalable
- the data is backed up and recoverable

Virtualization is 3-layers deep

Microsoft’s model for virtualization has three layers. Any or all of these technologies may be deployed.

1. The first layer allows data personalization and Microsoft has technologies within Windows 7 that allows for folder redirection and roaming user profiles.
2. The second layer enables application virtualization. One option is APP-V, which is part of MDOP. A second option is Remote Desktop Services’ RemoteApp. In both of these cases, the customer is hosting the application in the datacenter, so the application is just in display mode

for users on their desktop. This effectively separates the application from the operating system and prevents application conflicts since it doesn't change the Windows installation, the files, or the registry. It also expedites the testing, delivery and the updating of the application.

3. The third layer is OS virtualization with three different options. One, you can allow a single PC to run a virtual machine side-by-side using MED-V, which addresses legacy application compatibility issues. Two, you can host the desktop in a datacenter through VDI, where each user has their own personalized virtual machine in a datacenter. And three, you can host the desktop in a datacenter using Remote Desktop Services, previously called Terminal Services, where you have multiple users accessing non-personalized sessions.

Windows Server Virtualization

As infrastructure grows, its mission evolves. To accommodate increasing workloads, faster, denser (i.e., more cores) processors are deployed, translating into additional investments in software. When Windows Server 2008R2 was released, Microsoft introduced new virtualization rights:

- For Standard Edition, one physical operating system environment ("OSE") and one virtual OSE. This is known as the "1+1" rule.
- For Enterprise Edition, one physical OSE and up to four virtual OSEs. This is known as the "1+4" rule.
- Datacenter Edition enjoys unlimited virtual OSE while retaining the single instance on the physical OSE.

Two important factors should be considered regarding the above points: 1) the physical OSE can only be used for management of the virtual OSE(s); 2) the virtualization rights require that all processors in the server be licensed.

SQL Server Virtualization

The introduction of Microsoft SQL Server 2012 included licensing changes that may result in higher fees for some customers. In addition to replacing Per Processor licensing with Per Core licensing, SQL Server 2012 also introduced new virtualization rights. For SQL Server Standard Edition, the only method of licensing virtual machines is by licensing each individual virtual core (up to the 64-core technical maximum). SQL Server Enterprise Edition – Microsoft's top-of-the-line database software (replacing Datacenter Edition) – allows for the number of virtual instances equal to the number of licensed cores. Thus, a dual-CPU, quad-core server – that is, eight (8) cores – can run SQL Server Enterprise Edition in up to eight (8) virtual instances.

After June 30, 2012, the ability to deploy an unlimited number of virtualized SQL Server Enterprise Editions relies on the licensing of all cores. The minimum number of core licenses per VM is four. Once the number of core licenses match the total number of cores in the physical server, no further licensing is required. Microsoft refers to this as "full licensing." These licensing rules apply to Enterprise Edition, which is available only via Core Based licensing, and Standard Edition will also be available via Core Based licensing.

Some IT professionals may recall the oddity of licensing SQL Server Standard Edition in virtual environments. Each Virtual Machine has to be licensed, meaning that a single physical server could have multiple server licenses, depending on the number of virtual instances deployed. Microsoft has maintained this requirement and extended it to the BI Edition. This suggests that BI Edition and Standard Edition licensed in the Server+CAL model may not be suitable for virtualized environments. Careful investigation and planning is necessary to ensure the most efficient investment, given the nature of the environment and the required software functionality.

CAL licensing is required for BI Edition and Standard Edition when licensed in the Server+CAL model. A user need not be licensed multiple times. There are no differences between the CALs for one edition, and the CALs for another. Thus, every licensed user of a Standard Edition deployment is licensed for use with BI Edition and vice versa. Legacy versions of Enterprise Edition licensed in the Server+CAL model would also be covered by that same CAL license. However, the rule remains where the version of the CAL license must match or be more current than the version of the server license.

As mentioned previously, full Core-Based licensing of the server is required for unlimited virtualization. However, that is not the end of the story. One important advantage of virtualization is the ability to move (i.e., “VMotion”) instances from one physical server to another as workload demands. This dynamic provision is allowed by Microsoft only when the SQL Server licenses are covered by Software Assurance, effectively doing away with the 90-day license assignment constraint.

Software Assurance and Virtualization Rights

There is little that can be discussed about Microsoft software licensing without mentioning Software Assurance. Of course, this also applies to virtualization rights. In order to permit the primary user of a licensed instance of Windows Desktop to access that instance remotely – such as a from a kiosk, a rented device, or a personal device (i.e., tablets, or smartphones) – the device must be licensed with a Virtual Desktop Access (“VDA”) license, which is an annual subscription license (at about \$100) ... unless the Windows Desktop is covered by Software Assurance, in which case, Microsoft waives the VDA requirement.

The Software Assurance benefit for SQL Server 2012 Enterprise Edition eliminates the “number-of-cores-equals-number-of-virtual-instances” limitation. In other words, so long as Software Assurance remains active, there are unlimited virtualization rights for SQL Server 2012 Enterprise Edition.

Summary

Virtualization is today’s standard for IT organizations to manage its infrastructure and control the costs of software licensing. But the rules surrounding virtualization are complex. A thorough understanding of the environment is essential: its workload, the ways in which it is accessed, the number of users supported, and its plans for future upgrades. Carefully examining these aspects will help to determine the right licensing strategies.

Who is Miro Consulting?

Miro Consulting (www.miroconsulting.com) is an IT asset management consultancy focused on lowering the total cost of ownership through hardware and software optimization. Miro specializes in Oracle and Microsoft licensing management & Oracle hardware assets. Services include, but are not limited to Microsoft and Oracle license assessments; contract negotiations; technology evaluations; hardware management programs; and virtualization consulting. Since 2000, Miro has helped 500+ clients optimize their total cost of ownership and has overseen over \$1.5 billion in Oracle and Microsoft transactions.



Steps to Save on your Microsoft Licensing

- **Fact Gathering:** Review your software license
- **Validate Data:** Track and manage your licensing assets
- **Establish Priorities:** Understand what an enterprise needs now and in the future
- **Construct and negotiate your agreement:** Hire an external consultant who understands how to align IT to fit the business needs

Your Advocate. Trusted Advisor. Microsoft Consultant.

Miro Helps Companies Manage their Microsoft Licenses by:

- Obtaining the best price, terms and conditions when purchasing licenses
- Lowering your total cost of software ownership
- Assisting during software audits
- Staying compliant

Miro Consulting's cost containment strategies begin with a confidential, comprehensive licensing and compliance review. Each client receives a customized plan to fit their business needs in order to obtain the best price as well as terms and conditions. The company also offers ongoing software asset management program that includes a meticulous audit, analysis and implementation of strategy. Miro Consulting also offers license management services for companies that use Oracle.

FOR MORE INFORMATION CONTACT:

Scott D. Rosenberg

167 Main Street

Woodbridge, NJ 07095

T: 732.738.8511 ext. 1210

F: 732.738.8466

ScottR@miroconsulting.com

Smarter Oracle Licensing is a trademark of Miro Consulting, Inc.