

Matrix42

License Compliance of Virtual Workplaces

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Version: 1.0
May 31, 2011

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1 Management Summary

Desktop Virtualization has gained significant momentum within the enterprise. Quarterly revenue reports of market leaders, such as Citrix and VMware, are proof. The aftermath of avalanching tablet device acceptance in the market, now evolving from personal to business use, is driving related trends like “bring-your-own-computer”. While virtualization technology for client operating systems has become mature – supporting almost any kind of device – a top issue for many organizations today is the unique challenge of maintaining software license compliance in this virtual world.

License compliance is a topic that shouldn't be missed on the action item list when you are planning or already implementing virtual desktops for your users. Depending on your particular scenario this will likely involve different technologies and tools to satisfy license compliance needs. Compliance reconciliation of the client operating system, as well as of all the applications that you provide in a virtualized way, will be the core challenge.

Many software vendors are still lagging with regard to aligning their metrics to the new user-centric orientation of workplace virtualization. Licensing of Microsoft Windows and most applications are still tied to physi-

cal devices, which clearly doesn't address virtualization. Since user mobility is one of the key drivers for virtual workplaces it becomes obvious that license compliance is heavily affected.

Without clear awareness and corresponding support to address virtualization within your Software Asset Management (SAM) processes, expected cost savings from virtualization could evaporate. Your SAM processes need to incorporate Best Practice and your SAM tool needs to consolidate both physical and virtual workplaces for effective compliance reconciliation.

2 Workplace Virtualization

Virtualization of workplaces is a top topic these days, promising improved user flexibility in regard to being able to work wherever, whenever and from whatever device the user chooses. Accompanied by emerging concepts like “Bring-Your-Own-Computer” (BYOC) and the steadily increasing variety of mobile devices, it is clear that this virtualization trend is inevitable.

Looking from a SAM perspective, this compelling transition from physical to virtual workplaces raises a couple of interesting questions. Unfortunately it's not easy to get answers and it's even harder to definitively reconcile all available information.

▶ License Compliance of Virtual Workplaces

A recent research paper¹ about virtualization by Stewart Buchanan of Gartner Research stated the following key findings:

- ▶ Customer expectations range from less licensing costs to more licensing costs
- ▶ Without a more robust SAM, customers are exposed to possible high payments at audits
- ▶ Approaches to track compliance reduced to discovery will fail
- ▶ Virtualized software deployment options will often increase licensing costs and risks

In the same document Gartner Research recommends that software asset managers should care about following issues:

- ▶ Be sure to authorize virtualization initiatives as well as ongoing configuration changes
- ▶ Establish accountability of vendor, reseller or system integrator for specifying correct licensing terms for well-defined configurations
- ▶ Manage all documentary evidence to demonstrate compliance through the whole software life cycle
- ▶ Ensure that well-defined configuration is maintained establishing validated controls

¹ Contain Virtualization Licensing Costs With Software Asset Management Best Practices (G00211964), May 5, 2011

There is no doubt about that following these recommendations translates into implementing and operating SAM according to best practices.

3 Scenarios

Virtualization comes in different flavors. Let's take a look at the basic concepts that will help us understand possible implications in regard to license compliance moving forward

The following major virtualization scenarios can be distinguished as pointed out by Michael Silver, Research Director at Gartner at a Microsoft Virtualization Customer Roundtable²:

- ▶ **Remote Desktop:** Desktop of Server OS with remote presentation (Terminal Server)
- ▶ **Local Virtual Machine:** Running different operating systems on the same client hardware
- ▶ **Virtual Application:** Applications isolated from OS with execution on server or on client
- ▶ **Hosted Virtual Desktop:** Desktop of Client OS with remote presentation (VDI)

²

<http://www.microsoft.com/windows/enterprise/solutions/virtualization/dvroundtable2011.aspx>

Besides these, there are other specific virtualization approaches like Microsoft Enterprise Desktop Virtualization (MED-V) or Microsoft Windows Thin PC (WinTPC).

All these technological ways to virtualize software applications have their specific implications in regard to compliance. Keep in mind that there is no enforceable standard for software license compliance. Every software vendor is free to define proprietary rules and terms that apply, invariably resulting in differences between one technology and another.

This leads to the requirement, if you are moving from physical to virtual desktops, to validate prerequisites and feasibility from a technical perspective (e.g. which applications can be virtualized, which cannot). In addition you should clarify, with each of your vendors, possible impact of selected virtualization technology on license compliance. Considering that a regular desktop may comprise up to 30 different applications (or even more in some cases) this could mean significant work for your software asset managers.

According to the virtualization scenario of your choice, you need to adjust the scope for your corresponding SAM activities.

4 Server Operating System

Server Operating System pertains to virtualization technology that is either embedded into a server operating system (e.g. Microsoft Hyper-V) or represents traditional Remote Desktop scenarios where the user works on a server OS desktop, rather than a client OS desktop.

In cases where the instance of Microsoft server operating system is used for virtualization purposes only, no additional license for server OS is required. This option is rather strict, meaning that no other application may be installed (not even anti-virus applications).

In Terminal Server scenarios, where users connect to access installed applications, licensing needs to cover Windows Server Client Access (CAL), as well as Terminal Server CAL in addition to licenses for applications.

5 Virtualization Technology

Technology that delivers virtualization also requires proper licensing. While Microsoft embeds their MED-V (part of Microsoft Desktop Optimization Pack, MDOP) and WinTPC virtualization technologies to Windows Software Assurance, third party vendors of desktop and application virtualization solutions (e.g. Citrix or VMware) offer explicit product licenses.

While you are able to combine virtualization technologies licensing needs to cover all involved products, you may, for instance, use the VMware Hypervisor to run your VMware Virtual Machines and Citrix XenDesktop to deliver those virtual desktops to your end-users. Therefore it is required to understand available software suites to find the right license package for your scenario of choice.

- ▶ Virtual machines, running the client OS, may not be temporarily moved between several physical servers (e.g. for load balancing purposes)
- ▶ Virtual desktop may be assigned to one particular user only
- ▶ Any user may access one particular virtual desktop only

6 Client Operating System

Correct licensing of the client operating system is usually in the focus of all discussions about virtual workplaces. This is especially true for Microsoft Windows.

In their document “Licensing Windows for Virtual Desktops” Microsoft explains how traditional Windows license types apply to Virtual Desktops.

Original Equipment Manufacturer (OEM) License:

While OEM licenses are bound to physical hardware, they do not grant the right to access hosted virtual desktops.

Full Packaged Product (FPP) License:

FPP Licenses can be used in virtual desktop scenarios, according to following terms:

- ▶ Only one virtual desktop is running per physical server

Volume License:

Volume licenses share the same limitations as FPP licenses, in regard to access to a hosted virtual desktop. Additionally, it's not allowed to move the virtual machine off its original server to another – hence Windows volume licenses share the same characteristics as OEM licenses in that respect.

Virtual Desktop Access (VDA) and Software Assurance (SA):

Microsoft defines that remote presentation of a server hosted “virtual” desktop operating system cannot be entitled with a common Windows license. This is true even in cases where the accessing devices are holding a valid license for their local copy. To address this, Microsoft provides virtual desktop license entitlement through a Virtual Desktop Access (VDA) license. As part of Microsoft’s Software Assurance (SA) agreement, the right to work on a hosted

virtual desktop is included in this Windows maintenance subscription.

With that understanding, once again SAM is requiring organizations to map IT technology and its configuration to a considerable amount of legal perspectives, with all the respective options and exceptions. According to Microsoft's Windows Licensing for VDI Quick Reference Guide the following applies:

- ▶ Any device that is concurrently accessing up to four virtual desktops running Windows client operating system requires a valid VDA license.
- ▶ Any device whose local Windows operating system is covered with SA does not.
- ▶ Devices not owned (meaning neither directly nor indirectly managed) by company – occasionally used from outside the local network by users who are assigned as the “primary user” of a company-owned device, that is licensed for virtual desktop use by VDA or SA – do **not** require additional license (“Extended Roaming Right”). This applies for instance to user's private home PC or public “Internet Café” PC.
- ▶ Devices not owned by company – used from within the local network – **do** require additional license (e.g. contractor's PC).

- ▶ VDA Licenses may be associated to another device after a period of 90 days following their first assignment to the original device.

It is obvious that licensing pertaining to virtual desktop usage has a far higher complexity than traditional physical desktops. Now, location and legal ownership of the device becomes relevant. Thus, it requires not only the tracking of actual usage, but also has implications on extended Hardware Asset Management encompassing both home-use devices and company mobile devices.

7 Applications

Software applications either locally installed on a virtual desktop or published virtually usually follow the same licensing terms as in traditional deployments on physical desktops. The basic rule for compliance accounting is the prevailing metric – normally per installation, per device or per user. While different vendors may evaluate virtualization scenarios in their own way, it is not possible to outline a general view on that.

In any case, “per named user” licensing is quite straightforward. Using granted access rights (usually a single AD group) delivers the raw data to allow for reconciliation of software compliance.

Nonetheless, it is interesting to see how Microsoft deals with “per device” licensing, eligible to most of their applications. As for the Windows operating system, this metric refers to accessing devices rather than hosting devices. This perspective reveals a paradigm clash between “per user provisioning” of virtualization on one side and traditional “per hardware licensing” of software.

Providing software by granting access per user or per user group will not define how many licenses you actually need. It depends on the vendor’s definition whether potential or actual access is funding the need to have a valid license for the corresponding application. As for Microsoft, actual use is relevant. This again raises the challenge for tracking and recording access to virtual desktops or applications, to an extent that is capable of proving your compliance.

While some software publishers may even prohibit remote access to installed copies of their software we recommend clarifying implications of virtualization explicitly with every single vendor.

8 Conclusion

Even though license compliance for physical desktops is fairly straightforward, SAM pro-

cesses (according to a set of best practices) are still required. However, this is even more the case when the end-user’s workplaces become virtualized. This is basically due to an essential mismatch between user-centric vs. device-centric paradigms of workplace virtualization respective of software licensing.

Effective SAM requires resilient and validated information. This is why it is important that your SAM tool is capable to visualize and handle information from both physical desktops and virtual workplaces.

9 Disclaimer

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