

A Comparative Study of Application Portability with Virtualization Softwares

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ABSTRACT

Virtualization is a proven software technology that is rapidly transforming the IT landscape and fundamentally changing the way that people compute. Different virtual machines can run different operating systems and multiple applications on the same physical computer. Virtualization is a framework or methodology of dividing the resources of a computer into multiple execution environments, by applying one or more concepts or technologies such as hardware and software partitioning, time-sharing, partial or complete machine simulation, emulation, quality of service, and many others. This paper will discuss their types, the products currently available in the marketplace and impact of application virtualization technologies.

Definition: Virtualization is a technique for hiding the physical characteristics of computing resources from the way in which other systems, applications, or end users interact with those resources. This includes making a single physical resource (such as a server, an operating system or storage device) appear to function as multiple logical resources, or it can include making multiple physical resources appear as a single logical resource."

Keywords: Application Virtualization, ThinApp, Agent Less.

1. INTRODUCTION

Virtualization dramatically improves the efficiency and availability of resources and applications in your organization. Internal resources are underutilized under the old "one server, one application" model and IT administration spend too much time managing servers rather than innovating. An automated data center, built on a VMware virtualization platform, lets you respond to market dynamics faster and more efficiently than ever before.

2. MOTIVATION

Motivation came by an incidence encountered with me far away from my native place while an important data (of word 2007) could not be opened in the computer having Word 2003 version. Similar type of problem might have been faced by numerous. Due to remote location and urgency of matter one feels embezzled and forced to think that there should be some standby solution that data should be opened irrespective of version of application software, Operating System and Hardware configuration. In today's world we need 100% portability of application.

3. TYPES OF VIRTUALIZATION

Operating System Virtualization

The most prevalent form of virtualization today, virtual operating systems (or virtual machines) is quickly becoming a core component of the IT infrastructure.

Generally, this is the form of virtualization end-users are most familiar with. Virtual machines are typically full implementations of standard operating systems, such as Windows Vista or Red Hat Enterprise Linux, running simultaneously on the same physical hardware.

Application Virtualization

While they may sound very similar, Application Server and Application Virtualization are two completely different concepts. What we now refer to as application virtualization we used to call "thin clients." The technology is exactly the same, only the name has changed. Although you may be running Microsoft Word 2007 locally on your laptop, the binaries, personal information, and running state are all stored on, managed, and delivered by virtual software package. Your local laptop provides the CPU and RAM required running the software, but nothing is installed locally on your own machine. Other types of Application Virtualization include Microsoft Terminal Services and browser-based applications. All of these implementations depend on the virtual application running locally and the management and application logic running remotely

Storage Virtualization

As another example of a tried-and-true technology that's been dubbed "virtualization," storage virtualization can be broken up into two general classes: block virtualization and file virtualization. Block virtualization is best

summed up by Storage Area Network (SAN) and Network Attached Storage (NAS) technologies: distributed storage networks that appear to be single physical devices.

4. PRODUCTS IN MARKET

Application virtualization contains a list of several solutions. Some referred to additional tools and so I created a new list. I suspected that there might be more of them than the four I was aware of, but I was quite surprised by how many different application virtualization solutions there actually are. Virtualization.info compiled a more comprehensive list. I added a short comment to each product.

<i>Company</i>	<i>Product</i>
Xenocode	Virtual Application Studio
Microsoft	APP-V
VMWare	ThinApp

Xenocode Virtual Application Studio: I just learned about Xenocode on internet. During my tests, I found out that the virtualized application is not totally isolated from the host system. However, the degree of isolation is configurable. It is possible to totally block the host device.

Microsoft Application Virtualization (App-V): Microsoft acquired Softgrid a while back and renamed their product Application Virtualization a new abbreviation for it: App-V. This also shows that Microsoft believes App-V to be a product for enterprise customers only. Version 4.5 Beta is currently available at Microsoft Connect. We already heard from two sources that they had serious problems getting Microsoft Application Virtualization to work.

VMware ThinApp (Thinstall): According to the review VMware is the market leader in virtualization technology. They acquired Thinstall some months ago and renamed it now to ThinApp. Version 4.0 was just announced a couple of days ago. The main new features are "Application Link" and "Application Sync". Application Link allows sharing for common data such as .Net or Java runtime and Application Sync streams byte-level updates to users.

5. APPLICATION VIRTUALIZATION

Application virtualization is an umbrella that describes software technologies that improve portability, manageability and compatibility of applications by encapsulating them from the underlying operating system on which they are executed. A fully virtualized application is not installed in the traditional sense,

although it is still executed, as if it is. The application is fooled at runtime into believing that it is directly interfacing with the original operating system and all the resources managed by it, but in reality it is not. Application virtualization differs from platform virtualization in that in the latter case, the whole operating system is virtualized rather than only specific application.

Technologies under application virtualization include:

Application Streaming: The application is delivered in a package that may include a subset of OS files and configuration settings. Running the package requires the installation of a lightweight client application. Packages are usually delivered over a protocol such as HTTP or RTSP. Application virtualization is commonly paired with application streaming to deliver applications on demand.

Desktop Virtualization/Virtual Desktop Infrastructure: The application is hosted in a VM or blade PC that also includes the operating system (OS). These solutions include a management infrastructure for automating the creation of virtual desktops, and providing for access control to target virtual desktop. VDI solutions can usually fill the gaps where application streaming falls short.

The Benefits of Virtualized Applications: Virtualized applications ensure faster software deployment with a more seamless end-user experience:

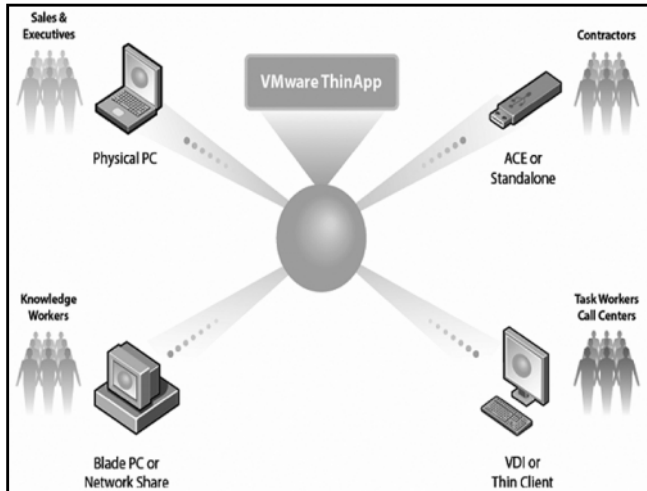
Full Portability: Virtualized applications can stream from ANY network share without a local client or a backend server.

Increased Efficiency of Application Deployments: Agentless virtual applications enable administrators to confidently deploy or de-commission applications on the fly with little or no regression testing, even to the most secure desktops.

Supportability: Single application packages can be supported by any Windows platform. Virtualized applications can run without requiring any modification of administrative security permissions, which protects the host operating system from possible corrupting installation modifications.

This future proof solution enables users to package an application once and deploy it across multiple device and OS types from a variety of mechanisms such as "self-service portals", Citrix XenApp (Presentation Server), Terminal Services, PC configuration management

vendors, network shares, or USB flash drives. There is no requirement for complex integrations to backend inventory, administrative, or other tools either on the server or client to enable the software in your current systems.



Example: Packaging Once, Deploying to Many

6. CONCLUSION

Some software packages but not all accomplish “zero installation” by presenting a virtual environment to the running application, making it appear as if all of its files, registry entries, environment variables, COM/ActiveX controls, services, and so on are already installed on the PC, even though in reality, no changes have been made.

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