

# Getting Started with Application Virtualization

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I'm fascinated by technology. Not technology for its own sake, but how it improves how we work. While adapting to changes induced by technology is not without cost in time and money, advances in efficiency and productivity are more than adequate compensation.

Technology is all about solving problems. As problems are solved not only do businesses become more profitable, but further innovations become possible. Adopting technology is all about balancing cost in time and resources with perceived versus actual real-life gains.

Knowing when to adopt is not as simple as jumping in, it's about having a careful and thorough plan of implementation. When competing technologies come into play, the process becomes even more difficult. Adopting prematurely without understanding the trade-offs can be more costly than maintaining the status quo. Adopting late with exact understanding and careful implementation is costly for the opposite reason—lingering with out-dated infrastructure and the costly upkeep of old technology.

The best improvements in technology occur when price and functionality cause a groundswell in the marketplace. The current groundswell is all about virtualization.

## Types of Virtualization

Virtualization touches a wide range of technologies. From reducing a room full of physical servers to a single, highly-optimized virtual replacement to disassociating a user's login profile from a single point of log-on and everything in between, virtualization changes how we think of hardware and software. Through virtualization the combinations of hardware and software configurations become limited only by imagination.

At Flexera Software, an important focus is leveraging

application virtualization—allowing your applications to run independent of operating system, hardware, co-existing applications, and to allow different versions of the same application, such as Microsoft® Excel® 97 alongside Microsoft Excel 2007, as well as future applications. With this new technology, a virtualized application is decoupled from the underlying operating system. Typically, this is done by providing the application with an abstracted view of the operating system resources. The virtualized application can usually be deployed locally or streamed in process to the user.

While the goals are similar, not all application virtualization technologies are the same. But then, neither are the organizations that implement them.

## Basics of Application Virtualization

Application virtualization begins with assessing your current and future requirements. Because the underlying technologies are diverse, a final implementation can be just as varied as the organization that it transforms.

Once a plan is in place, the next step is conversion. AdminStudio is the sole vendor to support application preparation for today's leading application virtualization environments – Microsoft App-V™, VMware® ThinApp™ and Citrix® XenApp™. Conversion within AdminStudio is straightforward and oftentimes lends itself to an automated process.

Let's take a look at the general process of generating a virtualized application. Each application virtualization provider supports the same general five stage process:

- **Capture**—each underlying application must be re-bundled into its virtual equivalent. This process consists of converting the existing application and its install technology into

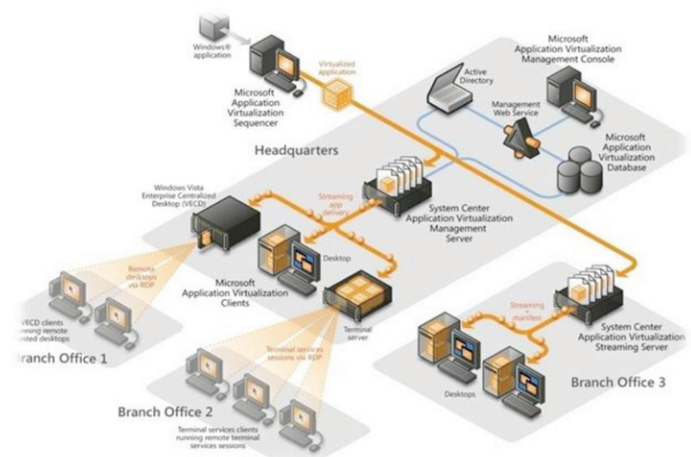
a collection of files and resources compatible with its virtualization technology. For organizations that have already invested in converting existing applications to Windows Installer technology (.msi packages), AdminStudio makes this process even easier by converting MSI to virtual formats for each technology—SFT for App-V, EXE for ThinApp or Profiles for XenApp. For organizations working with more than one application virtualization technology, AdminStudio simultaneously converts MSI to two or three virtual formats.

- **Isolation**—each application tolerates varying degrees of isolation. While some applications can operate exclusively in a virtual environment, others rely on the underpinning of the host operating system and its resources. Isolation is achieved by running the application with varying degrees of transparency to the underlying operating system. With complete isolation, the application runs with no reliance of the operating system. In moderate cases, the application has read/write access to specific operating system resources. Each application virtualization technology supports some degree of latitude in assigning isolation.
- **Linking**—each application has a different relationship with co-existing applications and resources. It's impractical to completely isolate an application from shared functionality. Whenever possible and within the scope of isolation, applications should share access to inter-dependent software layers. It's unreasonable to expect that every .NET™ application would be virtualized with its own copy of .NET.
- **Deployment**—each application has unique running characteristics just as different users have different use requirements. Users with a near permanent network connection can expect to use virtual applications differently than highly mobile users. The deployment model ranges from a locally installed copy of the virtual application to simply presenting the user interface.
- **Upgrade**—each application also has a requirement to support upgrades. As newer versions of the application become available, the virtualized application needs to reflect the newer binaries. An upgrade scenario could be as simple as modifying the virtualized application on the hosted server or it could be more pervasive—requiring the uninstall and re-install of the locally installed virtualized application.

### Microsoft App-V

Microsoft Application Virtualization (App-V) is just part of the vendor's complete virtualization solution. Microsoft virtualization includes server virtualization through Hyper-V, desktop virtualization through Virtual PC and Microsoft Enterprise Desktop Virtualization (MED-V), presentation virtualization through Terminal Services and profile virtualization (roaming profiles, folder redirection, and so on) through various technologies embedded in its operation systems.

Within App-V, Microsoft provides a complete virtual application management solution. From management servers that provide streaming and downloading of virtualized applications to data stores that house content, Microsoft provides a thorough virtualization architecture.

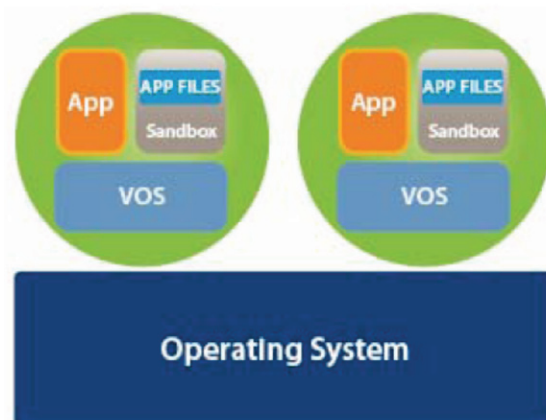


Source: App-V Security Best Practices

App-V is bundled with Microsoft Desktop Optimization Pack (MDOP). It works by converting or sequencing an existing application into an App-V virtualized package. Once virtualized, the application is streamed to a user's computer from a data store by a management server. To support licensing compliance, the management console verifies correct license attribution.

### VMware ThinApp

VMware's ThinApp application virtualization is unique in that it does not require a client. This agentless virtualization makes deploying a painless process. Because the ThinApp virtualized applications are also MSI packages, they can be deployed using the reporting and inventorying capabilities of existing corporate software deployment tools.



Source: ThinApp 4.0 Reviewer's Guide

When a ThinApp virtualized application is created, a virtual operating system (VOS) is embedded within the package. The final package launches and runs without decompressing any files. It can also be run from any data source.

While the ThinApp environment does not require a heavy backend infrastructure to manage, each virtualized application includes HTTP/HTTPS byte-level updates. When connectivity is available, updating of the application is possible.

## Citrix XenApp

Citrix XenApp is the application virtualization portion of the vendor's virtualization offerings. Citrix XenDesktop refers to the desktop virtualization product while Citrix XenServer is the server virtualization.

Running a XenApp virtualized application requires Citrix client software. Local application delivery is possible on Windows operating systems. For both Windows and non-Windows operating systems Citrix offers hosted deployment from a Windows server. In this case, the application runs on the hosted server and the user interacts with the application remotely.

## Limitations

While application virtualization is a near bulletproof solution to the most vexing conflict and deployment problems it's not without limitations. Each application virtualization technology comes with its own caveat of implementation. When adopting an application virtualization technology it's important to know what you can and cannot do.

Organizations hosting proof of concepts of each technology can use AdminStudio to accelerate the conversion of a test bed of applications to each vendor's specific virtual format. Saving this upfront time and effort with AdminStudio allows the proof of concept to focus on the strengths and weaknesses of each virtual technology in an organization's environment.

## Flexera Software Supports Application Virtualization

Flexera Software supports application virtualization in two key areas: consulting and product offering. Flexera Software Consulting Services supports the Flexera Software model of assessment and solution design as well as solution implementation. Experienced Flexera Software consultants can guide an organization to see the benefits of each technology for their specific goals, allowing a clear decision for the appropriate technology for a unique environment and budget. Most importantly, Flexera Software Consulting Services help organizations move from developing an application virtualization plan to implementing a working solution.

Through AdminStudio and an organization's existing MSI package conversions, Flexera Software consultants can work quickly to meet an organization's application virtualization needs. AdminStudio includes tools such as the Virtualization Scanner, which identifies those existing packages that are likely candidates for quick conversion into virtualized applications. AdminStudio includes a time-saving batch conversion tool that moves selected MSI packages into virtualized applications en masse.

Flexera Software Consulting Services are also valuable resources for Window 7 migrations, from planning and assessment to application conversion and rollout.

Flexera Software works closely with application virtualization vendors to stay informed about changes in application virtualization technology. This affords us the opportunity to work with cutting-edge organizations large and small around the globe. Relying on the experts at Flexera Software can save upfront time and money in an application virtualization project and help to ensure better ROI by establishing best practices that will last over time.

## About Flexera Software

Flexera Software is the leading provider of strategic solutions for Application Usage Management; solutions delivering continuous compliance, optimized usage and maximized value to application producers and their customers. Flexera Software is trusted by more than 80,000 customers that depend on our comprehensive solutions- from installation and licensing, entitlement and compliance management to application readiness and enterprise license optimization - to strategically manage application usage and achieve breakthrough results realized only through the systems-level approach we provide. For more information, please go to: [www.flexerasoftware.com](http://www.flexerasoftware.com)

To learn more about Flexera Software Consulting Services, contact us at: <http://www.flexerasoftware.com/services/consulting/contact.htm>



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