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Application Virtualization Comparison Chart
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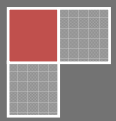

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Notes

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Introduction

This comparison chart is an objective overview of features of the major Application Virtualization solutions. Some of the major advantages are:

- Migrate to new operating systems without upgrading or replacing legacy applications.
- Lock down corporate endpoints by running applications in user mode without locking out users.
- Minimize application conflicts and regression testing.
- Replicate your virtualized applications like any other enterprise data to maintain an instant-on fail-over plan for your applications.

What is Application virtualization

All Application virtualization software vendors have their own definition of Application virtualization. Basically it comes down to this:

> *Application virtualization enables the deployment of software without modifying the local operating system or file system. It allows software to be delivered and updated in an isolated environment ensuring the integrity of the operating system and all applications. Application conflicts – and the need for regression testing - are significantly reduced. A single application can be bundled and deployed to multiple operating system versions. Applications are easier to provision, deploy, upgrade, and rollback.* (VMware's definition).

Solutions

In our opinion there are 3 approaches to application virtualization:

Standalone:
Applications are encapsulated in a single executable. These executables can run instantly from USB, CDROM or local disk. The applications can also be deployed using a management tool like Microsoft SMS.

Streaming:
Applications are encapsulated in a single file and are located on the network. When starting the application only the blocks needed to run the application are copied to a local drive (cache). When the more features of the application are used, more blocks are copied to the local cache. Streaming can be available for standalone virtualized applications accessed from the network or when the virtualized applications are presented with a locally installed agent.

Centrally controlled access:
Virtualized applications are "distributed" through a central deployment tool. A locally installed agent is required. The applications can be deployed (executables are copied locally) or shortcuts to the applications (located on a network-share) can be presented. When using shortcuts, streaming is used to cache files locally.

Comparison

This comparison chart compares the features of the most competitive Application Virtualization products. This might help you select a product that fits your needs. We advice to test the products yourself in a proof of concept before making a definitive choice.

Products that were considered, but did not make it into the chart:

- Altiris SVS
- Ceedo
- Edeavors Technologies Application JukeBox
- LanDesk Application Virtualization
- RingCube MojoPac
- Trigence AE
- Trustware BufferZone

Product	Application Streaming	Installfree Bridge	Softgrid	Appstream	ThinApp	Virtual Application Studio
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
Latest version	4.5	1.0	4.2	5.2.2 SP1	4.0	6.0.218
Release date	March 8th 2007	April 7th 2008	July 2nd 2007	December 4th 2007	June 27th 2008	March 1st 2008
Technology						
Stand-alone *Virtualized applications can run on clients without agent locally installed.*	No	Yes	No	Yes	Yes	Yes
Streaming *Launch the application instantly from a remote location. The first blocks needed to start the application are locally cached on the client. When more features are used, more blocks are cached.*	Yes	Yes	Yes	Yes	Yes	Yes
Centrally controlled access *Management software is included that can manage authorization on application delivery. Agent locally installed on the client is required.*	Yes	Yes	Yes	Yes	No	No
Off-Line Usage *Applications can be launched even when a user is off-line (for example on a laptop). The streamed application is completely cached locally.*	Yes	Yes	Yes	Yes	Yes	Yes
Application Interconnectivity / Binding *Virtualized applications, which are isolated, can be connected to each other. For example, .NET 2.0 framework is packaged once. Applications that needs .NET framework connect to the virtualized .NET package.*	No	Yes	No	No	Yes	No
Executes in user-mode only *There is no interaction with the kernel of the OS. Therefore, applications cannot crash the OS.*	Yes	Yes	Yes	Yes	Yes	Yes
License Management *Can the usage of the applications be controlled? How many licenses do you have of an application and how many times is the application (concurrently) in use?*	Yes	No	Yes	Yes	No	No
Tracking and reporting *The usage of applications can be tracked and monitored. Reports can be created.*	Yes	No	Yes	Yes	No	No
Memory consumed by runtime *What is the impact of the virtualization layer on memory usage?*	Unknown	approx. 15% extra	Unknown	Unknown	< 2MB	400 kB
Size of runtime *What is the size of the runtime of the virtualization layer?*	Unknown	1060 KB	Unknown	Unknown	400 KB	400 KB
Supported Infra						
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
16-bit application supported (only run on 32-bit OS)	No	No	Yes	No	Yes	No
64-bit application supported	No	No	No	No	No	No
Windows 2000	Yes	No	Yes	Yes	Yes	Yes
Windows XP	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2003 (TS) 32-bit	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2003 (TS) 64-bit	Yes	Yes	No	No	Yes	Yes
Windows Vista 32-bit	Yes	Yes	Yes	Yes	Yes	Yes
Windows Vista 64-bit	Yes	Yes	No	No	Yes	Yes
Windows Server 2008 (TS) 32-bit	No	No	No	No	Yes	Yes
Windows Server 2008 (TS) 64-bit	No	No	No	No	Yes	No
Terminal Server	No	Yes	Yes	Yes	Yes	Yes
Citrix	Yes	Yes	Yes	Yes	Yes	Yes

Packaging						
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
Packaging method *How is the software packaged as virtual application?* *- Streaming profiler: an installation is recorded in a stream* *- JeOS: the application is installed in a mini-OS* *- Snapshot: a before and after snapshot is taken. All changes made during installation are in the package* *- MSI: The MSI installation file is analysed and compiled into a package.*	Streaming Profiler	Install in JeOS	Streaming Profiler	Snapshot or MSI	Snapshot	Snapshot
NO clean PC required *If this is set to Yes then a clean PC is NOT needed for snapshotting a new application because the technique used does not use the OS on which the software is being captured.*	No	Yes	No	No	No	No
Save as EXE *The virtualized application can be saved as an executable.*	No	Yes	No	No	Yes	Yes
Save as MSI *The virtualized application can be saved as a MSI. This MSI can be distributed with various software deployement solutions.*	No	No	No	Yes	Yes	Yes
Application Add-ons as modules *Add-ons like plugins for internet explorer can be packaged separately and then attached to other packages.*	No	Yes	No	No	Yes	No
Compression *The virtualized application can be compressed to decrease the bandwith usage.*	Yes	Yes	Yes	Yes	Yes	Yes
Patching with additional/incremental files *Patches can be build in to sepereate (patch) files so that you don't need te repackage the original virtual application.*	Yes	Yes	Yes	No	Yes	No
Reboot supported *Are reboots supported when creating the virtualized application?*	Yes	Yes	Yes	Yes	Yes	Yes
Scripts supported *Is is supported to run scripts before or after launching the application?*	Yes	Yes	Yes	Yes	Yes	Yes
Embedded security on AD User Level (for standalone use) *When a package is created AD authorization based on Active Directory User rights can be implemented so that only users that are authorized can start the application.*	N/A	Yes	N/A	Yes	No	No
Embedded security on AD Group Level (for standalone use) *When a package is created AD authorization based on Active Directory Group membership can be implemented so that only users that are authorized can start the application.*	N/A	Yes	N/A	Yes	Yes	No
Embedded security on AD OU Level (for standalone use) *When a package is created AD authorization based on Active Directory OU's can be implemented so that only users that are authorized can start the application.*	N/A	Yes	N/A	Yes	No	No
Virtual COM and DCOM *Virtual applications access virtual COM and DCOM objects in order to keep the local OS clean.*	Yes	Yes	Yes	Yes	Yes	Yes
Virtual filesystem *Virtual applications access a virtual filesystem in order to keep the local OS clean.*	Yes	Yes	Yes	Yes	Yes	Yes
Virtual registry *Virtual applications access a virtual registry in order to keep the local OS clean.*	Yes	Yes	Yes	Yes	Yes	Yes
Virtual services *Virtual services can be created for the virtualized application in order to keep the local OS clean.*	No	Yes	Yes	Yes	Yes	Yes

Deployment						
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
Deploy to AD groups *Assign the application to groups in Active Directory.*	Yes	Yes	Yes	Yes	N/A	N/A
Deploy to AD Domain / OU's *Assign the application to an OU or Domain in Active Directory.*	No	Yes	No	No	N/A	N/A
Deploy to AD users *Assign the application to a user object in Active Directory.*	Yes	Yes	No	Yes	N/A	N/A
Pre-stream/cache to clients *Ability to prepopulate a desktop or server with an application so it loads faster on start-up.*	Yes	Yes	Yes	Yes	N/A	N/A
Runs from CD-ROM *Launch a Virtual Application from CD-ROM.*	No	Yes	No	Yes	Yes	Yes
Runs from HTTP *Launch a Virtual Application from a webserver using HTTP.*	Yes	Yes	No	Yes	Yes	Yes
Runs from network share *Launch a Virtual Application from a fileshare (no agent needed).*	Yes	Yes	No	Yes	Yes	Yes
Runs from USB *Launch a Virtual Application from a USB stick.*	No	Yes	No	Yes	Yes	Yes
User Experience						
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
Run without additional privileges *Logged on as a default Windows User.*	Yes	Yes	Yes	Yes	Yes	Yes
Runs on locked down PC *For example on a kiosk-PC where there is no agent available.*	No	Yes	No	Yes	Yes	Yes
Shell Integration out-of-the-box *Shell integration is available without the need for any additional handling during the install/package process.*	Yes	Yes	Yes	No	No	No
List prices						
Company	CITRIX	InstallFree	Microsoft	symantec.	vmware	XENOCODE
These prices are list prices we received from the vendor or distributor and no rights can be extraced from this information.						
Only available with XenApp Enterprise and Platinum (Concurrent user license)	$490					
Citrix Application Streaming for Desktops (concurrent user license)	$70					
InstallFree Bridge perpetual user license		$100				
Maintenance / Support = 18% (per year)		$18				
Microsoft Desktop Optimization Pack (per desktop) Software Assurance on the operating system is mandatory			$10			
AppStream Management Suite Professional perpetual				$49		
AppStream Annual Subscription (2-year commit)				$19		
ThinApp Suite (Including Workstation + 50 client licenses)					$5.000	
ThinApp client license					$39	
Support ThinApp Suite (required)					$1.000	
Support ThinApp client (required)					$10	
Xenocode Virtualization Starter Kit (incl. 5 user license)						$499
Xenocode Virtual OS End User License						$40
Additional Anual Maintenance						$10