

Overview of Microsoft Application Virtualization (App-V)

Microsoft Application Virtualization (App-V) is the technology to create an environment where an application can be executed on the local computer by using its resources, but is not allowed to modify anything. The application runs in a small environment that contains the registry entries, COM objects, and other components that are required to run. This virtual environment acts as a layer between the application and the operating system.

Even though the application is not installed locally, it can interact with the local operating system in the same way as a locally installed application does to make use of any local resource, such as a USB drive, disk drive, CD-ROM drive, or printer.

Challenges of each User Type:

Mobile User (Disconnected Client)

- 1 - Insufficient Bandwidth
- 2 - Security Standards
- 3 - Tracking Roaming Profiles and Application Licensing
- 4 - Backup and Recovery

Desktop User (Connected Client)

- 1 - Application Compatibility
- 2 - Resource Optimization / Hardware Usage
- 3 - Efficiency of deployment and maintenance
- 4 - Backup and Recovery

Presentation User (Connected Client)

- 1 - Required Functionality
- 2 - Applications needed that run on Terminal Services
- 3 - Server Performance

Determine the delivery method:

- Step 1:**
Determine whether Virtualization is appropriate
Yes/No?
- Step 2:**
Categorize the Application
Is the Application Server based or Client based?
- Step 3:**
Determine the Client Connectivity
Will the user be Disconnected or Connected to the network?

- Step 4:**
Determine the Application Location
Will the application be decentralized or centralized on a server?

- Step 5:**
Choose Application Virtualization (App-V) for individual applications running from the client desktop or Desktop Virtualization (Virtual PC) for applications in combination with an Operating System and other devices, or Presentation Virtualization (Terminal Services) for applications running from a central server session.

Key benefits to App-V include:

- No application conflicts
- Simplified application changes or updates
- No need to monitor license compliance
- Simplified application rollouts with greater flexibility

Distribution Methods for App-V include:

- Full Infrastructure Sequencing
- Streaming Delivery
- Local Installation Delivery via MSI

Streaming Protocols Used:

- Server Message Block (SMB)
- RTSP/RTSPS (Streaming Server)
- HTTP/HTTPS (IIS Server)

Application Delivery via CD to Disconnected User



For disconnected or mobile users when offline updates or installations are needed, you can use the following options:

Option 1: Streaming an application from a CD and managing with Microsoft Enterprise Deployment (MED-V). See Application Virtualization for the Mobile User Model Poster for more details.

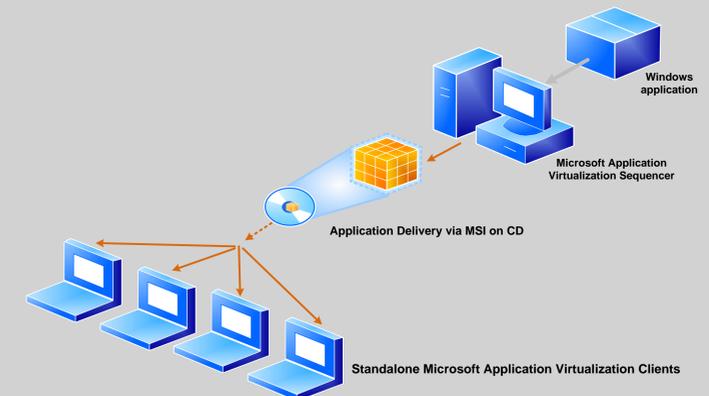
Option 2: Do a fresh install on a virtual machine (VM)

Option 3: Create two partitions to store a disk image of the first partition on the second partition, for a quick restore of the "clean" installation.

Delivering and downloading to a Local Install Source (LIS) for Offline, Mobile or poor network bandwidth delivery with a sequenced package still enables you to virtualize your application and manage the distribution.

Local Delivery requires up to three times the size of the software package to store in cache.

Virtual Machines (VM) or Ghost partitions can both be backed up on a server to deploy images when necessary, using Active Directory (group policies), System Center Configuration Manager (SCCM), or Media distribution.



Streaming Application Delivery to a Connected User



For Desktop Users, the Streaming Model allows you to deliver the applications without the need of an Active Directory, management server or a SQL database. Using existing servers, or System Center Configuration Manager (SCCM) distribution point is enough.

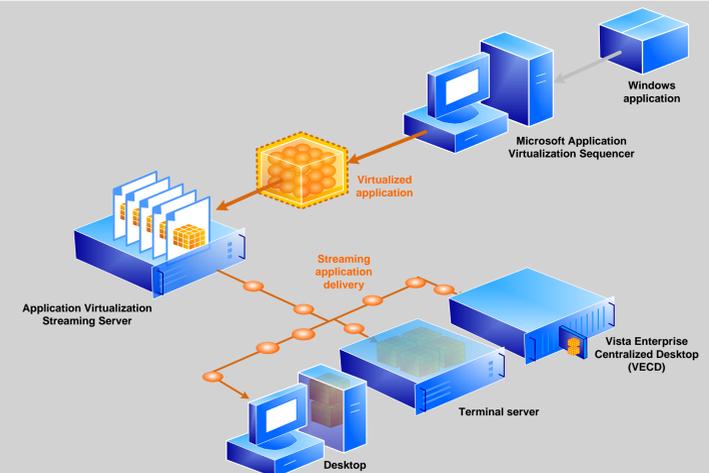
Use Access Control Lists (ACL's) to manager user access.

Steps to take when Streaming a connected **Desktop user**:

- Step 1 - Sequence through App-V management server, Internet Information Server (IIS) or a file server.
- Step 2 - Enable active upgrades via the next refresh
- Step 3 - Use Dynamic Suite Composition (DSC) to allow applications to be sequenced in separate virtual environments yet communicate with each other.

Steps to take when Streaming to a **Presentation user**:

- Step 1 - Configure the Terminal Services Role
- Step 2 - Run Terminal Services RemoteApp, using Terminal Services on the server side and Remote Desktop Control (RDC) on the desktop/thin client.
- Step 3 - Run Terminal Services Gateway for external users.



Management Server Implemented Full Infrastructure Delivery



The Full Infrastructure Delivery Model shows how a built-in software distribution server, management server, and reporting server can be used to stream applications.

This model is anchored by a SQL Server database, where separate databases define separate instances. The full infrastructure is an example of the ways you can combine and use virtualization architecture within an Enterprise.

Depending on what combination is necessary:

- Option 1 - Sequencing through a distribution environment like SCCM or an existing ESD
- Option 2 - Virtual Machine Manager (VMM) running all commands and file transfers
- Option 3 - Streaming application managed through VDI for full server-based virtualization

With Application Virtualization, you can combine any delivery method to accommodate each user type.

