

# Microsoft® System Center

## *Managing Client Virtualization*

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**System Center Configuration Manager 2007 is the solution to comprehensively assess, deploy, and update your servers, clients, and devices—across physical, virtual, distributed, and mobile environments. Optimized for Windows and extensible beyond, it is the best choice for gaining enhanced insight into, and control over, your IT systems.**

<http://www.microsoft.com/systemcenter/configurationmanager/en/us/default.aspx>

### **Why Virtualize the Client?**

Today, organizations are trying to drive down costs, increase their efficiency and enable business agility. These pressures run as opposing forces, as IT departments are forced to reduce their power consumption and complexity, but also increase their IT efficiencies, and foster business agility through the enablement of technology.

The client experience is a summary of many elements of a network infrastructure, and often the most challenging area of the IT business measurements are the client experience. Improved security, streamlined help desk support, lower cost of business and improved end user productivity are examples of how System Center can contribute to the organization. Through all of these scenarios, virtualization on the client can have several methods of presentation. This technical datasheet will discuss the spectrum of client virtualization, and provide an overview about how System Center delivers across these different scenarios.

### **The Spectrum of Client Virtualization**

Organizations are experiencing a range of client management scenarios, where users are connecting from a wide array of locations, on a broad range of form factors. Through this matrix, System Center brings a centralized management and security experience for IT.

### **Centrally managed Rich Client**

The spectrum of client virtualization begins with the traditional well managed client system. In this scenario, all Operating System, Applications and User State reside locally on the system, installed to the hardware. In this scenario, the layers are managed by a locally installed System Center client, that retrieves policy and executes various activities based on different requirements from the business. These activities can be inventory, OS and application installations, patch management, or other configuration or performance based activities.

Administrators can build on this traditional client experience by integrating various levels of virtualization. Through all of the scenarios where virtualization may be incorporated, the foundation begins with a secure well managed infrastructure. System Center is that

foundation, and provides capabilities around configuration, performance, DR, and service level management.

**“Dynamic” Rich Client**

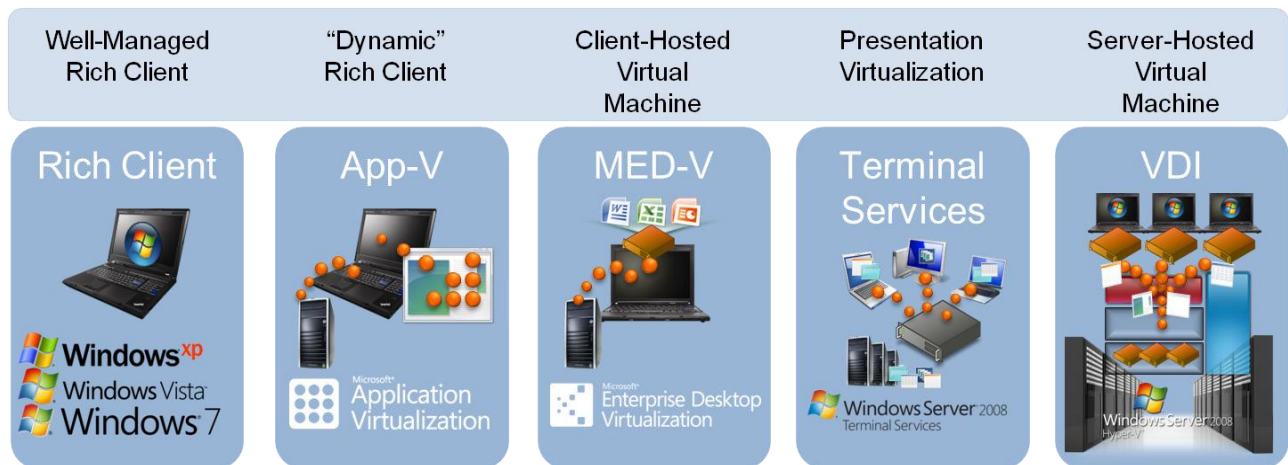
Building on the traditional client experience, Administrators can choose to incorporate virtualization of the application layer. One of the most complicated environments to manage is the client application layer. Often, applications are the biggest challenge in migrating to new hardware and operating system levels. Traditionally, applications that had conflicts with other applications - referred to as application compatibility conflicts, required new versions, repackaging, or alternative costly solutions. In many cases a single application could act as a blocker to a migration project, or new OS standard for an organization.

When application compatibility conflicts are encountered, one solution can be Application Virtualization (App-V).

deployment. A primary difference is that virtual application packages are not created from traditional source. Virtual applications are built from a sequenced package.

**Client-Hosted Virtual Machine**

Another way that traditional clients can integrate with virtualization is through desktop virtualization. Applications can experience a second form of compatibility, where the app causes a conflict with the Operating System. This can act as a significant barrier to moving forward with a new OS. One solution to this challenge is to provide a virtual workspace to the traditional client. This virtual workspace is delivered and controlled by policy, but the intent is the same as in the case of Application Virtualization. The difference is in this case the element that is virtualized is the entire OS and application suite. Effectively this is a virtual guest or



App-V is a level of virtualization designed to solve the challenge presented by application to application conflicts. By providing an application to a user in a virtualized format, the application is isolated from other applications. The application can still interact with the user, the OS, and even network services like printers. By taking the original source of the application (share, download, media etc) and 'sequencing' into a virtualized format, the application is abstracted, and no longer installed locally, protecting OS, directory, registry and other areas where applications can install to. The result is an application that is accessible, consistent to a traditional install, yet is isolated from other applications where it may have conflicted.

System Center, combined with MDOP App-V provide seamless application virtualization management of a range of scenarios: streaming across a LAN connection (for example a call center) or 'download and execute' format, which would support roaming or mobile users. These application delivery scenarios are managed from the same 'Software Distribution' feature within Configuration Manager as traditional application

virtual machine, delivered to the client managed by policy and targeting rules.

System Center, combined with MDOP MED-V (Microsoft Enterprise Desktop Virtualization) provides the ability to centrally deliver a virtual machine to the target system, and then through policy expose elements of that guest to the host. The elements can be browser, application or some other aspect of the guest. The intent is that the application is isolated from the OS where the conflict occurs. These applications appear to the user just like a traditional application, such as Start Menu, desktop shortcut or other. The main difference is they are run from inside the Virtual Machine, not the host OS.

Central policy applied against the virtual guest and its applications allow the user to experience the virtual applications that reside within the virtual workspace. Today through MDOP MED-V, and in the near term directly from within the Configuration Manager console, these policy and application customizations can be centrally deployed and rolled to large numbers of users, delivering an additional form of application virtualization. Similar today to how an Administrator deploys an

application package to a user, or group (collection) MED-V virtual workspaces can be delivered using the managed client infrastructure of System Center.

### **Remote Desktop Services**

Terminal Services makes it possible to remotely run an application in one location but have it be controlled and managed in another. Microsoft has evolved this concept considerably in Windows Server 2008 R2, and renamed Terminal Services to Remote Desktop Services (RDS) to better reflect these new features and capabilities. The goal of RDS is to provide both users and administrators with both the features and the flexibility necessary to build the most robust access experience in any deployment scenario.

Shifting a workload from the client system to a centralized hosted environment can take on two forms. The first is where a traditional rich client connects to a remote service, and an application is presented to the user. This application is hosted in the backend infrastructure. While the client is executing the connection, the bulk of the work is provided by the Remote Desktop services running in the datacenter.

Remote Desktop Services (RDS), one of the core virtualization technologies available in Windows Server 2008, makes it possible to run an application in one location but have it controlled in another. With RDS presentation virtualization, the Administrator can install and manage applications on centralized servers in the datacenter; screen images are delivered to the users, and the user's client machine, in turn, sends keystrokes and mouse movements back to the server.

Remote Desktop Services' 'RemoteApp' virtualizes a processing environment and isolates the processing from the graphics and I/O, making it possible to run an application in one location (datacenter) but have it be controlled in another (remote client).

System Center integrates heavily in an RDS environment, providing both client, application and host server configuration, performance and backup capabilities. The applications provided within the RD session can be packaged, delivered and monitored by System Center, ensuring that one point of administration is utilized for all application delivery scenarios.

### **Server-Hosted Virtual Machine**

To expand the Remote Desktop Services feature set, Microsoft also provides a Virtual Desktop Infrastructure, also known as VDI, in collaboration with our partners, including Citrix, Unisys, HP, Quest, Ericom and several others. VDI is a centralized desktop delivery architecture, which allows customers to centralize the storage, execution and management of a Windows desktop in the data center. It enables Windows and other desktop environments to run and be managed in virtual machines on a centralized server.

System Center integrates in a similar way for VDI as for Remote Desktop Services. VDI is a collection of hosted client virtual machines, and those VMs can be deployed, delivered applications, patched and monitored for performance based on System Center client technology. System Center would view these guests as clients on the network, and irrelevant of their virtual state, or location in a hosted Hyper-V library, System Center can centrally administer these units like any physical computer on the network.

### **What are the best solutions for your organization?**

The reality of any modern organization is they will use more than one client configuration. The capabilities here can be applied to organizational role, location, user type, or even application. Like an organization manages desktop and laptops, they can also manage both traditional and virtual desktop experiences. Within these there can also be choices of delivery vehicle. System Center does not limit any of the scenarios whether virtualization is involved, or the client is a traditional setup. There is no one fit for an organization, and in order to support today's complex user scenario requirements, it is possible that several of these models could be provided for a single user.

System Center has a wide range of client management capabilities, and is unlike any other vendor in the world when virtualization is considered. Through the entire layer of client structure, System Center delivers a central management toolset capable of robust management capability from traditional locally installed OS and application, through the different levels of virtualization, to hosted environments.

*For more information please visit*

#### **System Center home page**

<http://www.microsoft.com/systemcenter/en/us/default.aspx>

#### **Virtualization Homepage**

<http://www.microsoft.com/virtualization/default.mspx>

#### **Windows 7 Homepage**

<http://www.microsoft.com/windows/>

#### **Optimized Desktop Homepage**

<http://www.microsoft.com/windows/enterprise/products/mdop.aspx>

#### **Windows Deployment**

<http://technet.microsoft.com/en-us/solutionaccelerators/dd407791.aspx>

For more information about Microsoft System Center, visit <http://www.microsoft.com/systemcenter/en/us/default.aspx>.

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