

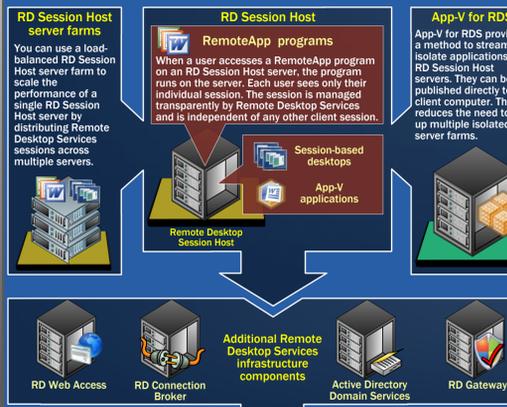
# Windows Server 2008 R2: Remote Desktop Services Component Architecture

## Acronyms

AD DS  
Active Directory Domain Services  
App-V  
Application Virtualization  
CAL  
client access license  
GPU  
graphics processing unit  
MSI  
Microsoft Installer Package  
RDC  
Remote Desktop Connection  
RDS  
Remote Desktop Services  
RDP  
Remote Desktop Protocol  
RD Connection Broker  
Remote Desktop Connection Broker  
RD Gateway  
Remote Desktop Gateway  
RD Session Host  
Remote Desktop Session Host  
RD Virtualization Host  
Remote Desktop Virtualization Host  
RD Web Access  
Remote Desktop Web Access  
ROI  
Return On Investment  
SP1  
Service Pack 1  
SCVMM  
System Center Virtual Machine Manager  
SSE2  
Streaming SIMD Extensions 2  
SLAT  
Second-Level Address Translation  
SSL  
Secure Sockets Layer  
VDI  
Virtual Desktop Infrastructure  
V-GPU  
virtual graphics processing unit  
VMM  
Virtual Machine Manager

## Remote Desktop Session Host

An RD Session Host server hosts Windows-based programs or the full Windows desktop for Remote Desktop Services clients. Users can connect to an RD Session Host server to run programs, to save files, and to use network resources on that server. Users can access an RD Session Host server by using RD Connection Broker, RD Web Access, or RemoteApp and Desktop Connection.



**Session-based desktops delivery**  
An RD Session Host server can deliver a user desktop session to any designated user in the network.

**RemoteApp programs delivery**  
RemoteApp enables administrators to make programs that are accessed remotely through an RD Session Host server appear as if they are running on the client computer. Instead of being presented to the user in the desktop of the RD Session Host server, the RemoteApp program is integrated with the client computer.

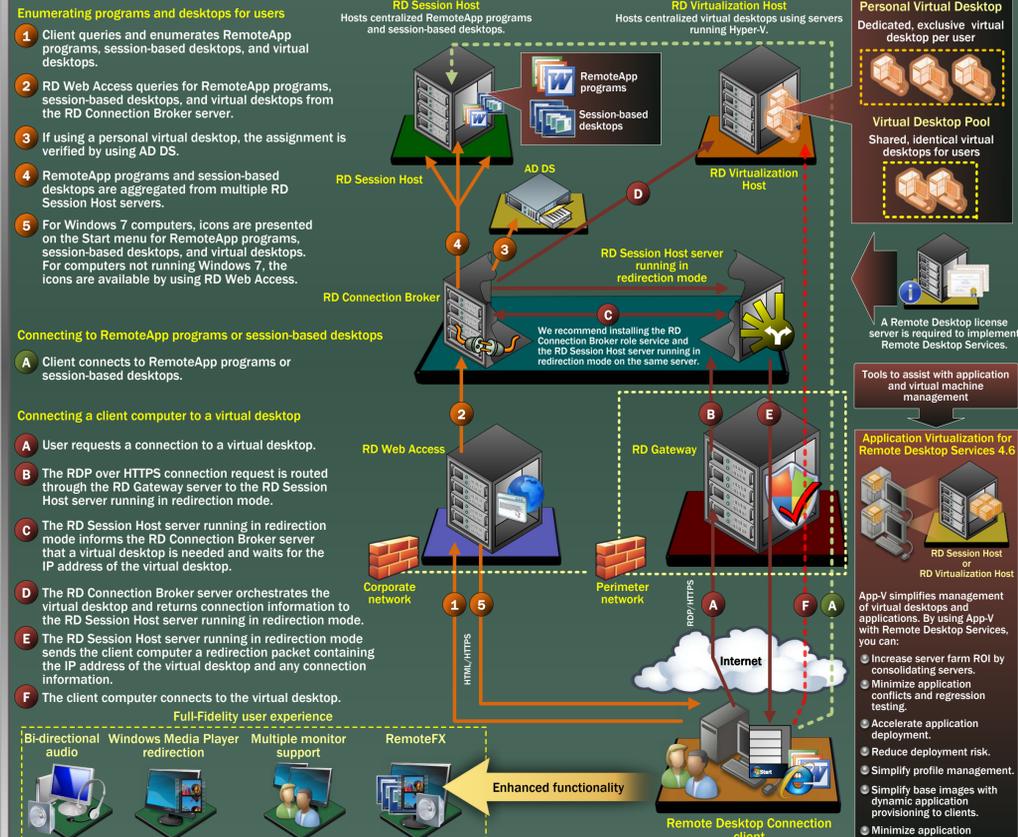
**Remote Desktop Connection client configuration**  
The RD Session Host server can be configured so that users connecting to a remote session can use some of the following functionality:  
• Audio recording redirection  
• Windows Aero experience  
• Remote computer's audio and video playback redirection

**Client requirements for accessing RemoteApp programs**  
To access RemoteApp programs, the client computer must be running at least RDC 6.1.  
To access RemoteApp programs, the client computer must be running either Windows 7, Windows Vista with SP1, or Windows XP with SP3.  
To access RemoteApp and Desktop Connection through the Start menu requires Windows 7.

**Accessing RemoteApp programs**  
Users access RemoteApp programs in the following ways:  
• Remote Desktop Protocol (.rdp) file  
• RD Web Access Web portal  
• RemoteApp and Desktop Connection by using the Windows 7 Start menu

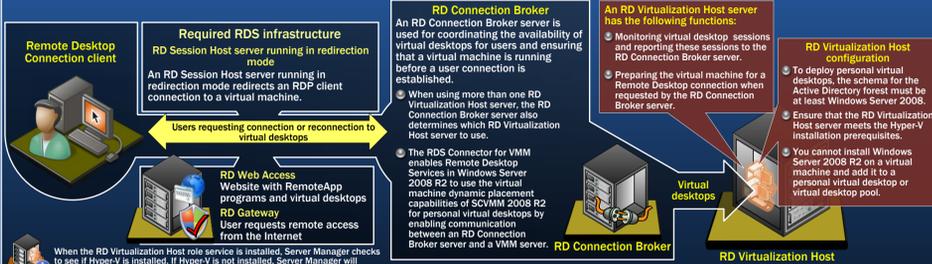
## Remote Desktop Services Architecture

Remote Desktop Services provides a virtualization platform for accelerating and extending desktop and application deployments from the data center to any device. It provides an extensible platform for a Virtual Desktop Infrastructure.



## Remote Desktop Virtualization Host

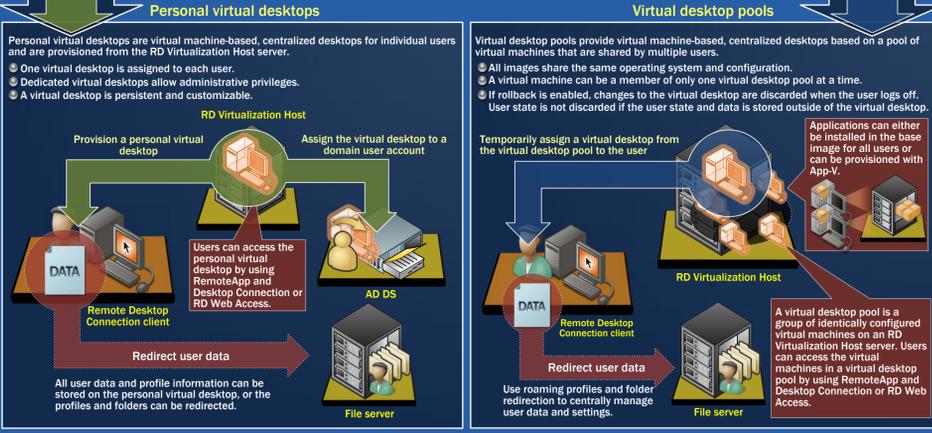
Remote Desktop Virtualization Host is a new Remote Desktop Services role service included with Windows Server 2008 R2. RD Virtualization Host integrates with Hyper-V to provide virtual machines that can be used as personal virtual desktops or virtual desktop pools. User accounts can be assigned a unique personal virtual desktop or be redirected to a virtual desktop pool where a virtual desktop is dynamically assigned. RD Virtualization Host is an essential component to the VDI solution offered by Microsoft.



**Personal virtual desktops and virtual desktop pools**  
Microsoft VDI stores and runs desktop workloads including a Windows client operating system, applications, and data in a virtual machine running on a Hyper-V server. In Windows Server 2008 R2 we support two VDI deployment scenarios: personal virtual desktops and virtual desktop pools. These two scenarios present two different models of assigning virtual machines to end users.

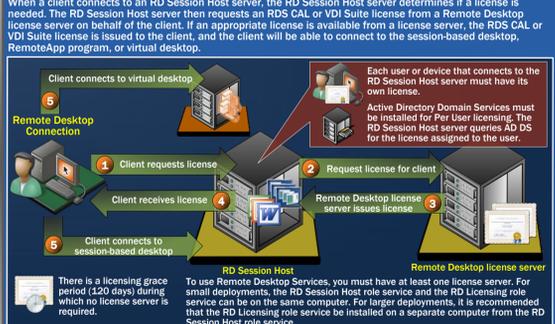
**Personal virtual desktops**  
When delivering your own VDI architecture, it is important to understand the following considerations:  
• The same Hyper-V server can be used to deploy personal virtual desktops and virtual desktop pools.  
• Administrators can minimize the servicing of virtual desktops for both personal virtual desktops and virtual desktop pools by separating the user state from the image. You can separate the user state from the image by using roaming user profiles and folder redirection.  
• Applications may be managed outside the image by using App-V.

**Virtual desktop pools**  
Virtual desktop pools provide virtual machine-based, centralized desktops based on a pool of virtual machines that are shared by multiple users.  
• All images share the same operating system and configuration.  
• A virtual machine can be a member of only one virtual desktop pool at a time.  
• If rollback is enabled, changes to the virtual desktop are discarded when the user logs off. User state is not discarded if the user state and data is stored outside of the virtual desktop.



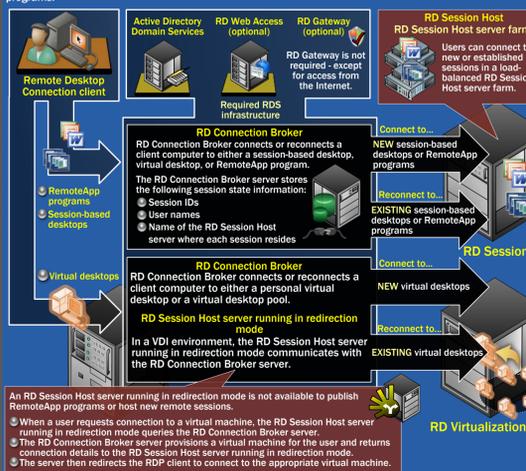
## Remote Desktop Licensing

Remote Desktop Licensing manages the Remote Desktop Services client access licenses and VDI Suite licenses that are required for each device or user to connect to session-based desktops, RemoteApp programs, or virtual desktops.



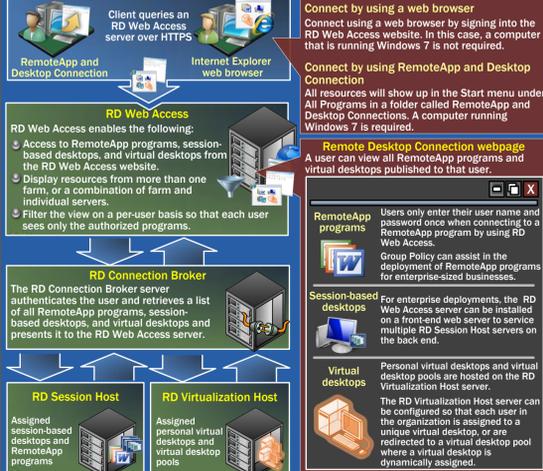
## Remote Desktop Connection Broker

Remote Desktop Connection Broker provides a single, personalized, and aggregated view of RemoteApp programs, session-based desktops, and virtual desktops to users. RD Connection Broker supports load balancing and reconnection to existing sessions on virtual desktops, session-based desktops, and RemoteApp programs.



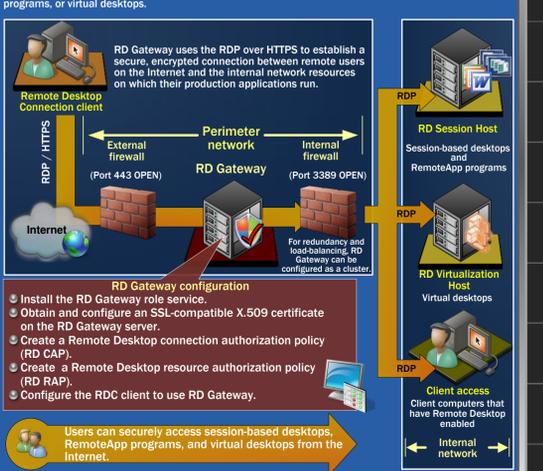
## Remote Desktop Web Access

A Remote Desktop Web Access server provides users with a customizable web portal for accessing session-based desktops, virtual desktops, and RemoteApp programs.



## Remote Desktop Gateway

The Remote Desktop Gateway role service in Windows Server 2008 R2 enables compatible devices to securely connect over the Internet to RD Session Host servers or RD Virtualization Host servers behind a corporate firewall. Network resources can be any authorized session-based desktops, RemoteApp programs, or virtual desktops.



## Microsoft RemoteFX

Microsoft RemoteFX delivers a rich user experience for VDI by using graphics processing units that are present on the server and shared across multiple virtual desktops.

