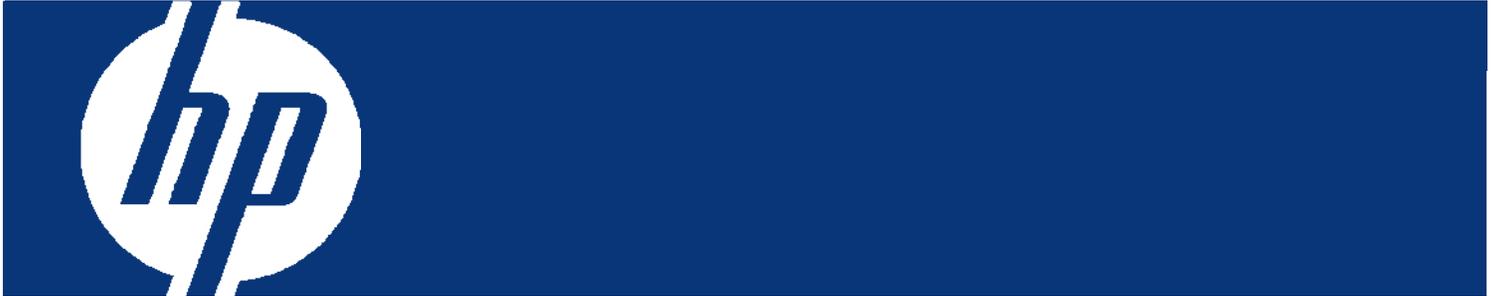


# Supporting HP RDP Enhancements on HP Compaq Thin Clients for 1LS (June 2009 Update)

V 2.0



## Abstract:

This white paper provides First Level Support (1LS) information for the HP RDP Enhancements package for HP thin clients and hosted desktops. The HP RDP Enhancements extend the standard functions of the client-to-hosted desktop RDP connections. The enhancements enable redirection of multimedia content from applications executing on the hosted desktop to the Windows Media Player on the client, and allow the automatic redirection and sharing of USB devices attached to the thin client to allow access to the devices from the applications and processes that execute on the hosted desktop.

The white paper describes the basic features and architecture of the enhancements. The [1LS call handling procedure](#) and [information gathering](#) requirements are explained. The [solution details](#) are provided with specifics on the supported platforms, devices, and media types.

Mini-FAQs, based on the support experience of Quest Software (the third-party developer of the software) are included. These [mini-FAQs](#) explain the significant call-generating issues that they have experienced and the recommended actions/resolutions to address the issues. The question and answer results from the January 2009 HPVC session are included in [Appendix B](#).

The information in this whitepaper will help the 1LS agent to determine the nature of the customer call issue and to provide appropriate advice to the customer. When elevation/escalation is indicated, the 1LS agents can use the information gathering guidelines to ensure that the significant information is available to the next support level.

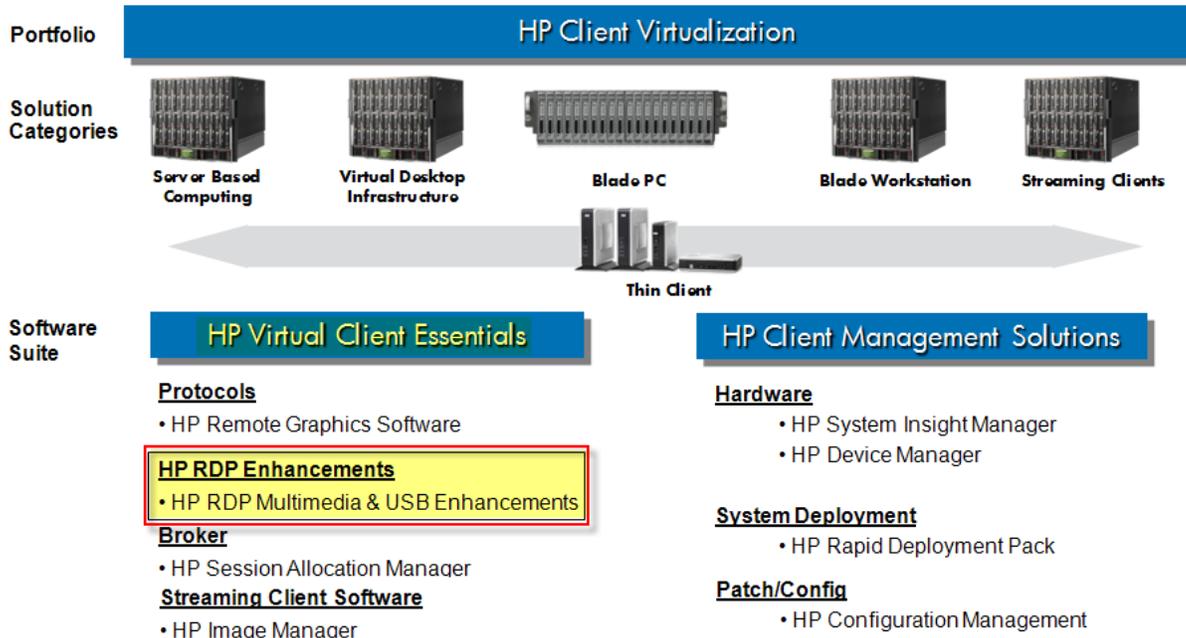
## INDEX

Overview of HP RDP Enhancements .....	3
What are HP RDP Enhancements? .....	3
Functional components.....	4
General Architecture .....	5
TLS Call Handling Procedure .....	6
Capturing Customer Information.....	7
Solution Details, Windows and Linux .....	8
Features.....	8
USB Device Support.....	9
Codecs on Linux .....	10
Multimedia Codecs, Linux .....	10
Codec Licensing, Linux .....	11
Mini-FAQs .....	12
MMR FAQs.....	12
USBR FAQs.....	13
Linux codecs FAQ.....	14
Support consideration: Codec installation on HP t5735 Linux images.....	14
Appendix A: HP RDP Enhancements Terminology .....	15
Appendix B: Class Q&A from the January HPVC session.....	16
Appendix C: Installing HP RDP Enhancements .....	17
Hosted desktop and Windows thin client install .....	17
Configuration .....	20

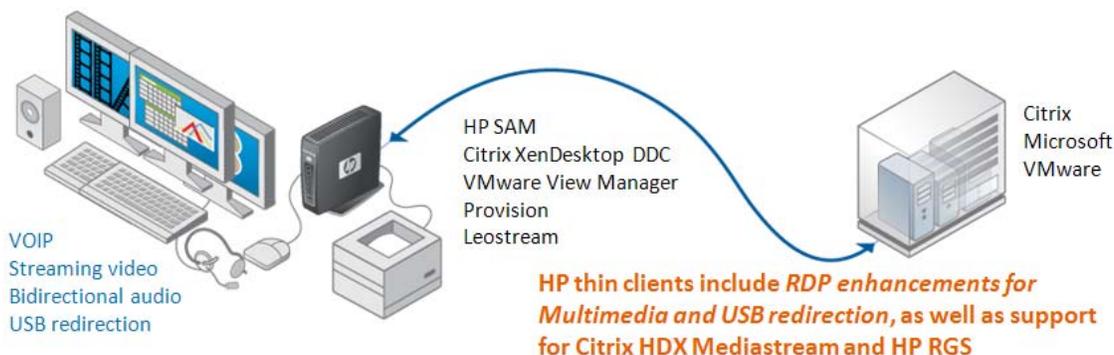
# Overview of HP RDP Enhancements

## What are HP RDP Enhancements?

HP RDP Enhancements are part of the HP Virtual Client Essentials suite (<http://www.hp.com/go/vce>). They are designed to enhance the overall end user experience when using Microsoft Remote Desktop Protocol (RDP) to connect to a hosted desktop.



HP RDP Enhancements provide easy, out-of-the-box multimedia and USB device redirection to help eliminate the limitations sometimes associated with the Virtual Desktop Infrastructure (VDI) desktop experience.



- End users can play multimedia that is running remotely on servers.
- End users can use USB devices locally.
- Supports VMware View and Terminal Servers.
- Excellent OOB with RDP enhancements and key codecs *pre-installed* with most HP thin clients.
- No additional cost to most HP customers.

## Functional components

The suite contains two components, Multimedia redirection and USB redirection. Both components use virtual channels within the RDP protocol connection. Because the RDP Enhancements use virtual channels, the redirection capabilities are available as long as there is an RDP connection between the client and the HP RDP Enhancement components on the hosted desktop.

### HP Multimedia Redirection (MMR)

MMR delivers a near physical desktop experience, including local delivery of rich multimedia content and comprehensive format capabilities using RDP virtual channels to redirect multi-media content to the thin client from the hosted desktop (in its native format). This design enables:

- Client-side decoding of multimedia content
- Multimedia content redirected in its native format
- No user configuration required

### HP USB Redirection (USBR)

USBRedirection enables the use of many USB connected device by applications and services running on the hosted desktop. The supported devices include PDAs, local printers, scanners, cameras, and headsets. Supported devices vary depending on whether you are using a Windows or a Linux thin client.

Refer to the [Solution Details](#) section in this document for the specifics.

This component also uses RDP virtual channels to redirect USB communication between the thin client and the hosted desktop. This enables:

- Auto-sharing of USB devices
- Multiple, simultaneous USB connections
- Supports Plug and Play

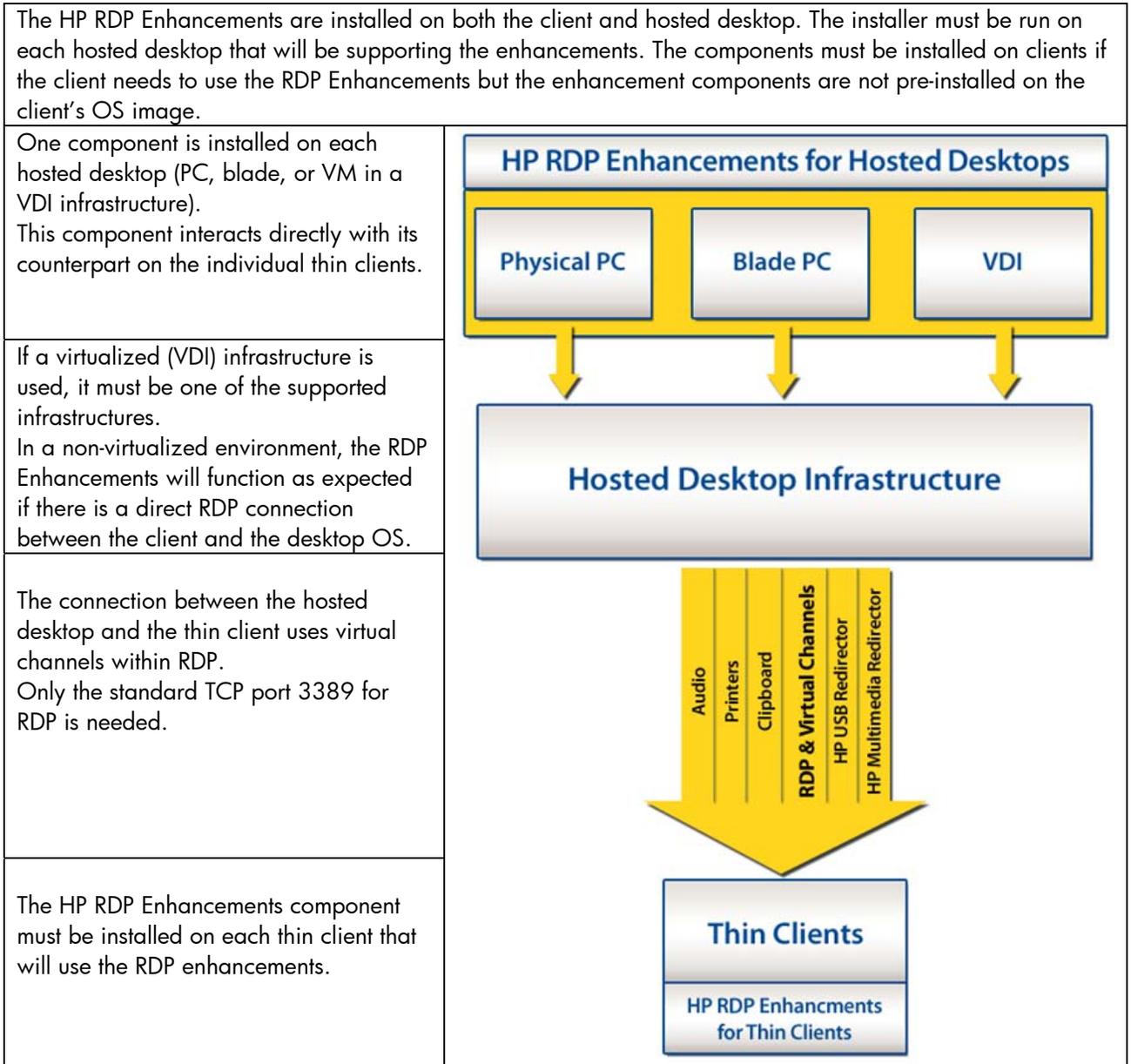
The client-side support is either pre-installed in the client image or available for installation as an add-on package. Selected Linux and Windows (Windows XPe and Windows Embedded Standard) thin clients are supported. Refer to the [Solution Details](#) section in this document for the specifics.



A Windows installer is also provided for installing support for USBRedirection/MMR on the hosted desktop OS. Windows XP and Windows Vista hosted are supported.

The components on the client-side establish a connection with the components on the hosted desktop and communicate over RDP virtual channels within the standard RDP protocol connection. USBRedirection and MMR do not use a separate protocol.

## General Architecture



# 1LS Call Handling Procedure

Follow the steps below to handle a customer call:

1. Follow the standard procedure for handling customer calls.
2. Follow normal troubleshooting procedures to validate that the hardware and image are functioning correctly and if necessary:
  - a. Recommend a hardware event, or
  - b. Provide a fix if the issue can be isolated and it is not related to HP RDP Enhancements components.
3. If the problem appears to be due to a software fault, first determine if the customer is using HP Multimedia Redirection or HP USB Redirection.
4. Once that is determined, check the [mini-FAQs](#) and the [Q&A from the HPVC session](#) to see if the customer's issue is listed there.
5. If the customer's issue is not listed in the [mini-FAQs](#), gather the relevant customer information for elevation to 2LS.

**Note:** Be sure you obtain the version of HP RDP Enhancements (thin client and hosted desktop) that the customer is using.

# Capturing Customer Information

Capturing the right information from the customer before elevating a call can significantly improve the ability for 2LS to respond appropriately.

1. First, gather all of the customary information that is required to log a support call in your region.
2. Next, gather the specific HP RDP Enhancement data as shown in the table below. This information will help to direct a customer to the appropriate 2LS resource.
3. Include all of the information in the case log that is generated for elevation.

Information type	Questions	Notes
<b>Customer data</b>	Collect the standard customer identification data required by your tracking software (such as WFM). Follow the normal procedures for your region to obtain this information.	
<b>Problem description</b>	What specific issue is the customer encountering? Obtain as detailed an account as possible.	Is the issue related to HP Multimedia Redirection or HP USB Redirection?
<b>If the issue is related to HP Multimedia Redirection</b>	What codec is the media content encoded with? What version of Windows Media Player is on the Hosted Desktop?	Note the codec type and the version of the Windows Media Player on the hosted desktop and provide this information to 2LS.
<b>If the issue is related to HP USB Redirection</b>	What is the make and model of the device?	Note the make and model of the device that is causing the issue and provide this information to 2LS.
<b>Thin Client</b>	What is the thin client model?	The thin client models that will support the HP RDP Enhancements are the t5545, t5630, t5720, t5730, t5735, gt7720, gt7725.
<b>Hosted Desktop</b>	What type of hosted desktop is the customer running?	The supported hosted desktop platforms are: a physical PC a Blade PC a desktop hosted on a supported Virtual Desktop Infrastructure platform.
<b>If the hosted desktop is on VDI:</b>	What Virtual Desktop Infrastructure is the customer running?	The supported infrastructures are: Microsoft HyperV Microsoft Virtual Server 2005 VMware ESX/ESXi VMware Server Virtual Iron
<b>Hosted Desktop Operating System</b>	What Operating System is the customer running on the Hosted Desktop?	The supported hosted desktop operating systems are: Microsoft Windows XP Professional 32-bit Microsoft Windows Server 2003 32-bit Virtual Desktop Infrastructure with Genuine Microsoft Windows XP Professional 32-bit Virtual Desktop Infrastructure with Microsoft Windows Server 2003 32-bit

# Solution Details, Windows and Linux

## Features

Features	Linux	Windows XPe
<b>Key components</b>	Multimedia and USB Redirection (Initially delivered as add-on, then pre-installed in select thin clients)	Multimedia and USB Redirection (Initially delivered as add-on, then pre-installed in select thin clients)
<b>Thin Clients supported</b>	Available Now: t5545 (ThinPro) Available in around June 2009 t5735 (Debian Linux) t5725 (Must first download latest image version (ver# TBD) then apply the add-on) gt7725 (ThinPro GT)	t5630, t5720, t5730, gt7720 HP RDP Enhancements are pre-installed on Windows XPe image version 5.1.606 and later.  Minimum 1GB memory required on HP Thin Client
<b>Supported Virtual/Remote Desktops/Sessions</b>	VMware View with Windows XP Pro 32-bit guests Microsoft Terminal Services 2003 (supports multimedia redirection only)	VMware View with Windows XP Pro 32-bit guests Microsoft Terminal Services 2003 (supports multimedia redirection only)
<b>Brokers supported (VMware)</b>	VMware View Manager 3.0	VMware View Manager 3.0
<b>Supported Virtualization Platform (back-end)</b>	VMware ESX 3.5	VMware ESX 3.5
<b>Media Players supported</b>	Windows Media Player 9/10 (hosted desktop)	Windows Media Player 9/10 (hosted desktop) Windows Media Player 11 (thin client)
	<b>Note:</b> The <a href="#">Microsoft Windows Media Player web site</a> provides detailed information about the file types that the player supports.	
<b>Codecs supported</b>	<b>Pack #1</b> WMV 7/8/9 WMA 7/8/9 MPEG-1 MP3  Container types supported are those that are natively supported in Windows Media Player.	WMV 7/8/9 WMA 7/8/9 MPEG-1 MP3 MPEG-4 part 2 (DivX, Xvid)  These codecs are included by default in Windows XPe image version 5.1.606 and later.
<b>Other Codecs</b>	<b>Pack #2 (Option, minimal charge)</b> MPEG-4 part 2 (DivX, Xvid) MPEG-4 part 10 (AVC, H.264) MPEG-2 AAC AC3  Container types supported are those that are natively supported in Windows Media Player.	<b>Planned for future</b> MPEG-4 part 10 (AVC, H.264) MPEG-2 AAC AC3
<b>Codec Notes</b>	EULA compliance required; License keys not required.	
<b>Localization</b>	Client software not localized because both MMR and USBR run in the background, with minimal user interaction. However, any HP MUI or localization is supported.  Server-side software is not localized.	

\* GBU R&D will provide this image version when available



HP has a contractual obligation with Fluendo (the multimedia codec developers) that prevents us from giving away codecs if we cannot track the codecs for royalty purposes. HP must track every codec we sell or give to customers.

## USB Device Support

The following table lists the supported USB devices that have been tested in the VMware View environment.

Device Type	Linux, supported versions	Windows XPe and WES, supported versions
USB storage	N/A	HP External USB 2.0 Multibay II: HDD 80 GB (PH357A), DVD/CD-RW (PA509A)
USB headsets w/microphone	Cyber Acoustics AC-850, Microsoft LifeChat LX-3000, Logitech USB (Audio will come out of the headset for everything on the RDP session except for multimedia played with MMR.)	Cyber Acoustics AC-850, Microsoft LifeChat LX-3000, Logitech USB (Audio will come out of the headset for everything on the RDP session except for multimedia played with MMR.)
USB printer	HP LaserJet 1150, HP LaserJet 1300, HP DeskJet 5650	HP LaserJet 1150, HP LaserJet 1300, HP DeskJet 5650
USB printer/scanner	Printing function only on following printer/scanners: HP OfficeJet 9100, HP Color LaserJet 2840 Scanners: N/A	HP OfficeJet 9100, HP Color LaserJet 2840
USB scanner	N/A	HP OfficeJet V45 Scanner, HP ScanJet 4200 CXi, HP ScanJet 4890, Canon CanoScan LiDE 60
USB drive key	N/A	2 GB Apacer, 4 GB Apacer
USB dongle	USB parallel (Belkin F5U002), USB Serial (Belkin F5u257)	



Check SAW (HP Intranet access only) <http://saw.cce.hp.com/km/saw/home.do> for the most up to date platform/device support information.

## Codecs on Linux

### Multimedia Codecs, Linux

The following table lists the model support and availability details for the Linux client multimedia codecs.

Product	Module	Add-on	Pre-install
t5545	HP RDP enhancements	Available on Web (includes RDP enhancements and Linux Codec Pack#1)	Starting June 2009 refresh (Ramp Jun-21-09)
	Linux Codec Pack #1	Any t5545 customer (even installed base) can download free of charge	
	Linux Codec Pack #2	Not pre-installed – Available on <a href="#">Software Depot</a> Customers have to buy – HP Sales can make pricing adjustments, as necessary	
gt7725	HP RDP enhancements	<b>Available around June 2009</b> (includes RDP enhancements and Linux Codec Pack#1)	Timeline to be determined
	Linux Codec Pack #1	Any gt7725 customer (even installed base) can download free of charge	
	Linux Codec Pack #2	Not pre-installed – Available on <a href="#">Software Depot</a> Customers have to buy – HP Sales can make pricing adjustments, as necessary	
t5735/t5725	HP RDP enhancements	<b>Available around June 2009</b> Any t5735/t5725* customer can download Free of charge to customers	No pre-install (because no image refresh is planned for t5735/t5725)
	Linux Codec Pack #1	Not pre-installed – Available on <a href="#">Software Depot</a>	
	Linux Codec Pack #2	Customers have to buy – HP Sales can make pricing adjustments, as necessary	

\* t5725 customers must first download and install the supported image version (version number TBD), then apply the add-on.

## Codec Licensing, Linux

	Codec Pack#1	Codec Pack#2
Codecs included Container types supported are those natively supported in Windows Media Player	WMV 7/8/9 WMA 7/8/9 MPEG-1 MP3	MPEG-4 part 2 (DivX, Xvid) MPEG-4 part 10 (AVC, H.264) MPEG-2 AAC AC3
Suggested Price per license (Customer can buy multiple licenses with one download or shipment)	US\$10.00	US\$20.00
Part Numbers	AT487AAE HP Linux Codec Pk1 TC <u>E-LTU and E-Media</u> AT487AA HP Linux Codec Pk1 TC <u>LTU and Media</u>	AT905AAE HP Linux Codec Pk2 TC <u>E-LTU and E-Media</u> AT905AA HP Linux Codec Pk2 TC <u>LTU and Media</u>
Codec delivery mechanism (if not pre-installed)	<p><b>NA:</b> SMB web Sales rep Indirect channel partner</p> <p><b>EMEA:</b> Indirect or direct – Direct order entry only</p> <p><b>APJ:</b> All standard sales processes All regions except APJ: electronic delivery APJ: Physical delivery</p>	<p><b>NA:</b> SMB web Sales rep Indirect channel partner</p> <p><b>EMEA:</b> Indirect or direct – Direct order entry only</p> <p><b>APJ:</b> All standard sales processes All regions except APJ: electronic delivery APJ: Physical delivery</p>

### Single download/delivery for multiple licenses

One electronic download or physical delivery can be associated with multiple licenses. Customers will be asked to enter the number of licenses when they place their order on Software Depot.

The customer charge is based on the number of licenses they are ordering but only one download or physical media delivery is required.

# Mini-FAQs

The following tables provide information about common customer issues and resolutions/suggested actions. The issue list is based on Quest Software – Provision Network support experience.

## MMR FAQs

Issue	Notes
Multimedia content with HP RDP enhancements does not appear to be any different than regular RDP (i.e., choppy, slow, out of sync audio).	Verify the thin client device the customer is using. It must be one of the devices on the "Supported HP Thin Clients" list. Verify the hosted desktop the customer is connecting to. It must be a hosted desktop on the "Supported Hosted Desktop Platforms" list. Verify the customer has the HP RDP Enhancements installed on the thin client and hosted desktop. Refer to "HP RDP Enhancements Installation and User Guide". Verify the video plays (correctly) locally from the thin client. If video plays choppy, and if no other issues are identified, try setting Windows client color depth from 32 bit to 16 bit.
After rebooting the thin client, HP MMR is no longer working.	Make sure EWF was disabled prior to installing HP RDP Enhancements.
There is sound, but no video when playing some multimedia content.	This is by design. The thin client has the sound codec, but not the video codec for the multimedia content.
There is a message that the multimedia content is not supported.	This is by design. The thin client has neither the audio or video codec to play the multimedia content.



If a customer reports that they are seeing a message that indicates that their multimedia content is not supported, advise the customers that the message means that there was no codec available on the thin client to decode the multimedia content. If the customer can identify the content type and locate a Windows-compatible codec, installing the codec on the thin client should resolve the issue. For Linux thin clients, content must be compatible with one of the supported (Pack 1 or Pack 2) codecs.

## USB FAQs

Issue	Notes
<p>USB device is plugged in, but it is not detected.</p>	<p>Verify that the thin client the customer is using is one of the HP supported devices.</p> <p>Verify the hosted desktop the customer is connecting to. It must be a hosted desktop on the "Supported Hosted Desktop Platforms" list.</p> <p>Verify the customer has the HP RDP Enhancements installed on the thin client and hosted desktop. Refer to "HP RDP Enhancements Installation and User Guide".</p> <p>Verify Auto-connect is still enabled (auto-connect is enabled by default) on the thin client and hosted desktop.</p> <ul style="list-style-type: none"> <li>○ Thin client: <b>Start→Settings→Control Panel→HP RDP USB Redirector Client</b>. Make sure the <b>Auto-share devices</b> checkbox is checked.</li> <li>○ Hosted desktop: <b>Start→Settings→Control Panel→HP RDP USB Redirector Server</b>. Make sure the <b>Auto-connect devices</b> checkbox is checked.</li> </ul> <p>Verify the Hewlett-Packard RDP USB Redirector Service is started on the thin client and hosted desktop. Start→ Run→ services.msc</p> <p>Thin Client: "Hewlett-Packard RDP USB Redirector Workstation Service"</p> <p>Hosted Desktop: "Hewlett-Packard RDP USB Redirector Terminal Server Service"</p>
<p>Customer cannot install the device they plugged in.</p>	<p>To install device driver, a user must be a member of the local Administrators group on the hosted desktop.</p>
<p>After installing HP RDP Enhancements on the thin client, mouse and keyboard no longer work.</p>	<p>By default the USB component of HP RDP Enhancements client will exclude HID devices and not auto-share them. If a customer is using a non-standard mouse/keyboard combination, it may be detected as a composite device. When this happens the customer will need to connect a PS2 mouse/keyboard and then reconfigure the local exclusion list. To do this, click:</p> <ul style="list-style-type: none"> <li>- Start→Settings→Control Panel→HP RDP USB Redirector Client</li> <li>- Select the USB composite device (keyboard and/or mouse)</li> <li>- Click the Exclude button.</li> </ul>
<p>When connecting to a Windows 2003 Server desktop, the customer does not see the option to install the driver for the device they plugged in.</p>	<p>In order to see the "New Device Wizard" when connecting to a Windows 2003 Server desktop, the customer must run MSTSC.EXE with the /console switch.</p> <p>Example:</p> <p>After launching Remote Desktop Connection in "Computer" field type: 10.x.x.x /console.</p>
<p>A customer has a USB headset (i.e., Microsoft LifeChat) plugged in and working within their hosted desktop. They complain that when they play media-content the sound comes through the thin client speakers instead of their head phones.</p>	<p>This is by design because all Windows Media Player content is rendered and decoded locally on the thin client.</p> <ul style="list-style-type: none"> <li>● The multimedia content is redirected to the media player on the client which will play the audio on the local device's speakers.</li> <li>● The USB headset has been redirected to the application running on the hosted desktop. That redirects the device itself to the application, but multimedia streams that the application generates are handled by MMR not USBR device redirection.</li> </ul>
<p>After rebooting the thin client, HP MMR is no longer working.</p>	<p>For Windows clients, make sure EWF was disabled prior to installing HP RDP Enhancements.</p>

## Linux codecs FAQ

This table provides responses for typical customer and support questions related to licensing codecs for use on the Linux-based thin clients.

Customer question	Response
A customer recently bought an HP t5545 which has HP RDP enhancements and codecs pre-installed. They want to know what they need to do to?	You have everything you need to run HP RDP enhancements on your t5545. You do not need to download or buy anything else.
I bought an HP t5545 in December 2008. I understand that you have a solution now for MMR and USBR. How do I get it?	Download the required add-on from HP.com. This image contains both the HP RDP enhancements software as well as select codecs (pack#1).
I have an HP t5735 that I bought in Jan-2009. I downloaded the RDP enhancements add-on from HP.com, but it does not have the codecs. How do I get these codecs for the t5735?	You can buy appropriate codecs from HP Software Depot. There are 2 codec packs available, both with 4-6 codecs.
I have an HP t5725 that I bought in early 2008. I read that you now have software for multimedia and USB redirection. How do I get it so I can try it?	<p>You need two components to do multimedia redirection:</p> <ol style="list-style-type: none"> <li>1. HP RDP enhancements for Linux and</li> <li>2. Appropriate codecs for the multimedia streams you want to accelerate.</li> </ol> <p>Download the latest full image, and then apply the RDP enhancements add-on (both are available free of charge from the HP website).</p> <p>Linux codecs are available for purchase on HP Software Depot. There are 2 codec packs available, both with 4-6 codecs. Buy the pack that has the codec you need.</p>
HP Customer Support question	Response
I have a customer with t5545 who received codecs pre-installed in the image. Now their image is corrupted. How can I help them?	There is nothing special you have to do. Simply get the new image from HP.com as you have always been doing. The image will contain the pre-installed codecs.

### Support consideration: Codec installation on HP t5735 Linux images

#### HP Confidential

Do not show to customers.

Two new thin client models will be released in late 2009, the t5740 (WES) and the t5745 (Linux). The new clients will include an image refresh. This may cause confusion for existing t5735 Linux customers because the t5745 image will contain the codec Pack #1 while the t5735 images have not included any codecs. Because the image itself has N-1 backward compatibility with the t5735, customers may assume that they will be able to download the t5745 image for their t5735 thin clients, and essentially get the codecs at no cost.

The plans are not yet final but HP will likely have 2 images on the web: one for the t5745 and one for the t5735. The only difference between these two images would be that the t5745 image will contain codecs (Pack#1). A second option is being looked at where HP provides a single image for the t5735 and t5745 but the image will contain a BIOS lock to prevent installation of the codecs when the image is installed on a t5735.

To use the multimedia redirection capabilities in HP RDP Enhancements, customers will always need to buy codec packs for the t5735.

# Appendix A: HP RDP Enhancements Terminology

This glossary provides definitions for some of terms that are commonly used in describing the HP RDP Enhancements.

Term	Description
<b>Microsoft Remote Desktop Protocol (RDP)</b>	<p>A protocol that provides remote display and input capabilities over network connections for Microsoft Windows-based applications running on a server. RDP is designed to support different types of network topologies and multiple LAN protocols.</p> <p><a href="http://msdn.microsoft.com/en-us/library/aa383015(VS.85).aspx">http://msdn.microsoft.com/en-us/library/aa383015(VS.85).aspx</a></p>
<b>Hosted desktop</b>	<p>A backend infrastructure that thin clients connect to using Microsoft Remote Desktop Protocol. The backend infrastructure can be a physical PC, a blade PC, or a Virtual Desktop Infrastructure (VDI) running on a hypervisor.</p>
<b>VDI (Virtual Desktop Infrastructure)</b>	<p>A VMware initiative that describes a system comprised of servers operated by VMware Virtual Infrastructure 3 software, and hosting virtual machines running a desktop operating system such as Windows XP, Windows Vista, or Linux.</p>
<b>Hypervisor</b>	<p>The first layer of software installed on a computer system in a bare metal environment, but below other virtualization services such as a virtual machine monitor. The hypervisor allows multiple, possibly heterogeneous, operating systems to share a single hardware platform.</p>
<b>Virtual Channels</b>	<p>Virtual channels are software extensions that can be used to add functional enhancements to a Terminal Services application. Examples of functional enhancements might include: support for special types of hardware, audio, or other additions to the core functionality provided by RDP. The RDP protocol provides multiplexed management of multiple virtual channels.</p> <p>A virtual channel application has two parts, a client-side component and a server-side component. The server-side component is an executable program running on the terminal server. The client-side component is a DLL that must be loaded into memory on the client computer when the Terminal Services client program runs.</p> <p>Virtual channels can add functional enhancements to a Terminal Services client, independent of the RDP protocol. With virtual channel support, new features can be added without having to update the client or server software, or the RDP protocol.</p> <p><a href="http://msdn.microsoft.com/en-us/library/aa383509(VS.85).aspx">http://msdn.microsoft.com/en-us/library/aa383509(VS.85).aspx</a></p>
<b>USB</b>	<p>A serial bus standard to interface devices to a host computer. USB was designed to allow many peripherals to be connected using a single standardized interface socket and to improve the plug and play capabilities by allowing hot swapping, that is, by allowing devices to be connected and disconnected without rebooting the computer or turning off the device.</p> <p><a href="http://en.wikipedia.org/wiki/USB">http://en.wikipedia.org/wiki/USB</a></p>
<b>Multimedia</b>	<p>Media and content that utilizes a combination of different content forms.</p> <p><a href="http://en.wikipedia.org/wiki/Multimedia">http://en.wikipedia.org/wiki/Multimedia</a></p>

## Appendix B: Class Q&A from the January HPVC session

**Q.** What is the difference between the RDP that comes already with all Windows OS and this one?

**Ans.** The enhancements add 2 .dll components that change the way the RDP connection handles multimedia and USB devices attached to the thin client. Normal default RDP behavior would not forward multimedia output to the client, and USB devices would not be automatically shared and accessible to the processes on the hosted desktop.

The enhancements are particularly helpful with devices such as PDAs (like a Blackberry) -- with the enhancements, the processes (Outlook, for example) on the hosted desktop will see and recognize the PDA.

The USB and multimedia redirection also provides much better performance; multimedia playback is smoother/clearer, I/O to and from USB devices is much faster.

**Q.** Are administrator privileges required to work with this utility? Will it work in a user environment?

**Ans.** Admin rights are required to install USBR/MMR but the RDP Enhancement functions do not require anything other than user rights.

**Q.** Will you please elaborate on USB Audio redirection?

**Ans.** With multimedia redirection, the audio uses the MMR channel and the sound is decoded locally on the thin client. With a USB headset device, such as a VOIP telephone connection, the connection uses the USB redirection channel and replaces the default audio and directs the audio from the hosted desktop to the USB device (the headset), not the local audio decoders. (Refer to the recording of the January HPVC session for additional discussion.)

**Q.** Will any individual USB Stick need to be configured over again, or are the settings generic for any USB Stick?

**Ans.** Settings are generic for USB sticks/drive keys. No additional configuration is required. However, please note that as of May 2009, only the Apacer 2GB and 4GB have been tested and they are supported on Windows only.

**Q.** How does this compare to Wyse TCX technology? Does their technology offer the same level of USB redirection? How do we compare for codec support; same/worse/better?

**Ans.** This is intended to directly compete with TCX. In some of our tests, this implementation returns better network performance; Wyse has announced a newer version of TCX that seems to implement the same native format streaming that we have but we have not yet done a direct comparison with that version.

**Q.** Can USB Redirection client be pushed on to the thin client using HP Device Manager or Altiris?

**Ans.** The component uses a standard InstallShield installer and it shouldn't be a problem but HP does not provide any specific script for the task. USBR/MMR will be pre-installed on all current Windows XPe SP3/WES and ThinPro images an update is not required.

**Q.** Can we use the -Silent option to install the client or server portion of the software?

**Ans.** For Windows, the silent option is supported; it's a standard installer.

**Q.** While troubleshooting, can we use the regsvr32 command line utility to register the MMR/USBR dll's or do we need to uninstall and reinstall the complete software?

**Ans.** Yes, you can use the regsvr32.

**Q.** You mentioned that this software is OEM-ed from Quest Software. What, if any, are the differences between this HP version and the Quest software? (that we can tell our HP customers)

**Ans.** The HP version is a subset of the full Quest suite. We are using 2 components to address a specific customer requirement.

**Q.** Are there any special considerations or steps needed for Windows Vista or Windows Longhorn server 2008 to get this software configured?

**Ans.** The component is supported on 32-bit Windows but only the ones listed in these materials. It is quite possible that other 32-bit Windows versions will be supported later if there is a customer requirement.

## Appendix C: Installing HP RDP Enhancements



Refer to the *Installing and Configuring HP RDP Multimedia and USB Enhancement Software Guide* for procedural information and additional technical detail. The guide is available from the Service Access Workbench ([SAW](#)).

For Windows XPe and Windows Vista, a standard InstallShield installer is used on both the hosted desktop and the thin client. For Linux-based thin clients, if the enhancements are not pre-installed the customer will download the add-on and apply it to the client image. For both Windows and Linux thin clients, you would use the Windows installer on the hosted desktop because the enhancements support Windows hosted desktops only.

### Hosted desktop and Windows thin client install

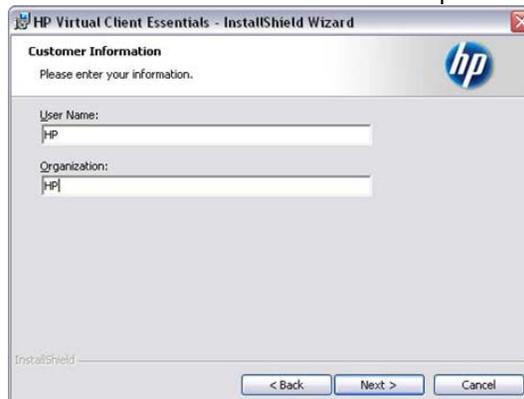
There are separate installers for the hosted desktop and the thin client install but the installer dialogs are essentially identical. The procedure steps are:

1. Download the Softpaq from the HP Support site for the thin client and move or deploy the installer to the hosted desktop or thin client, as appropriate.
2. Double-click the setup.exe installer executable. The initial dialog displays. Click **Next** to continue.



Initial installer dialog

3. Enter the user and organization name and click **Next**. This information is for display only. The user name does not have to be a valid user account name for the platform.



User and Organization dialog

4. You will typically accept the default location but you can select the Change button if you wish and select a different install location. Click **Next** to continue.



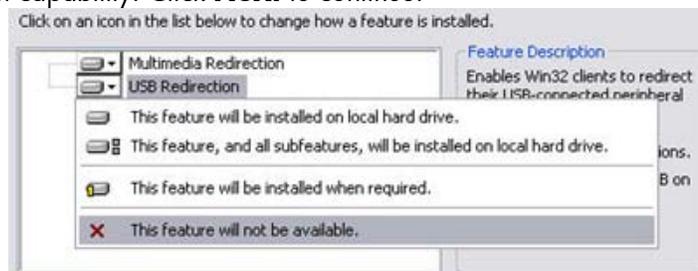
Install location dialog

5. Select **Complete** to accept the default setting to install support for both the USB and Multimedia Redirection. Select **Custom** if you want to install only one of the capabilities. Click **Next** to continue.



Setup type dialog

6. If you selected the Custom radio button, a dialog displays to allow you to deselect one (or both) of the enhancements. This is a standard InstallShield dialog and you select the dropdown menu to access the desired option. In this example, we are selecting "This feature will not be enabled" for the USB Redirection capability. Click **Next** to continue.



Change install options dialog

The USB Redirection option icon changes to an "X" to indicate that the option will not be installed.



Custom setup options dialog

7. The "Ready to Install the Program" dialog displays. Click **Install** to begin the installation. The installation completes in a few seconds.



Begin install dialog

8. When the final dialog displays. Click **Finish** to complete the installation.



When you install the HP RDP Enhancements:

- If you have installed the enhancements on a hosted desktop, you must **reboot the hosted desktop OS** to complete the installation.
- If you have installed the enhancements on a thin client, you must **log off and log back on to the thin client** complete the installation.

See the *Installing and Configuring HP Remote Desktop Protocol (RDP) Multimedia and USB Enhancement Software* white paper for more information. To download the referenced white paper, complete the following steps:



1. Go to <http://www.hp.com>.
2. Click "**Support and Troubleshooting**" (under "Customer Support").
3. Click "**See support and troubleshooting information for product:**" and, in the text box, type **t5730** or **t5720** or **t5630**. Then click **>>** or press the **Enter** key.
4. Click **Manuals (guides, supplements, addendums, etc)**.
5. Locate "White Papers," and click "Installing and Configuring HP Remote Desktop Protocol (RDP) Multimedia and USB Enhancement Software."

## Configuration

### HP Multimedia Redirection

The multimedia redirection feature does not have any user interface and there are no configuration options for either the hosted desktop or the thin client.

- When the HP Multimedia Redirector is enabled, all audio and video content using Windows Media Player is passed through the HP Multimedia Redirector virtual channel. The video is rendered by the local video card and the audio is decoded by the local audio device.
- All other audio generated on the hosted desktop uses the audio device specified within the RDP session. This is the Microsoft RDP Audio Driver by default.



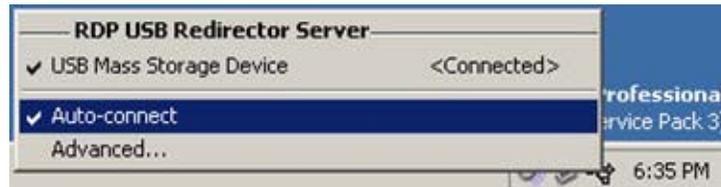
Using a USB Headset with HP USB Redirector changes the audio device within the hosted desktop from the Microsoft RDP Audio Driver to the USB Headset. Windows Media audio bypasses the USB Headset audio and is decoded by the local audio device; output sound goes to the local speakers.

### HP USB Redirection (Windows Hosted Desktop)

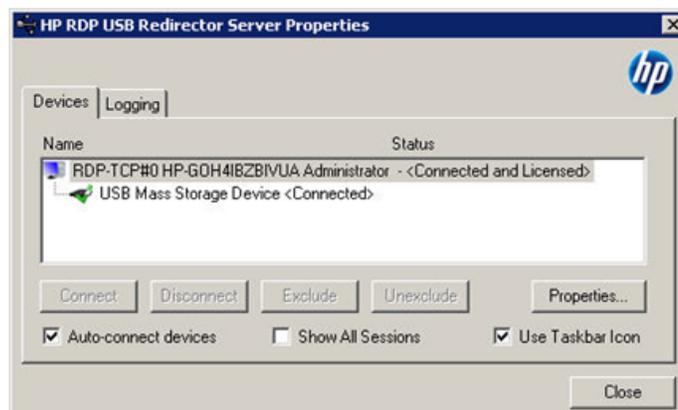
The USB redirection enhancement places an icon in the system tray.



Right-click the icon to access the popup menu. Auto-connect for USB devices is enabled by default.



Click **Advanced** to access the additional configuration options. (You can also access these configurations through the Control Panel HP USB Redirector Client applet.)



You can use this dialog to selectively connect/disconnect and exclude/un-exclude devices from control by the USB redirector.



Refer to the HP USB Redirector User Guide for additional details on the Advanced options and the various scenarios where different option combinations can be applied.

© 2009 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Version 2.0 June 2009