

# High-Definition Video Conferencing with HP Thin Clients



## Technology Demonstration at Synergy Berlin

The accelerated growth of client virtualization has created a challenge for many companies planning to deploy video conferencing solutions, as traditional virtual computing environments were fraught with obstacles like the inability to support isochronous ISB devices like web cameras, network latency and local processing inefficiency.

HP, along with Citrix, Microsoft, Logitech and Avistar, are introducing powerful new technologies that will enable businesses to deploy a high-definition video-conferencing experience with full unified communications functionality in a fully virtualized desktop environment without degraded network performance.

This solution, demonstrated during the keynote address at Citrix Synergy Berlin 2010, is enabled on the HP t5570 Thin Client with the combined power of Citrix XenDesktop 5 and Avistar C3 Integrator™ enabled to support the new Logitech HD Webcam B990 – all introduced at the event.

The new HP t5570 Mainstream Series Thin Client delivers a great desktop experience, including Microsoft Windows® Embedded Standard 2009 combined with a full-featured browser, support for XenDesktop 5, and a powerful Superscalar VIA Nano u3500 CPU and VX900 Integrated Graphics Processor provide deliver hardware assisted multimedia decoding for traditional PC multimedia performance.<sup>1</sup>

The HD video-conferencing experience is delivered point-to-point across the network via the advanced multimedia capabilities of Avistar's C3 Integrator—

seamlessly stitched into a XenDesktop session. The Logitech HD Webcam B990 provides onboard HD video encoding, while decoding HD video via the t5570's media processor.

With the Avistar C3 Integrator™– Citrix Edition solution, media processing is optimized at the HP thin client, while application control and functionality continue to run in the virtualized environment or data center.

Using this architecture, the application avoids transmitting uncompressed audio or video, minimizing transmission delays and ensuring the network is not overburdened. Server application code and communications APIs remain unchanged, ensuring the retention of Citrix's cost and operational benefits and operation in an optimized infrastructure.

Avistar C3 Integrator™– Citrix Edition is designed specifically to run on the Citrix ICA platform. Users can launch Avistar directly from their HP thin clients. Avistar C3 Integrator™– Citrix Edition operates with both Citrix XenApp and XenDesktop.

Combined with the Avistar C3 Integrator desktop videoconferencing application, the B990 will remove the burden of video processing from the HP thin clients and enable HD 720p video conferencing, as demonstrated in the XenDesktop 5 environment. In addition, the Logitech B990 webcam delivers plug-and-play enterprise-class reliability, 720p HD video calling, and dual-microphone stereo audio.

For more information about HP thin computing solutions, visit [www.hp.com/go/thincomputing](http://www.hp.com/go/thincomputing).

## Solution Components

These are the components that complete this solution



### HP t5570/t5740e Thin Clients

End-users receive a rich computing experience with Citrix XenDesktop environment through the superior multimedia and processing performance of HP thin clients.



### Citrix XenDesktop 5

The highly-scalable Citrix XenDesktop 5 environment is designed to facilitate quicker and easier virtualization deployment and provide HP more dynamic multimedia capabilities.



### Logitech HD Webcam B990

Delivers plug-and-play enterprise-class reliability, 720p HD video calling and dual-microphone stereo audio.



### Avistar C3 Integrator™

Provides decoding and additional media processing of the HD video stream

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## Hardware Component Specifications

### HP t5570 Thin Client

<b>Operating system</b>	Microsoft® Windows® Embedded Standard 2009
<b>Local clients</b>	Preinstalled Citrix ICA 12.0 (Citrix Online Plugin 12.0), Microsoft RDP 7.0, Microsoft Internet Explorer 7, Windows Media Player 11, HP TeemTalk Terminal Emulation 7, HP Remote Graphics Software Receiver 5.4 for VMware View and Microsoft Terminal Services, Adobe Flash Player 10.1
<b>Host environments</b>	Microsoft Terminal Services, Citrix XenApp, Citrix XenDesktop, Citrix Presentation Server, Virtual Desktop Infrastructure (Microsoft and VMware), blade workstations, web applications, mainframes (using terminal emulation)
<b>Processor &amp; Chipset</b>	VIA Nano u3500 1 GHz; VIA VX900 north/south bridge unified chip
<b>Memory</b>	1 GB DDR3 SO-DIMM (128 MB reserved for video)
<b>Storage</b>	2 GB Flash
<b>Graphics</b>	VIAChromotionHD5 2.0 Integrated Graphics Processor
<b>Audio</b>	Internal amplified speaker, VIA VT1708S Audio Codec supports up to 24-bit, 192 KHz samples
<b>Communications</b>	10/100/1000 Ethernet, TCP/IP with DNS and DHCP, Point-to-Point Protocol (PPP), Point-to-Point over Ethernet (PPPoE), Point-to-Point Tunneling Protocol (PPTP), Layer-2 Tunneling Protocol (L2TP), Wake on LAN (WOL), PXE, SNMP, 802.11 a/b/g/n Wi-Fi <sup>2</sup> (certain models)
<b>Ports and connectors</b>	Six (6) USB 2.0 ports (two front, two rear, two in secure compartment), one DVI-I, one DVI-D, one parallel, one serial, two (2) PS/2, one front audio out, one front audio in, one RJ-45 port, one (1) DVI-I-to-VGA adapter included in carton
<b>Environmental</b>	Meets EuP Lot6 Requirement; ENERGY STAR® qualified, EPEAT™ Gold registered where applicable/supported, see <a href="http://www.epeat.net/">http://www.epeat.net/</a> for registration status by country, BFR/PVC-free <sup>3</sup>
<b>Weight &amp; Dimensions (HxWxD)</b>	1.36 kg with stand; 209.55 x 58.42 x 215.90 mm without stand; 219.70 x 58.42 x 215.90mm with stand

### HP t5740e Thin Client

<b>Operating system</b>	Microsoft® Windows® Embedded Standard 2009
<b>Local clients</b>	Microsoft RDP 6.1, Citrix ICA 11.0 (XenApp Plugin for Hosted Apps 11.0), Microsoft Internet Explorer 7, Windows Media Player 11, HP TeemTalk Terminal Emulator 7, HP Remote Graphics Software Receiver, HP Multimedia and USB Redirection Enhancement Software. (Citrix ICA 12 and Microsoft RDP 7.0 available via download)
<b>Host environments</b>	Citrix XenApp 5 and 6, Citrix XenDesktop 2.x, 3, and 4; Citrix Presentation Server 4.0, Windows Server 2008 Terminal Services, Windows 2000/2003 Server families, Windows 2000/2003 Server Terminal Services, blade PCs, blade workstations, web applications, mainframes (terminal emulation)
<b>Processor</b>	Intel Atom N280* 1.66 GHz (*Intel's numbering is not a measurement of higher performance.)
<b>System Memory</b>	2 GB DDR-3 SODIMM installed in single slot leaving one slot empty for upgrade (64 MB minimum reserved for video)
<b>Storage</b>	4 GB primary Flash
<b>Graphics</b>	Intel GL40 graphics; maximum resolution: 2048x1536, standard screen, 1920x1200, wide screen
<b>Audio</b>	Mic in/headphone out ports, internal speaker, 1/8-inch mini output, full 16-bit stereo, 44 KHz sample rate
<b>Communications</b>	10/100/1000 Gigabit Ethernet (actual speeds may vary), 802.11 a/b/g/n Wi-Fi <sup>2</sup> (certain models)
<b>Ports and connectors</b>	Base unit: 8 USB 2.0 (2 front/4 rear/2 in secure USB compartment), 1 serial, 2 PS/2, VGA (DB15) and DisplayPort monitor connectors; optional PCIe X4/PCI Expansion Module: 1 serial, 1 parallel
<b>Environmental<sup>3</sup></b>	Meets EuP Lot6 Requirement; ENERGY STAR® qualified, EPEAT™ Gold registered where applicable/supported, see <a href="http://www.epeat.net/">http://www.epeat.net/</a> for registration status by country
<b>Weight &amp; Dimensions (HxWxD)</b>	3.48 lb (1.58 kg) with stand; 4.14 lb (1.88 kg) with optional Expansion Module; 10.04 x 1.73 x 8.74 in. (255 x 44 x 222 mm) without stand; 10.39 x 1.73 x 8.74 in (266.7 x 44 x 222 mm) with stand; 10.04 x 2.91 x 8.74 in (255 x 74 x 222 mm) with optional Expansion Module

1. Hardware-assisted decoding depends on driver support for the streaming media types and is not identical for all operating systems 2. Wireless access point and Internet access required. Availability of public wireless access points limited. 3. HP t5550, HP t5565, and HP t5570 thin clients are brominated flame retardant and polyvinyl chloride free (BFR/PVC-free); meeting the evolving definition of "BFR/PVC-free" as set forth in the "iNEMI Position Statement on the 'Definition of Low-Halogen Electronics (BFR/CFR/PVC-Free).'" Plastic parts contain <1,000 ppm (0.1 percent) of bromine (if the Br source is from BFRs) and <1,000 ppm (0.1 percent) of chlorine (if the Cl source is from CFRs or PVC or PVC copolymers). All printed circuit board (PCB) and substrate laminates contain bromine/chlorine total <1,500 ppm (0.15 percent) with a maximum chlorine of 900 ppm (0.09 percent) and maximum bromine being 900 ppm (0.09 percent). Service parts after purchase may not be BFR/PVC-free. Power supply, power cords, keyboard, mouse, and DVI-to-VGA adapter are not BFR/PVC free. 2. Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited. 3. ENERGY STAR® is a registered mark owned by the U.S. government. EPEAT® registered where applicable/supported, see [www.epeat.net](http://www.epeat.net/) for registration status by country

## High-Definition Video Conferencing with HP Thin Clients, continued

### Hardware Component Specifications

<b>Logitech HD Webcam B990</b>	<b>Sensor</b>	High quality 5M pixel sensor for superior low-light behavior, better image quality and wider field of view; 5x advanced zoom
	<b>H.264 Encoder</b>	On-board H.264 for greater video compression; high definition video calling resolution up to 720p at 30fps
	<b>Lens</b>	Carl Zeiss lens with autofocus
	<b>Audio</b>	Dual microphone stereo audio
	<b>Indicators</b>	LED arcs for call ringing and call active
	<b>Clip</b>	Sleek ID, clip and rubberized contact for secure placement on TVs, notebooks and LCD monitors
	<b>Connection</b>	Plug-and-play USB

### Software Component System Requirements

<b>Avistar C3 Integrator™</b>	<b>Client/Terminal Operating System</b>	Windows 7, Windows Vista SP1, Windows XP SP3, Windows Embedded Standard 2009 SP3, Windows XP Embedded SP2 or SP3
	<b>Memory</b>	Minimum 768 MB
	<b>Disk space:</b>	At least 50 MB available
	<b>Network interface</b>	Full-duplex Ethernet TCP/IP local network connection
	<b>Direct X</b>	DirectX 9 or greater
	<b>VGA adapter</b>	Minimum 24 bit video card and driver that support DirectShow overlays, VMR7 or greater. Minimum 8 MB video RAM recommended
	<b>Privileges</b>	Administrator privileges are required for installation
	<b>USB port</b>	USB port to support a camera

## For more information

HP Thin Computing – [www.hp.com/go/thincomputing](http://www.hp.com/go/thincomputing)

Citrix XenDesktop 5 – [www.citrix.com/xendesktop](http://www.citrix.com/xendesktop)

Logitech Webcams – [www.logitech.com](http://www.logitech.com)

Avistar C3 Integrator™ – [www.avistar.com](http://www.avistar.com)

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