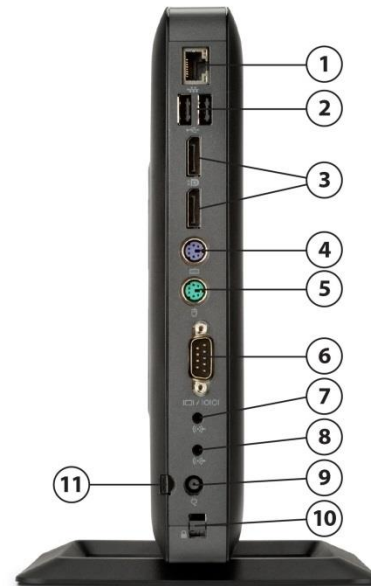


Overview

HP t620 Thin Client



FRONT



BACK

- 1 Power button (with integrated power indicator light)
- 2 Flash memory activity indicator light
- 3 Hi-Speed USB 2.0 ports
- 4 SuperSpeed USB 3.0 ports
- 5 3.5 mm audio port (mic/line in)
- 6 3.5 mm audio port (headphone/line out)
- 7 VESA 100 mounting system
- 8 System stand

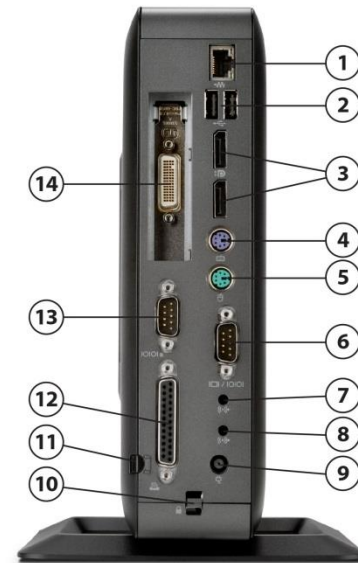
- 1 Gigabit Ethernet RJ-45 connector
- 2 Hi-Speed USB 2.0 ports (2)
- 3 DisplayPort 1.2 digital video outputs (2)
- 4 PS/2 keyboard connector
- 5 PS/2 mouse connector
- 6 Optionally configured as serial, VGA, or SC Fiber Optic
- 7 Audio line in port
- 8 Audio line out port
- 9 +19V DC power input
- 10 Cable lock slot
- 11 Power cord retention clip

Overview

HP t620 PLUS Thin Client



FRONT



BACK

- 1 Power button (with integrated power indicator light)
- 2 Flash memory activity indicator light
- 3 Hi-Speed USB 2.0 ports
- 4 SuperSpeed USB 3.0 ports
- 5 3.5 mm audio port (mic/line in)
- 6 3.5 mm audio port (headphone/line out)
- 7 VESA 100 mounting system
- 8 System stand

- 1 Gigabit Ethernet RJ-45 connector
- 2 Hi-Speed USB 2.0 ports (2)
- 3 DisplayPort 1.2 digital video outputs (2)
- 4 PS/2 keyboard connector
- 5 PS/2 mouse connector
- 6 Optionally configured as serial, VGA, or SC Fiber Optic
- 7 Audio line in port
- 8 Audio line out port
- 9 +19V DC power input
- 10 Cable lock slot
- 11 Power cord retention clip
- 12 Parallel port
- 13 Serial port
- 14 PCI Express (half-height) card slot (in quad-head video configurations - 2 x DVI-I ports)

Overview

HARDWARE FEATURES:

- Processor/graphics options:
 - t620: AMD G-Series GX-415GA SOC: 1.5 GHz quad-core APU; Radeon HD 8330E graphics
AMD G-Series GX-217GA SOC: 1.65 GHz dual-core APU; Radeon HD 8280E graphics
 - t620 PLUS: AMD G-Series GX-420CA SOC: 2.0 GHz quad-core APU; Radeon HD 8400E graphics
- DDR3L SDRAM system memory; two SODIMM slots; up to 16 GB supported
- Solid state flash memory storage; mSATA and M.2 form factors²
- Active thermal management technology monitors component operating temperatures, throttles SOC operation if appropriate, and prevents unit thermal shutdown
- 2 x digital DisplayPort 1.2 video outputs supporting up to 2560 X 1600; optional 1 x analog VGA output for legacy monitors
- HP t620 PLUS can be configured to support quad video displays with an AMD FirePro 2270 dual head discrete video card; when combined with on-board DisplayPort video outputs this configuration provides up to 4 digital video outputs
- Network connection supported via an integrated Gigabit Ethernet NIC. An optional Fiber Fast Ethernet NIC or Fiber Gigabit NIC is available as well as optional Wi-Fi adapters including antennas integrated internally in the chassis.
NOTE: Fiber optic and Wi-Fi NIC options cannot be supported together³
- USB ports: 2 x SuperSpeed USB 3.0 and 2 x Hi-Speed USB 2.0 on front, 2 x Hi-Speed USB 2.0 on rear, and 2 x Hi-Speed USB 2.0 secured inside the chassis.
- Legacy ports (t620): 1 x PS/2 keyboard and PS/2 mouse, and 1 x serial or VGA (factory-configurable port)
- Legacy ports (t620 PLUS): 1 x PS/2 keyboard and PS/2 mouse, 2 x serial, and 1 x parallel
- Integrated PC speaker for basic audio playback; 3.5 mm audio ports on front and rear supporting headphones, microphones and external speaker systems
- Security features: TCG certified TPM chipset¹, BIOS designed to address NIST SP 800-147 guidelines, cable lock slot, and power cord retention clip to prevent accidental disconnects, rear port cover & case intrusion detection options; 2 internal USB 2.0 ports for securing USB flash drives and dongles
- t620 PLUS expansion: Low profile PCI Express x4 (physically x16) expansion slot (not available with quad-head configuration)
- ENERGY STAR[®] certified and EPEAT[®] Gold registered in the United States (except for some models with quad-head video or Fiber NIC networking options installed). See <http://www.epeat.net> for registration status in other countries.
- Post-consumer recycled plastics content greater than 25% total unit plastics (by weight)
- Low halogen⁴ material content
- All models TAA Compliant (in North America & EMEA) TAA models available in APJ by request

¹With 32-bit operating system, memory above 3.2 GB may not be available due to operating system limitations

²GB = 1 billion bytes; actual formatted capacity is less

³Wireless access point and Internet access is required; availability of public wireless access points is limited

⁴This product is low halogen except for power cords, as well as the optional Fiber Optic NIC module; service parts obtained aftermarket may not be low halogen.

HP ThinPro / Smart Zero Core operating system:

- HP ThinPro and HP Smart Zero Core are HP's purpose-built thin client operating systems based on Linux
- HP ThinPro offers an easy-to-use, easy-to-configure, locked-down interface -- HP Connection Manager -- that allows administrators to quickly create server connections for end users.

Overview

- HP Smart Zero Clients using Smart Zero Client Core boot directly into a user log-in on the server or portal for which they are configured. No local thin client user interface means the end-user can get to work without special training on the access device. The Smart Zero Core technology reduces the administrative burden by enabling the IT administrator to perform the configuration settings on the server and the settings will be automatically applied to HP thin clients plugged in to the network.
- ICA and RDP support for accessing Citrix and Windows resources
- VMware Horizon View PCoIP support for accessing VMware Horizon View sessions
- VDI broker support includes VMware Horizon View, Citrix XenDesktop (with CDA mode utility),
- Multimedia and USB redirection support
 - Citrix HDX MediaStream (multimedia redirection)
 - Citrix HDX Plug-n-Play (USB redirection)
- Improved end user experience with HP Velocity
 - Enables IT managers to monitor network activity and optimize end-user experience
 - Intelligently reduces network retransmissions due to packet loss, providing a better user experience
 - Built in monitors enable remote debugging and troubleshooting.
 - Available only on HP thin clients.
 - For details visit: <http://www.hp.com/go/velocity>

Windows® Embedded Standard 7E (32-bit):

- Microsoft® Windows Embedded Standard 7E SP1 with support for RemoteFX and local applications, providing a richer user experience
- Internet Explorer 9 for genuine Internet Explorer browsing and Web-application interfaces
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Latest protocol support from Citrix On-Line Plug in (ICA), RDP w/RemoteFX, and VMware Horizon Client
- Enhanced Write Filter and File-Based Write Filter provide complete flexibility to protect the entire Flash disk, or configure areas of the disk for persistent access by local applications
- Microsoft Firewall for enhanced data security
- Support 802.1x LAN-based authentication for greater security
- HP Universal Print Driver provides instant access to a range of HP print devices without downloading separate
- Improved end user experience with HP Velocity
 - Enables IT managers to monitor network activity and optimize end-user experience
 - Intelligently reduces network retransmissions due to packet loss, providing a better user experience
 - Built in monitors enable remote debugging and troubleshooting.
 - Available only on HP thin clients.
 - For details visit: <http://www.hp.com/go/velocity>

Windows® Embedded Standard 7P (64-bit):

All the features of WES 7E, plus the following:

- A 64-bit OS for improved performance and support for larger memory installations (up to 16 GB)
- Windows Touch (Multi-touch support) for touch-screen monitors
- Multi-language support brings multilingual capabilities letting users select a preferred display language, or to easily install a number of other languages
- DirectAccess feature allows remote users to securely access enterprise shares, websites, and applications without connecting to VPN
- BrancheCache WAN optimization technology

Overview

- AppLocker application “whitelisting”
- AntiMalware and Windows Defender software providing additional protection from virus, worms, and spyware
- Snipping tool for easy screen capture copying and pasting
- Remote media streaming to enhance multimedia user experience
- Photo Viewer for easy image viewing

Windows® Embedded 8 Standard (64-bit):

- The newest Microsoft embedded software based on Windows 8
- A 64-bit operating system for improved performance and support for larger memory installations (up to 16 GB)
- Smooth, immersive experiences with technologies like advanced Multi Touch and Windows 8 applications
- The latest RDP and Remote FX client software
- Windows Embedded 8 Standard offers a secure platform that is intelligent systems ready
- Latest Internet Explorer 10 for genuine Internet Explorer browsing, HTML 5 support and Web-application interfaces
- Latest protocol support from Citrix, VMware and RDP
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Improved end user experience with HP Velocity
 - Enables IT managers to monitor network activity and optimize end-user experience
 - Intelligently reduces network retransmissions due to packet loss, providing a better user experience
 - Built in monitors enable remote debugging and troubleshooting.
 - Available only on HP thin clients.
 - For details visit: <http://www.hp.com/go/velocity>
- All Windows Embedded 8 Standard devices must be activated. Customers have the option via Internet connection, telephone, or indirectly through a proxy for large deployments.

Windows® 10 IoT Enterprise Operating System:

- The newest Microsoft embedded operating system based on Windows® 10
- A 64-bit operating system for improved performance and support for larger memory installations
- Smooth, immersive experiences with technologies like advanced Multi Touch and Windows® 10 applications
- The latest RDP and Remote FX client software
- Latest Internet Explorer 11 for genuine browsing, HTML 5 support and web-application interfaces
- Latest protocol support from Citrix®, VMware® and RDP
- Excellent rich multimedia experience and enhanced USB device support in VDI environments
- Improved end-user experience with HP Velocity
 - Enables IT managers to monitor network activity and optimize end-user experience
 - Intelligently reduces network retransmissions due to packet loss, providing a better user experience
 - Built in monitors enable remote debugging and troubleshooting

For details visit: <http://www.hp.com/go/velocity>

Warranty:

HP Total Care Warranty and Services: limited three-year hardware warranty in most regions. HP Care Pack Services extend service contracts beyond your standard warranties. For more details visit <http://www.hp.com/go/lookuptool>

Technical Specifications

OPERATING SYSTEMS:

- HP ThinPro (32-bit)
- HP Smart Zero Core (32-bit)
- Windows® Embedded Standard 7E (32-bit)
- Windows® Embedded Standard 7P (64-bit)
- Windows® Embedded 8 Standard (64-bit)
- Windows® 10 IoT Enterprise (64-bit)

PROCESSOR / CHIPSET

t620 Thin Client:	AMD G-Series GX-217GA SOC; 1.65 GHz dual-core APU; Radeon HD 8280E GPU AMD G-Series GX-415GA SOC; 1.5GHz quad-core APU; Radeon HD 8330E GPU
t620 PLUS Thin Client:	AMD G-Series GX-420CA SOC; 2.0 GHz quad-core APU; Radeon HD 8400E GPU

MEMORY

Type:	DDR3L SDRAM
Data Transfer Rate:	1,600 MT/s
Peak Transfer Rate:	12,800 MB/s
Number of Slots	2 x SODIMM
Capacities:	2 GB, 4 GB, 8 GB, 16 GB
Reserved for Graphics:	512 MB

NOTE: The system's Graphics Processing Unit (GPU) uses part of the total system memory. System memory dedicated to graphics performance is not available for use by other programs

STORAGE

Type:	NAND flash memory; non-volatile
Number of Sockets:	1 x M.2 1 x mSATA (not present on all systems)
	NOTE: Early production systems were built with both a mSATA socket and a M.2 socket to facilitate a transition from one form factor to the other during the product's production life. The mSATA socket was subsequently removed from production at the end of 2014; since that time all systems are built with a single M.2 socket
Capacities:	8 GB, 16 GB, 32 GB, 64 GB, 128 GB

Note: the t620 & t620 PLUS thin clients only support a single flash memory module. Systems will ship with either a mSATA module or a M.2 module depending upon supply and availability. As of the beginning of 2015 all production moved to M.2 only.

Technical Specifications

GRAPHICS

Mode	Refresh Rate (Hz)
800 x 600	60, 75, 85
1024 x 600	60, 75, 85
1024 x 768	60, 70, 75, 85
1152 x 864	60, 75, 85
1280 x 720	60, 75, 85
1280 x 768	60, 75, 85
1280 x 800	60
1280 x 960	60, 75, 85
1280 x 1024	60, 75, 85
1366 x 768	60
1400 x 1050	60, 75, 85
1440 x 900	60, 75, 85
1600 x 900	60
1600 x 1200	60, 75, 85
1680 x 1050	60
1920 x 1080	60, 75, 85
1920 x 1200	60, 75
2048 x 1536 (DisplayPort only)	60
2560 x 1440 (DisplayPort only)	60
2560 x 1600 (DisplayPort only)	60

NOTE: This table represents a sample of possible modes that this controller is capable of displaying but various factors such as the capability and EDID information returned by the attached monitor, the interface used (DVI-I/DisplayPort or optional D-SUB with dongle), and dual monitor mode may limit the availability of modes, color depth, and/or refresh rate

Technical Specifications

AMD FirePro™ 2270 Multi-View Professional Graphics dual-head graphics card¹

Up to two monitor ports on the dual-head card work in addition to the two monitor ports on the motherboard to provide quad-head capabilities at a bargain price. Optional output dongles can provide dual DisplayPort outputs from the graphics card if desired. With the DisplayPort adapter on the graphics card and on the motherboard, up to four 2560x1600 displays can be connected simultaneously.

- Factory installed option; installed in the system's PCI Express expansion slot
- 512MB memory
- PCIe 2.1, x1
- DMS-59 (ships with dual DVI-I dongle)
- Maximum resolution as shipped
 - DisplayPort: 2 x 2560x1600 (on motherboard)
 - DVI: 2 x 1920 x 1200 (from graphics card)
- Maximum resolution with optional DMS-59 to DisplayPort adapter:
 - 4 x DisplayPort: 2560 x 1600 (2 on motherboard & 2 from graphics card)
- OpenGL 4.1

¹**NOTE:** If you attach the primary display to the AMD 2270 video card, the BIOS post information will not be displayed to the monitor at system startup. The display will turn on when the operating system starts. To view BIOS post information, attach the primary display to DP connectors on the rear panel.

INPUT / OUTPUT

(peripheral support)

Keyboard	USB or PS/2 (varies by region)
Mouse	USB or PS/2 (varies by region)
Printer	Local and/or network printers (RDP, ICA, LPD)
Display / Monitor	All models include two (2) DisplayPort with multi stream video outputs Systems can be configured with an optional VGA analog video output. When configured with the VGA output only one DisplayPort output is active. t620 PLUS models can be configured with an optional AMD FirePro 2270 discrete graphics solution that provides two (2) additional digital video streams for a total of four (4) video outputs

AUDIO/VIDEO

Audio Subsystem	<ul style="list-style-type: none"> • Internal amplified speaker system for basic audio playback • 3.5 mm headphone socket (front access) • 3.5 mm microphone socket (front access) • 3.5 mm line out socket (rear access) • 3.5 mm line in socket (rear access) • Full 24-bit stereo capable • Up to 192-kHz sample rate
Audio CODECs	<ul style="list-style-type: none"> • MP3 • AAC Stereo • HE AAC • Includes hardware acceleration support
Video CODECs	<ul style="list-style-type: none"> • MPEG-4 part 2 (DivX, Xvid) • MPEG-4 part 10 (H.264, AVC) • WMV 7/8/9 VC-1 & ASF Demuxer • Includes hardware acceleration support

Technical Specifications

HARDWARE SECURITY

- Security lock slot (cable lock sold separately)
- Power cord retention clip

ETHERNET NETWORKING

Hardware Networking:	<ul style="list-style-type: none"> • Gigabit Ethernet (RJ-45) • Wake on LAN (WOL) • PXE • TCP/IP with DNS and DHCP 	
Software Networking:	HP ThinPro Smart Zero Core	Windows Embedded
Point-to-Point Protocol (PPP)		✓
Point-to-Point over Ethernet (PPPoE)		✓
Direct Connection through RS-232	✓	✓
Point-to-Point Tunneling Protocol (PPTP)	✓	✓
Layer-2 Tunneling Protocol (L2TP)	✓	✓
Server Network Time Protocol (SNTP)	✓	✓

WI-FI NETWORKING

Adapter Options:	<ul style="list-style-type: none"> • Broadcom 802.11n • Broadcom 801.11ac • Intel 802.11ac
Form Factor:	PCI Express mini card with dual internal antennas
Security:	<p>Supports 64- and 128-bit WEP, WPA, WPA2, AES, TKIP</p> <p><u>HP ThinPro and HP Smart Zero Technology:</u> 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, LEAP</p> <p><u>Windows Embedded Standard 7E, 7P and 8S:</u> 802.1x authentication types: EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, LEAP</p>

Technical Specifications

FIBER OPTIC NETWORK INTERFACE

Adapter Options:	Allied Telesis AT-27MINI Fiber Fast Ethernet Network Interface Allied Telesis AT-29MINI Fiber Gigabit Network Interface
Form Factor:	PCI Express mini card
Management:	WMI, ACPI 2.0/w01, PXE 2.1 boot ROM, SNMP
Ethernet:	IEEE 802.1p (Quality of Service) IEEE 802.2 (LLC) IEEE 802.3ac (MAC) IEEE 802.3u (100Mbps) IEEE 802.1as (Audio Bridging) P802.1Qav P802.1Qat (SRP) 1588-2000 (PTP)
Connector:	SC
Optical Specifications:	Output Optical Power -20 (min) -17 (typ) -14 (max) dBm Optical Sensitivity -34 (typ) -32 (max) dBm
Maximum Cabling Distance:	Full-duplex Up to 2000 m (5,560 ft) Half-duplex Up to 412 m (1,351 ft)
Status Indicators:	LED 1 port <ul style="list-style-type: none"> • On (link up) • Blink (Activity) • Off (link down)
Power Consumption:	2 Watts (typ)
Compliance	RoHS, UL, FCC/EN55022 Class A, TUV, EN55024, CE, C-TICK, VCCI

Technical Specifications

I/O PORTS, EXPANSION SLOTS & CONNECTORS

t620 Thin Client	t620 PLUS Thin Client
4 x Hi-Speed USB 2.0 ports (two in front, two in rear) 2 x SuperSpeed USB 3.0 ports (in front) 2 x Hi-Speed USB 2.0 ports (inside chassis) 2 x DisplayPort 1.2 digital video outputs (rear) 2 x PS/2 keyboard/mouse ports (rear) Factory configured with one of the following: 1 x serial port 1 x VGA analog video output 1 x Fiber Optic NIC with SC connector 1 x RJ45 Ethernet port (rear) 1 x 3.5 mm headphone port (front) 1 x 3.5 mm microphone port (front) 1 x 3.5 mm audio line in port (rear) 1 x 3.5 mm audio line out port (rear)	4 x Hi-Speed USB 2.0 ports (two in front, two in rear) 2 x SuperSpeed USB 3.0 ports (in front) 2 x Hi-Speed USB 2.0 ports (inside chassis) 2 x DisplayPort 1.2 digital video outputs (rear) 2 x PS/2 keyboard/mouse ports (rear) 1 x serial port (rear) 1 x parallel port (rear) Factory configured with one of the following: 1 x serial port (2 nd rear port) 1 x VGA analog video output 1 x Fiber Optic NIC with SC connector 1 x RJ45 Ethernet port (rear) 1 x 3.5 mm headphone port (front) 1 x 3.5 mm microphone port (front) 1 x 3.5 mm audio line in port (rear) 1 x 3.5 mm audio line out port (rear) 1 x half height PCI Express expansion slot (rear) X16 slot wired as a x4

NOTE: The t620 /t620 PLUS Thin Client base system provides a total of two video output streams regardless of the number of video outputs configured. When the system is configured with the optional VGA analog video output, the devices connected at boot up or subsequently disconnected determine which of the three video outputs are enabled and which is disabled. The presence of the optional VGA output alone does not cause the disablement of either of the standard DisplayPort outputs.

- If the VGA output is connected at boot up, then only one DisplayPort output may be used; the second DisplayPort output becomes disabled. If the VGA output is subsequently disconnected, then both DisplayPort outputs become enabled.
- If both DisplayPort outputs are connected at boot up, the VGA output is disabled. If one or both DisplayPort outputs are subsequently disconnected, the VGA output becomes enabled.

SERVER OPERATING SYSTEM COMPATIBILITY / SUPPORT

Citrix XenApp 5 and later
 Citrix XenDesktop 3 and later
 Citrix Presentation Server 4.0 and later
 Windows Server 2003
 Windows Server 2008r2 Terminal Services
 Windows 2012 Server Remote Desktop Services
 VMware Horizon View Virtual Desktop Infrastructure

Software

Host Environment	Protocol	HP ThinPro HP Smart Zero Core	WES 7E WES 7P WE 8S	WIN 10 IoT
Microsoft Remote Desktop Services	Remote FX (RFX), RDP	✓	✓	✓
Citrix	ICA, HDX	✓	✓	✓
VMware Horizon View	RDP, PCoIP	✓	✓	✓

Protocol Clients	ThinPro				
	Smart Zero Core	WES 7E	WES 7P	WE 8S	WIN 10 IoT
Citrix Receiver*	✓	✓	✓	✓	✓
Microsoft Remote Desktop Client	FreeRDP	✓	✓	✓	✓
VMware™ Horizon View™ Client*	✓	✓	✓	✓	✓
Remote Graphics Software (RGS)	via add-on	✓	✓	✓	✓
HP TeamTalk Terminal Emulator	✓	via add-on	via add-on	via add-on	via add-on
Free RDP	✓	N/A	N/A	N/A	N/A

*NOTE: These features are included in the Windows Embedded 8 Standard image, but they are disabled. To unlock these features, the "Windows Embedded 8 Standard Enterprise Kit" must be purchased through Microsoft volume licensing.

Browser Support	ThinPro Smart Zero Core	WES 7E	WES 7P	WE 8S	WIN IoT
Mozilla Firefox	✓	N/A	N/A	N/A	N/A
Internet Explorer	N/A	✓	✓	✓	✓

Software

Security	ThinPro				
	Smart Zero Core	WES 7E	WES 7P	WE 8S	WIN IoT
Smart Card	✓	✓	✓	✓	✓
Log-on Manager	✓	✓	✓	✓	✓
Read only Operating System	✓	✓	✓	✓	✓
802.1x	✓	✓	✓	✓	✓
Operating System Write Filter	N/A	EFW, FBWF	EFW, FBWF	UWF, FBWF	UWF
Microsoft Firewall	N/A	✓	✓	✓	✓

Management Tools	ThinPro				
	Smart Zero Core	WES 7E	WES 7P	WE 8S	WIN 10 IoT
HP Device Manager	✓	✓	✓	✓	✓
HP ThinState	✓	✓	✓	✓	✓
HP Easy Tools	✓	via add-on	via add-on	via add-on	N/A
HP Smart Zero Client Services	✓	N/A	N/A	N/A	N/A
Microsoft SCCM/EDM agent	N/A	✓	✓	✓	✓

Additional Components	ThinPro				
	Smart Zero Core	WES 7E	WES 7P	WE 8S	WIN 10 IoT
HP Velocity	✓	✓	✓	✓	✓
HP Easy Shell	N/A	✓	✓	✓	✓
HP Universal Print Driver	N/A	✓	✓	✓	✓
Windows Media Player	N/A	✓	✓	✓	✓
Microsoft Direct Access	N/A	N/A	✓	✓	✓
Microsoft BranchCache	N/A	N/A	✓	✓	✓
Microsoft AppLocker	N/A	N/A	✓	✓	✓
Microsoft Sideload	N/A	N/A	✓	✓	✓

NOTE: Other add-on software available (see: <http://www.hp.com/support> for latest list of available add-ons). Software performance and support may vary depending on customer environment and backend.

Software

TEXT AND GRAPHICS TERMINAL EMULATIONS

(provided by HP TeemTalk 7 in HP ThinPro & WES 7 operating systems)

Emulation	Terminal ID
HP 700-92/96	70092, 70094, 70096, 2392A, 2622A
IBM3151	Mod11, Mod31
IBM3270	3278-2 (24x80), 3278-3 (32x80), 3278-4 (43x80), 3278-5 (27x132), 3278-2-E (24x80), 3278-3-E (32x80), 3278-4-E (43x80), 3278-5-E (27x132), 3279-2 (24x80), 3279-3 (32x80), 3279-4 (43x80), 3279-5 (27x132), 3287-1
IBM5250	5291-1, 5292-2, 5251-11, 3179-2, 3196-A1, 3180-2, 3477-FC (27x132), 3477-FG (24x80), 3486-BA, 3487-HA, 3487-HC, 3812-1
VT52, VT100, VT100+, VT500 (7- or 8-bit)	VT100, VT101, VT102, VT125, VT131, VT132, M2200, VT220, VT240, VT320, VT340, VT420, VT510, VT520, VT525
VT HP220, VT UTF8	VT100, VT101, VT102, VT125, VT220, VT240, VT320, VT340, VT420, VT131, VT132, M2200, VT510, VT520, VT525

NOTE: Wireless features, performance and support may vary depending on environmental variables such placement, settings and firmware of your access points. Please contact your wireless vendor for support of your wireless environment.

LANGUAGES (local user interface)

Available for Windows Embedded Standard 7: English, French, German, Spanish, Dutch, Norwegian, Korean, Simplified Chinese, Traditional Chinese, Japanese, Russian, and Arabic

Available for HP ThinPro / Smart Zero Core: English, French, German, Spanish, Korean, Simplified Chinese, Traditional Chinese, and Japanese

Environmental

WEIGHTS & DIMENSIONS

	t620 Thin Client	t620 PLUS Thin Client
W x D x H: (vertical orientation)	220 x 40 x 240 mm 8.7 x 1.6 x 9.5 in	220 x 65 x 240 mm 8.7 x 2.6 x 9.4 in
Volume:	2.11 liter	3.43 liter
System Weight	1.36 kg 3.0 lb	2.04 kg 4.5 lb
Shipping Weight	4.63 kg 10.21 lb	5.06 kg 11.16 lb

NOTE: All measurements are approximate; the addition of optional modules will increase the weight

EXTERNAL POWER SUPPLY

t620 Thin Client		t620 PLUS Thin Client	
65W external power adapter		85W external power adapter	
Worldwide auto-sensing 100-240 VAC, 50-60 Hz		Worldwide auto-sensing 100-240 VAC, 50-60 Hz	
Energy-saving automatic power-down		Energy-saving automatic power-down	
Surge-tolerant		Surge-tolerant	
External power adapters are sourced from a number of suppliers in order to ensure adequate supply and availability is maintained. The actual dimensions of the power brick will vary by supplier.			
Chicony	126 x 50 x 30 mm	Bestec	132 x 55.5 x 30.6 mm
Delta	108 x 46 x 29.5 mm	LiteOn	146 x 55 x 31 mm
Bestec	116 x 50 x 30 mm		
LiteOn	113.5 x 55 x 30 mm		

ENVIRONMENTAL

Operating Temperature Range:	<u>Standard</u> 50° to 104° F (10° to 40° C)
	<u>Using Quick Release with a flat panel monitor</u> 50° to 95° F (10° to 35° C)
	<u>Using PCIe Expansion Card</u> 50° to 104° F (10° to 40° C)
	t620 / t620 PLUS with Fiber NIC: 50° to 95° F (10° to 35° C)
Non-operating Temperature Range:	-22° to 140° F (-30° to 60° C)
Humidity:	Condensing: 20% to 80% Non-condensing: 10% to 90%

NOTE: Specifications are at sea level with altitude derating of 1° C/300m (1.8° F/1000ft) to a maximum of 3 Km (10,000 ft), with no direct, sustained sunlight. Upper limit may be limited by the type and number of options installed.

Environmental

REGULATORY COMPLIANCE

Ergonomics: Approved

Safety: UL 1950, CSA 950; TÜV-GS (EN60 950); approved

RF Interference: FCC Class B; CE Mark; EN55022B; VCCI

Environmental Data

HP t620 Thin Client

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO Declaration
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	4.96 W	5.07 W	4.96 W
Normal Operation (Long idle)	4.51 W	4.58 W	4.55 W
Sleep	0.70 W	0.74 W	0.69 W
Off	0.53 W	0.56 W	0.53 W

Heat Dissipation*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	17 BTU/hr	17 BTU/hr	17 BTU/hr
Normal Operation (Long idle)	15 BTU/hr	16 BTU/hr	16 BTU/hr
Sleep	2 BTU/hr	3 BTU/hr	2 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive -2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 14.5% post-consumer recycled plastic (by wt.)
- This product is 94.4% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	118.8 g
Internal:	PLASTIC/Polyethylene low density	19.2 g
	PLASTIC/EPE-Expanded Polyethylene	62.7 g

Environmental Data

HP t620 PLUS Thin Client

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO Declaration
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

Energy Consumption (in accordance with US

ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	5.42 W	5.51 W	5.44 W
Normal Operation (Long idle)	5.02 W	5.11 W	5.03 W
Sleep	0.64 W	0.67 W	0.63 W
Off	0.44 W	0.48 W	0.44 W

Heat Dissipation*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	19 BTU/hr	19 BTU/hr	19 BTU/hr
Normal Operation (Long idle)	17 BTU/hr	17 BTU/hr	17 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive -2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 17.3% post-consumer recycled plastic (by wt.)
- This product is 95.6% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	118.8 g
Internal:	PLASTIC/Polyethylene low density	19.2 g
	PLASTIC/EPE-Expanded Polyethylene	48.3 g

Environmental Data

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at

http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for power cords
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Environmental Data

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

Options and Accessories (sold separately)

Category	Description	Part Number
Accessories	HP Quick Release Kit	EM870AA
	HP Integrated Work Center Stand	G1V61AA
	HP ProDisplay Companion Stand	J7V21AA
	HP t620 Rear Port Cover	F4N53AA
	HP t620 PLUS Rear Port Cover	F4N54AA
Memory Upgrade	HP 4 GB DDR3-1600 SODIMM Kit	B4U39AA/AT
	HP 8 GB DDR3-1600 SODIMM Kit	B4U40AA/AT
Communications	HP USB-to-Serial Adapter ¹	J7B60AA
	HP USB Business Webcam	D8Z08AA
Input Devices	HP PS/2 Keyboard	DT527A
	HP USB Keyboard	DT528A
	HP USB CCID Smartcard Keyboard	BV813AA
	HP USB CCID Smartcard Keyboard (bulk pack)	BT824A6
	HP Wireless Keyboard & Mouse (note: function keys do not operate with Smart Zero Core)	QY449AA
	HP PS/2 Optical Mouse	EY703AA
	HP USB Optical Scroll Mouse	DC172B
Graphics	DisplayPort to DVI-D Adapter	FH973AA/AT
	DisplayPort to VGA Adapter	AS615AA
	Display Port to HDMI adapter	BP937AA
	DisplayPort Cable Kit	VN567AA
	HP DMS-59 to dual VGA Adapter (for use with t620 PLUS quad-head models only)	GS567AA
	HP DMS-59 to dual DVI-I Adapter (for use with t620 PLUS quad-head models only)	DL139A
	HP DMS-59 to dual DisplayPort Adapter (for use with t620 PLUS quad-head models only)	XP688AA
Storage	HP 64GB M.2 Solid State Drive	F3V79AA
Security	HP Keyed Cable Lock	BV411AA

¹ Option, drivers, warranty, and support are available directly from third party.

² Drivers must be installed. For a complete list of monitors compatible with HP thin clients, it is important to cross-reference the supported video resolutions of the HP thin client to the supported resolutions of the monitor. Most HP monitors have one or more supported resolutions that match HP thin client products.

³ Supported on HP t620 WES7P and WE 8S thin clients

⁴ Multi-touch only supported on HP t620 WES7P and WE 8S thin clients

Summary of Changes

Date of change:	Version History:		Description of change:
	V1 to v2		
May 29, 2014	v4 to v5	Changed	Energy Star compliances and power specifications
		Added	Part numbers and ID PubNumber
June 30, 2014	v6 April 2014 to v7 June 30	Changed	Storage
		Added	Version number, At A Glance, Operating Systems, Memory, Storage, Monitor Configurations, Input/Output, Wireless LAN, HP Fiber Fast Ethernet Network Interface Card, I/O Port, Slots & Connectors, and Volume were revised.
		Removed	
October 24, 2014	From v7 to v8	Changed	Software compatibility matrix
		Removed	t620 Standard Chassis and flash drive options, Overview Software Features - Citrix and VMWare plugin options
February 4, 2015	From v8 to v9	Changed	Environmental data table refresh
March 2, 2015	From v9 to v10	Changed	Low Halogen for power cords and NIC Card notes in Overview and Environmental
March 24, 2015	From v10 to v11	Changed	Memory nomenclature, and changes throughout the document
July 22, 2015	From v11 to v12	Changed	Environmental data sections for both t620 and t620 PLUS
Jan 1, 2016	v12 to v13	Added	added Windows 10 content

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