Data sheet

HP Thin Client Family

Enjoy rich multimedia performance, enterprise level data security, simplified management, and lower costs with HP Thin Clients.

Monitor, keyboard, mouse, and integrated work center stand are sold separately

HP Zero Clients

Zero in on a better VMware client.
HP Zero Clients are designed for VMware environments with the latest PCoIP technology ideal for graphics-intensive applications that need workstation-like performance and support for dual monitors.[1] No operating system or moving parts mean HP Zero clients require zero management. Deployment is simple and viruses are history. As HP's most secure endpoints, HP Zero Clients keep your data safe in the datacenter—only pixels are transferred. Hardware USB authorization and fiber NIC[2] add extra layers of security. Designed for fast PCoIP, Amazon Workspace and VMware, HP Zero Clients are an ultra-low-cost-per-seat solution with ultra performance and reliability.

HP Thin Clients

Customize your level of performance, security and manageability.
Pair the thin client desktop form factor of your choice with the operating system of your choice, including Linux-based **HP Smart Zero Core** and **HP ThinPro**, or **Windows Embedded**. Choose the AMD processing power that matches your productivity needs, whether it's for mission-critical multimedia access, or everyday task-based demands. Support your growth with expansion options and legacy ports, choose native support for up to four digital displays, and maintain network adaptability with wired-in ethernet and Wi-Fi options. Get a cloud-ready and VDI-optimized thin client that's tested and certified for today's top ISV providers, including Citrix, VMware and Microsoft.

HP Mobile Thin Clients
Ultimate cloud convenience.
Mobile cloud computing is easier and more flexible than ever with HP Mobile Thin Clients. Employees can get the job done from just about anywhere thanks to professional cloud and VDI-optimized features with critical user and management software built right in. Windows-based programs and tools make it easy for everyone to log in and get to work with familiar tools and programs. No training required.

Operating Systems and Software

HP ThinPro OS

More flexibility. More freedom.
Get the highest customization per user with HP ThinPro—featuring a new, simplified graphical user interface. Customize properties, rich graphics, terminal emulation connections, and permissions. Print locally and enable concurrent virtualization sessions. Create multiple experiences and roll back to previous configurations with "snapshot" restore points. Switch between HP ThinPro and HP Smart Zero, or customize your own experience—all from one centralized interface.

For more information go to hp.com/go/thinpro

HP Smart Zero Core OS
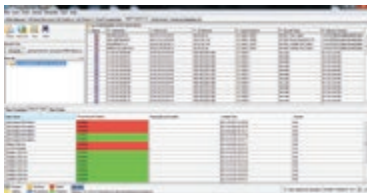
The smarter zero client.
Configure it and forget it. It's that easy with the smarter HP Zero Client experience provided by HP Smart Zero Core technology. Everyone wins with an easy-to-navigate ecosystem for end users and simple setup and maintenance for IT that doesn't require specialized administrative support. Switch between HP Smart Zero and HP ThinPro, or customize your own experience—all from one centralized interface.

HP and Windows Embedded OS

A familiar interface.
Work efficiently with Windows Embedded, the thin client operating system you're already well-acquainted with. Reduce the cost of training and tools and make maintenance and roll-outs a breeze. Help prevent unauthorized updates and viruses with an integrated Write Filter. Take advantage of broad-range support for peripherals, drivers, and applications.
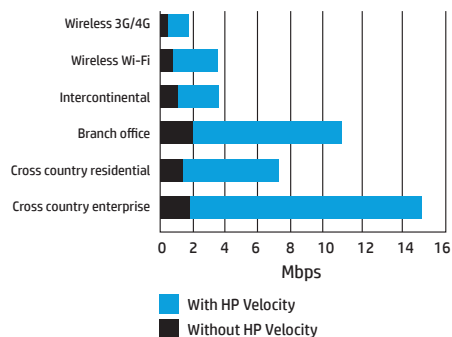
HP Device Manager

Making your life easy to manage.
HPDM provides full life cycle management for HP Thin Clients; from initial discovery, deployment and configuration to maintenance and EOL of product. IT administrators can control and make decisions about their IT resources locally or remotely with HPDM which provides detailed asset information through a simple console "dashboard". With just one software you can do it all—track, configure, upgrade, clone, and manage up to thousands of thin client devices. So, kick back and relax. We do the hard work so you can focus on your key business initiatives. Device deployment, task automation, compliance management, and policy-based security management.

For more information go to hp.com/go/hpdm

HP Velocity

Accelerate network performance.
Improve network performance and the end-user experience with HP Velocity software, which optimizes network traffic for remote desktops and application streaming, IDs and fixes bottlenecks, and simplifies IT troubleshooting.

For more information go to hp.com/go/velocity

Network performance improvements with HP Velocity
Figure 1. Effective network performances seen by user under different network conditions.

Mbps

■ With HP Velocity
■ Without HP Velocity

HP EasyShell

Quick. Simple. Customized.
Make your HP Thin Client Windows Embedded user experience easier than ever with HP Easy Shell. Customize the intuitive interface and level of protection to fit your needs, and enjoy targeted control at a great price so you can make the most of your cloud infrastructure, VDI, and kiosk environments.

For more information go to hp.com/go/easyshell

HP True Graphics

True 3D[3] delivery you have to see to believe.
Achieve breakthrough loss-less video and graphics presentation from the cloud with HP True Graphics[4] which offloads rich multimedia content to your GPU HW decoder so your CPU can boost the efficiency of your thin client and scale easily for heavy compute demands.

For more information go to hp.com/go/truegraphics

HP Remote Graphics Software

Work virtually anywhere.
Access your workstation- or server-based graphic-rich applications and collaborate remotely in real time from any PC, Thin Client or Windows tablet with HP Remote Graphics Software (RGS).[5]

For more information go to hp.com/go/rgs

HP Thin Client Portfolio

Series	Zero	Smart Zero	Thinpro, Smart Zero and Windows Embedded*			
Platforms	t310/ t310 AiO	t410/t410 AiO	t420	t520	t620/t620 PLUS	t820
Processor and memory						
Processor	TERA2321 PCoIP Zero Client processor	Texas Instruments TMS320 DM8148 ARM® Cortex™–A8	AMD G-Series Systemon-Chip (SOC); 1.0 GHz dual core APU; AMD Radeon HD GPU	AMD GX-212JC 1.2GHz dual-core SOC APU with AMD Radeon HD Graphics[6]	AMD GX-217GA Dual-Core APU with AMD Radeon HD 8280E graphics (1.65 GHz); AMD GX-415GA quad-core[7] APU with AMD Radeon HD 8330E (1.5 GHz); AMD GX-420CA quad-core APU with AMD Radeon HD 8400E graphics (2 GHz)	Intel® Core™ i5-4570S quad-core 2.9 GHz Processor with Intel HD 4600 Graphics Intel® Pentium™ G3220 3.0 GHz with Intel HD Graphics
Flash/RAM[8]	32 MB/512 MB	4GB/1GB eMMC 2 GB eMMC	2 GB DDR3 SDRAM; 1,066 MT/s data transfer rate	32GB/4-8GB	16 GB/4-16 GB	16 GB SSD/4-16 GB
Video and audio (All HP desktop thin clients support widescreen resolutions and headphone/mic)						
Maximum resolution[9]	**t310** 1920 x 1200 2560 x 1600[10] **t310 AiO** 1920 x 1080	**t410** 1920 x 1200 **t410 AiO** 1366 x 768	1920 x 1200	1920 x 1200	2560 x 1600	2560 x 1600
Monitor support[11]	**t310** DVI-I and DVI-D **t310 AiO** DVI-I and VGA	**t410** VGA, DisplayPort 1.1a **t410 AiO** Built-in Monitor	1 x DVI-D digital video outputs 1 x VGA analog video output	2 x DisplayPort, 1 x VGA	2 x DisplayPort 1.2, or 1 x DisplayPort 1.2 and 1 x VGA (some models) PLUS: optional graphics configurations up to 4 monitors	2 x DisplayPort 1.2 ports plus VGA port support up to 3 monitors when configured with an Intel Core i5 CPU and utilizing the on-board Intel® HD 4600 Graphics card.
Touchscreen support[12]	No	No	No	No	Yes	Yes
Networking						
Integrated Networking	10/100/1000 Mbit/ sec Ethernet	10/100/1000 Mbit/sec Ethernet 10/100 Ethernet when using Power over Ethernet (POE)	10/100/1000 GbE	10/100/1000 GbE Mbit/sec Ethernet	10/100/1000 Mbit/sec Ethernet	10/100/1000 Mbit/sec Ethernet
Networking Options	Wake on LAN (WoL) using magic packet.	N/A	Optional 802.11n 2x2 dual band Wi-Fi Adapter with Bluetooth	Optional wireless 802.11 a/g/n 2x2 dual and mini card with Bluetooth NIC[14], Wake on LAN module	Broadcom 802.11 a/b/g/n with dual antennas on select models[13]; Broadcom 802.11ac[14] with dual internal antennas: HP 100 Mbps Mini-PCIe SC Fiber NIC factory-installed option (cannot be installed simultaneously with Wi-Fi)	Broadcom 802.11 a/b/g/n with dual antennas on select models[13] HP 100 Mbps Mini-PCIe SC Fiber NIC factory option (cannot be installed simultaneously with Wi-Fi)
I/O and expansion						
Serial/Parallel PS2/USB	0/0/0/6 (USB 2.0)	0/0/0/4	0/0/0/4	0/0/0/6 (2x USB 3.0, 4x USB 2.0)	Standard: 1/0/2/8 (2x USB 3.0; 4x USB 2.0; 2x USB 2.0 hidden) PLUS chassis: 2/2/2/8 (2x USB 3.0; 4x USB 2.0; 2x USB 2.0 hidden) (2x USB 3.0; 4x USB 2.0)	0/0/2/10 (6xUSB 2.0, 4xUSB 3.0)
Slot expansion options[15]	No	No	No	No	Standard: No PLUS: 1 HH PCIe x16 card slot (x4 channels)	No
HP cable lock slot	Yes	Yes	Yes	Yes	Yes	Yes
Environmental certifications						
ENERGY STAR®	Yes	Yes	Yes	Yes	Yes	Yes
EPEAT®[16]	Yes	Yes	Yes	Yes	Yes	Yes
Low Halogen[17]	N/A	Yes	Yes	Yes	Yes	Yes

HP Thin Client Portfolio

Series	Mobile			
Platforms	mt245	HP EliteBook 745	HP ElitePad 1000 G2 TC Tablet	HP ElitePad 1000 G2 Healthcare TC Tablet
Processor and memory				
Processor	AMD A6-6310 APU with Radeon™ R4 Graphics (1.8 GHz, up to 2.4 GHz, 2 MB cache, 4 cores)[6]	AMD A6 Pro-7050B 3.0 GHz dual-core SOC	Intel® Atom™ Z3795 (Quad-core 1.6 GHz base/2.39 GHz burst SoC BGA)[20]	Intel® Atom™ Z3795 (Quad-core 1.6 GHz base/2.39 GHz burst SoC BGA)[20]
Flash/RAM[8]	Up to 4 GB	Up to 4 GB	Up to 4 GB	Up to 4 GB
Video and audio (All HP desktop thin clients support widescreen resolutions and headphone/mic)				
Maximum resolution[9]	1920 x 1200	1920 x 1200	1920 x 1200	1920 x 1200
Monitor support[11]	1 VGA 1 HDMI	1 VGA 1 DisplayPort 1.2	1 HDMI	1 HDMI
Touchscreen support[12]	No	No	Yes	Yes
Networking				
Integrated Networking	10/100 Mbit/sec Ethernet: 802.11b/g/n (1x1) Wi-Fi and Bluetooth® 4.0 Combo[13]	10/100/1000 Mbit/sec Ethernet: 802.11b/g/n (2x2) Wi-Fi and Bluetooth® 4.0 Combo[13]	Broadcom 43241 802.11 a/b/g/n (2x2)+ BT 4 LE SDIO[13]	Broadcom 43241 802.11 a/b/g/n (2x2)+ BT 4 LE SDIO[13]
I/O and expansion				
Serial/Parallel PS2/USB	0/0/0/3 1 USB 3.0 2 USB 2.0	1 USB 3.0	1 USB 3.0	1 USB 3.0
Slot expansion options[15]	1 multi-format digital media card reader: Supports SD/SDHC/SDXC	No	1 multi-format digital media card reader: Supports SD/SDHC/SDXC	1 multi-format digital media card reader: Supports SD/SDHC/SDXC
HP cable lock slot	Yes	Yes	No	No
Environmental certifications				
ENERGY STAR®	Yes	Yes	Yes	Yes
EPEAT® [16]	Yes	Yes	Yes	Yes
Low Halogen[17]	Yes	Yes	Yes	Yes

HP Thin Client Portfolio

Software specifications	Windows Embedded 8 Standard	Windows Embedded Standard 7E[18]	Windows Embedded Standard 7P[18]	HP ThinPro	HP Smart Zero Technology[19]
Available Platforms					
	HP t520, HP t620/t620 PLUS, HP t820, HP ElitePad 1000 G2, HP ElitePad 1000 G2 Healthcare TC Tablet	HP t420, t520, HP t620, HP t620 PLUS, HP t820, HP EliteBook 745 G2, mt41	HP t520, HP t620, HP t620 PLUS, HP t820, mt245	HP t420, t520, HP t620, HP t620 PLUS	t410, t410 AiO, t420 HP t520, HP t620
Applications					
ICA/RDP	•	•	•	•	•
VDI brokers	•	•	•	•	•
HP TeemTalk Terminal Emulation	•	•	•	•	
X Windows (X11R6)				•	
Java Virtual Machine	Add-on	Add-on	Add-on		
API compatibility	Win64	Win32	Win32	Linux	
Local browser	Full Internet Explorer	Full Internet Explorer	Full Internet Explorer	Mozilla Firefox	Mozilla Firefox for Smart Zero Technology
Media player	•	•	•		
PDF Reader	•	•	•	•	
ThinPrint print client (TCP/IP)	Available directly from vendor	Available directly from vendor	Available directly from vendor	•	
Security					
File protection	Unified Write Filter	Enhanced Write filter or File based Write Filter	Enhanced Write filter or File based Write Filter	Read only file system	Downloads firmware at boot
Locked configuration/ accounts	•	•	•		
Firewall	Microsoft Firewall	Microsoft Firewall	Microsoft Firewall		
Smart Card support	•	•	•	•	•
Management and User Experience Software					
HP Device Manager	•	•	•	•	•
Microsoft SCCM		•	•		
Windows Embedded Device Manager		•	•		
HP Remote Graphics Software (HP RGS)	•	•	•	•	
HP Universal Print Driver	•	•	•		
HP Velocity	•	•	•	•	•
HP Easy Shell	•	•	•		
HP True Graphics				•	

| Model | OS Version | VMware Horizon View HCL | Citrix Ready/HDX Ready | | Microsoft |
		Horizon View Client	XenDesktop/XenApp	ViaB 5.x	RemoteFX Logo
t310	No Operating System	Tera2 Certified	N/A	N/A	N/A
t310 AiO	No Operating System	Tera2 Certified	N/A	N/A	N/A
t410	HP Smart Zero Client	N/A	HDX	Verified	Certified
t410 AiO	HP Smart Zero Client	Certified	HDX	Verified	Certified
t420	HP ThinPro	In Progress	In Progress	In Progress	N/A
t420	HP Smart Zero Core	In Progress	In Progress	In Progress	N/A
t420	Windows Embedded	In Progress	In Progress	In Progress	N/A
t520	Windows Embedded	Certified	In Progress	Verified	Certified
t520	HP ThinPro	Certified	In Progress	Verified	N/A
t520	HP Smart Zero Core	In Progress	In Progress	In Progress	In Progress
t620	HP Smart Zero Core	Certified	HDXP	Verified	N/A
t620	HP Thin Pro	Certified	HDXP	Verified	N/A
t620	Windows Embedded	Certified	HDXP	Verified	Certified
t820	Windows Embedded	Certified	HDXP	Verified	Certified
mt245	Windows Embedded	In Progress	In Progress	In Progress	N/A
HP EliteBook 745 G2	Windows Embedded	Certified	In Progress	In Progress	N/A
HP ElitePad 1000 G2	Windows Embedded	Certified	Verified	Verified	N/A
HP ElitePad 1000 G2 HC Tablet	Windows Embedded	Certified	Verified	Verified	N/A

* Availability varies by region

1. The resolutions your monitor displays and the multi-display modes (i.e. clone, spanning, extended/independent) supported in ICA, RDP or locally may vary. Number of monitors supported varies by model.
2. t310 only
3. 3D content required to view 3D images. 3D capable display required to take full advantage of 3D.
4. HP True Graphics requires an HP Thin Client with an HP ThinPro 5.0 or higher operating system (combo OS with HP Smart Zero Core begins at v5.0), AMD processing technology, and a Citrix virtual desktop infrastructure—must be XenApp or XenDesktop v7.0 or higher. HP True Graphics is preinstalled on the OS starting with HP ThinPro 5.2. HP True Graphics will be available on HP ThinPro 5.0 or higher as an add-on through Easy Update for ThinPro or via HPDM in early 2015. See product QuickSpecs for exact compatibility.
5. HP Remote Graphics Software requires Windows and internet connection.
6. This system requires a 64-bit operating system and 64-bit software products to take advantage of the 64-bit processing capabilities of AMD technology. Multi-core processing available with AMD technology is designed to improve performance of this system. Given the wide range of software applications available, performance of a system including a 64-bit operating system will vary.
7. Multi core processing with AMD technology is designed to improve performance of this system. Given the wide range of software applications available, performance will vary. AMD's numbering is not a measurement of clock speed.
8. Maximum memory capacities assume Windows 64-bit operating systems or Linux. With Windows and Linux 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.
9. The resolutions your monitor displays and the multi-display modes (i.e. clone, spanning, extended/independent) supported in ICA, RDP or locally may vary. Number of monitors supported varies by model.
10. With custom single-to-dual DVI conversion cable, sold separately.
11. 64 MB or more memory reserved for video. 42 GB/1 GB SKU available in North America. Up to 1 GB may not be available in 4GB configurations with 32-bit operating systems due to system resource requirements. Flash and RAM maximum vary with OS.
12. Touchscreen support varies by OS. Not supported by Windows Embedded Standard 7E, Windows CE, or HP Smart Zero Client Technology.
13. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. 802.11 Wi-Fi and Bluetooth combo sold separately or as an optional feature.
14. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the thin client to communicate with other 802.11ac WLAN devices.
15. Options sold separately. Availability varies by country.
16. Configurations of the HP t620 and HP t620 PLUS Flexible Thin Clients that are ENERGY STAR® qualified are identified on HP websites and on energystar.gov. EPEAT® registered where applicable. EPEAT registration varies by country. See epeat.net for registration status by country.
17. This product is low halogen except for power cords, cables and peripherals, as well as the customer-configurable 100 Mbps Fiber NIC module which is not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
18. Windows Embedded Standard 7 products require 8 GB or more Flash memory.
19. Configurable for one protocol at a time.
20. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

For more information visit
hp.com/go/thin

HDX – HDX Ready
HDXP – HDX Premium Ready
N/A – Certification is not applicable to this device