



Hardware Reference Guide

HP Thin Client

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About This Book

 **WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

 **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.


 **NOTE:** Text set off in this manner provides important supplemental information.

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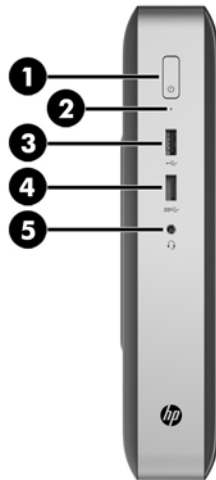
1 Product features



This guide describes the features of the thin client. For more information about the hardware and software installed on this thin client, go to <http://www.hp.com/go/quickspecs> and search for this thin client.

Front panel components

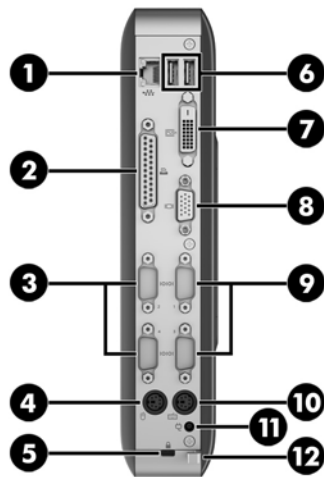
For more information, go to <http://www.hp.com/go/quickspecs> and search for your specific thin client to find the QuickSpecs.



Item	Component	Item	Component
1	Power button	4	USB 3.0 port
2	Flash drive activity LED	5	Headset port
3	USB 2.0 port		

Rear panel components

For more information, go to <http://www.hp.com/go/quickspecs> and search for your specific thin client to find the QuickSpecs.

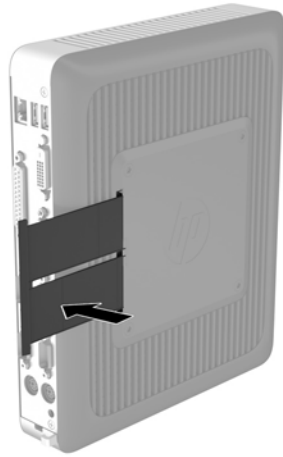


Item	Component	Item	Component
1	RJ-45 (network) jack	8	VGA connector
2	Parallel port	9	Serial port COM 1
3	Configurable serial ports COM 2 and COM 4	10	Serial port COM 3*
4	PS/2 mouse connector	11	PS/2 keyboard connector
5	Security cable slot	12	Power connector
6	USB 2.0 ports (2)	13	Power cord retention hook
7	DVI-D connector		

*On some models, COM 3 is a configurable serial port.

Serial number location

Every thin client includes a unique serial number located as shown in the following illustration. Have this number available when contacting support for assistance.



2 Setup

Warnings and cautions

Before performing upgrades be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

⚠ WARNING! To reduce the risk of personal injury or equipment damage from electric shock, hot surfaces, or fire:

Unplug the power cord from the AC outlet and allow the internal system components to cool before you touch them.

Do not plug telecommunications or telephone connectors into the network interface controller (NIC) receptacles.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Plug the power cord into a grounded (earthed) AC outlet that is easily accessible at all times.

To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and provides guidelines for posture and work habits that increase your comfort and decrease your risk of injury. It also provides electrical and mechanical safety information. The *Safety & Comfort Guide* is located on the HP website at <http://www.hp.com/ergo>.

⚠ WARNING! Energized parts inside.

Disconnect power to the equipment before removing the enclosure.

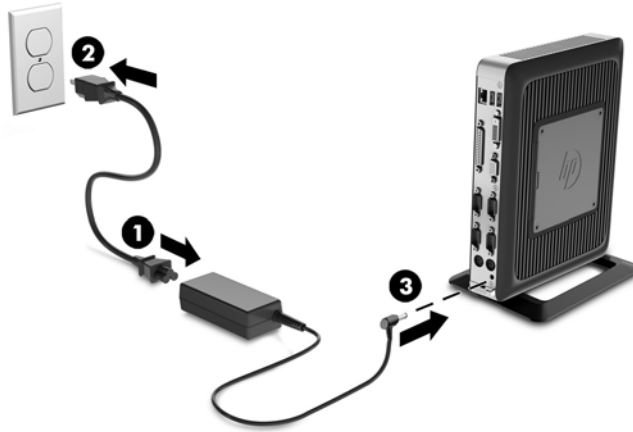
Replace and secure the enclosure before re-energizing the equipment.

⚠ CAUTION: Static electricity can damage the electrical components of the thin client or optional equipment. Before beginning the following procedures, be sure that you are discharged of static electricity by briefly touching a grounded metal object. See [Preventing electrostatic damage on page 37](#) for more information.

When the thin client is plugged into an AC power source, voltage is always applied to the system board. To prevent damage to internal components, you must unplug the power cord from the power source before opening the thin client.

Connecting the power cord

1. Plug the power cord into the AC adapter (1).
2. Plug the other end of the power cord into an AC outlet (2).
3. Connect the AC adapter to the power connector on the rear of the thin client (3).



4. Press the power cord into the retention hook and bundle any excess power cord.

CAUTION: Failure to secure the power cord with the retention hook may result in the power cord becoming disconnected, causing loss of data.

NOTE: The thin client uses an Acbel Polytech Inc./HSTNN-AA44 adapter. The vendor is Chicony Power Technology Co., Ltd. The model is HSTNN-CA40.

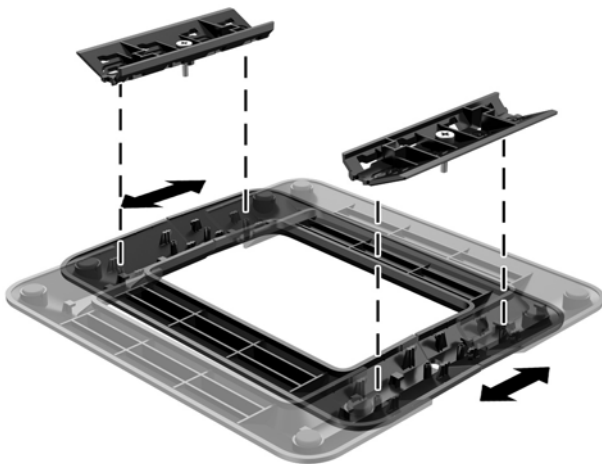
Attaching the stand

CAUTION: To ensure proper airflow, the thin client must either be operated with the stand attached or be mounted using the HP Quick Release mounting bracket (see [Mounting and orienting the thin client on page 9](#)).

Adjusting the stand

The stand included with the thin client allows the thin client to be used in either a tower or horizontal orientation.

Take the stand apart by removing the two short pieces connecting the two sides. Snap the sides to the outer connection points on the short pieces for a square configuration or to the inner connection points for the narrow configuration.



Installing the stand

The stand included with the thin client allows the thin client to be used in either a tower or horizontal orientation.

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.
3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet and disconnect any external devices.
5. Adjust the stand, if necessary.

For instructions, see [Adjusting the stand on page 6](#).

6. Attach the stand to the thin client.
 - To use the thin client in the tower orientation:

- a. Position the thin client upside down and locate the two screw holes in the grid on the bottom of the thin client.
- b. Position the stand over the bottom of the thin client and line up the captive screws in the stand with the screw holes in the thin client.
- c. Tighten the captive screws securely.



- To use the thin client in the horizontal orientation:
 - a. Position the thin client right-side up and locate the two screw holes in the grid.
 - b. Position the stand over the thin client and line up the captive screws in the stand with the screw holes in the thin client.
 - c. Tighten the captive screws securely.




7. Reconnect external devices, reconnect the power cord, and then turn the thin client on.



NOTE: Be sure that at least 10.2 centimeters (4 inches) of space on all sides of the thin client remain clear and free of obstructions.

8. Lock any security devices that were disengaged when the thin client cover or access panel was removed.

 **NOTE:** An optional Quick Release mounting bracket is available from HP for mounting the thin client to a wall, desk, or swing arm. When the mounting bracket is used, do not install the thin client with the I/O ports oriented towards the ground.

Securing the thin client

The thin client is designed to accept a security cable. This cable prevents unauthorized removal of the thin client. To order this option, go to the HP website at <http://www.hp.com> and search for your specific thin client.

1. Locate the security cable slot on the back panel.
2. Insert the security cable into the slot, and then use the key to lock it.



Mounting and orienting the thin client

HP Quick Release mounting bracket

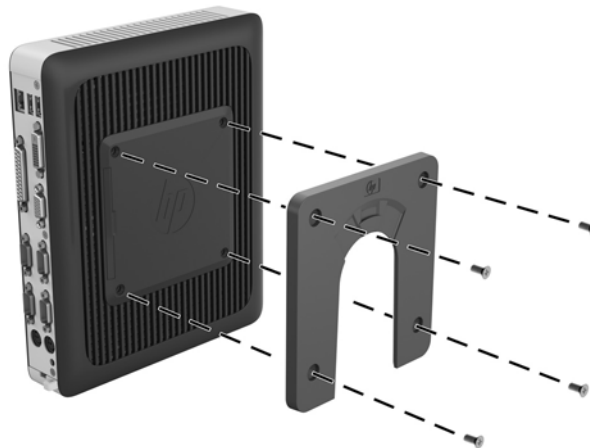
An optional Quick Release mounting bracket is available from HP for mounting the thin client to a wall, desk, or swing arm. When the mounting bracket is used, do not install the thin client with the I/O ports oriented towards the ground.

This thin client incorporates four mounting points on the right side of the unit. These mounting points follow the VESA (Video Electronics Standards Association) standard, which provides industry-standard mounting interfaces for flat displays (FDs), such as flat-panel monitors and flat-panel TVs. The mounting bracket connects to the VESA-standard mounting points, allowing you to mount the thin client in a variety of orientations.




To use the HP Quick Release mounting bracket:

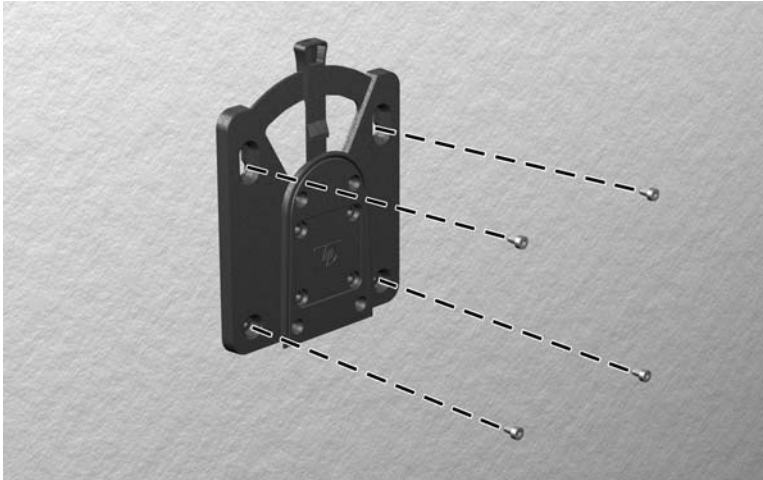
1. Using four of the 10 mm screws included with the mounting bracket, attach one side of the mounting bracket to the thin client.



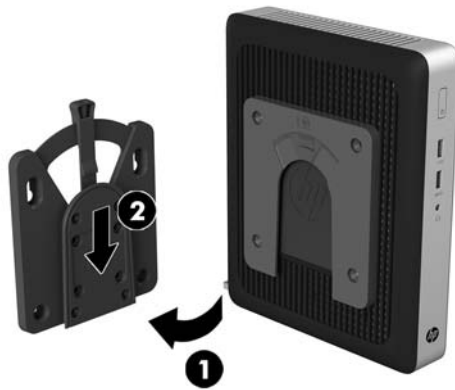
2. To attach the other side of the mounting bracket, follow the instructions specific to your mounting surface:


- Third party mounting device—Use the screws provided with that mounting device.
- Back of a monitor—See the monitor user guide for instructions.
- Another surface—Use four of the screws provided, in the length appropriate to the surface.


 **IMPORTANT:** Be sure that the release lever points upward.



3. Slide the side of the mounting bracket attached to the thin client (1) over the other side of the mounting bracket (2) until you hear a click, indicating a secure connection.



 **CAUTION:** To ensure proper function of the mounting bracket and a secure connection of all components, make sure both the release lever on one side of the mounting device and the rounded opening on the other side face upward.

 **NOTE:** When attached, the mounting bracket automatically locks into position. You only need to slide the lever to one side to remove the thin client.

Supported mounting options

The following illustrations demonstrate some of the supported mounting options for the mounting bracket.

- On the back of a monitor:



- On a wall:



- Under a desk:



Supported orientation and placement

⚠ CAUTION: To ensure that your thin clients function properly, you must use an HP-supported orientation. To ensure proper airflow, the thin client must either be operated with the stand attached or mounted using the HP Quick Release mounting bracket.

- Horizontal orientation



- Vertical orientation



- Horizontal orientation under a monitor stand, with at least 2.54 cm (1 in) clearance



Nonsupported placement

HP does not support the following placements for the thin client:

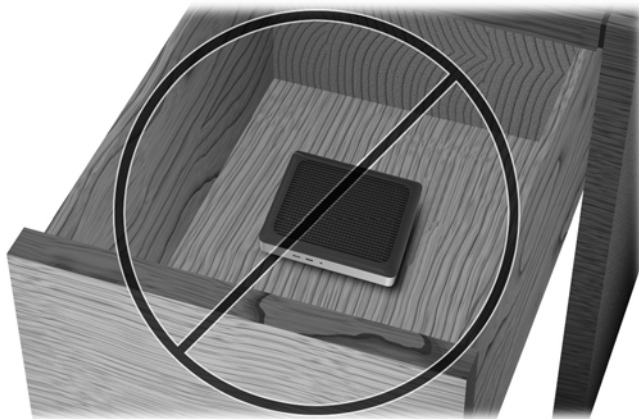
⚠ CAUTION: Nonsupported placement of thin clients could result in operation failure and/or damage to the devices.

Thin clients require proper ventilation to maintain operating temperature. Do not block the vents.

Do not install the thin client with the I/O ports oriented towards the ground.

Do not put thin clients in drawers or other sealed enclosures. Do not place a monitor or other object on top of the thin client. Do not mount a thin client between the wall and a monitor. Thin clients require proper ventilation to maintain operating temperatures.

- In a desk drawer



- With a monitor on top



Routine thin client care

Use the following information to properly care for your thin client:

- Never operate the thin client with the outside panel removed.
- Keep the thin client away from excessive moisture, direct sunlight, and extreme heat and cold. For information about the recommended temperature and humidity ranges for the thin client, go to <http://www.hp.com/go/quickspecs> and search for your model.
- Keep liquids away from the thin client and keyboard.
- Turn off the thin client and wipe the exterior with a soft, damp cloth as needed. Using cleaning products may discolor or damage the finish.

3 Hardware changes

Warnings and cautions

Before performing upgrades be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

-
- ⚠ WARNING!** To reduce the risk of personal injury or equipment damage from electric shock, hot surfaces, or fire:
- Unplug the power cord from the AC outlet and allow the internal system components to cool before you touch them.
 - Do not plug telecommunications or telephone connectors into the network interface controller (NIC) receptacles.
 - Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
 - Plug the power cord into a grounded (earthed) AC outlet that is easily accessible at all times.
 - To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and provides guidelines for posture and work habits that increase your comfort and decrease your risk of injury. It also provides electrical and mechanical safety information. The *Safety & Comfort Guide* is located on the HP website at <http://www.hp.com/ergo>.

- ⚠ WARNING!** Energized parts inside.
- Disconnect power to the equipment before removing the enclosure.
 - Replace and secure the enclosure before re-energizing the equipment.
- ⚠ CAUTION:** Static electricity can damage the electrical components of the thin client or optional equipment. Before beginning the following procedures, be sure that you are discharged of static electricity by briefly touching a grounded metal object. See [Preventing electrostatic damage on page 37](#) for more information.
- When the thin client is plugged into an AC power source, voltage is always applied to the system board. To prevent damage to internal components, you must unplug the power cord from the power source before opening the thin client.
-

Removing and replacing the access panel

Removing the access panel

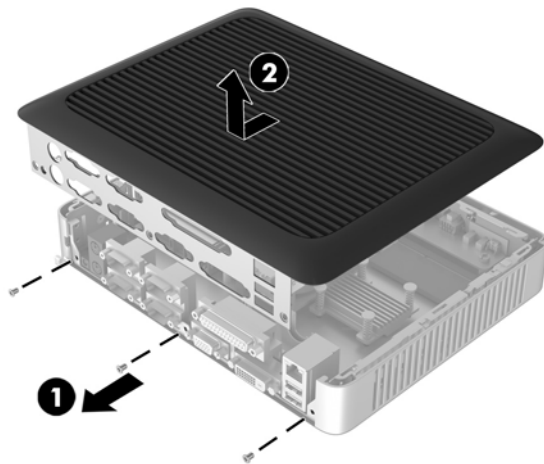
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- ⚠ WARNING!** To reduce the risk of personal injury or equipment damage from electric shock, hot surfaces, or fire, ALWAYS operate the thin client with the access panel in place. In addition to enhancing safety, the access panel may provide important instructions and identification information, which may be lost if the access panel is not used. DO NOT use any access panel except the one that is provided by HP for use with this thin client.
- Before removing the access panel, be sure that the thin client is turned off and the power cord is disconnected from the AC outlet.
-

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.

3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet, and disconnect any external devices.

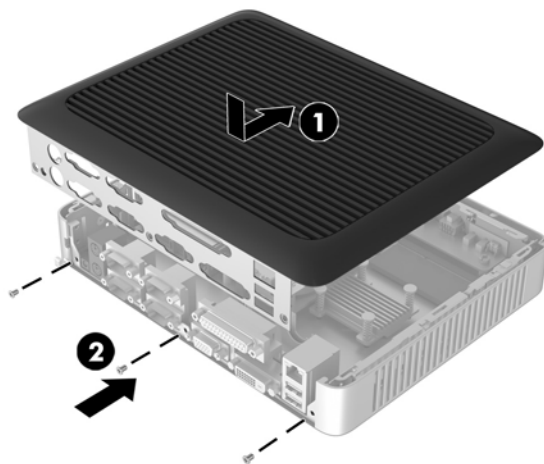
CAUTION: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must unplug the power cord to avoid damage to the internal components of the thin client.

5. Remove the stand from the thin client.
6. Position the thin client flat on a stable surface with the right side up.
7. Remove three screws (1) from the rear I/O panel.
8. Slide the access panel (2) toward the rear and lift it off the chassis.

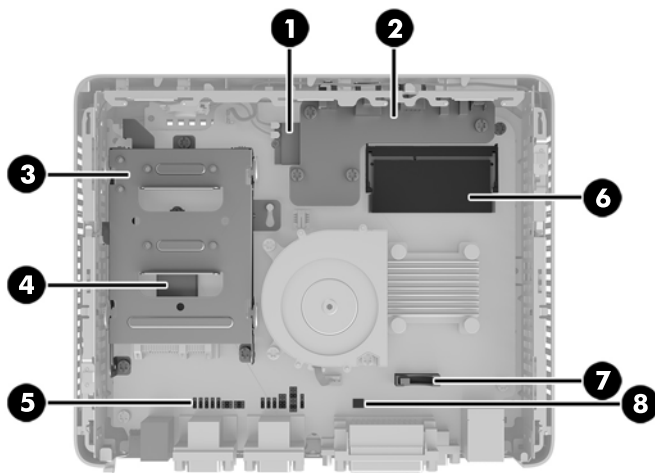


Replacing the access panel

1. Position the access panel on the chassis, approximately 6 mm (.24 in) inside the edge of the chassis. Slide the panel toward the front of the chassis (1) until it locks into place.
2. Fasten the three screws (2) through the rear I/O panel to secure the access panel to the chassis.



Locating internal components



Item	Component	Item	Component
1	M.2 socket shown with Wi-Fi module installed	5	Configurable serial port jumpers
2	Front I/O board	6	Memory module
3	Hard drive bracket	7	Battery
4	Primary storage slot shown with flash memory storage installed	8	CMOS button

Removing and replacing the battery

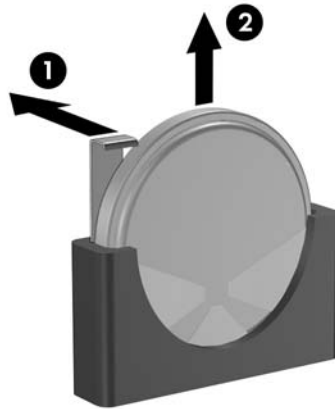
⚠ WARNING! Before removing the access panel, be sure that the thin client is turned off and the power cord is disconnected from the AC outlet.

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.
3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet, and disconnect any external devices.

⚠ CAUTION: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must unplug the power cord to avoid damage to the internal components of the thin client.



5. Remove the stand from the thin client.
6. Position the unit flat on a stable surface with the right side up.
7. Remove the thin client access panel. See [Removing and replacing the access panel on page 15](#).
8. Locate the battery on the system board. See [Locating internal components on page 17](#).

9. To release the battery from its holder, pull back on the clip (1) that holds the battery in place, and remove the battery (2).



10. Insert the new battery and position the clip back into place.
11. Replace the access panel. See [Removing and replacing the access panel on page 15](#).
12. Replace the thin client stand.
13. Reconnect external devices, reconnect the power cord, and then turn on the thin client.
14. Lock any security devices that were disengaged when the thin client access panel was removed.

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, go to <http://www.hp.com> and search for “recycle.”

Icon	Definition
	Batteries, battery packs, and accumulators should not be disposed of together with the general household waste. In order to forward them to recycling or proper disposal, please use the public collection system or return them to HP, an authorized HP partner, or their agents.
	The Taiwan EPA requires dry battery manufacturing or importing firms, in accordance with Article 15 or the Waste Disposal Act, to indicate the recovery marks on the batteries used in sales, giveaways, or promotions. Contact a qualified Taiwanese recycler for proper battery disposal.

Upgrading system memory

The memory socket on the system board is populated with one memory module. To achieve the maximum memory support, you can populate the system board with up to 8 GB of memory.

For proper system operation, the memory module must adhere to the following specifications:

- Industry-standard 204-pin
- Unbuffered non-ECC PC3L-12800 DDR3L-1600 MHz-compliant
- 1.35 volt DDR3L-SDRAM memory module

The thin client supports the following:

- 2 Gb and 4 Gb non-ECC memory technologies
- Single-sided and double-sided memory modules
- Memory modules constructed with x8 and x16 devices; memory modules constructed with x4 SDRAM are not supported



NOTE: The system does not operate properly when a nonsupported memory module is installed.

Installing a memory module



CAUTION: You must unplug the power cord and wait approximately 30 seconds for the power to drain before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the thin client is plugged into an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

The memory module socket has gold-plated metal contacts. When upgrading the memory, it is important to use a memory module with gold-plated metal contacts to prevent corrosion and/or oxidation resulting from having incompatible metals in contact with each other.

Static electricity can damage the electronic components of the thin client or optional cards. Before beginning the following procedures, be sure that you are discharged of static electricity by briefly touching a grounded metal object. For more information, refer to [Electrostatic discharge on page 37](#).

When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.
3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet, and disconnect any external devices.

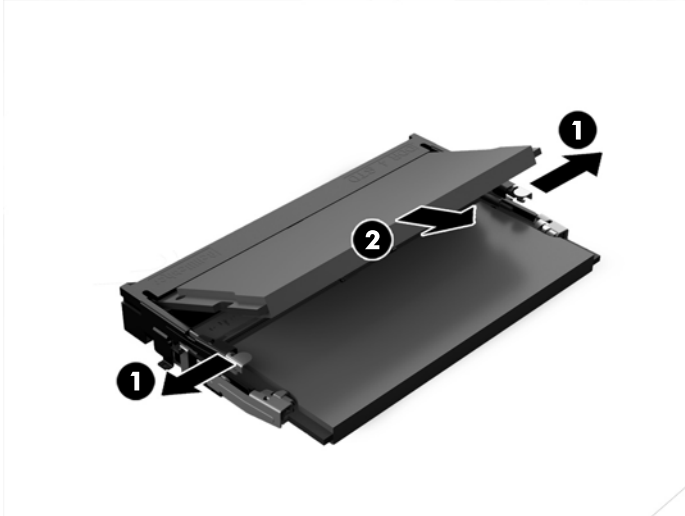


CAUTION: You must unplug the power cord and wait approximately 30 seconds for the power to drain before adding or removing a memory module. Regardless of the power-on state, voltage is always supplied to the memory module as long as the thin client is plugged into an active AC outlet. Adding or removing a memory module while voltage is present may cause irreparable damage to the memory module or system board.

5. Remove the stand from the thin client.
6. Position the unit flat on a stable surface with the right side up.
7. Remove the thin client access panel. See [Removing and replacing the access panel on page 15](#).

⚠ WARNING! To reduce risk of personal injury from hot surfaces, allow the internal system components to cool before you touch them.

8. Locate the memory module on the system board. See [Locating internal components on page 17](#).
9. To remove a memory module, press outward on the two latches on each side of the memory module (1), rotate the memory module up, and then pull the memory module out of the socket (2).



10. Slide the new memory module (1) into the socket at approximately a 30° angle, and then press the memory module down (2) so that the latches lock it in place.



📝 NOTE: A memory module can be installed in only one way. Match the notch on the module with the tab on the memory socket.

11. Replace the access panel. See [Removing and replacing the access panel on page 15](#).
12. Replace the thin client stand.
13. Reconnect external devices, reconnect the power cord, and then turn the thin client on.
14. Lock any security devices that were disengaged when the thin client access panel was removed.

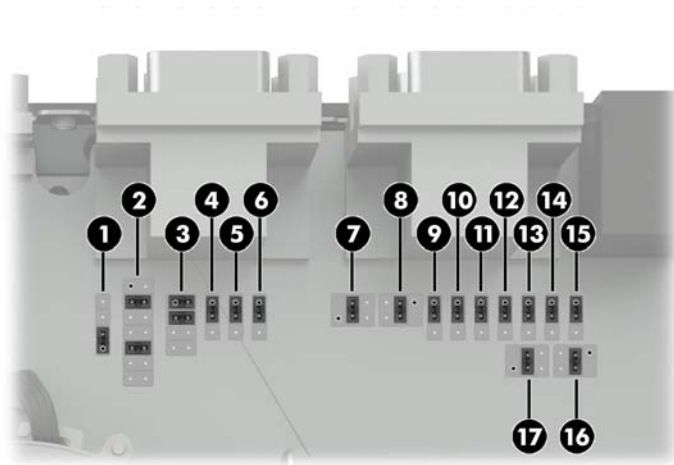
The thin client automatically recognizes the new memory when you turn on the thin client.

Configuring serial ports

Two configurable serial ports, COM 2 and COM 4, are standard on the thin client. On some models, COM 3 is also a configurable serial port. COM 1 is a standard serial port that cannot be configured. Some devices use a powered serial port. If the serial port is configured as a powered port, devices that support a powered serial interface do not require an external power source.

Locating configurable serial port jumpers

See [Locating internal components on page 17](#) to find the configurable serial port jumpers. Individual configurable serial port jumpers on the system board are positioned as shown in the following illustration:



COM 2		COM 4		COM 3	
Item	Jumper	Item	Jumper	Item	Jumper
1	COM 2 CN20	7	COM 4 CN31	14	COM 3 CN35
2	COM 2 CN23	8	COM 4 CN33	15	COM 3 CN34
3	COM 2 CN22	9	COM 4 CN30	16	COM 3 CN37
4	COM 2 CN27	10	COM 4 CN29	17	COM 3 CN36
5	COM 2 CN21	11	COM 4 CN25		
6	COM 2 CN26	12	COM 4 CN24		
		13	COM 4 CN28		


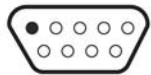
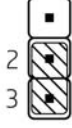
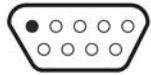
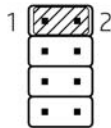
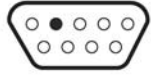
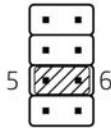
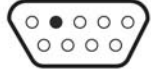
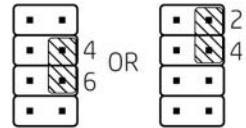
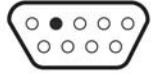
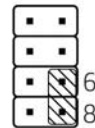
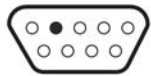
Serial port functionality

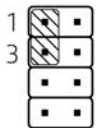
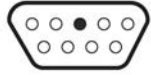
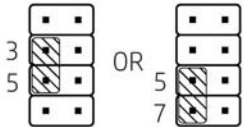
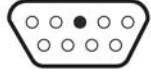
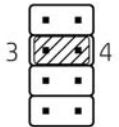
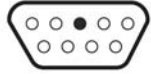
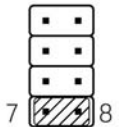
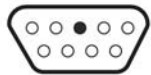
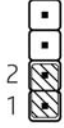
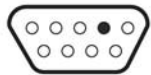

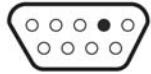
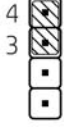
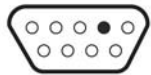
Configurable Serial Port Settings


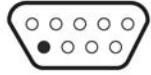

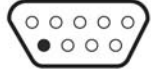

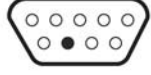

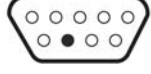
Pin	COM1 (Standard)			COM2			COM3			COM4					
	DCD_RS232	RXD_RS232	TXD_RS232	DCD_RS232	RXD_TTL	TXD_RS232	DCD_RS232	RXD_RS232	TXD_RS232	DCD_RS232	RXD_RS232	TXD_RS232	DCD_RS232	RXD_RS232	TXD_RS232
Pin 1															
Pin 2															
Pin 3															
Pin 4															
Pin 5															
Pin 6															
Pin 7															
Pin 8															
Pin 9															


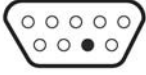

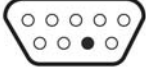


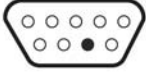
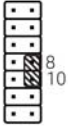
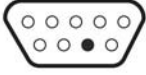
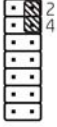
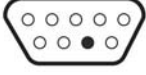
Shaded cells are default settings

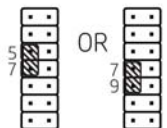
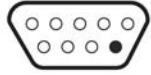

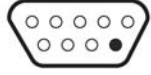

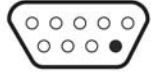
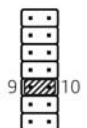
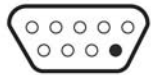
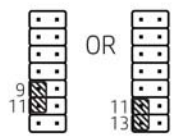
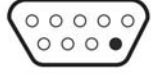

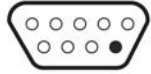
⚠ CAUTION: To prevent severe equipment damage, carefully verify the location of the serial port jumper before you configure it. See [Locating configurable serial port jumpers on page 21](#) for locations.

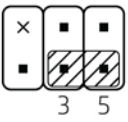
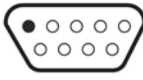
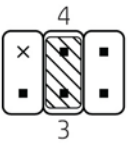
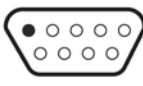
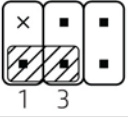
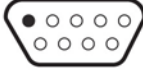
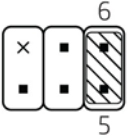
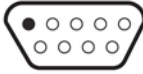

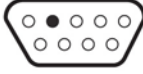

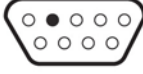

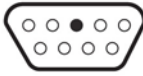

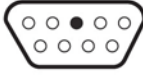
Jumper Configuration	Function	Pin
COM 2 - CN21		
	PIN1:+5V (Default)	
	PIN1:DCD	
COM 2 - CN22		
	PIN2:RXD (Default)	
	PIN2:RXD_TTL	
	PIN2:TXD	
	PIN2:TXD_TTL	

Jumper Configuration	Function	Pin
<p>COM 2 - CN22</p> 	PIN3:RXD	
	PIN3:RXD_TTL	
	PIN3:TXD (Default)	
	PIN3:TXD_TTL	
COM 2 - CN20		
	PIN4:DTR	
	PIN4:+5V	
	PIN4:NC (Default)	


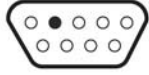
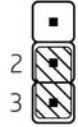
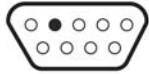

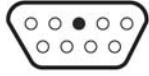
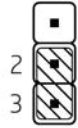
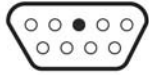
Jumper Configuration	Function	Pin
COM 2 - CN26		
	PIN6:DSR	
	PIN6:NC (Default)	
COM 2 - CN27		
	PIN7:RTS	
	PIN7:NC (Default)	

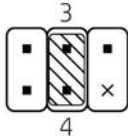
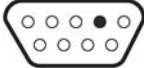
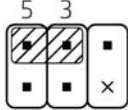
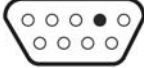
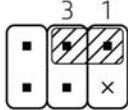
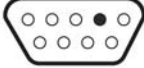
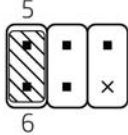
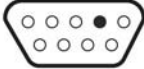

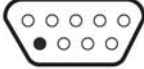

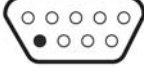
Jumper Configuration	Function	Pin
COM 2 - CN23 	PIN8:RXD	
	PIN8:RXD_TTL (Default)	
 OR 	PIN8:TXD	
	PIN8:TXD_TTL	
	PIN8:CTS	


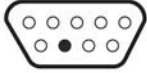
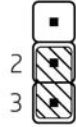
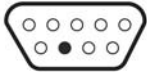

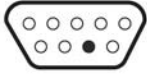
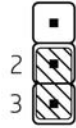
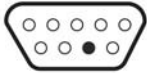
Jumper Configuration	Function	Pin
<p>COM 2 - CN23</p> 	PIN9:RXD	
	PIN9:RXD_TTL	
	PIN9:TXD	
	PIN9:TXD_TTL (Default)	
	PIN9:RI	
	PIN9:+5V	

Jumper Configuration	Function	Pin
COM 3 - CN36		
	PIN1:DCD	
	PIN1:+5V (Default)	
	PIN1:+12V	
	PIN1:NC	
COM 3 - CN34		
	PIN2:RXD (Default)	
	PIN2:TXD	
COM 3 - CN35		
	PIN3:TXD (Default)	
	PIN3:RXD	

Jumper Configuration	Function	Pin
COM 3 - CN37		
<p>A 3-pin header with pins labeled 3 and 4. A diagonal hatched jumper is placed between pins 3 and 4. Pin 1 has an 'x' and pin 2 has a square.</p>	PIN4:DTR (Default)	<p>A 12-pin D-sub connector with pin 4 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 5 and 3. A diagonal hatched jumper is placed between pins 5 and 3. Pin 1 has an 'x' and pin 2 has a square.</p>	PIN4:+5V	<p>A 12-pin D-sub connector with pin 4 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 3 and 1. A diagonal hatched jumper is placed between pins 3 and 1. Pin 2 has a square and pin 4 has an 'x'.</p>	PIN4:+12V	<p>A 12-pin D-sub connector with pin 4 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 5 and 6. A diagonal hatched jumper is placed between pins 5 and 6. Pin 1 has a square and pin 2 has an 'x'.</p>	PIN4:NC	<p>A 12-pin D-sub connector with pin 4 highlighted by a solid black dot.</p>
COM 4 - CN31		
<p>A 3-pin header with pins labeled 3 and 5. A diagonal hatched jumper is placed between pins 3 and 5. Pin 1 has an 'x' and pin 2 has a square.</p>	PIN1:DCD	<p>A 12-pin D-sub connector with pin 1 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 4 and 3. A diagonal hatched jumper is placed between pins 4 and 3. Pin 1 has an 'x' and pin 2 has a square.</p>	PIN1:+5V (Default)	<p>A 12-pin D-sub connector with pin 1 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 1 and 3. A diagonal hatched jumper is placed between pins 1 and 3. Pin 2 has a square and pin 4 has an 'x'.</p>	PIN1:+12V	<p>A 12-pin D-sub connector with pin 1 highlighted by a solid black dot.</p>
<p>A 3-pin header with pins labeled 6 and 5. A diagonal hatched jumper is placed between pins 6 and 5. Pin 1 has a square and pin 2 has an 'x'.</p>	PIN1:NC	<p>A 12-pin D-sub connector with pin 1 highlighted by a solid black dot.</p>

Jumper Configuration	Function	Pin
COM 4 - CN24		
	PIN2:RXD (Default)	
	PIN2:TXD	
COM 4 - CN25		
	PIN3:TXD (Default)	
	PIN3:RXD	

Jumper Configuration	Function	Pin
<p>COM 4 - CN33</p> 	PIN4:DTR (Default)	
	PIN4:+5V	
	PIN4:+12V	
	PIN4:NC	
<p>COM 4 - CN28</p> 	PIN6:DSR (Default)	
	PIN6:NC	

Jumper Configuration	Function	Pin
COM 4 - CN29		
	PIN7:RTS (Default)	
	PIN7:NC	
COM 4 - CN30		
	PIN8:CTS (Default)	
	PIN8:NC	

Configuring the serial ports

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.
3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet, and disconnect any external devices.

⚠ CAUTION: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must unplug the power cord to avoid damage to the internal components of the thin client.

5. Remove the stand from the thin client.
6. Position the unit flat on a stable surface with the right side up.
7. Remove the thin client access panel. See [Removing and replacing the access panel on page 15](#).
8. Locate the serial port and jumper. See [Locating configurable serial port jumpers on page 21](#)
9. Place jumpers on the appropriate pins. (See [Serial port functionality on page 22](#) to determine the appropriate pins.)

⚠ CAUTION: An unsupported configuration can cause severe equipment damage. Carefully verify serial port jumper locations and supported configurations before you configure a serial port. See [Locating configurable serial port jumpers on page 21](#) for jumper locations. See [Serial port functionality on page 22](#) for supported configurations.

10. Replace the access panel. See [Removing and replacing the access panel on page 15](#).
11. Replace the thin client stand.
12. Reconnect external devices, reconnect the power cord, and then turn the thin client on.
13. Lock any security devices that were disengaged when the thin client access panel was removed.

Replacing or installing a hard drive

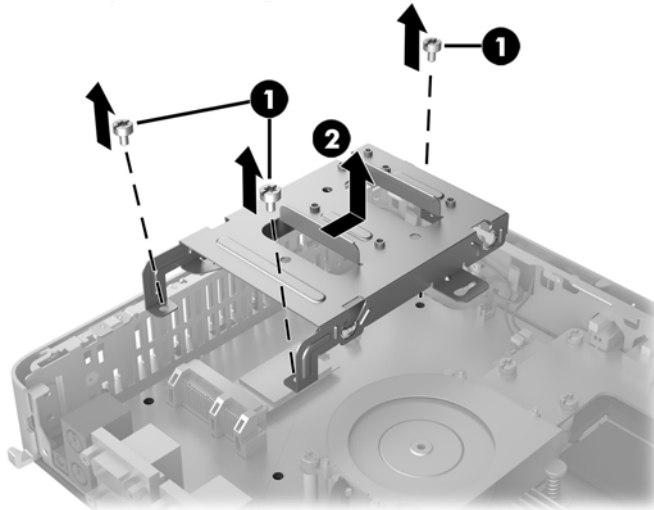
You may replace or install a hard drive in the thin client. A 2.5-inch SATA hard drive is available from HP for this purpose.

1. Remove/disengage any security devices that prohibit opening the thin client.
2. Remove all removable media, such as USB flash drives, from the thin client.
3. Turn off the thin client properly through the operating system, and then turn off any external devices.
4. Unplug the power cord from the AC outlet, and disconnect any external devices.

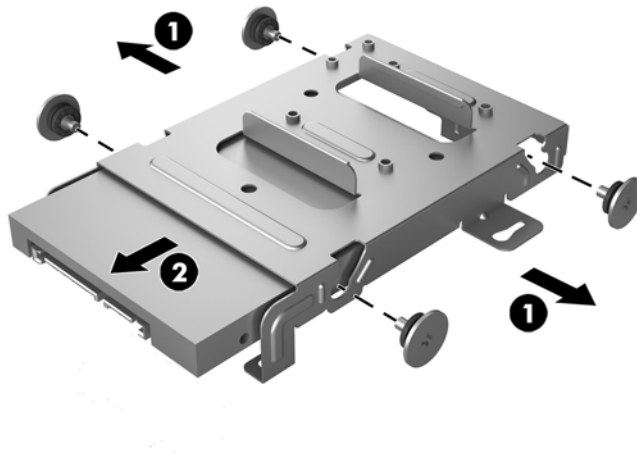
⚠ CAUTION: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must unplug the power cord to avoid damage to the internal components of the thin client.

5. Remove the stand from the thin client.
6. Position the unit flat on a stable surface with the right side up.
7. Remove the thin client access panel. See [Removing and replacing the access panel on page 15](#).
8. Locate the hard drive bracket. See [Locating internal components on page 17](#).

9. Remove the three screws (1) securing the hard drive bracket to the chassis.
10. Slide the hard drive bracket (2) toward the front of the chassis until it stops and the tab on the inside edge of the bracket can be lifted clear of the retaining screw in the chassis. Lift the bracket out of the chassis.

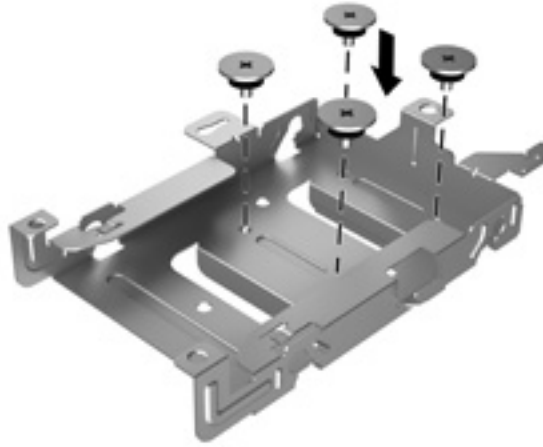


11. If the hard drive bracket does not contain a hard drive, go to step [13](#).
12. If the hard drive bracket contains a hard drive:
 - a. Remove the four screws (1) from the sides of the bracket.
 - b. Slide the hard drive (2) out of the bracket.

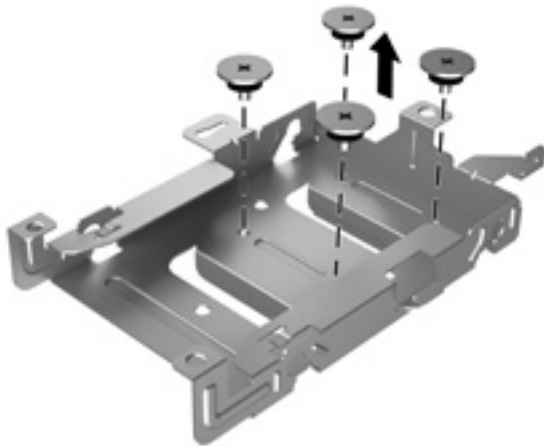


- c. If a new hard drive is to be installed now, go to step [14](#).

- d. If a new hard drive is not to be installed now, screw the four screws into the underside of the bracket and go to [step 16](#).

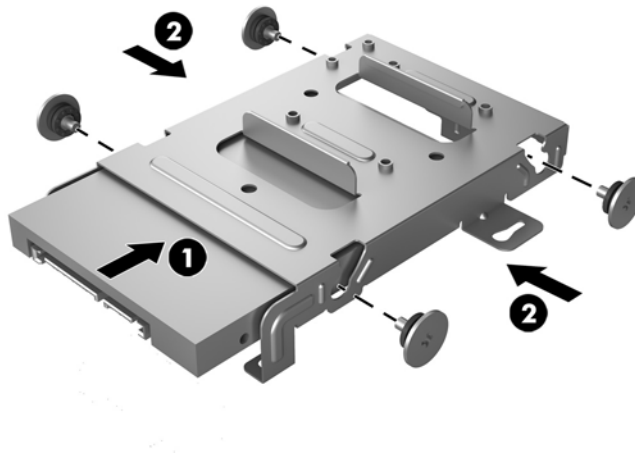


- 13. Remove the four screws from the underside of the bracket.



- 14. With the hard drive connectors facing you, slide the new hard drive (1) into the hard drive bracket. The connectors should be visible at the open end of the bracket.

15. Insert the four screws (2) through the sides of the hard drive bracket into the 2.5-inch hard drive and tighten to secure the hard drive in the bracket.

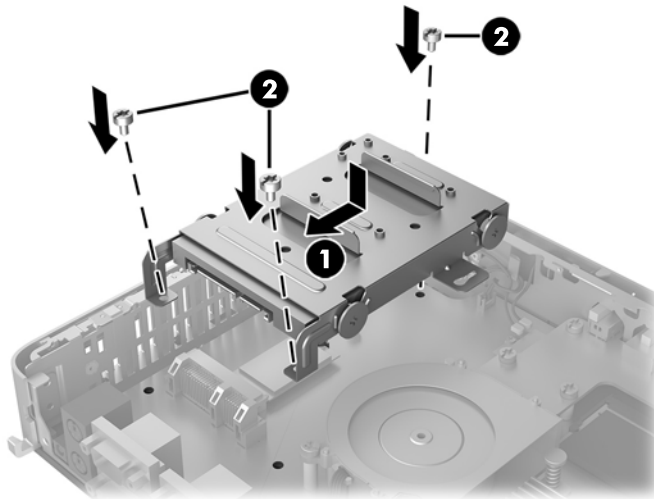


16. Hold the hard drive bracket with the open end toward the rear of the thin client. Set the bracket (1) into the chassis and slide the bracket toward the rear to engage the retaining screw.



NOTE: If you are installing a hard drive, be sure that the hard drive connectors are connected.

17. Insert the three screws (2) and tighten them to secure the hard drive bracket to the chassis.



18. Replace the access panel. See [Removing and replacing the access panel on page 15](#).
19. Replace the thin client stand.
20. Reconnect external devices, reconnect the power cord, and then turn the thin client on.
21. Lock any security devices that were disengaged when the thin client access panel was removed.

A Electrostatic discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Preventing electrostatic damage

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods

Use one or more of the following methods when handling or installing static-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded thin client chassis. Wrist straps are flexible straps of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, contact an HP authorized dealer, reseller, or service provider.



NOTE: For more information about static electricity, contact an HP authorized dealer, reseller, or service provider.

B Shipping information

Shipping preparation

Follow these suggestions when preparing to ship the thin client:

1. Turn off the thin client and external devices.
2. Unplug the power cord from the AC outlet, and then from the thin client.
3. Disconnect the system components and external devices from their power sources, and then from the thin client.
4. Pack the system components and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.



NOTE: For environmental nonoperating ranges, go to <http://www.hp.com/go/quickspecs> and search for your model.

Important service repair information

In all cases, remove and safeguard all external options before returning the thin client to HP for repair or exchange.

In countries that support customer mail-in repair by returning the same unit to the customer, HP makes every effort to return the repaired unit with the same internal memory and flash modules that were sent.



IMPORTANT: If a hard drive is installed, it is strongly recommended that you remove it before returning the thin client to HP for repair or exchange.


In countries that do not support customer mail-in repair by returning the same unit to the customer, all internal options should be removed and safeguarded in addition to the external options. The thin client should be restored to the **original configuration** before returning it to HP for repair.

C Accessibility

HP designs, produces, and markets products and services that can be used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

Supported assistive technologies

HP products support a wide variety of operating system assistive technologies and can be configured to work with additional assistive technologies. Use the Search feature on your device to locate more information about assistive features.

 **NOTE:** For additional information about a particular assistive technology product, contact customer support for that product.

Contacting support

We are constantly refining the accessibility of our products and services and welcome feedback from users. If you have an issue with a product or would like to tell us about accessibility features that have helped you, please contact us at (888) 259-5707, Monday through Friday, 6 a.m. to 9 p.m. Mountain Time. If you are deaf or hard-of-hearing and use TRS/VRS/WebCapTel, contact us if you require technical support or have accessibility questions by calling (877) 656-7058, Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.

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