



# Hardware Reference Guide

HP t5325/t5335 Thin Clients

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#### **Hardware Reference Guide**

HP t5325/t5335 Thin Clients

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## About This Book

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- ⚠ **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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# Table of contents

<b>1 Overview</b> .....	<b>1</b>
<b>2 Front Panel Components</b> .....	<b>2</b>
<b>3 Rear Panel Components</b> .....	<b>3</b>
<b>4 Installing the Rubber Feet</b> .....	<b>4</b>
<b>5 Serial Number Location</b> .....	<b>5</b>
<b>Appendix A Specifications</b> .....	<b>6</b>
<b>Appendix B Security Provisions</b> .....	<b>7</b>
Securing the Thin Client .....	7
<b>Appendix C Mounting the Thin Client</b> .....	<b>8</b>
HP Quick Release .....	8
Supported Mounting Options .....	10
Non-supported Mounting Option .....	12
<b>Appendix D Thin Client Operation</b> .....	<b>13</b>
Routine Thin Client Care .....	13
Supported Orientations .....	13
Non-supported Orientation .....	15
<b>Appendix E Electrostatic Discharge</b> .....	<b>16</b>
Preventing Electrostatic Damage .....	16
Grounding Methods .....	16
<b>Appendix F Shipping Information</b> .....	<b>17</b>
Shipping Preparation .....	17
Important Service Repair Information .....	17
<b>Index</b> .....	<b>18</b>



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# 1 Overview

Thank you for purchasing an HP thin client. We hope you have years of use from our thin clients. Our goal is to provide you with award-winning clients that are easy to deploy and manage with the power and reliability you expect.


The next sections describe the features of the thin client. For a complete list of the hardware and software installed on a specific model, visit <http://www.hp.com> and search for your specific thin client model.

The following features are common to all HP thin clients:

- no hard drives or diskette drives
- 5-minute hardware setup time
- central deployment and management using HP Management Solutions

Various options are available for your thin client. For more information about available options, visit the HP Web site at <http://www.hp.com> and search for your specific thin client model.

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 **NOTE:** Your computer model may look different than the model in the following illustrations.

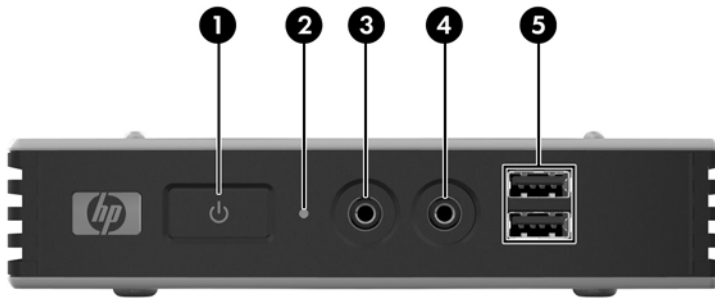
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## 2 Front Panel Components

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

**Figure 2-1** Front panel components



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(1)	Power button	(4)	Line-out (headphone) audio connector
(2)	Flash activity LED	(5)	Universal serial bus (USB) connectors (2)
(3)	Line-in (microphone) connector		

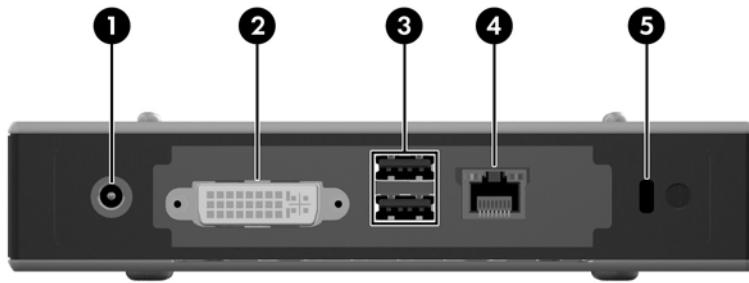
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# 3 Rear Panel Components

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

Figure 3-1 Rear panel components



(1)	Power connector	(4)	Ethernet RJ-45 connector
(2)	DVI-I connector*	(5)	Cable lock slot
(3)	Universal serial bus (USB) connectors (2)		

\*VGA output can be obtained using the DVI-I to VGA adapter that shipped with the thin client.


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## 4 Installing the Rubber Feet

To install the rubber feet:

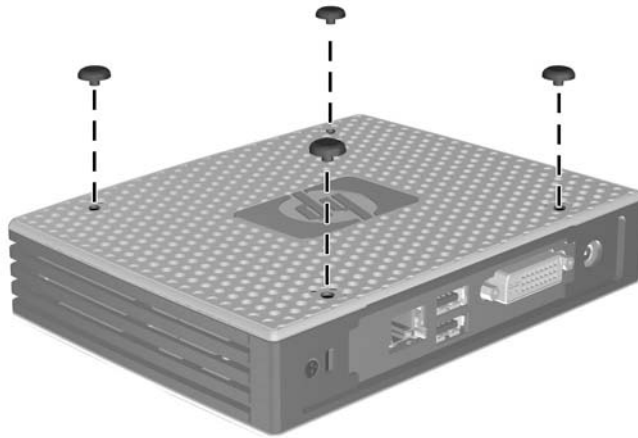
1. Remove the feet from their backing.
2. Line up the hole in each foot with a VESA hole on the bottom of the thin client. Press the foot down firmly to secure it to the thin client.

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 **NOTE:** The feet provide a protective cushion between the thin client and whatever surface it sits on or is mounted to.

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**Figure 4-1** Installing the rubber feet



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## 5 Serial Number Location

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

**Figure 5-1** Serial number location



# A Specifications

**Table A-1 HP t5325/t5335 Thin Clients**

<b>Dimensions</b>		
Width (side to side)	160 mm	6.3 in.
Height (top to bottom)	32 mm	1.3 in.
Depth (front to back)	123 mm	4.8 in.
<b>Approximate Weight</b>		
	490 g	17.3 oz
<b>Temperature Range (fanless design)*</b>		
Operating**	10° to 35° C	50° to 95° F
(max. rate of change is 10° C per hour or 18° F per hour)		
Nonoperating	-30° to 60° C	-22° to 140° F
(max. rate of change is 20° C per hour or 36° F per hour)		
*Specifications are at sea level with altitude derating of 1° C/300 m (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.		** The operating temperature range when the thin client is attached to a flat panel using the HP Quick Release is 50° to 95° F (10° to 35° C).
<b>Relative Humidity (non-condensing)</b>		
Operating	10–90%	10–90%
(max. wet bulb temperature is 28° C or 84.2° F)		
Nonoperating	5–95%	5–95%
(max. wet bulb temperature is 38.7° C or 101.6° F)		
<b>Maximum Altitude (unpressurized)</b>		
Operating	3048 m	10,000 ft
(max. allowed rate of change is 457 m per minute or 1500 ft per minute)		
Nonoperating	9144 m	30,000 ft
(max. allowed rate of change is 457 m per minute or 1500 ft per minute)		
<b>Power Supply</b>		
Operating Input Voltage Range	100–240 VAC	100–240 VAC
Rated Line Frequency	50–60 Hz	50–60 Hz
<b>Power Output (maximum)</b>		
	36 W	36 W
<b>Rated Output Current (maximum)</b>		
	3 A	3 A
<b>Output Voltage</b>		
	+12 V DC	+12 V DC

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## B Security Provisions

### Securing the Thin Client

These thin clients are designed to accept a security cable lock. This cable lock prevents unauthorized removal of the thin client, as well as locking the secure compartment. To order this option, visit the HP Web site at <http://www.hp.com> and search for your specific thin client model.

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

**Figure B-1** Securing the thin client



# C Mounting the Thin Client

## HP Quick Release

This thin client incorporates four mounting points on the bottom 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, flat displays, and flat TVs. The HP Quick Release connects to the VESA-standard mounting points, allowing you to mount the thin client in a variety of orientations.

**NOTE:** When mounting to a thin client, use the 10 mm screws supplied with the HP Quick Release.

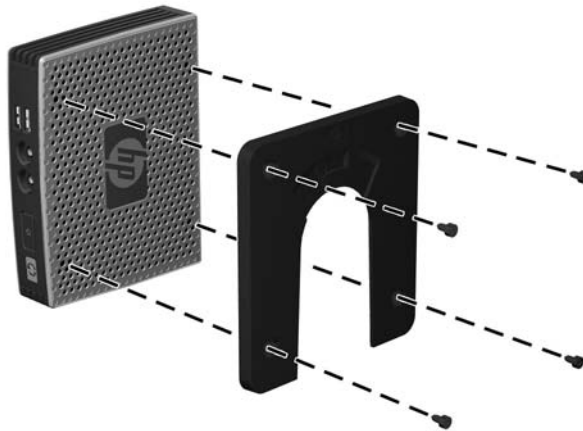
**Figure C-1** HP Quick Release



To use the HP Quick Release:

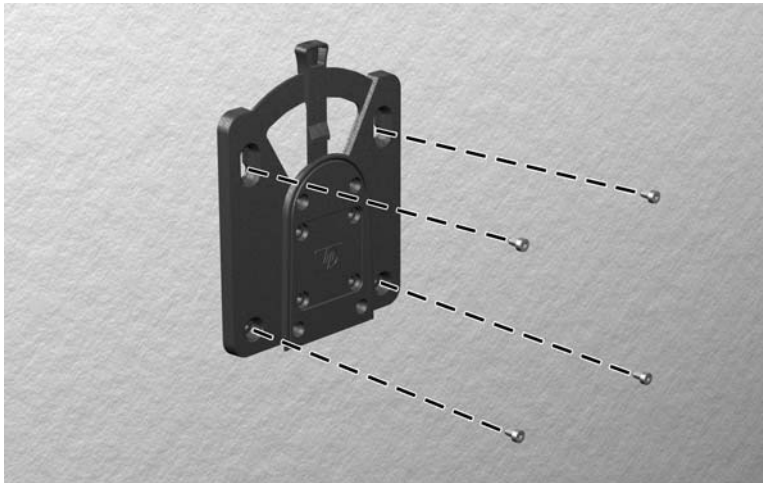
1. Using four 10 mm screws included in the mounting device kit, attach one side of the HP Quick Release to the thin client as shown in the following illustration.

**Figure C-2** Connecting the HP Quick Release to the thin client



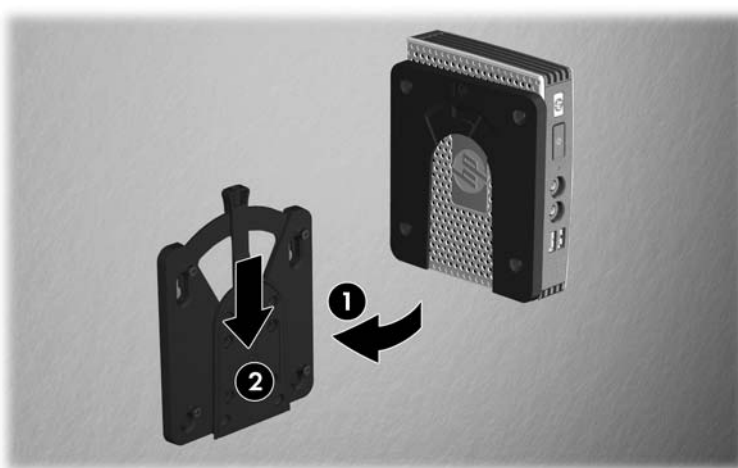
2. Using four screws included in the mounting device kit, attach the other side of the HP Quick Release to the device to which you will mount the thin client. Make sure the release lever points upward.

**Figure C-3** Connecting the HP Quick Release to another device





3. Slide the side of the mounting device attached to the thin client (1) over the other side of the mounting device (2) on the device on which you want to mount the thin client. An audible 'click' indicates a secure connection.

**Figure C-4** Connecting the thin client



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 **NOTE:** When attached, the HP Quick Release automatically locks in position. You only need to slide the lever to one side to remove the thin client.

 **CAUTION:** To ensure proper function of the HP Quick Release 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.

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## Supported Mounting Options

The following illustrations demonstrate some of the supported and not supported mounting options for the mounting bracket.

**Figure C-5** Thin client mounted with flat panel on wall



**Figure C-6** Thin client mounted on back of monitor stand





**Figure C-7** Thin client mounted on wall



**Figure C-8** Thin client mounted under desk



## Non-supported Mounting Option

- △ **CAUTION:** Mounting a thin client in a non-supported manner could result in failure of the HP Quick Release and damage to the thin client and/or other equipment.

Do not mount the thin client on a flat panel monitor stand between the panel and the stand.

**Figure C-9** Unsupported mounting position—thin client between stand and monitor



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# D Thin Client Operation

## 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, see [Specifications on page 6](#).
- 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.

## Supported Orientations

HP supports the following orientations for the thin client.

- 
- △ **CAUTION:** You must adhere to HP-supported orientations to ensure your thin clients function properly.
- 

**Figure D-1** Horizontal orientation



- 
- △ **CAUTION:** If your thin client is not mounted, the horizontal orientation is the only supported orientation.
-

**Figure D-2** Under monitor stand with at least one inch clearance



## Non-supported Orientation

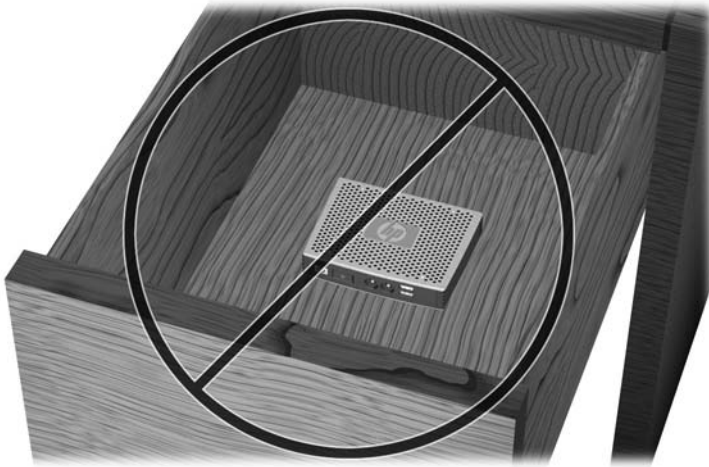
HP does not support the following orientations for the thin client.

- △ **CAUTION:** Non-supported 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 put thin clients in drawers or other sealed enclosures. Do not place a monitor or other object on top of the thin client. Thin clients require proper ventilation to maintain operating temperatures.

**Figure D-3** Do not put thin clients in drawers or other sealed enclosures



**Figure D-4** Do not place a monitor on the thin client



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# E 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

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-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.

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

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# F Shipping Information

## Shipping Preparation

Follow these suggestions when preparing to ship the thin client:

1. Turn off the thin client and external devices.
2. Disconnect the power cord from the electrical outlet, then from the thin client.
3. Disconnect the system components and external devices from their power sources, 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.

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 **NOTE:** For environmental nonoperating ranges, see [Specifications on page 6](#).

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## 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.

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.

# Index

- A**
  - altitude specifications 6
- C**
  - cable lock, installing 7
  - cable routing slot 3
  - cautions
    - HP Quick Release 9
    - mounting thin client 12
    - thin client orientation 13, 15
    - ventilation 15
  - components
    - front panel 2
    - rear panel 3
- D**
  - dimensions 6
  - DVI-I connector location 3
- E**
  - electrostatic discharge 16
  - Ethernet connector location 3
- F**
  - feet, installing 4
  - Flash activity LED location 2
  - front panel components 2
- G**
  - grounding methods 16
- H**
  - hardware specifications 6
  - headphone connector location 2
  - horizontal orientation 4, 13
  - HP Quick Release 8
  - humidity specifications 6
- I**
  - installing
    - cable lock 7
    - HP Quick Release 8
    - rubber feet 4
    - thin client onto HP Quick Release 8
- L**
  - line-out audio location 3
- M**
  - microphone connector location 2
  - mounting holes, VESA 4
  - mounting options
    - on back of monitor stand 10
    - on wall 10
    - under desk 10
    - with flat panel on wall 10
  - mounting thin client 8
- N**
  - non-supported orientations
    - in a drawer 15
    - under a monitor 15
- O**
  - options 1, 7
  - orientation
    - horizontal 4
- P**
  - parallel connector 3
  - power button location 2
  - power connector location 3
  - power LED location 2
  - power output specifications 6
  - power supply specifications 6
  - preventing electrostatic damage 16
  - PS/2 connectors location 3
- Q**
  - Quick Release 8
- R**
  - rated output current 6
  - rear panel components 3
  - relative humidity specifications 6
  - RJ-45 connector location 3
  - routine care 13
  - rubber feet, installing 4
- S**
  - secure cable routing slot 3
  - secure USB compartment
    - location 2
  - security 7
  - serial connector location 3
  - serial number location 5
  - service repair 17
  - shipping preparation 17
  - specifications
    - altitude 6
    - dimensions 6
    - hardware 6
    - humidity 6
    - power output 6
    - power supply 6
    - rated output current 6
    - relative humidity 6
    - temperature 6
    - thin client 6
    - weight 6
  - supported mounting options 10
  - supported orientations
    - horizontal 13
    - under monitor stand 13
    - vertical 13
- T**
  - temperature specifications 6
- U**
  - unsupported mounting option 12
  - USB compartment
    - security 7
  - USB ports
    - location 2, 3
- V**
  - vertical orientation 13
  - VESA mounting holes 4
  - VGA output 3
- W**
  - Web sites
    - HP 1



weight 6