

# Illustrated Parts & Service Map

## HP Compaq 8200 Elite Business PC Microtower



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### Key Specifications

<b>Processor Type</b>	Intel® Core i7, i5, i3
<b>RAM Type</b>	Non-ECC DDR3 PC3-10600 (1333 MHz) & PC3-8500 (1066 MHz)
<b>Maximum RAM</b>	16 GB
<b>Expansion Slots</b>	<ul style="list-style-type: none"> <li>• (2) PCIe-x16</li> <li>• (1) PCIe-x1</li> <li>• (1) PCI</li> </ul>
<b>Chipset</b>	Intel Q67 Express
<b>Graphics Adapter</b>	Integrated Intel HD graphics
<b>Bays</b>	<ul style="list-style-type: none"> <li>• (2) external 5.25-inch</li> <li>• (2) internal 3.5-inch</li> <li>• (1) external 3.5-inch</li> </ul>
<b>I/O Interfaces</b>	Front: (4) USB, microphone, headphone Rear: (6) USB, PS/2 keyboard and mouse, line in, line out, VGA, DisplayPort v1.1a, RJ-45, serial port, eSATA (optional), parallel (optional)
<b>Preinstalled Operating Systems</b>	<ul style="list-style-type: none"> <li>• Windows® Vista</li> <li>• Windows 7</li> <li>• FreeDos</li> </ul>

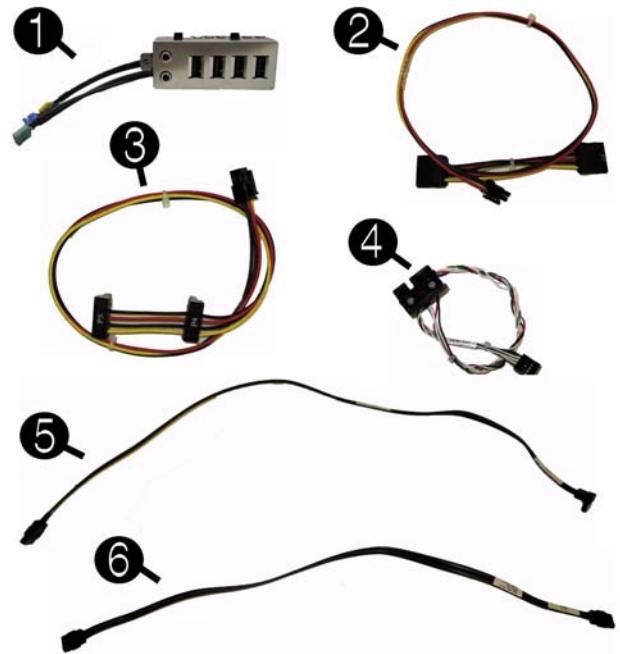
### Spare Parts



#### System Unit

1	Front bezel	646826-001
2	Access panel	646825-001
3	Power supply, 320W, 90% efficient	613764-001
*	Power supply, 320W	613765-001
4	Chassis	not spared
*	5.25-inch bezel blank, jack black	570838-001
*	3.5-inch bezel blank, jack black	583653-001

\* Not shown



#### Cables

1	Front I/O assembly	646827-001
2	SATA optical drive power cable	646834-001
3	SATA hard drive power cable	646833-001
4	Power switch/LED assembly	646828-001
5	SATA cable, 18 inch, 1 straight end, 1 angled end (unlabeled)	639958-001
6	SATA cable, 17.7 inch, 2 straight ends	639959-001
*	SATA cable, 18 inch, 1 straight end, 1 angled end (labeled)	646830-001
*	DMS-59 to dual VGA cable	463023-001
*	Adapter, DisplayPort to VGA	603250-001
*	Adapter, DisplayPort to DVI	484156-001
*	Adapter, DisplayPort to HDMI	617450-001
*	DisplayPort cable	487562-001

\*Not shown

#### Keyboards (not illustrated)

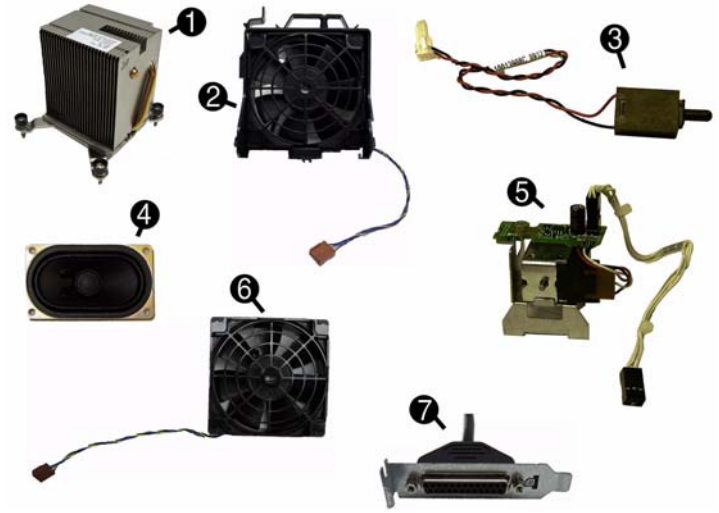
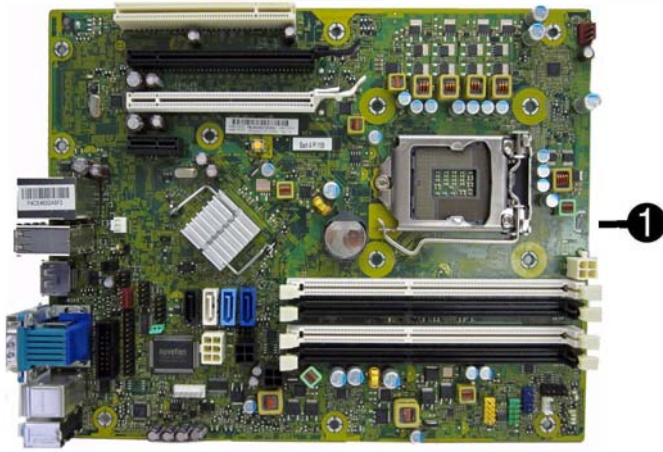
<b>PS/2, Basic</b>	<b>537745-xx1</b>	
<b>USB, Basic</b>	<b>537746-xx1</b>	
<b>Washable</b>	<b>613125-xxx</b>	
<b>Smartcard</b>	<b>631411-xx4</b>	
Arabic	-17x LA Spanish[b]	-16x
Belgian[b]	-18x Norwegian[b]	-09x
Brazilian Portuguese[b]	-20x People's Republic of China[b]	-AAx
Bulgaria [c]	-26x Portuguese	-13x
Czech	-22x Romanian [c]	-27x
Danish[b]	-08x Russian	-25x
Finnish[a]	-35x Saudi Arabia	-DEx
French[b]	-05x Slovakian	-23x
French Canadian	-12x South Korea[b]	-KDx
German[b]	-04x Spanish[b]	-07x
Greek[b]	-15x Swedish[b]	-10x
Hebrew	-BBx Swiss	-11x
Hungarian	-21x Taiwanese[b]	-ABx
International[b]	-37x Thai[b]	-28x
International English[b]	-L3x Turkish	-14x
Italian[b]	-06x U.S.	-00x
Japanese[b]	-29x U.K.[b]	-03x

[a] not for 537745  
[b] not for 613125

[c] not for 631411

#### Mass Storage Devices (not illustrated)

16X SATA DVD±RW drive with LightScribe	581600-001
16X SATA DVD-ROM drive	581599-001
Blu-ray BD-RW SuperMulti DL Drive with LightScribe	617030-001
1 TB, 7200 rpm SATA hard drive	636930-001
750 GB, 7200 rpm SATA hard drive	632938-001
500 GB, 7200 rpm SATA hard drive	636929-001
320 GB, 7200 rpm SATA hard drive, 2.5-inch	634824-001
300 GB, 10000-RPM SATA3 hard drive	639695-001
300 GB, 10000-RPM SATA2 hard drive	648963-001
250 GB, 7200 rpm SATA hard drive	636927-001
160 GB, 10000-RPM SATA hard drive	639694-001
160 GB, 10000-RPM SATA hard drive, 2.5-inch	508312-001
160 GB Solid State Drive (SSD)	646809-001
80 GB Solid State Drive (SSD)	607817-001



### Standard and Optional Boards

System boards with thermal grease, alcohol pad, and CPU socket cover

1	System board	611834-001
*	System board, does not include Trusted Platform Module (TPM)	649741-001

Memory modules (PC3-10600, CL9)

2	1 GB	635802-001
*	2 GB	635803-001
*	4 GB	585157-001

Other boards

*	HP WLAN 802.11 b/g/n	538048-001
*	Antenna for use with 538048-001	583345-001
*	nVidia Quadro NVS295 PCIe x16 graphics card, 256 MB	641462-001
*	nVidia Quadro NVS300 PCIe x16 graphics card, 512 MB	632486-001
*	nVidia GF405, DVI/VGA PCIe x16 graphics card, 512 MB	641732-001
*	ATI Radeon HD6350 PCIe x16 graphics card, 512 MB	637995-001
*	ATI Radeon HD6450 PCIe x16 graphics card, 512 MB	637996-001
*	ATI Radeon HD6570 PCIe x16 graphics card, 1 GB	637997-001
*	AMD FirePro 2270 PCIe x16 graphics card, 512 MB	637213-001
*	Intel PRO/1000CT NIC, includes bracket	635523-001
*	HP FireWire / IEEE 1394a PCIe x1 Card	637591-001

Intel Core i7 processors (include thermal material)

*	2600, 3.4 GHz, 8-MB L3 cache, 95W	638632-001
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Intel Core i5 processors (include thermal material)

*	2500, 3.3 GHz, 6-MB L3 cache, 95W	638631-001
*	2400, 3.1 GHz, 6-MB L3 cache, 95W	638630-001

Intel Core i3 processors (include thermal material)

*	2120, 3.3 GHz, 3-MB L3 cache, 65W	638629-001
*	2100, 3.1 GHz, 3-MB L3 cache, 65W	638628-001

\* Not shown

### Diagnostic LEDs

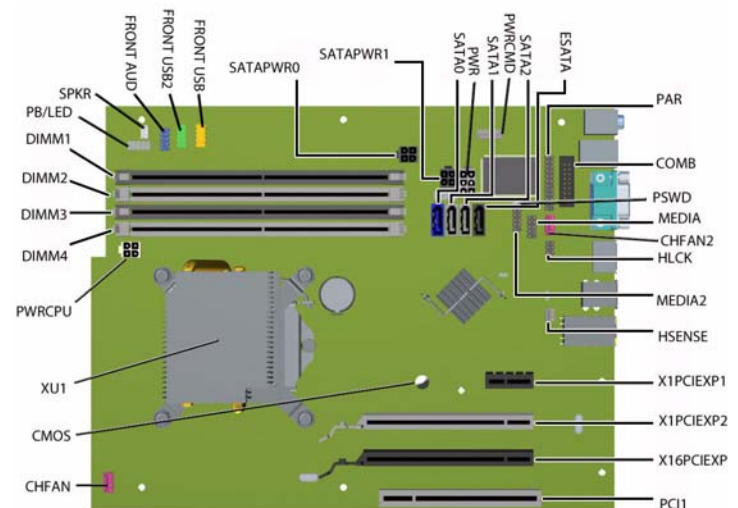
LED	Color	LED Activity	State/Message
Power	Green	On	Computer on
Power	Green	1 blink every 2 seconds	Normal Suspend Mode
Power	Red	1 blink every second followed by a 2 second pause	CPU thermal shutdown
Power	Red	3 blinks, 1 blink every second followed by a 2 second pause	Processor not installed
Power	Red	4 blinks, 1 blink every second followed by a 2 second pause	Power failure (power supply overload)
Power	Red	5 blinks, 1 blink every second followed by a 2 second pause	Pre-video memory error
Power	Red	6 blinks, 1 blink every second followed by a 2 second pause	Pre-video graphics error
Power	Red	7 blinks, 1 blink every second followed by a 2 second pause	System board failure (ROM)
Power	Red	8 blinks, 1 blink every second followed by a 2 second pause	Invalid ROM based on Checksum
Power	Red	9 blinks, 1 blink every second followed by a 2 second pause	System powers on but is unable to boot
Power	Red	10 blinks, 1 blink every second followed by a 2 second pause	Bad option card
Power	Red	11 blinks, 1 blink every second followed by a 2 second pause	Current processor does not support a feature previously enabled.
none	none	System does not power on and LEDs are not flashing	System unable to power on

### Miscellaneous Parts

1	Heat sink	645326-001
2	Fan chassis with guard	585884-001
3	Hood sensor	638816-001
4	Speaker, 40mm x 70mm	645330-001
5	Solenoid lock	641498-001
6	Chassis fan, 92mm x 92mm	636922-001
7	Printer port, PCI card	638817-001
*	Serial port, PCI card	638815-001
*	Fan duct assembly	646824-001
*	Card reader, 22-in-1	636166-001
*	Grommet, hard drive isolation, blue	594220-001
*	USB powered speakers	571536-001
*	Mouse, PS2, optical, jack black	537748-001
*	Mouse, USB, BFR-PVC	590270-001
*	Mouse, washable	619580-001
*	Mouse, optical, jack black	444740-001
*	Mouse, laser, jack black	570580-001
*	USB 3.0 port, PCIe x1 card	616610-001
*	eSATA port assembly, PCI card	645558-001
*	Hard drive conversion bracket	397117-001
*	Clamp lock, includes universal cable (plate not included)	508987-001

\*Not shown

### System Board



### System Board Connectors and Jumpers (component location may vary)

Connector/Jumper	Description	Connector/Jumper	Description
SPKR	Speaker connector	HLCK	Hood lock connector
FRNT AUD	Front panel connector	MEDIA2	Media card reader connector
FRONT_USB2	2nd USB connector	HSENSE	Hood sensor connector
FRONT_USB	1st USB connector	X1PCIEXP1	PCIe X1 slot
SATA PWR0	Optical drive power connector	X1PCIEXP2	PCIe X1 slot
SATA PWR1	Hard drive power connector	X16PCIEXP	PCIe X16 slot
SATA0	1st hard drive (SATA3.0)	PCI1	PCI slot
PWR	Main power connector	CHFAN	Fan connector
SATA1	2nd hard drive, or 2nd ODD if an ESATA Adapter Cable exists (SATA 3.0)	CMOS	CMOS header
PWR CMD	Power connector	XUI	Processor socket
SATA2	1st optical drive (SATA 2.0)	PWRCPU	CPU power connector
ESATA	eSATA connector or 2nd ODD	DIMM4	Memory socket - Channel A
PAR	Parallel port connector	DIMM3	Memory socket - Channel A
COMB	Serial port	DIMM2	Memory socket - Channel B
PSWD	Password header	DIMM1	Memory socket - Channel B
MEDIA	Media card reader connector	PB/LED	Power switch connector
CHFAN2	System fan connector		

## System Setup and Boot

Access the Setup Utility during the computer boot sequence by pressing the **Esc** key while “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen, and then pressing the **F10** key. If you do not press **Esc** at the appropriate time, you must restart the computer and again press **Esc** when the monitor light turns green to access the utility.

### Computer Setup Menu

Heading	Option/Description	
File	System Information - Lists the following main system specifications: <ul style="list-style-type: none"> <li>Product name</li> <li>SKU number (some models)</li> <li>Processor type/speed/stepping</li> <li>Cache size (L1/L2/L3)</li> <li>Installed memory size/speed/chan</li> <li>Integrated MAC Address</li> <li>System BIOS</li> <li>Chassis serial number</li> <li>Asset tracking number</li> <li>ME firmware version</li> <li>ME Management mode</li> </ul>	
	About - Displays copyright notice.	
	Set Time and Date - Allows you to set system time and date.	
	Flash System ROM - Allows you to select a drive containing a new BIOS.	
	Replicated Setup - Save to Rmvble Media and Restore from Rmvble Media	
	Default Setup <ul style="list-style-type: none"> <li>Save Current Settings as Default</li> <li>Restore Factory Settings as Default</li> </ul>	
	Apply Defaults and Exit - Applies the selected default settings and clears any established passwords.	
	Ignore Changes and Exit - Exits Computer setup without saving changes.	
	Save Changes and Exit - Saves changes to system configuration or default settings and exits Computer Setup.	
	Storage	Device Configuration - Lists all installed BIOS-controlled storage devices. The following options are available: <ul style="list-style-type: none"> <li>CD-ROM - Let you view drive size, model, firmware version, serial number, connector color.</li> <li>Hard Disk - Let you view drive size, model, firmware version, serial number, connector color, SMART. Also lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off).</li> <li>Diskette Drive - model and firmware version.</li> <li>SATA Defaults - lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off).</li> <li>eSATA port - Allows you to set a SATA port as an eSATA port for use with an external drive.</li> <li>SATA Emulation - IDE, RAID (not for USDT), or AHCI.</li> <li>Removable Media Boot - Enables/disables ability to boot the system from removable media.</li> <li>Max eSATA Speed - Allows you to choose 1.5 Gbps or 3.0 Gbps as the maximum eSATA speed.</li> </ul>
DPS Self-Test - Allows you to execute self-tests on ATA hard drives.		
Boot Order - Allows you to specify boot order. <ul style="list-style-type: none"> <li>Shortcut to Temporarily Override Boot Order</li> </ul>		
Security		Setup Password - Allows you to set and enable the setup (Admin) password.
		Power-On Password - Allows you to set and enable power-on password.
		Password Options - When any password exists allows you to lock legacy resources, enable/disable Setup Browse Mode, set password prompt, enable/disable network server mode, specify password requirement for warm boot, and set stringent passwords.
		Smart Cover (some models) - Allows you to lock/unlock cover lock and set status of cover removal sensor.
	Device Security - Allows you to set Device Available/Device Hidden for: embedded security devices, serial and parallel ports, system audio, network controller, and SATA ports.	
	USB Security - Allows you to set Device Available/Device Hidden for front USB ports 1-4, rear USB ports 1-6, accessory USB ports 1-4.	
Slot Security - Allows you to disable any PCI or PCI Express slot.		
Network Boot - Enables/disables boot from OS (NIC models only).		
System IDs - Allows you to set Asset tag, Ownership tag, Chassis serial number or UUID, and keyboard locale setting.		
System Security (some models) - Allows you to enable/disable: <ul style="list-style-type: none"> <li>Data Execution Prevention (enable/disable)</li> <li>Virtualization Technology (VTx) (enable/disable)</li> <li>Virtualization Technology Directed I/O (VTD) (enable/disable)</li> <li>Intel TXT (LT) (enable/disable)</li> <li>Embedded Security Device Support (enable/disable)</li> <li>OS management of Embedded Security Device (enable/disable)</li> <li>Reset of Embedded Security Device through OS (enable/disable)</li> </ul>		
DriveLock Security - Allows you to assign or modify a master or user password for hard drives.		
Power	OS Power Management - Allows you to enable/disable Runtime Power Management, Idle Power Savings, Unique Sleep State Blink Rates.	
	Hardware Power Management - Allows you to enable/disable SATA bus power management and S5 maximum power savings.	
	Thermal - Allows you to control minimum fan speed.	
Advanced	Power-On Options - Allows you to set: <ul style="list-style-type: none"> <li>POST mode-QuickBoot, FullBoot, Clear Memory, FullBoot every x days</li> <li>POST messages - Enable/disable</li> <li>Press the ESC key for Startup Menu - Enable/disable</li> <li>Option ROM prompt - Enable/disable</li> <li>After Power Loss - Off/on/previous state</li> <li>POST Delay - None, 5, 10, 15, or 20 seconds</li> <li>System Recovery Boot Support - Enable/disable</li> <li>Remote Wakeup Boot Source - Remote server/local hard drive</li> <li>Bypass F1 Prompt on Configuration Changes - Enable/disable</li> </ul>	
	BIOS Power-On - Allows you to set the computer to turn on at a preset time.	
	Onboard Devices - Allows you to set resources or disable Legacy devices.	
	Bus Options (some models) - Allows you to enable/disable PCI SERR# Generation and PCI VGA palette snooping.	
	Device Options - Allows you to set: <ul style="list-style-type: none"> <li>Turbo Mode - enable/disable</li> <li>Printer Mode - Bi-Directional, EPP &amp; ECP, Output Only</li> <li>Num Lock State at Power-on - off/on</li> <li>Integrated Video - enable/disable</li> <li>Internal Speaker - enable/disable</li> <li>NIC Option ROM Download - enable/disable</li> <li>Multi-Processor - enable/disable</li> <li>Hyper-threading - enable/disable</li> </ul>	
	<b>Computer Setup Menu (continued)</b>	
	Advanced (cont)	VGA Configuration - Displayed only if there are multiple PCI video adapters in the system. Allows you to specify which VGA controller will be the “boot” or primary VGA controller.
		AMT Configuration - Allows you to set: <ul style="list-style-type: none"> <li>AMT-enable/disable functions of the embedded Management Engine (ME) such as Active Management Technology (AMT).</li> <li>Unconfigure AMT/ME-unconfigure any provisioned management settings for AMT.</li> <li>Watchdog Timer-set amount of time for a operating system and BIOS watchdog alert to be sent if the timers are not deactivated.</li> </ul>

### Common POST Error Messages

Screen Message	Probable Cause	Recommended Action
101-Option ROM Error	1. System ROM checksum error. 2. Expansion board option ROM checksum	1. Verify ROM, reflash if required 2. Remove suspected card, reboot 3. Clear CMOS memory, reboot 4. Replace system board
103-System Board Failure	DMA, timers	1. Clear CMOS memory. 2. Remove expansion boards. 3. Replace system board.
164-Memory Size Error and 201-Memory Error	Incorrect memory configuration	1. Run Setup (F10). 2. Check DIMMs for proper seating, type, and HP compatibility. 3. Remove DIMMs singularly and reboot to isolate faulty DIMM. 4. Replace system board.
214-DIMM Configuration Warning	Populated DIMM configuration is not optimized	Rearrange the DIMMs so that each channel has the same amount of memory.
301-, 304-Keyboard error	Keyboard failure.	Check keyboard connection or keys. Check connector for bent or missing pins. Replace keyboard. If 304, possible system board problem.
501-Display Adapter Failure	Graphics display controller.	1. Reseat graphics card. 2. Clear CMOS. 3. Check monitor connection. 4. Replace graphics card.
1720-SMART Hard Drive Detects Imminent Failure	Hard drive is about to fail.	1. Determine if hard drive is giving correct error message. Enter Computer Setup and run the Drive Protection System test under <b>Storage &gt; DPS Self-test</b> . 2. Apply hard drive firmware patch if applicable. 3. Back up contents and replace hard drive.

## Password Security

Establishing a Setup or Power-On password:

- Turn on or restart the computer.
- As soon as the computer turns on, press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
- Press the **F10** key to enter Computer Setup.
- To establish Setup password, select **Security > Setup Password** and follow the instructions.  
- or -  
To establish a Power-On password, select **Security > Power-On Password** and follow the instructions on the screen
- Before exiting, click **File > Save Changes and Exit**.

### Changing a Setup or Power-On password:

- Turn on or restart the computer.  
To change the Setup password, go to step 2.  
To change the Power-on password, go to step 3.
  - To change the Setup password, as soon as the computer turns on:
    - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
    - Press the **F10** key to enter Computer Setup.
  - When the key icon appears, type your current password, a slash (/) or alternate delimiter character, your new password, another slash (/) or alternate delimiter character, and your new password again as shown:  
*current password/new password/new password*.  
NOTE: Type the new password carefully since the characters do not appear on the screen.
  - Press **Enter**.
- The new password will take effect the next time the computer is restarted.

### Deleting a Power-On or Setup password

- Turn on or restart the computer.  
To delete the Setup password, go to step 2.  
To delete the Power-On password, go to step 3.
- To change the Setup password, as soon as the computer turns on:
  - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
  - Press the **F10** key to enter Computer Setup.
- When the key icon appears, type your current password followed by a slash (/) or alternate delimiter character as shown. Example: *currentpassword/*
- Press **Enter**.

### Clearing CMOS

- Turn off the computer and disconnect the power cord from the power outlet.
- Remove the access panel.
- On the system board, press and hold the CMOS button for 5 seconds.
- Replace the chassis access panel and reconnect the power cord.
- Turn on the computer and allow it to start.