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Compaq ProLiant ML370 G2

Service Update

Abstract: This service update white paper describes an update to the Compaq ProLiant ML370 G2 Server. It provides spares part and option kit numbers for the new 1.4 GHz processor and reviews service procedures for removing or replacing the processor.

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Compaq ProLiant ML370 G2 Service Update© 2002 Compaq Computer Corporation

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Product Description

The ProLiant ML370 G2 Server has a new processor speed, 1.4Ghz. This document lists the new option and spare part number and reviews the corresponding procedures to service.



Features

This is a review of the features pertinent to this update.

- New, faster processor speed: 1.4GHz

System and Mechanical Spare Parts List

As a review, Figure 1 and 2 illustrate an exploded views of the mechanical and system spare component parts. Table 1 lists the option and spare part numbers. Part numbers for new processor are **highlighted** in yellow.

Figure 1. Mechanical parts exploded view

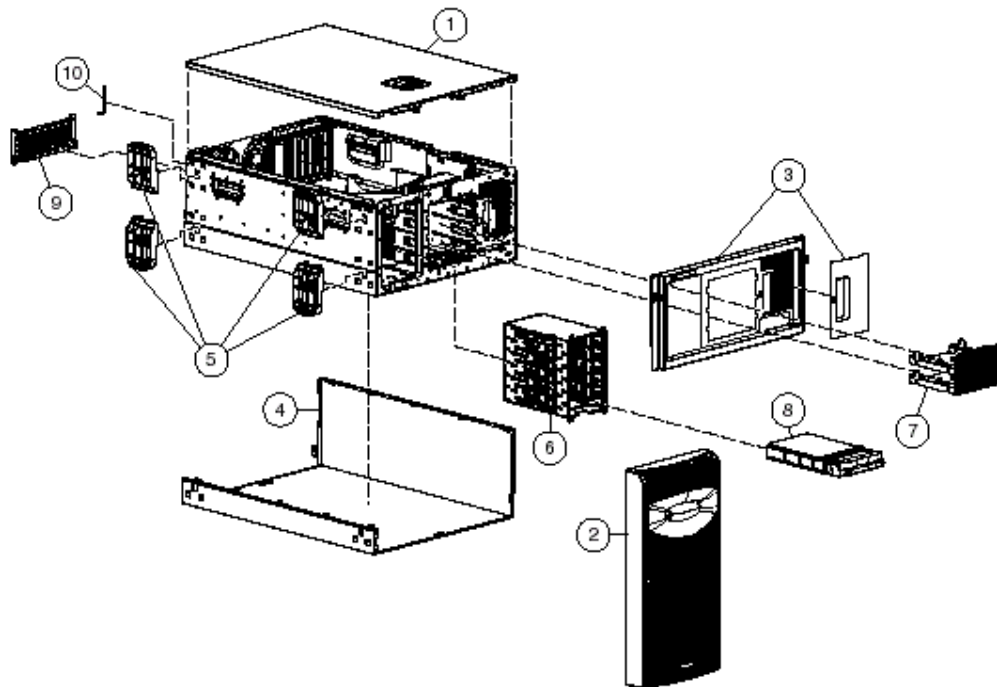


Figure 2. System components exploded view

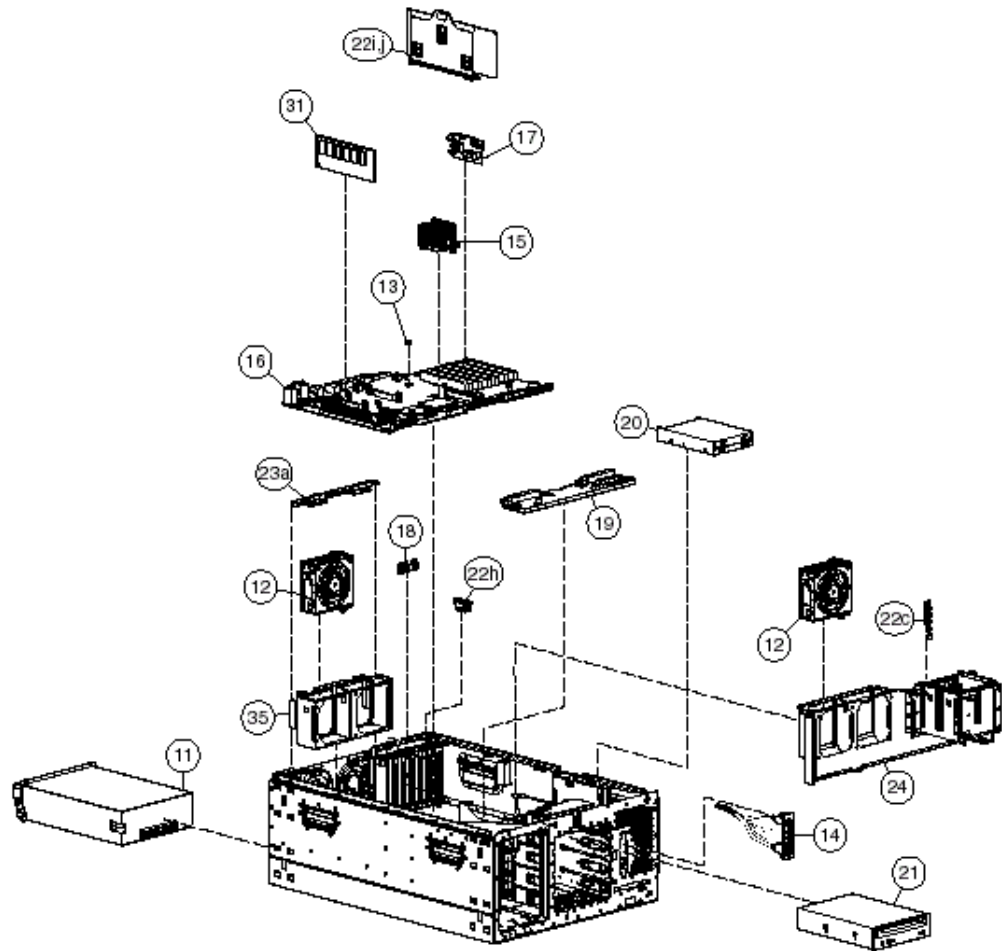


Figure 1-2. System components

Table 1: System and Mechanical Spare Parts List

Item	Description	Assembly Number	Spare Part Number
	Mechanical Components		
1	Access panel (top cover)	224969-001	230985-001
2	Front bezel (tower model only)	224991-001	230996-001
3	Rack bezel (rack model only)	224992-001	230997-001
4	Tower hood cover	224954-001	233410-001
5	Feet (tower model only) (part of kit #23)	228148-001	230979-001
6	6 x 1-inch hot-plug SCSI drive cage, with backplane	224990-001	230995-001
7	Removable media blanks	141289-002	231212-001
8	Hard drive blank	349448-001	122759-001
9	Power supply blank	224955-001	233601-001
10	Torx T-15 tool	107473-001	199630-001
	System Components		
11	Power supply, 500 W, with handle	216068-001	230993-001
12	Fans, 92 mm	224994-001	231213-001
13	3.3 V lithium battery	334149-001	179322-001
14	Power button/LED assembly	225034-001	230986-001
	Boards		
15	Processor, Intel Pentium III a) 1.13-GHz, with heatsink b) 1.26-GHz, with heatsink c) 1.4-GHz, with heatsink	235384-003 235384-002 235384-004	239324-001 230991-001 259594-001
16	System board	011074-001	230998-001
17	Processor power module (PPM)	217366-001	228506-001
18	PCI Hot Plug backplane	011077-001	230981-001

Item	Description	Assembly Number	Spare Part Number
19	Power supply backplane	011080-001	230982-001
	Mass Storage Devices		
20	Diskette drive, 3-mode, 1.44-MB	233327-001	233409-001
21	CD-ROM drive, IDE, 40x	222839-001	233408-001
	Miscellaneous		
22	Plastics kit		230979-001
	a) Foot, stone (see item number 6)	228148-001	
	b) Receptacle, door snap, opal *	148525-003	
	c) Retainer, card guide, PCI		
	Hot-plug	1774555-003	
	Non-hot-plug	1774555-004	
	d) Fastener, 0.150 plastic standoff *	225249-001	
	e) Fastener, 0.202 plastic standoff *	225250-001	
	f) Clip, cable, adhesive, 1.77 inch *	241347-007	
	g) Clip, retainer, 0.125 diameter *	115151-007	
	h) Assembly, PCI latch and base		
	Hot-plug	228194-001	
	Non-hot-plug	228194-002	
	PCI Hot Plug Divider Assembly		
	i) Puller, PCI Hot Plug	230674-001	
	j) Divider, PCI Hot Plug	226693-001	
	k) Base, PCI Hot Plug *	226692-001	
23	Hardware kit		230980-001
	a) Bracket, rear, removable	224965-001	

Item	Description	Assembly Number	Spare Part Number
	b) Bracket, floppy tray*	224953-001	
	c) Bracket, floppy retainer*	228189-001	
	d) Cover, slot, PCI expansion*	306348-001	
	e) Bracket, blank, option board, new PCI latch*	228072-001	
24	Wall, center	224949-001	230999-001
25	Rack-mounting kit *	228715-001	230994-001
26	Country kit *	195316-001	230992-001
27	Maintenance and service guide *	203511-003	230989-001
28	Return kit, packing box and cushions *		230990-001
	Cables		
29	Miscellaneous data cable kit *		230988-001
	a) IDE hard drive/CD-ROM drive data cable	242947-019	
	b) Floppy drive cable	271946-005	
	c) PCI Hot Plug backplane cable	224999-001	
	d) Point-to-point SCSI cable	166298-033	
	e) 3-device SCSI cable	148785-004	
	f) Auxiliary VHDCI SCSI cable	155074-002	
30	Miscellaneous power cable kit *		230987-001
	a) Diskette and CD-ROM drive power cable	224997-001	
	b) Power supply cable, 24-pin	224996-001	
	c) Fan cage cable	224998-001	
	*not shown		

Item	Description	Assembly Number	Spare Part Number
	Memory		
31	256-MB (2 x 128-MB), 133-MHz, registered SDRAM DIMM kit	201692-B21	164278-001
32	512-MB (2 x 256-MB), 133-MHz, registered SDRAM DIMM kit *	201693-B21	157377-001
33	1-GB (2 x 512-MB), 133-MHz, registered SDRAM DIMM kit *	201694-B21	177628-001
34	2-GB (2 x 1-GB), 133-MHz, registered SDRAM DIMM kit *	201695-B21	163902-001
	Options		
35	Rear fan cage	224956-001	230984-001
36	Tower-to-rack conversion kit *	225074-B21	230997-001
37	Smart Array 5i Controller *	226593-B21	233609-001
38	Telco rack-mounting kit *	231121-B21	236856-001
39	Third-party rack-mounting kit *	231122-B21	236857-001
NOTE:	* Not shown		

Table 2: Processor Option Kit

Description	Part Number
Pentium III P1133-512KB Processor Option Kit	238888-B21
Pentium III P1266-512KB Processor Option Kit	231117-B21
Pentium III P1400-512KB Processor Option Kit	231118-B21

Servicing Procedures

Processor

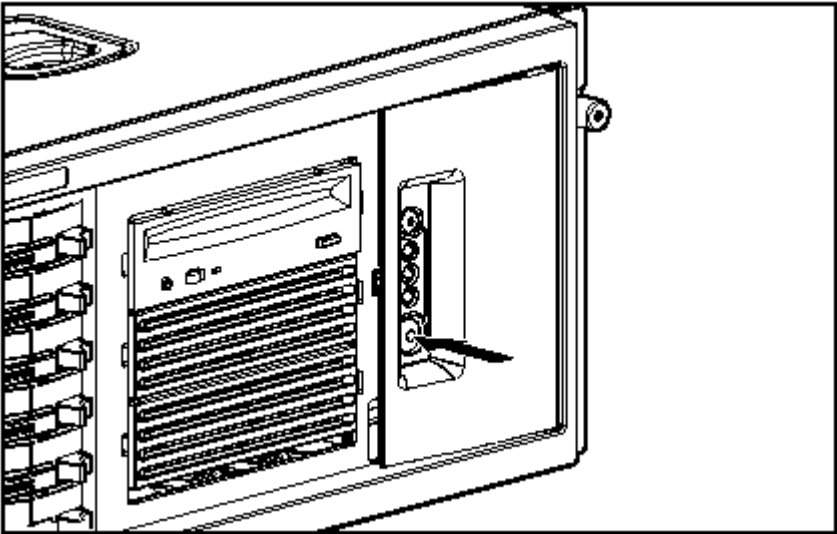
Power down the server

System power in ProLiant ML370 Generation 2 servers does not completely shut off with the front panel Power On/Standby button. The button toggles between on and standby modes, rather than on and off. The standby position removes power from most electronics and the drives, but portions of the power supply and some internal circuitry remain active. To completely remove all power from the system, you must disconnect all power cords from the server.

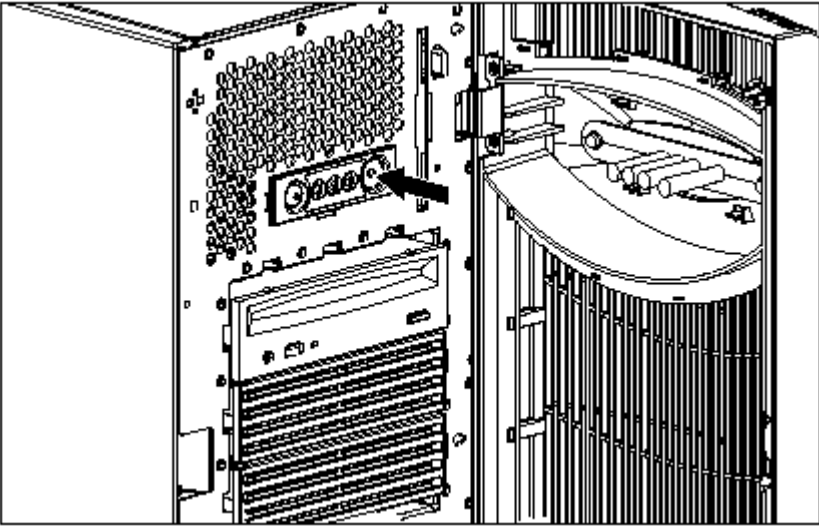
WARNING: To reduce the risk of injury from electrical shock, remove the power cords to completely disconnect power from the system.

CAUTION: Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning any installation procedure.

Rack Server

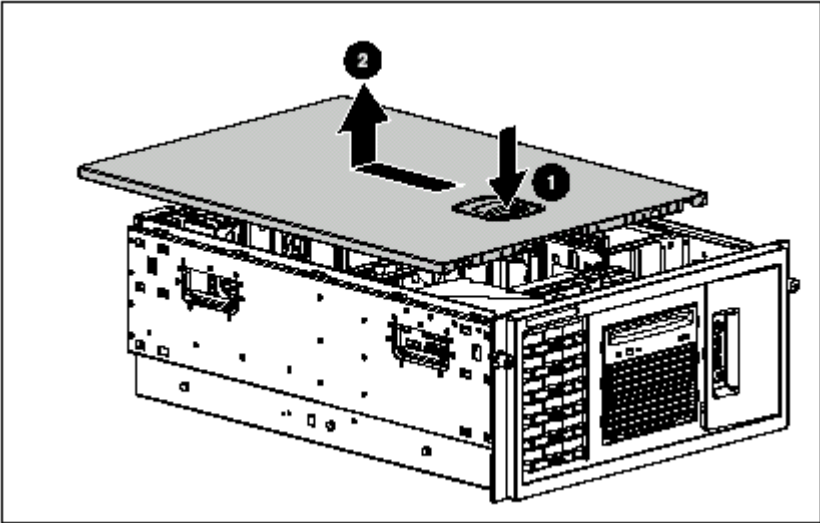
Step	Action
1.	Back up your server data.
2.	Shut down the operating system as directed in your operating system instructions.
3.	Press the Power On/Standby button. 
4.	Verify that the system power LED on the front panel, near the Power On/Standby button, is amber and that the fan noise stops.

Tower Server

Step	Action
1.	Back up your server data.
2.	Shut down the operating system as directed in your operating system instructions.
3.	Open the front bezel.
4.	<p>Press the Power On/Standby button. The system power LED turns amber when the server is powered off in this manner.</p> <p>WARNING: Setting the server Power On/Standby button to the off position removes power from most areas of the server; this process may take 30 seconds. Portions of the power supply and some internal circuitry remain active until the AC power cord is disconnected. If the server has multiple power supplies installed, it is necessary to remove all power cords to remove all power from the system.</p> 
5.	Disconnect all AC power cords from the AC outlets, then from the server.
6.	Disconnect all external peripheral devices from the server.
7.	Place the server on a sturdy, level surface.

Remove and replace the access panel

WARNING: To reduce the risk of personal injury from hot surfaces, allow internal system components to cool before touching them.

Step	Action
1.	Unlock the front bezel (tower server only). IMPORTANT: You must unlock the tower bezel before removing the access panel.
2.	Push the release latch securing the access panel to the chassis ❶.
3.	While holding the release latch down, slide the large access panel back about 1.5 cm (0.6 inches), then pull it away from the chassis ❷. 
	To replace the access panel, reverse step 3. When the release latch snaps into place, the access panel is secure.

Remove and replace the processor

CAUTION: Ensure that you have the current version of the system ROM. Failure to flash your ROM with the correct version before installing or replacing the processor causes system failure. For the most current version of the ROM, visit the Compaq website:

<http://www.compaq.com/support/files/server/us/>

Remove

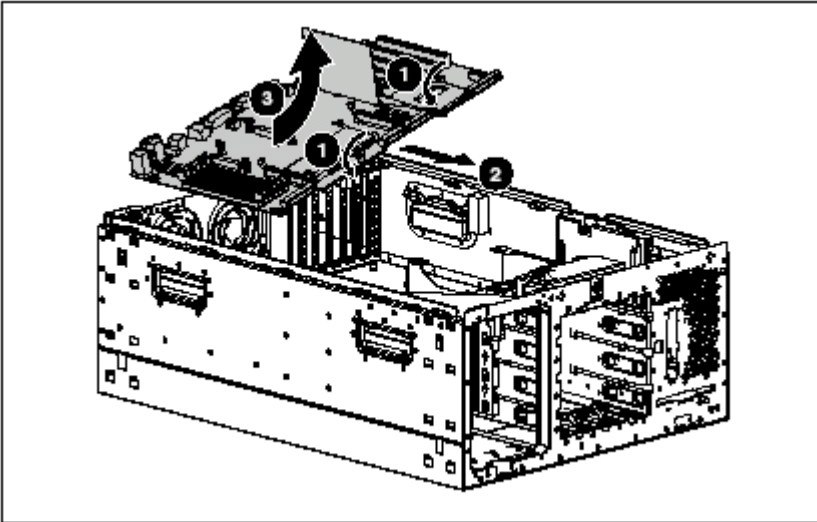
Step	Action
1.	Power down the server.
2.	Unlock the front bezel (tower server only).
3.	Remove the access panel.
4.	Release the heatsink retaining clip that secures the heatsink to the socket ❶ IMPORTANT: Ensure that the clip clears the front and rear of the socket before removing the assembly.
5.	Release the socket lever by pulling it away from the processor and then all the way up to a 90-degree angle ❷.
	Pull the processor assembly from the server ❸. <div data-bbox="418 1073 1230 1591" style="border: 1px solid black; padding: 10px; text-align: center;"> </div>
	Repeat steps 4 through 6 to remove a second processor assembly, if necessary.

Replace

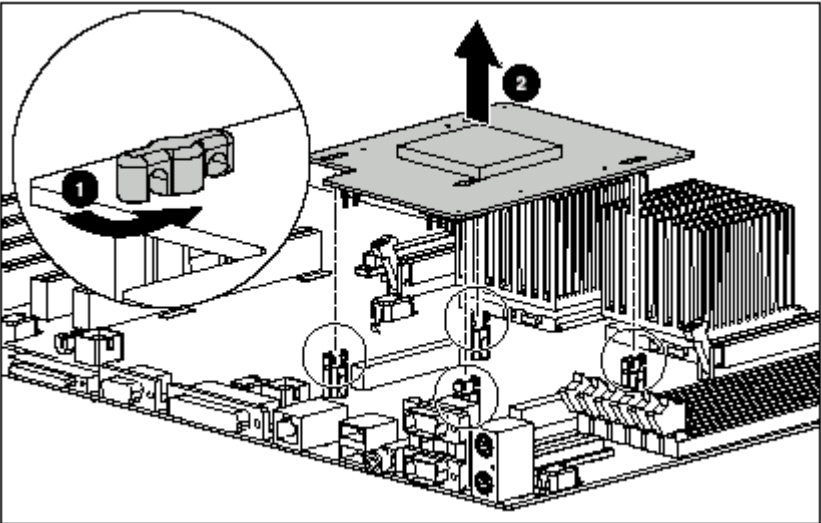
Step	Action
1.	Raise the processor socket lever to open the socket.
2.	Place the processor into the socket. Use the processor socket guide posts to align the processor. NOTE: The processor and socket are keyed to fit in one direction only. Use the holes to align with guiding pins.
3.	Lower the socket latch to secure the assembly in the socket.
4.	Lift the heatsink retaining clip over the rear edge of the socket and hook underneath the socket tabs.
5.	Clasp the front of the assembly clip over the front edge of the socket.
6.	Press the assembly clip down to secure the heatsink and processor assembly in the socket. NOTE: When replacing a failed processor, run RBSU after replacing the new processor to mark the failed processor as repaired. Refer to the setup and installation guide for more detailed information on RBSU.

System Board

Step	Action
1.	Power down the server.
2.	Unlock the front bezel (tower server only).
3.	Remove the access panel.
4.	Remove the redundant fan cage, if installed.
5.	Remove all expansion boards.
6.	Remove the dividers.
7.	Remove the center wall.
8.	Remove all cable connections.
9.	Loosen the two thumbscrews securing the system board to the chassis ❶.
10.	Slide the system board toward the front of the chassis to release it from the seven retaining guides ❷.
11.	Lift the system board out of the chassis and tilt it to one side to clear the cable guide ❸.



IMPORTANT: For safety and improved serviceability, reinstall the PCI Hot Plug divider base when replacing the system board.

Step	Action
12.	<p>Remove Smart Array 5i controller, if equipped, at this time.</p> <p>Follow these steps to do this:</p> <ol style="list-style-type: none"><li data-bbox="391 373 1437 430">a. Rotate the tops of the four anchor pins so that they align with the anchor bases ❶.<li data-bbox="391 436 1437 493">b. Grasp the controller from the front and back and gently pull away from the connectors on the system board ❷. 
13.	<p>To replace the system board, reverse steps 8 through 11 and reinstall all hardware.</p> <p>NOTE: Be sure that you align the seven retaining guides on the chassis with the holes on the system board when replacing it.</p>

Service Considerations

There are no new service considerations for this upgrade. However, here is a review of the service considerations that pertain to this new module.

The ProLiant ML370 G2 supports three processors: a 1.13-GHz , 1.26GHz, and (now) a 1.4GHz Pentium III Flip Chip - Pin Grid Array (FC-PGA) . Each processor requires its own Processor Power Module (PPM). The processor and PPM are located on the server's System Board . The Processor Option Kit contains the processor, PPM and heat sink. The processor and PPM are spared separately. When installing a 2nd processor, these guidelines must be followed.

- A processor and its PPM must be installed in the first processor location
- The Processor Core Frequency and Speed configuration settings cannot be changed from the factory default. The System ROM will automatically detect and configure the speed of the processor.
- The Chassis ID switch on the system board should be left in the default positions.
- Both processors must be the same frequency/speed. Mixing of processors with different specifications is not permitted.
- After installing a processor and PPM, the system ROM based Setup and Configuration Utility must be ran. Save the new processor configuration to CMOS.

References

For information on servicing and troubleshooting the Compaq ProLiant ML370 G2 Server refer to the:

Compaq ProLiant ML370 Generation 2 Server Maintenance and Service Guide

This maintenance and service guide is a document that can be used for reference when servicing the Compaq ProLiant ML370 Generation 2 server.

203511-003 (PDF,BM) 11558 KB *ARCHIVE* [Internal Link](#)

http://www3.compaq.com/support/reference_library/selectproduct.asp [External Link](#)

Install Guide

Compaq ProLiant ML370 Generation 2 Server Setup and Installation Guide

This guide is designed to be used as step-by-step instructions for installation and as a reference for operations, troubleshooting and future upgrades.

203510-001 (PDF,BM) 23221 KB *ARCHIVE* [Internal Link](#)

http://www3.compaq.com/support/reference_library/selectproduct.asp [External Link](#)

QuickSpec

Compaq ProLiant ML370 Generation 2 QuickSpec

http://www.compaq.com/products/quickspecs/10901_na/10901_na.html

Compaq ProLiant ML370 QuickSpecs

http://www.compaq.com/products/quickspecs/10493_na/10493_na.html

Weblink

Compaq Software and Driver Support Link

<http://www.compaq.com/support/files>