

Chapter **4**

Connectors, LED Indicators, Switches, and Jumpers

This chapter explains the location and function of system connectors, internal and external LEDs, system board switches, and jumpers.

Connectors

The figures and tables on the following pages show connector locations on the rear panel and the system board of the ProLiant DL380 Generation 2 server.

Rear Panel Connectors

Figure 4-1 and Table 4-1 show the connectors on the rear panel of a ProLiant DL380 Generation 2 server.

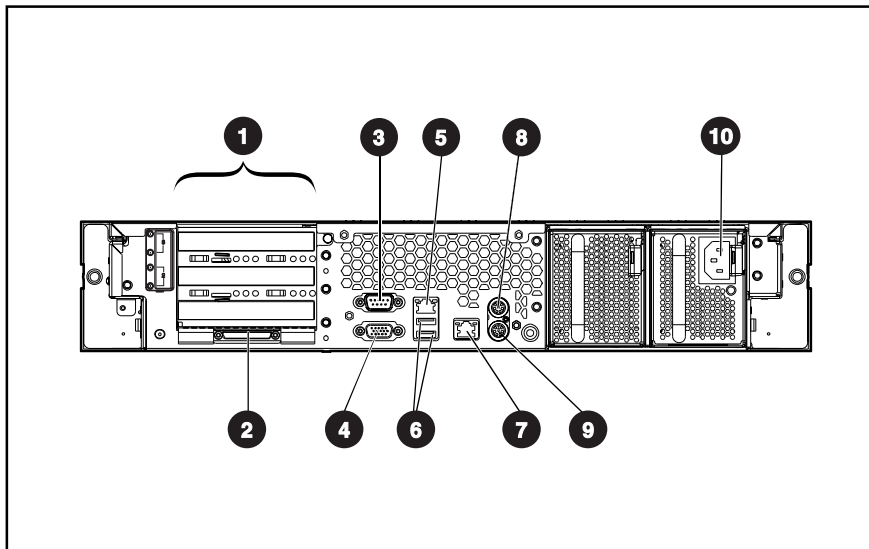


Figure 4-1. Rear panel connectors

Table 4-1
Rear Panel Connectors

Item	Description
1	PCI expansion slots
2	VHDCI SCSI connector (SCSI port 1)
3	Serial connector (teal)
4	Video connector (blue)
5	RJ-45 connector for NIC 2
6	USB connectors (2) (black)
7	RJ-45 connector for NIC 1
8	Mouse connector (PS/2) (green)
9	Keyboard connector (PS/2) (purple)
10	Power connector

System Board Connectors

Figure 4-2 and Table 4-2 show the connectors on the system board.

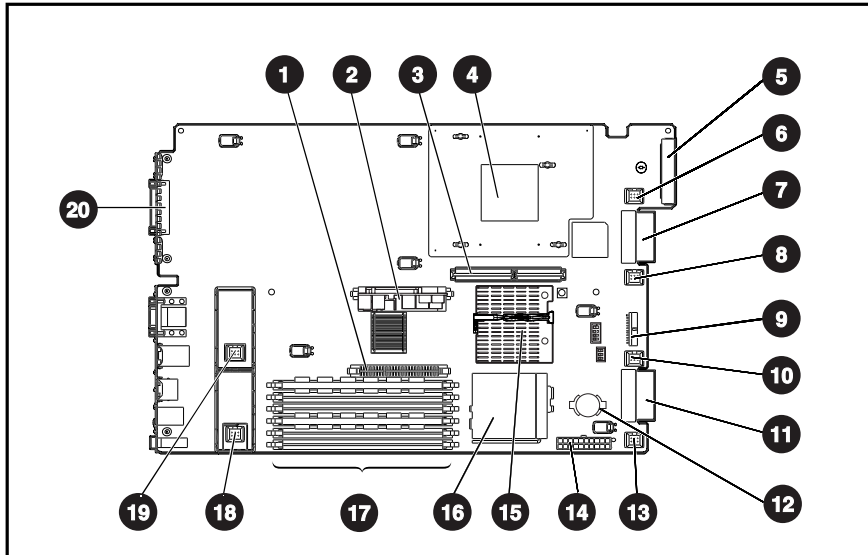


Figure 4-2. System board connectors

Table 4-2
System Board Connectors

Item	Description	Item	Description
1	PPM slot 2	8	Diskette drive system connector
2	PPM slot 1	9	Battery
3	PCI riser cage connector	10	Fan 6 connector
4	Smart Array 5i Controller	11	System power connector
5	SCSI port 2 (internal)	12	Processor socket 1
6	Fan 3 connector	13	Processor socket 2
7	LED/CD-ROM drive system connector	14	DIMM slots (1A-6C)
15	Fan 4 connector	15	Fan 2 connector
16	Power supply signal connector	16	Fan 1 connector
17	Fan 5 connector	17	VHDCI SCSI connector (port 1)
18			
19			
20			

LED Indicators

The ProLiant DL380 Generation 2 server contains several sets of LEDs that indicate the status and settings of hardware components. This section explains the following types of LEDs:

- Front panel
- Hot-plug SCSI hard drive
- PCI riser cage
- PCI Hot Plug
- RJ-45 network connector
- Rear unit identification LED switch
- Hot-plug power supply
- Hot-plug fan
- Power converter module
- System board

Front Panel LEDs

The five LEDs on the front of the server indicate server status. Figure 4-3 and Table 4-3 identify and describe the LED locations and functions.

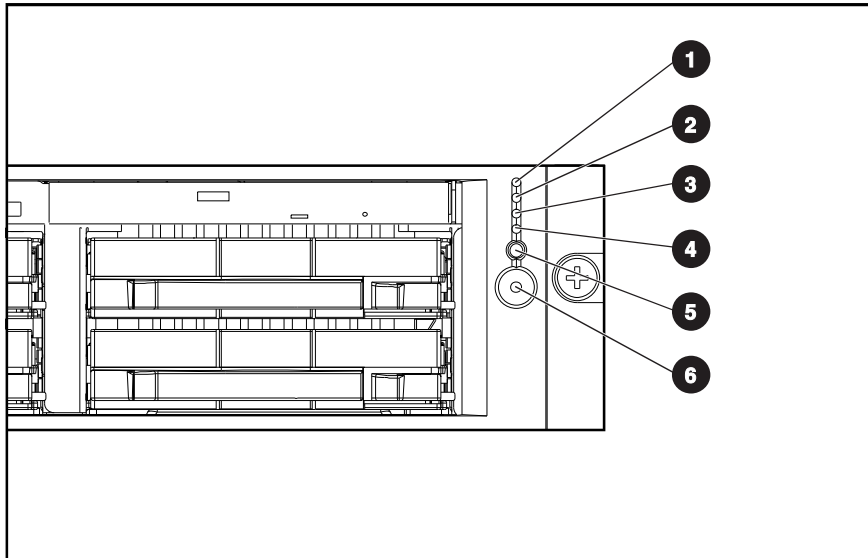


Figure 4-3. Front panel LEDs

Table 4-3
Front Panel LEDs

Item	LED Description	Status
1	Internal health	Red = System critical Amber = System degraded Green = Normal
2	External health (power supply)	Red = Critical power supply failure Amber = Power redundancy failure Green = Normal
3	NIC 1 link/activity	Green = Network link
4	NIC 2 link/activity	Flashing = Network link/activity Off = No link/activity. (If power is off, view the rear panel RJ-45 LEDs.)
5	Front unit identification LED switch	Blue = Activated Off = Deactivated
6	System power	Amber = System shut down, but power still applied Green = System on Off = Power cord not attached or power supply failure

The internal health LED identifies service events for internal components in a pre-failure or failed condition. Use Table 4-9 to identify LED combinations for the internal health LED and the system LEDs.

Hot-Plug SCSI Hard Drive LEDs

Each hot-plug SCSI hard drive has three LEDs located on the front of the drive. The LEDs provide activity, online, and fault status for each corresponding drive configured as a part of an array and attached to a powered-on Smart Array Controller. The indicators may vary depending on the status of other drives in the array. Use Figure 4-4 and Table 4-4 to analyze the status of each hot-plug SCSI hard drive.



WARNING: To avoid personal injury read the “Hot-Plug Hard Drive Replacement Guidelines” in the *Compaq Servers Troubleshooting Guide* before removing a hard drive.

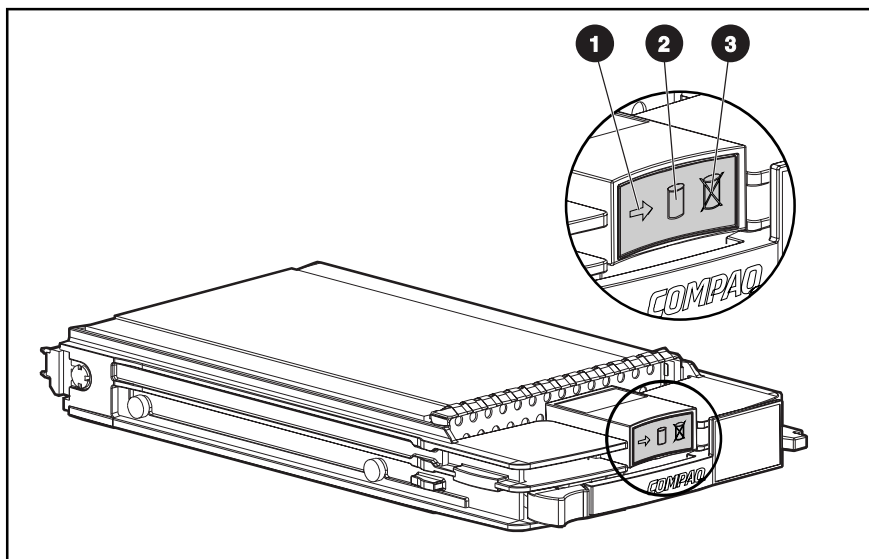


Figure 4-4. Hot-plug SCSI hard drive LEDs

- The LED on the left indicates drive activity status **1**, where ON indicates activity and OFF indicates no activity by the drive.
- The center LED indicates online status **2**, where flashing indicates an active online condition and OFF indicates an inactive online condition.
- The LED on the right indicates fault status **3**, where flashing indicates fault-process activity and OFF indicates a no fault-process activity.

Table 4-4
Hot-Plug SCSI Hard Drive LED Status Combinations

Activity	Online	Fault	Means
On	Off	Off	<p>Do not remove the drive. Removing a drive during this process causes data loss.</p> <p>The drive is being accessed and is not configured as part of an array.</p>
On	Flashing	Off	<p>Do not remove the drive. Removing a drive during this process causes data loss.</p> <p>The drive is rebuilding or undergoing capacity expansion.</p>
Flashing	Flashing	Flashing	<p>Do not remove the drive. Removing a drive during this process causes data loss.</p> <p>The drive is part of an array being selected by the Array Configuration Utility.</p> <p>-Or-</p> <p>The Options ROMPaq is upgrading the drive.</p>
Off	Off	Off	<p>OK to replace the drive online if a predictive failure alert is received (see the following section for details) and the drive is attached to an array controller.</p> <p>The drive is not configured as part of an array.</p> <p>-Or-</p> <p>If this drive is part of an array, then a powered-on controller is not accessing the drive.</p> <p>-Or-</p> <p>The drive is configured as an online spare.</p>
Off	Off	On	<p>OK to replace the drive online.</p> <p>The drive has failed and has been placed off-line.</p>
Off	On	Off	<p>OK to replace the drive online if a predictive failure alert is received (see the following section for details), provided that the array is configured for fault tolerance and all other drives in the array are online.</p> <p>The drive is online and configured as part of an array.</p>
On or flashing	On	Off	<p>OK to replace the drive online if a predictive failure alert is received (see the following section for details), provided that the array is configured for fault tolerance and all other drives in the array are online.</p> <p>The drive is online and being accessed.</p>

PCI Riser Cage LEDs

The PCI riser cage contains two LEDs. The slot speed LED indicates whether slots 2 and 3 are operating at 66 or 33 MHz. The AC power connected LED indicates when the AC power is connected to the server.

Use Figure 4-5 and Table 4-5 to identify the PCI riser cage LEDs.

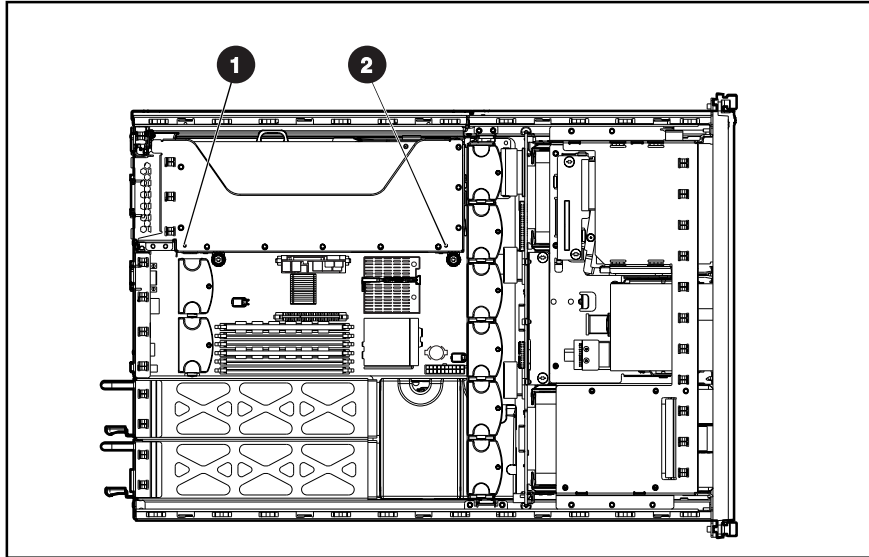


Figure 4-5. PCI riser cage LEDs

Table 4-5
PCI Riser Cage LEDs

Item	LED Description	Status
1	AC power connected (green)	On = AC power connected Off = AC power disconnected
2	Slot speed (green)	On = 66 MHz Off = 33 MHz

PCI Hot Plug LEDs

The PCI Hot Plug LEDs adjacent to each expansion slot provide a visual reference of the status for each slot. These LEDs can also be viewed when the hot-plug door is open. Use Figure 4-6 and Table 4-6 to identify the LEDs.

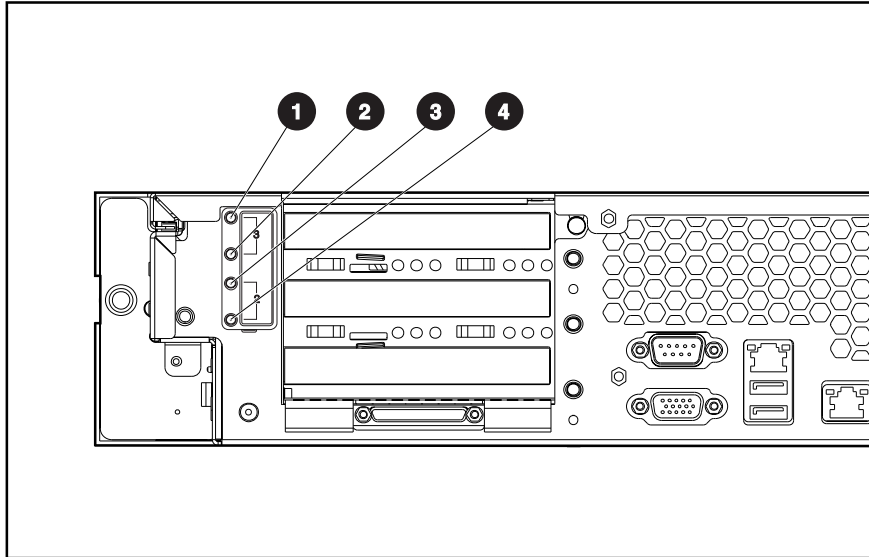


Figure 4-6. PCI Hot Plug button LEDs

Table 4-6
PCI Hot Plug LEDs

Item	LED Description	Status
1	Slot 3 power (green)	On = Power is applied to the slot. Flashing = Power is cycling. Off = Power is not applied to the slot.
2	Slot 3 fault (amber)	On = Board has failed. Off = Board is normal.
3	Slot 2 power (green)	On = Power is applied to the slot. Flashing = Power is cycling. Off = Power is not applied to the slot.
4	Slot 2 fault (amber)	On = Board has failed. Off = Board is normal.

RJ-45 Network Connector LEDs

The RJ-45 network connector on the server rear panel has two LEDs. Use Figure 4-7 and Table 4-7 to identify the location and status of the LEDs.

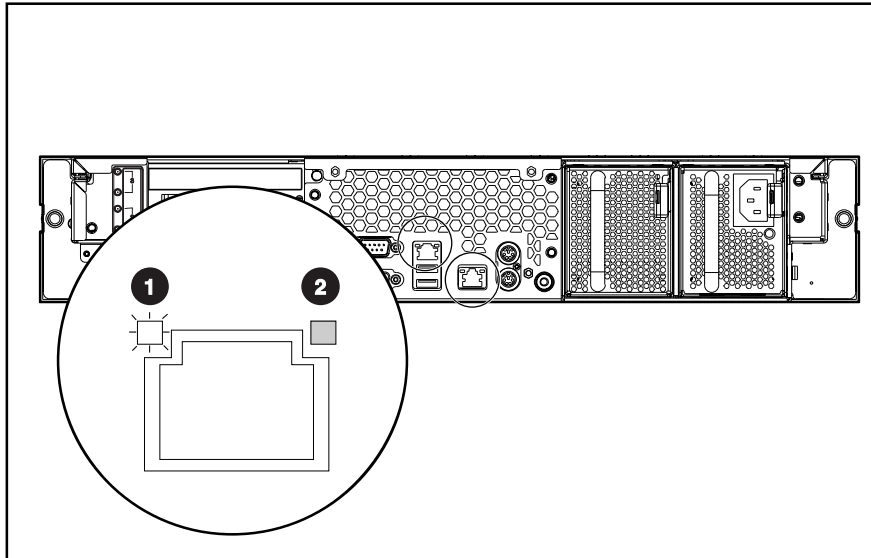


Figure 4-7. RJ-45 network connector LEDs

Table 4-7
RJ-45 Network Connector LEDs

Item	LED Description	Status
1	Activity (green)	On or flashing = Network activity Off = No network activity
2	Link (green)	On = Linked to the network Off = Not linked to the network

Rear Unit Identification LED Switch

The rear unit identification LED switch offers a visual reference for service personnel (Figure 4-8).

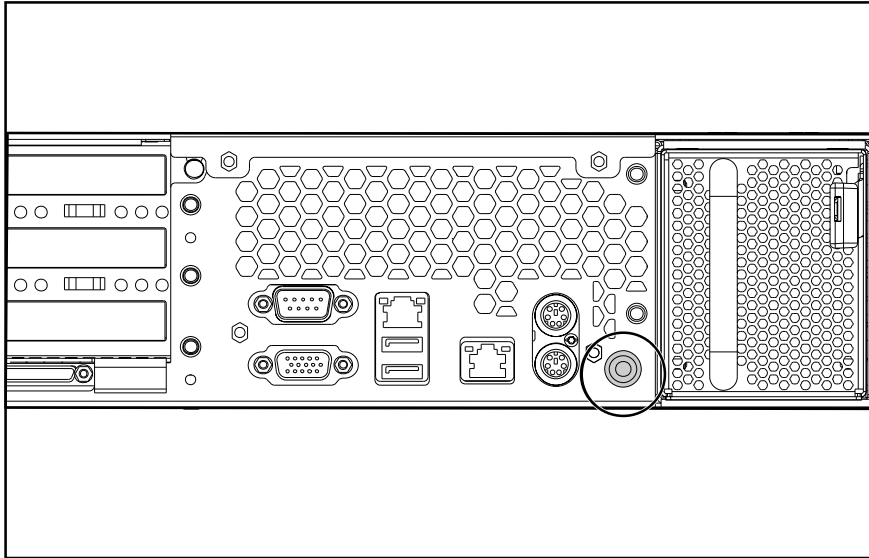


Figure 4-8. Rear unit identification LED switch

The rear unit identification LED switch indicates the following conditions:

- Blue = The switch is activated.
- Off = The switch is deactivated.

Hot-Plug Power Supply LED

Determine the hot-plug power supply status by observing the color of the power supply LED located adjacent to the AC inlet (Figure 4-9).

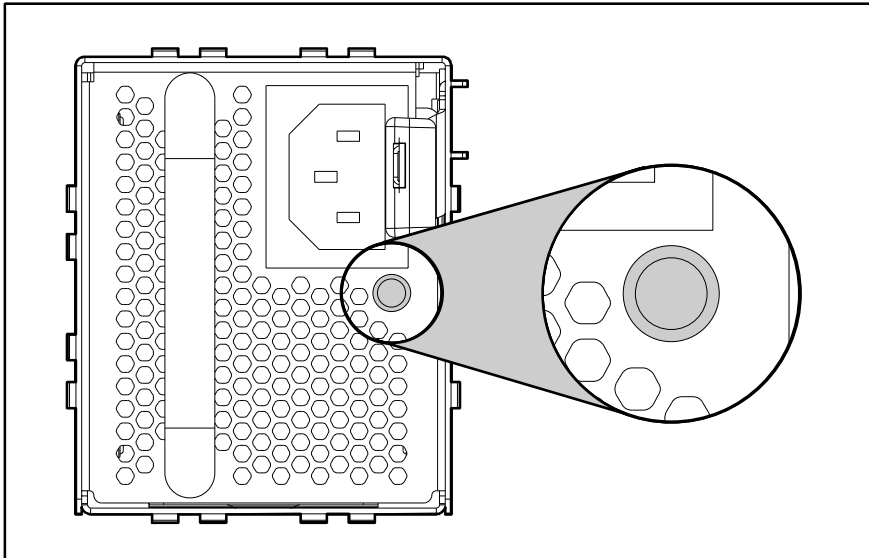


Figure 4-9. Hot-plug power supply LED

When the power supply LED is off, the following conditions may exist:

- The AC power is unavailable.
- The power supply has failed.
- The power supply is in standby mode.
- The power supply has exceeded the maximum current limit.

When the power supply LED is green, the power is turned on and the power supply is functioning properly.

Hot-Plug Fan LED

Each of the hot-plug fans contains a dual-color LED (Figure 4-10).

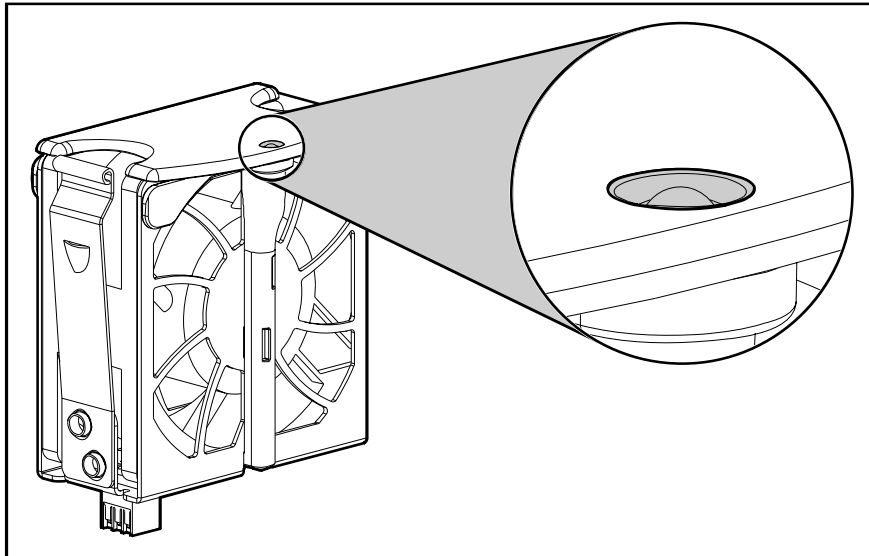


Figure 4-10. Hot-plug fan LED

The hot-plug fan LED indicates the following conditions:

- Green = The fan is operating normally.
- Amber = The fan has failed.
- Off = The fan is not powered.

Power Converter Module LED

The power converter module LED indicates whether the power converter module is functioning properly (Figure 4-11).

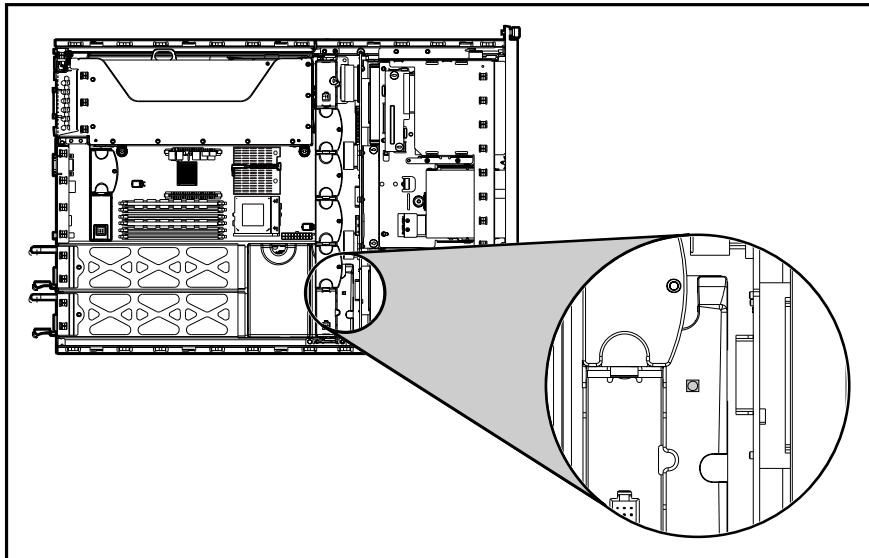


Figure 4-11. Power converter module LED

The power converter module LED indicates the following conditions:

- Amber = The power converter module has failed.
- Off = The power converter module is functioning.

System Board LEDs

The following LEDs are located on the system board:

- Processor failure
- PPM failure
- Memory failure
- Overtemperature
- Riser/SCSI interlock failure

Use Figure 4-12 and Table 4-8 to identify system board LEDs location and status.

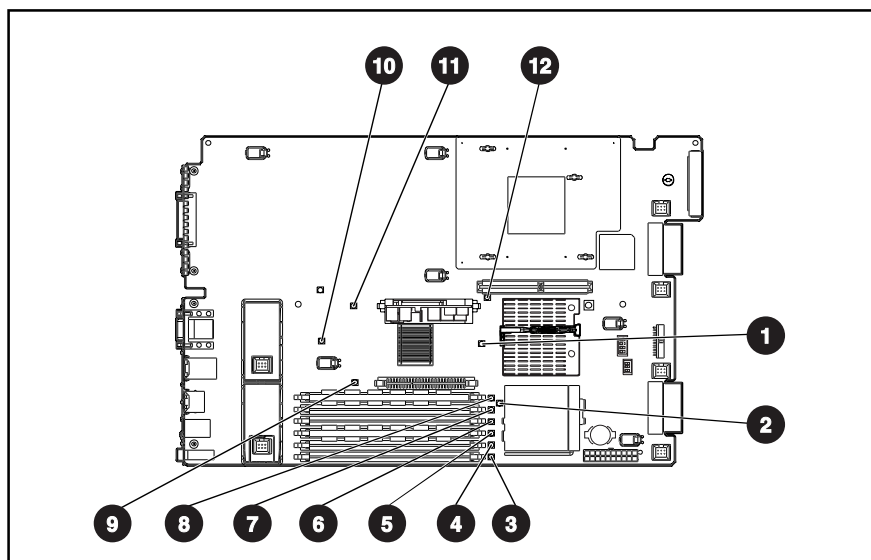


Figure 4-12. System board LEDs

Table 4-8
System Board LEDs

Item	LED Description	Status
1	Processor 1 failure	Amber = Processor failed Off = Normal
2	Processor 2 failure	
3	DIMM failure 6C	
4	DIMM failure 5B	
5	DIMM failure 4A	Amber = Memory failed Off = Normal
6	DIMM failure 3C	
7	DIMM failure 2B	
8	DIMM failure 1A	
9	PPM 2 failure	Amber = PPM failed Off = Normal
10	Overtemperature	Amber = Temperature has exceeded OS cautionary level or critical hardware level. Off = Temperature is OK.
11	PPM 1 failure	Amber = PPM failed Off = Normal
12	Riser/SCSI interlock failure	Amber = PCI Riser or Smart Array 5i controller not seated Off = Normal

Note: When the SCSI interlock disable switch is set to default (off), the riser/SCSI interlock failure LED indicates that the PCI riser or the Smart Array 5i Controller is unseated. If the default setting is changed for troubleshooting purposes (on), the LED indicates that only the PCI riser is unseated.

System LEDs and Internal Health LED Status Combinations

When the internal health LED on the front panel illuminates either amber or red, the server is experiencing a health event. Combinations of illuminated system LEDs and the internal health LED indicate system status (Table 4-9).

IMPORTANT: For the internal health LED to provide pre-failure and system conditions, the system management driver must be installed.

The front panel health LEDs indicate only the current hardware status. In some situations, Compaq Insight Manager XE may report server status differently than the health LEDs because the software tracks more system attributes.

Table 4-9
System LEDs and Internal Health LED Status Combinations

System LED and Color	Internal Health LED Color	Status
Processor failure, socket <i>X</i> (Amber)	Red	<ul style="list-style-type: none"> ■ Processor in socket <i>X</i> has failed. ■ Processor <i>X</i> has failed over to offline spare. ■ Processor <i>X</i> is not installed in the socket. ■ Processor <i>X</i> is unsupported. ■ ROM detects a failed processor during POST.
	Amber	Processor in the socket is in a pre-failure condition.
Processor failure, both sockets (Amber)	Red	Processors are mismatched (speed and/or type).
PPM failure, slot <i>X</i> (Amber)	Red	<ul style="list-style-type: none"> ■ PPM in slot <i>X</i> has failed. ■ PPM is not installed in slot <i>X</i>. ■ PPM is not installed in slot <i>X</i>, but the corresponding processor is installed.
	Amber	<ul style="list-style-type: none"> ■ DIMM in slot <i>X</i> has failed. ■ DIMM in slot <i>X</i> is an unsupported type, and no valid memory exists in another bank. ■ DIMM in slot <i>X</i> has experienced a multi-bit error.
DIMM failure, slot <i>X</i> (Amber)	Red	<ul style="list-style-type: none"> ■ DIMM in slot <i>X</i> has failed. ■ DIMM in slot <i>X</i> is an unsupported type, and no valid memory exists in another bank. ■ DIMM in slot <i>X</i> has experienced a multi-bit error.
	Amber	<ul style="list-style-type: none"> ■ DIMM in slot <i>X</i> has reached single-bit correctable error threshold. ■ DIMM in slot <i>X</i> is in a pre-failure condition. ■ DIMM in slot <i>X</i> is an unsupported type, but valid memory exists in another bank.

continued

Table 4-9
System LEDs and Internal Health LED Status Combinations *continued*

System LED and Color	Internal Health LED Color	Status
DIMM failure, all slots in one bank (Amber)	Red	<ul style="list-style-type: none"> ■ Interleaving error: DIMM is missing from the bank, and no valid memory exists in another bank. ■ Interleaving error: DIMMs are mismatched within the bank, and no valid memory exists in another bank.
	Amber	<ul style="list-style-type: none"> ■ DIMMs have failed over to the online spare bank. ■ Interleaving error: DIMM is missing from the bank, but valid memory exists in another bank. ■ Interleaving error: DIMMs are mismatched within the bank, but valid memory exists in another bank.
DIMM failure, all slots in all banks (Amber)	Red	No valid or usable memory is installed in the system.
Overtemperature (Amber)	Red	<ul style="list-style-type: none"> ■ System has reached the operating system cautionary level. ■ System has exceeded the hardware critical level.
Riser/SCSI interlock failure (Amber)	Red	PCI riser or Smart Array 5i Controller is unseated. *
Power converter module (Amber)	Red	The power converter module has failed.
Fan (Amber)	Red	A primary fan has failed at least one zone.
	Amber	A redundant fan has failed at least one zone.
<p>Note: * When the SCSI interlock disable switch is set to default (off), the riser/SCSI interlock failure LED indicates that the PCI riser or the Smart Array 5i Controller is unseated. If the default setting is changed for troubleshooting purposes (on), the LED indicates that only the PCI riser is unseated.</p>		

System Switches

With system switches, you can enable or disable certain settings or perform advanced diagnostic procedures. The following sections explain the functions of each switch. Figure 4-13 and Table 4-10 identify switch locations on the system board.

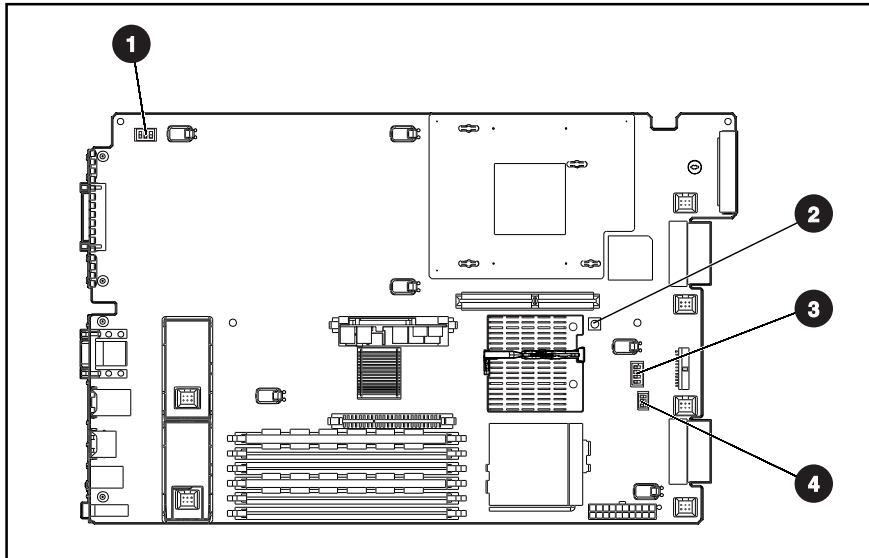


Figure 4-13. System board switches

Table 4-10
System Board Switches

Item	Description
1	SCSI interlock disable
2	Non-maskable interrupt (NMI)
3	System maintenance
4	Chassis ID

SCSI Interlock Disable Switch

The SCSI interlock disable switch (Figure 4-13) is a two-position switch that enables the system to boot during troubleshooting procedures when the Smart Array 5i Controller is not installed on the system board. The default setting requires the system to halt during boot if the controller is not installed.

Table 4-11 shows the switch settings and positions.

Table 4-11
SCSI Interlock Disable Switch

Position	Description	On/Off Function
1	SCSI interlock disable	Off = Interlock failure applies to both the PCI riser and the Smart Array 5i Controller. On = Interlock failure applies only to the PCI riser.
2	Reserved	—

NMI Switch

Crash dump analysis is an essential part of eliminating reliability problems such as hangs or crashes in operating systems, device drivers, and applications. Crashes can freeze a system, requiring you to do a hard reset. Resetting the system erases any information that supports root cause analysis.

Systems running Microsoft Windows NT experience a blue screen trap when the operating system crashes. When this happens, Microsoft recommends that system administrators perform a NMI event by pressing a dump switch. The NMI event allows a hung system to become responsive.

The ProLiant DL380 Generation 2 server is equipped with an NMI switch that, when pushed, performs a memory dump before performing a hard reset (Figure 4-13).

System Maintenance Switch

The system maintenance switch is a six-position switch that is used for system configuration (Figure 4-13). The default setting for all six positions is off. For the proper system maintenance switch settings, refer to the labels attached to the inside of the server access panel or see Table 4-12.

Table 4-12
System Maintenance Switch

Position	Description	On/Off Function
1	Reserved	—
2	Configuration lock	Off = System configuration can be modified. On = System configuration is locked and cannot be modified.
3	Rack mount indicator	Off = System is in a tower configuration. On = System is in a rack-mounted configuration.
4	Enable diskette boot	Off = RBSU controls booting from diskette. On = Booting from diskette is enabled and RBSU is overridden.
5	Password disable	Off = Power-on password is enabled. On = Power-on password is disabled.
6	Invalidate configuration	Off = No function On = ROM treats the system configuration as invalid.

Chassis ID Switch

The Chassis ID switch is a three-position switch that identifies the operational use of the server (Figure 4-13). This switch is set to default to the ProLiant DL380 Generation 2 server rack-mount setting. All three positions of the switch default to the off value.

Jumpers

The ProLiant DL380 Generation 2 server contains one two-pin bootblock flash jumper. It enables the user to configure the system board for a bootblock flash of the system ROM (Figure 4-14).

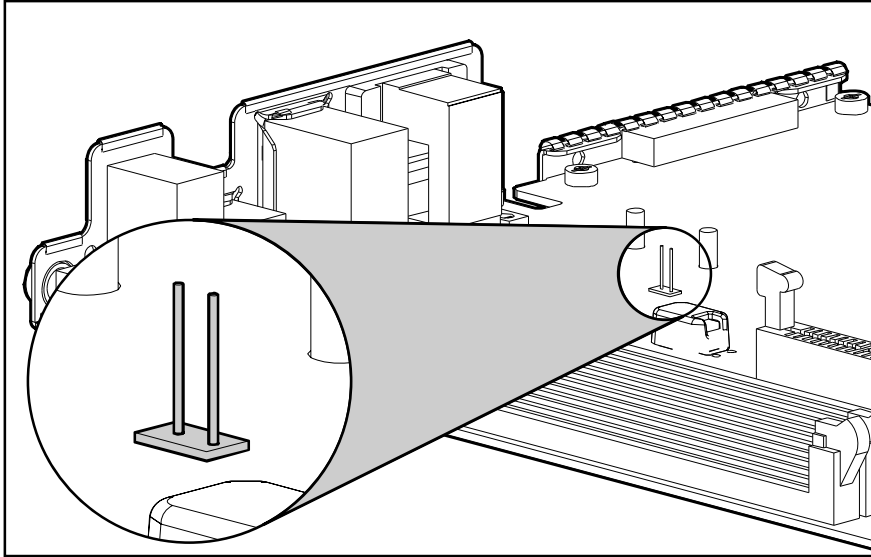


Figure 4-14. Bootblock flash jumper

To perform a bootblock flash of the system ROM, contact your Compaq authorized service provider for the appropriate utility.