



Troubleshooting

To better help our customers - this HP Laserjet 2400 series troubleshooting page is simply a guide / additional information for your convenience, as you search for assistance in repairing your machine. Although this information is provided for your convenience it is recommended, for the most part, that a technician inspects your office equipment.

It is recommended to consult with a professional when ordering your printer part(s).

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Control-panel menus

Use the control-panel menus to control various printer functions. For example, you can use the RESETS submenu to reset and restore most of the factory default printer settings quickly. Not all of the available menus are described in this manual.

Using control-panel menus

1. Press the **SELECT** (✓) button to open the menus.
2. Use the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button to scroll to the menu that you want, and then press the **SELECT** (✓) button.
3. Some menus might have several submenus. Use the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button to scroll to the submenu item that you want, and then press the **SELECT** (✓) button.
4. Use the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button to scroll to the setting, and then press the **SELECT** (✓) button. An asterisk (*) appears next to the selection on the display, indicating that it is now the default. Some settings change rapidly if the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button is held down.
5. Press **PAUSE/RESUME** to close the menu.

Resets submenu

To find the RESETS submenu, use the control panel to open the CONFIGURE DEVICE menu. Items on the Resets submenu are used to return settings to the defaults and to change settings such as **Sleep**.

The following section lists the settings and their possible values in the RESETS submenu. The default value for each setting is the one that has an asterisk (*) next to it.

Table 7-1. Resets submenu

Item	Values	Explanation
RESTORE FACTORY SETTINGS	No values available	<p>Performs a simple reset and restores most of the factory (default) settings. This item also clears the input buffer for the active I/O. Restoring factory settings does not affect the network parameter settings on the optional HP Jetdirect print server.</p> <hr/> <p>CAUTION</p> <p>Restoring memory during a print job cancels the print job.</p> <hr/>
Sleep	OFF* ON	<p>Turns the Sleep mode on or off. The Sleep mode affects the printer in two ways:</p> <ul style="list-style-type: none">• Minimizes the amount of power that the printer consumes when it is idle.• Reduces wear on the electronic components in the printer (for example, it turns off the display backlight, although the display can still be read). <p>The printer automatically leaves the Sleep mode when you send a print job, press a printer control panel button, open a tray, or open the top cover.</p> <p>You can set the amount of time that the printer remains idle before it enters the Sleep mode.</p>

Diagnostics menu

Administrators can use this menu to isolate parts and to troubleshoot jam and print-quality issues.

The following section lists the settings and their possible values in the DIAGNOSTICS menu. The default value for each setting is the one that has an asterisk (*) next to it.

Table 7-2. Diagnostics menu

Item	Values	Explanation
PRINT EVENT LOG	No values available	Press the SELECT (✓) button to generate a list of the 50 most recent entries in the event log. The printed event log shows the error number, page count, error code, and description or personality that was in use when the event occurred.
SHOW EVENT LOG	No values available	Use the UP ARROW (▲) button or the DOWN ARROW (▼) button to scroll through the event log contents.
PAPER PATH TEST <ul style="list-style-type: none"> • PRINT TEST PAGE • SOURCE • DESTINATION • DUPLEX • COPIES 	No values available	Generate a test page, which is useful for testing the paper-handling features of the printer.
	<ul style="list-style-type: none"> • PRINT TEST PAGE 	Press the SELECT (✓) button to start the paper-path test using the source (tray), destination (output bin), duplex, and number of copies settings that you set in the other items on the Paper Path Test menu. Set the other items before selecting PRINT TEST PAGE.
	<ul style="list-style-type: none"> • SOURCE <ul style="list-style-type: none"> • ALL_TRAYS • TRAY 1 • *TRAY 2 • TRAY <N> 	Select the tray for the paper path that you want to test. You can select any tray that is installed. Select ALL_TRAYS to test the paper path for every tray. (Paper must be loaded in the selected trays.)
	<ul style="list-style-type: none"> • DESTINATION <ul style="list-style-type: none"> • ALL BINS • *STANDARD • OUTPUT • OPTIONAL BIN 1 	Select the output bin for the paper path that you want to test. You can select any output bin that is installed. Optional bins (stacker or stapler/stacker bin) must also be correctly configured. Select ALL BINS to test the paper path for every bin.
	<ul style="list-style-type: none"> • DUPLEX <ul style="list-style-type: none"> • *OFF • ON 	Determine whether or not the paper goes through the duplexer during the paper path test. This item is available only if the duplexer is installed.
	<ul style="list-style-type: none"> • COPIES <ul style="list-style-type: none"> • *1 • 10 • 50 • 100 • 500 <p>*11050100500</p>	Set how many sheets of media are used from each tray during the paper-path test. If you are testing the stapling function of the optional stapler/stacker (DESTINATION item OPTIONAL BIN 1), you must select 10 copies.

Service menu (service PIN codes)

Authorized HP service technicians can use this menu to gain access to printer settings that are reserved for service personnel. The service menu is protected by use of a personal identification number (PIN). When you select SERVICE from the list of menus, you are prompted to type an eight-digit PIN code.

NOTE

The printer automatically exits the service menu after about one minute if no menu items are selected or changed.

Use the PIN code **11240002** for the HP LaserJet 2400 product.

1. Press the **SELECT** (✓) button to open the menus. Use the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button to scroll to SERVICE, and then press the **SELECT** (✓) button.
2. Press the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button until the first digit of the PIN code appears. Press the **SELECT** (✓) button to save that digit. Repeat this selection procedure until you have typed the entire eight-digit PIN code. You can use the **LEFT ARROW** (⇐) button to return to a PIN digit. When the last digit is saved, the service submenu appears on the control-panel display.
3. Use the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button to scroll to the service-menu item that you want, and then press the **SELECT** (✓) button.
 - **Clear event log.** Select this item to clear (reset to zero) the internal event log.
 - **Total page count.** Select this item to set the total number of pages that have been printed to-date. Typically this is only required when a new formatter is installed.
 - **Maintenance count.** Select this item to set the number of pages that have been printed since the last maintenance kit was installed or the total number of pages that have been printed on this printer if a maintenance kit has not yet been installed (during the first 200,000 pages).
 - **Maintenance interval.** Select this item to specify the number of pages that can be printed before a maintenance-kit-required message appears on the control-panel display to indicate that a maintenance kit is required.
 - **Serial number.** Select this item to update the serial number if you replace the formatter.
 - **Service ID.** Select this item to specify the date when the printer was first used, rather than the date when a replacement formatter is installed. See [Restoring the Service ID](#).
 - **Cold reset.** Select this item to reset the default paper size when you replace the formatter or restore factory settings (see [Resets submenu](#)). When you replace a formatter or restore factory settings in a country/region that uses A4 as the standard paper size, use this item to reset the default paper size to A4 (see [Cold reset](#)). Letter and A4 are the only cold-reset values available.

Service ID

This information appears on the configuration page (see [Configuration page](#)), which eliminates the need for customers to keep paper receipts for proof of the warranty. Because the printer does not have an internal clock, the availability of the service ID date depends on the printer being connected to a source that can provide the date, in this case a time server on the same network as the printer. When the printer is not connected to a date source, the service ID is not available, and **00000** appears on the configuration page.

Restoring the Service ID

If you replace the formatter, the date is lost. Use this menu item to reset the value to the date that the printer was first used. The date format is YYDDD. Use the following procedure to calculate the date.

1. To calculate YY, subtract 1990 from the calendar year. For instance, if the printer was first used in 2002, calculate YY as follows: $2002 - 1990 = 12$ (YY = 12).
2. To calculate DDD, use the following formula: $30 (\text{calendar month} - 1) + \text{calendar day} = \text{DDD}$. If the calendar day is 31, use 30 instead. For instance, if the printer was first used on October 17, calculate DDD as follows:
 1. Subtract 1 from 10 (October is the tenth month of the year): $10 - 1 = 9$.
 2. Multiply 9 by 30: $9 \times 30 = 270$.
 3. Add 17 to 270: $270 + 17 = 287$ (DDD = 287).

Converting the Service ID to an actual date

You can use the printer Service ID number to determine whether the printer is still under warranty. Use the following procedure to convert the Service ID into the installation date.

1. Add 1990 to YY to determine the actual year that the printer was installed.
2. Divide DDD by 30 and add 1 to the remainder. The total is the month.
3. The remainder from the calculation in step 2 is the day of the month.

Using the Service ID 12287 as an example, the date conversion is as follows:

- $12 + 1990 = 2002$, so the year is 2002.
- $287 \text{ divided by } 30 = 9 \text{ with a remainder of } 17$. Add 1 to 9 to get 10 so the month is October.
- The remainder (from the above calculation) is 17, so that is the day of the month.
- The complete date is 17-October-2002.

A 6-day grace period is built into the date system.

Printer resets and power-on modes

The following sections describe the types of printer resets and power-on modes.

Cold reset

A cold reset unlocks menus that have been previously locked and sets all control panel menu items (including EIO settings) back to the factory defaults. However, it **does not** clear the values in the service menu (such as the serial number and page counts).

NOTE

Before performing a cold reset, print a menu map and a configuration page (see [Menu map](#) and [Configuration page](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the cold reset procedure changes.

To perform a cold reset

1. Turn the printer off.
2. Hold down the **SELECT** (✓) button, and then turn the printer on. Continue holding down the **SELECT** (✓) button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
3. After the message **SELECT LANGUAGE** appears on the display, press the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button until **COLD RESET** is highlighted.
4. Press the **SELECT** (✓) button. The printer performs a cold reset and then continues its power-on sequence.
5. Check all I/O settings and reset any customer-set printer configuration values.

NVRAM initialization

CAUTION

Initializing the NVRAM resets the serial number, the event log, the page counts, and the EIO card (initializing the NVRAM resets service menu values to factory defaults). Use the service menu to restore the serial number and page counts. Also reconfigure any computers that print to this printer so that the computers can recognize the printer. Initialize the NVRAM only when absolutely necessary. In most situations, use a cold reset rather than a NVRAM initialization to reset printer settings (this will retain the values in the service menu).

NOTE

Before performing a NVRAM initialization, print a menu map and a configuration page (see [Menu map](#) and [Configuration page](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the NVRAM initialization procedure changes. Take special note of the **total page count**, **maintenance count**, and the **serial number**.

To initialize NVRAM

1. Remove any installed accessories (for example, a stapler/stacker).
2. Turn the printer off.
3. Hold down the **DOWN ARROW** (▼) button, and then turn the printer on. Continue holding down the **DOWN ARROW** (▼) button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
4. Press the **UP ARROW** (▲) button.
5. Press the **PAUSE/RESUME** button. The display should show **SKIP DISK LOAD**.
6. Press the **UP ARROW** (▲) button until NVRAM INIT is highlighted.
7. Press the **SELECT** (✓) button. The printer initializes NVRAM and then continues its power-on sequence.

Hard-disk initialization

CAUTION

A hard-disk initialization erases and reformats the printer hard disk. Perform a hard-disk initialization only if an error code on the control panel indicates an EIO disk error. Always try initializing the hard disk before replacing it.

NOTE

Before performing a hard-disk initialization, print a menu map and a configuration page (see [Menu map](#) and [Configuration page](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the hard-disk initialization procedure changes.

To initialize the hard disk

1. Turn the printer off.
2. Hold down the **PAUSE/RESUME** button, and then turn the printer on. Continue holding down the **PAUSE/RESUME** button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the **BACK ARROW** (⇐) button. The display should show INITIALIZE DISK.
4. Press the **SELECT** (✓) button. The printer initializes the hard disk and continues its power-on sequence.

Power-on bypass

When the power is turned on the printer begins the power-on sequence. By performing a power-on bypass, you can cause the printer to resume the power-on sequence but not to recognize any installed EIO hard disk (skip disk-load procedure). This can be helpful in isolating EIO hard-disk errors.

You can also resume the power-on sequence but make the printer continuously print configuration pages until the **PAUSE/RESUME** button is pressed (self test procedure). This can be helpful if you need to verify the printer components that are installed by reviewing the information on the configuration page, but you cannot open the menus to print a configuration page.

Skip disk-load

1. Turn the printer off.
2. Hold down the **DOWN ARROW** (▼) button, and then turn the printer on. Continue holding down the **DOWN ARROW** (▼) button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the **UP ARROW** (▲) button and then press the **PAUSE/RESUME** button.
4. Press the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button until **SKIP DISK LOAD** is highlighted.
5. Press the **SELECT** (✓) button. The printer continues the power-on sequence but ignores an installed EIO hard disk.

Self test

1. Turn the printer off.
2. Hold down the **SELECT** (✓) button, and then turn the printer on. Continue holding down the **SELECT** (✓) button until all three printer control panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the **UP ARROW** (▲) button or the **DOWN ARROW** (▼) button until **SELF TEST** is highlighted.
4. Press the **SELECT** (✓) button. The printer continues the power-on sequence and begins to continuously printing configuration pages.
5. Press the **PAUSE/RESUME** button to exit the self test.

Save + Restore

When you exchange the formatter as part of the troubleshooting process, make sure that you move the CompactFlash parts from the old formatter to the new formatter. Do not perform a cold reset when the new formatter with the previous CompactFlash parts is installed. By not using a cold reset, the embedded LAN code can work to modify the network configuration to make it compatible with the new formatter. When a new formatter is installed, the Ethernet MAC Address changes because the MAC address is stored as part of the formatter and not stored in the CompactFlash. Some network reconfiguration might be necessary.

Test pages

Printing test pages helps you determine whether or not the printer engine and the formatter are functioning.

Engine-test page

To verify that the printer engine is functioning, print an engine-test page. To print an engine-test page, press the engine-test-page switch on the formatter (see callout 5 in [Figure 7-8. Sensors and switches, HP LaserJet 2400 series](#)).

The test page should have a series of vertical lines. The test page prints from the last tray that you used to print unless the printer has been turned off, and then turned on again since the most recent print job. If the printer has been turned off and then on again since the most recent print job, then the page will print from tray 2. The printer will continuously print test pages as long as the test-page switch is depressed. The printer will not print a test page if it is in Sleep mode.

NOTE

A damaged formatter might interfere with the engine test. If the engine test page does not print, try removing the formatter and performing the engine test again. If the engine test is then successful, the problem is in the formatter, the control panel, or the cable that connects them.

Formatter test page

To verify that the formatter is functioning, print a configuration.

1. Press the **SELECT** (✓) button to open the menus.
2. Press the **DOWN ARROW** (▼) button to scroll to INFORMATION.
3. Press the **SELECT** (✓) button to select INFORMATION.
4. Press the **DOWN ARROW** (▼) button to scroll to PRINT CONFIGURATION.
5. Press the **SELECT** (✓) button to select PRINT CONFIGURATION.

Interface troubleshooting

The following sections provide instructions for interface troubleshooting.

Communications checks

NOTE

Communication problems are normally the customer's responsibility. Time spent attempting to resolve these problems might not be covered by the Hewlett-Packard product warranty. Refer the customer to the network administrator for assistance in troubleshooting network problems.

If the printer is not connected directly to a Windows or MS-DOS-based host, see [EIO troubleshooting](#).

CAUTION

HP LaserJet printers are not designed to work with mechanical switch-box products that don't have correct surge protection. These devices generate high transient voltages that cause permanent damage to the formatter. This circumstance is not covered by the Hewlett-Packard product warranty.

Computer direct connect (parallel) test

After the printer is installed, verify communications by bypassing the Windows driver between the printer and the IBM-compatible computer. Type the following information at the MS-DOS prompt:

```
C:\>DIR>LPT1 Enter (for printing to parallel port #1)
```

The printer should print a directory listing of the C:\ directory. You might need to press **SELECT** (✓) on the control panel to print the data that is in the buffer.

EIO troubleshooting

If the printer contains an optional HP Jetdirect print server, and you cannot communicate with the printer over the network, verify that the print server is operating. Print a configuration page (see [Configuration page](#)). If the Jetdirect card does not appear under "Installed personalities and options" on the configuration page, reseal or replace the Jetdirect EIO card. See the troubleshooting section of the **HP Jetdirect Print Server Software Administrators Guide**.

When the HP Jetdirect print server is installed correctly, print a Jetdirect page (this page automatically prints when a Jetdirect print server is installed and a configuration page is printed). See [Jetdirect page](#). The Jetdirect page contains valuable network-related information about the printer.

If the host system and printer are still not communicating, replace the formatter (see [Formatter](#)) and the EIO card, and then reconfigure the printer.

The following illustration shows the contents of the Jetdirect page.

Jetdirect page

The screenshot shows the Embedded JetDirect Page for an HP LaserJet 2430 printer. The page is titled "hp LaserJet 2430 printers" and "Embedded JetDirect Page". It contains several sections of configuration and status information, each highlighted with a blue box and a numbered callout (1-5):

- 1. HP JetDirect Configuration:** Status: I/O Card Ready. V2843 unity debuglite: 37949E. Hardware Address: 000E775E38F. Firmware Version: V 28_43_FF. LAA: 000E775E38F. Port Config: 100TX FULL. Auto Negotiation: On. Manufacturing ID: *****. Build Date: 06/23/2004 09:38:29.
- 2. Security Settings:** Admin Password: Not Specified. Secure Web: HTTPS (optional). Cert Expires: 2007-01-01 00:00 UTC. SNMP Versions: Not Specified. SNMP Set Only Name: Not Specified. Access List: Not Specified.
- 3. Network Statistics:** Total Packets Received: 1415366. Unicast Packets Received: 18111. Bad Packets Received: 0. Framing Errors Received: 0. Total Packets Transmitted: 26667. Unsendable Packets: 2. Transmit Collisions: 0. Transmit Late Collisions: 0.
- 4. TCP/IP:** Status: Ready. Host Name: NP175E38F. IP Address: 63.230.114.59. Subnet Mask: 255.255.255.0. Default Gateway: 63.230.114.1. Config By: Manual. BOOTP/TFTP Server: Not Specified. TFTP Server: Not Specified. Config File: Not Specified. Domain Name: Not Specified. Primary DNS Server: 209.189.223.2. Secondary DNS Server: Not Specified. WINS Server: 63.230.114.17. Idle Timeout: 270 sec. Web JetAdmin URL: Not Specified. mDNS Service Name: hp LaserJet 2430 [75E38F].
- 5. Other Protocols:** IPX/SPX: Disabled. Novell/NetWare: Disabled. AppleTalk: Disabled. DLC/LLC: Ready.

Figure 7-5.

Jetdirect page

- 1 HP Jetdirect Configuration** If the EIO Jetdirect card is installed correctly and the printer completes its internal diagnostics, the **I/O CARD READY** status message prints. If communication is lost, an **I/O NOT READY** status message prints, followed by a two-digit error code. See the **HP Jetdirect Network Interface Configuration Guide** for further details and recommended action.
- 2 Network Statistics** This block indicates that network activity has been occurring. Bad packets, framing errors, unsendable packets, and collisions should be minimal. If a high percentage (greater than one percent) of these occur, contact the network administrator. All of the statistics are set to zero when the printer is turned off.
- 3 TCP/IP** In this block, the default IP address is "192.0.0.192." You can operate the printer by using this default address. The error message **ARP DUPLICATE ADDRESS** might appear in this block. This is an acceptable error code if the TCP/IP protocol is not being used. Check with the network administrator to determine the correct IP address for the printer. To configure the printer's IP address, go to the control panel EIO menu, select **CFG NETWORK=YES**, select **CFG TCP/IP=YES**, and then select **BOOTP=NO**.
- 4 Novell/NetWare** This block should state the name of the Novell printer server to which the printer is connected. If the node name reads "NP1xxxxxx" (where xxxxxx = the last six digits of the EIO LAN address), the EIO card has not been configured for a Novell server. This could indicate that the card is operating under protocol other than Novell. Check with the network administrator to determine what node name might be appropriate.