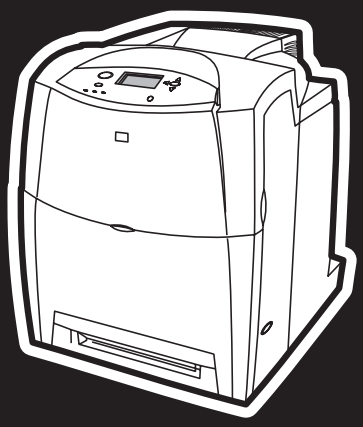
software technical reference

invent



hp color LaserJet 4650

HP Color LaserJet 4650

Software Technical Reference

Copyright

(c) 2004 Copyright Hewlett-Packard Development Company, L.P.

Reproduction, adaptation or translation without prior written permission is prohibited, except as allowed under the copyright laws.

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Edition 1, 05/2004

Trademarks

Adobe (R), Adobe Photoshop (R), Acrobat (R), PostScript (R), and the Acrobat logo (R) are trademarks of Adobe Systems Incorporated.
Java (TM) is a US trademark of Sun Microsystems, Inc.
The Bluetooth (R) trademarks are owned by its proprietor and used by Hewlett-Packard Company under license.
Linux is a U.S. registered trademark of Linus Torvalds
Microsoft (R), Windows (R), and Windows NT (R) are U.S. registered trademarks of Microsoft Corporation.
Pantone *Pantone, Inc.'s check-standard trademark for color.
Pentium (R) is a trademark or registered trademark of Intel Corporation or its subsidiaries in the United States and other countries.
UNIX (R) is a registered trademark of The Open Group.
EnergyStar (R) and the Energy Star logo (R) are US registered marks of the United States Environmental Protection Agency.

Table of contents

1 Purpose and scope 1

Introduction 1
HP Color LaserJet 4650 printers 2
Printing-system software CD....4
HP Color LaserJet print drivers 4
Additional drivers....5
Software features 5
Driver Autoconfiguration....5
Update Now....5
HP Driver Preconfiguration....6
Printing system and installer 6
HP Color LaserJet 4650 printing-system software CD for Windows systems 6
Installer features 7
Installable print drivers 8
PCL 5c, PCL 6, and HP PS emulation drivers 8
Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 driver versions 8
Macintosh and Macintosh-compatible system-driver versions 9
Additional driver availability 9
HP Color LaserJet documentation 10
HP Color LaserJet 4650 User Guide 10
HP Color LaserJet 4650 printing-system install notes 11
HP Embedded Web Server user guide....11
HP Jetdirect administrator's guide....12
HP Device Installer Customization Wizard....12
Structure and availability of the software CD 12
In-box file layout 12
HP LaserJet software CD, Windows partition 12
HP LaserJet software CD, Macintosh partition 13
Availability and fulfillment 13
In-box CDs 13
Web deployment 17
Printing-system software 17
Standalone drivers 17
Other operating systems 17
Software component availability 18

2 Software description 19

Introduction....19
Supported operating systems 19
Technology background information 20
Driver Configuration....20
Bidirectional communication....20

Enterprise AutoConfiguration....21
HP Driver Preconfiguration....23
Lockable features....24
Euro character....24
International Color Consortium profiles....25
PANTONE (R)* color profiles....25
HP Embedded Web Server....26
The EWS frame....26
Links to off-product solutions....27
Information tab....27
Device Status screen....28
Configuration Page....29
Settings tab....29
Configure Device....30
Alerts....31
Networking tab....32
Configuration section....32
Security section....32
Diagnostics section....33
Network settings....33
HP Toolbox....33
HP Toolbox requirements....33
To view the HP Toolbox....34
The HP Toolbox frame....34
Top banner....34
Status tab....35
Troubleshooting tab....36
Print Quality Tools....36
Maintenance....37
Error Messages....37
Paper Jams....38
Supported Media....39
Printer Pages....39
Alerts tab....40
Documentation tab....41
Linking to the HP Embedded Web Server....41
Other Links....42
HP Web Jetadmin....43
Bluetooth (R)*....44
Remote firmware update....45
Determining the current level of firmware....45
Downloading the new firmware from the HP Web site....45
Remote firmware update by using the FTP through a browser....46
Remote firmware update by using FTP on a direct network connection....46
Windows operating systems....47
Macintosh operating systems....47
Remote firmware update through a local Windows port....48
Windows 98 or Windows Me....48
Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003....49
Remote firmware update through a Windows network....49
Remote firmware update for UNIX systems....50
Remote firmware update by using Fetch (Mac OS 9.x only)....50
Remote firmware update by using the HP LaserJet Utility (Mac OS 9.x only)....50
Remote firmware update by using the LPR command....51
Remote firmware update by using HP Web Jetadmin....51

Printer messages during the firmware update 52
Troubleshooting a firmware update 52
Printing print-ready documents from a command line 53
Print-ready file printing by using FTP through a browser 54
Print-ready file printing by using FTP on a direct network connection 54
Windows operating systems 54
Macintosh operating systems 55
Print-ready printing by using a local Windows port 55
Windows 98 or Windows Me 56
Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003 56
Print-ready file printing in a Windows network 56
Print-ready file printing in UNIX systems 57
Print-ready file printing by using Fetch (Mac OS 9.x only) 57
File printing by using the HP LaserJet Utility (Mac OS 9.x only) 57
Print-ready file printing by using the LPR command 58
Driver-feature comparison in various operating systems 58
Job stream output 59
PCL6 raster compression 59
PJL/PJL Encoding 59
Job tracking 60
Connectivity 60
Bidirectional communication 61
HP Driver Preconfiguration 61
Bundle support 62
Tray and paper assignment 62
Installable options 62
UI features 63
Help features 64
Job storage 64
Print quality and resolution 65
Resizing options 65
Color settings 66
Other document options 66
Watermarks 67
Alternative source/paper type 67
Printing destination 68
Font support....68
Postscript-specific features 69

3 HP traditional print drivers for Windows 71

Introduction 71
HP Traditional PCL 6 and HP Traditional PCL 5c Driver features 71
Access to print drivers....72
Access to print drivers in Windows NT 4.0....72
Document Default driver tabs....72
Properties driver tabs....72
Access to print drivers in Windows 98 and Windows Me....73
Help system 73
What's this? Help 73
Context-sensitive Help 73
Incompatible Options messages 74
Bubble Help 75
Finishing tab features 76
Print Task Quick Sets 76

Default Print Settings 77
HP Color LaserJet 4550 Color Emulation....79
User Guide Print Settings 80
Document Options 80
Print on Both Sides check box 80
Automatically printing on both sides 80
Manually printing on both sides....81
Flip Pages Up 82
Booklet Printing 83
Book and Booklet Printing 83
Pages per Sheet 84
Print Page Borders 85
Page Order 85
Document preview image 85
Print Quality group box 86
Print Quality Details for the PCL 6 Driver 86
Current Setting group box 86
Graphics Settings group box....86
Font Settings group box 87
Output Settings 87
Print Quality Details for the PCL 5c driver 87
Current Setting 88
Font Settings 88
Output Settings 88
Effects tab features 89
Print Task Quick Sets 89
Fit To Page group box 90
Print Document On setting 90
Scale to Fit option 90
% of Normal Size option 91
Watermarks group box 91
Watermarks drop-down menu 91
First Page Only check box 92
Edit button (Watermark Details) 92
Current Watermarks 93
Watermark Message 93
Message Angle 93
Document preview image 93
Font Attributes 93
Paper tab features 95
Print Task Quick Sets 95
Paper Options 96
Size is....96
Use Different Paper/Covers....96
Source Is....97
Type is 97
Custom 98
Name 99
Save, Delete, or Rename 99
Custom size (width and height controls) 100
Custom width and height control limits 101
Dynamic measurement units 101
Close 102
Use Different Paper/Covers....102
First Page 103

Other Pages 103
Back Cover 104
Document preview image 105
Product image....106
Job Storage tab features 106
Job Storage tab 107
Print Task Quick Sets 108
Status group box....108
Job Storage Mode 108
Off 108
Proof and Hold 108
Private Job 109
Using a PIN for Private Job 109
Quick Copy 109
Stored Job 110
Job notification 110
User Name 111
Job Name....111
PIN 111
Using Job Storage features when printing 111
Releasing a Job Storage print job 112
Deleting a Job Storage print job 112
Basics tab features 113
Print Task Quick Sets 113
Copies 114
Orientation 114
Document preview image 114
About 115
Color tab features....116
Print Task Quick Sets....116
Color Options....117
Automatic....117
Manual....117
Neutral Grays....118
Halftone....118
RGB Color....119
General....119
Print in Grayscale....119
Properties tabs 119
NT Forms tab features 120
Configuring the trays 121
Configure tab features 121
Printer Model....122
Paper Handling Options 123
Duplexing Unit....123
Allow Manual Duplexing....123
Mopier Enabled 123
Optional Paper Sources 124
Other Options 124
More configuration options 125
Automatic configuration 127
Printer image 128
HP Traditional Postscript 3 Emulation Driver features 128
Access to Document Default drivers in Windows NT 4.0....128
Access to Properties print-driver settings in Windows NT 4.0....129

Access to drivers in Windows 98 and Windows Me....129
PS 3 emulation support for the HP Color LaserJet 4650 printer....129
Help system....130
What's this Help....130
Context-sensitive Help....130
Page Setup tab features....131
Advanced tab features....132
Paper/Output....132
Graphic....133
Document Options....133
Page Layout Option....133
PostScript Options....134
Printer Features....134
Job Storage tab features....137
Job Storage tab....138
Status group box....138
Job Storage Mode....139
Off....139
Proof and Hold....139
Private Job....139
Using a PIN for Private Job....140
Quick Copy....140
Stored Job....140
Job Identification....141
User Name....141
Job Name....141
PIN....141
Using Job Storage features when printing....142
Releasing a Job Storage print job....142
Deleting a Job Storage print job....143
Device Settings tab....143
Form to Tray Assignment....145
Font Substitution Table....146
PostScript Device Settings....146
Available PostScript Memory....146
Output Protocol....146
Send Ctrl-D Before Each Job....147
Send Ctrl-D After Each Job....147
Job Timeout....147
Wait Timeout....147
Minimum Font Size to Download as Outline....147
Maximum Font Size to Download as Outline....147
Installable Options....147
Tray 3....148
Tray 4....148
Duplex Unit (for 2-sided Printing)....148
Printer Memory....148
Printer Hard Disk....148
Job Storage....148
Mopier Mode....149

4 HP PCL 6, HP PCL 5c, and HP PS 3 emulation unidrivers for Windows 151

Introduction....151
HP PCL 6, HP PCL 5c, and PS emulation unidriver features....151

Access to drivers 152
Help system 152
What's this? Help 152
Context-sensitive Help 152
Incompatible Print Settings messages 153
Advanced tab features 154
Paper/Output 155
Copy Count 155
Collated 155
Graphic 156
Image Color Management 156
Document Options 156
Advanced Printing Features 156
Color Printing Mode....157
Print Optimizations 157
Printer Features....157
Print All Text as Black 157
Send TrueType as Bitmap 157
Raster Compression....157
Graphics Mode....158
Layout Options 158
Orientation....158
Page Order 158
Paper/Quality tab features 159
Print Task Quick Sets 160
Default Print Settings 160
HP Color LaserJet 4550 Color Emulation....163
User Guide Print Settings 163
Type new Quick Set name here 164
Paper Options 164
Size is....165
Custom paper sizes....165
Use different paper....165
Source Is....165
Type is 166
Use different paper 167
First Page 167
Other Pages 168
Back Cover 169
Document preview image 170
Finishing tab features 170
Print Task Quick Sets 171
Document Options 171
Print on Both Sides 171
Automatically printing on both sides 171
Manually printing on both sides....172
Flip Pages Up 173
Booklet layout 174
Book and Booklet Printing 174
Pages per Sheet 175
Print Page Borders 175
Page Order 175
Document preview image 176
Rotate....176
Effects tab features 177

Print Task Quick Sets 177
Resizing options 178
Actual Size....178
Print Document On 178
Scale to Fit 178
% of Normal Size 179
Document preview image 179
Watermarks 179
Current watermarks 180
Watermark Message 181
Message Angle 181
Font Attributes 181
Name 181
Color 182
Shading 182
Size 182
Style 182
Default settings 182
Job Storage tab features 182
Job Storage tab 184
Print Task Quick Sets....185
Status group box....185
Job Storage Mode 185
Off 185
Proof and Hold 185
Private Job 186
Using a PIN for Private Job 186
Quick Copy 186
Stored Job 187
Job notification 187
User Name 187
Job Name 188
PIN 188
Using Job Storage features when printing 188
Releasing a Job Storage print job 189
Deleting a Job Storage print job 189
Color tab....190
Print Task Quick Sets....190
Color Options....191
Automatic....191
Manual....192
Neutral Grays....193
Halftone....193
RGB Color....194
General....194
Print in Grayscale....194
Properties tabs....194
Device Settings 195
Form to Tray Assignment 196
External Fonts 196
Installing external fonts 197
Removing external fonts 197
Font Substitution Table 198
Installable Options 198
Duplex Unit (for 2-Sided Printing) 199

Allow Manual Duplexing....199
Printer Memory....199
Printer Hard Disk....199
Job Storage....200
Mopier Mode....200

5 Installing Windows printing-system components 203

Introduction....203
Supported Windows operating systems....203
System requirements....204
Font support....204
Basic fonts....204
Default fonts....204
Installation instructions....209
General installation for Windows 98, Me, NT 4.0, 2000, and XP....210
Installing from the printing-system CD....210
Installing from a network or from downloaded files....210
Detailed Windows installation....210
Typical Installation dialog box sequence....211
Custom Installation....234
Installing print drivers by using Add Printer....236
Installer Customization Wizard for Windows....236
Running the installer customization wizard....237
Dialogs....237
Distribution....254
Command-line silent install....255
Point and Print installation for Windows 98, Me, NT 4.0, 2000, XP, and 2003....255
Setting a default printer....256

6 Installation for Macintosh and Linux operating systems 257

Introduction....257
System requirements....257
Macintosh....257
Linux....258
UNIX....258
Macintosh....258
Macintosh component descriptions....258
HP LaserJet PPDs....258
PDEs....258
HP Toolbox....259
HP Embedded Web Server....259
Install notes....259
Online help....259
Screen fonts....259
Font support....259
Installing the Macintosh printing system....262
To install the HP LaserJet printing-system software for the Macintosh OS....263
To set up an AppleTalk networked Printer with Mac OS 9.x....263
To set up a Printer with Mac OS X....263
To set up an IP/LPR networked Printer with Mac OS 9.x....264
Uninstalling the Macintosh printing system....264
In-box disk layout....264

Folders and files added through installation of the HP Color LaserJet 4650 software (Mac OS) 264
Mac OS Classic installation 264
Main Install dialog box sequence 265
HP LaserJet Screen Fonts Installer dialog box sequence 267
Mac OS X installation 268
Main Install dialog box sequence 269

7 Engineering Detail 271

Introduction 271
Media attributes 271
Paper sources and destinations 271
Paper-tray configurations 272
Paper-source commands 272
Media types and sizes 273
Driver features and attributes....273
PCL 6 custom paper sizes 276
Paper type commands 276

Index 279

List of tables

Table 1-1. Features of the HP Color LaserJet 4650 printers 2
Table 1-2. Print drivers included with the HP Color LaserJet 4650 printer....4
Table 1-3. Documentation availability....10
Table 1-4. CD 1 (Q3668-60101)....14
Table 1-5. CD 2 (Q3668-60102)....14
Table 1-6. CD 3 (Q3668-60103)....15
Table 1-7. CD 4 (Q3668-60104)....16
Table 1-8. Software component availability for HP Color LaserJet 4650 printer 18
Table 2-1. Enterprise AutoConfiguration availability in Microsoft Windows and Microsoft Share....22
Table 2-2. Enterprise Autoconfiguration availability in Novell Netware environments 23
Table 2-3. HP Web Jetadmin support 43
Table 2-4. Update messages 52
Table 2-5. Troubleshooting a firmware update 53
Table 2-6. Troubleshooting a firmware update failure 53
Table 2-7. Driver support for the job stream output feature 59
Table 2-8. PCL6 color raster compression support 59
Table 2-9. Printer Job Language (PJL) and PJL encoding 59
Table 2-10. Driver support for job tracking 60
Table 2-11. Driver support for connectivity features 60
Table 2-12. Driver support for bidirectional communication features 61
Table 2-13. Driver support for HP Driver Preconfiguration 61
Table 2-14. Bundle support 62
Table 2-15. Tray and paper assignment 62
Table 2-16. Driver support for installable options 62
Table 2-17. Driver support for UI features 63
Table 2-18. Driver support for Help features 64
Table 2-19. Driver support for job storage features 64
Table 2-20. Print quality and resolution features 65
Table 2-21. Resizing options 65
Table 2-22. Color settings 66
Table 2-23. Other document options 66
Table 2-24. Driver support for watermarks feature 67
Table 2-25. Driver support for alternate source/paper type feature 67
Table 2-26. Driver support for printing destination feature 68
Table 2-27. Font support....68
Table 2-28. Driver support for postscript-specific features 69
Table 3-1. Print Task Quick Set default values for the HP Color LaserJet 4650 printer 77
Table 3-2. Page orientation 82
Table 3-3. Name drop-down menu text strings 100
Table 3-4. PCL 6 custom media sizes 101
Table 3-5. Close dialog box text strings 102
Table 3-6. Driver Mopier mode and collation settings 124
Table 4-1. Print Task Quick Set default values for the HP Color LaserJet 4650 160

Table 4-2. Page orientation 173
Table 4-3. Driver Mopier mode and collation settings 200
Table 5-1. Default fonts 205
Table 5-2. Additional PS emulation fonts 207
Table 7-1. HP Color LaserJet 4650 paper sources and destinations 271
Table 7-2. Media tray configurations for the HP Color LaserJet 4650....272
Table 7-3. Paper-source commands 273
Table 7-4. Supported features and attributes by driver 273
Table 7-5. Supported input media types 274
Table 7-6. PCL 6 custom paper sizes 276
Table 7-7. Paper-type commands 276

List of figures

Figure 1-1. Installation software CD main screen 6
Figure 2-1. Device Status screen on the Information tab 28
Figure 2-2. Configuration screen on Information tab 29
Figure 2-3. Settings tab - Configure Device 30
Figure 2-4. Settings tab - Alerts screen 31
Figure 2-5. Networking tab - Configuration section....32
Figure 2-6. Toolbox Device Status tab....35
Figure 2-7. Troubleshooting tab – Print Quality Tools....36
Figure 2-8. Troubleshooting tab – Maintenance....37
Figure 2-9. Troubleshooting tab – Control panel messages....37
Figure 2-10. Troubleshooting tab – Paper jams....38
Figure 2-11. Troubleshooting tab – Supported Media....39
Figure 2-12. Troubleshooting tab – Printer Pages....39
Figure 2-13. Current Alerts....40
Figure 2-14. Documentation tab Install Notes....41
Figure 2-15. Status tab with Advanced Printer Settings button 42
Figure 3-1. A typical constraint message with an OK button....74
Figure 3-2. A property page with a Bubble Help icon 75
Figure 3-3. The default appearance of the Finishing tab 76
Figure 3-4. Print on Both Sides Instructions....82
Figure 3-5. Printing a booklet 84
Figure 3-6. Page-order preview images 85
Figure 3-7. Print Quality Details dialog box for the HP Traditional PCL 6 Driver 86
Figure 3-8. Print Quality Details dialog box for HP traditional PCL 5c driver 87
Figure 3-9. Effects tab 89
Figure 3-10. Preview images - Legal on Letter; Scale to Fit off (left) and on (right) 90
Figure 3-11. Watermark Details 92
Figure 3-12. Paper tab 95
Figure 3-13. Paper Options group box (default)....96
Figure 3-14. Custom Paper Size dialog box 98
Figure 3-15. First Page options 103
Figure 3-16. Other Pages options 104
Figure 3-17. Back Cover setting 105
Figure 3-18. Job Storage tab 107
Figure 3-19. Basics tab 113
Figure 3-20. About This Driver dialog box 115
Figure 3-21. Color tab....116
Figure 3-22. Color Settings dialog box....117
Figure 3-23. Driver NT Forms tab 120
Figure 3-24. Configure tab 121
Figure 3-25. More Configuration Options dialog box 125
Figure 3-26. Configure Font Cards dialog box 126
Figure 3-27. Page Setup tab 131
Figure 3-28. Advanced tab 132
Figure 3-29. Job Storage tab 138

Figure 3-30. Device Settings tab in Windows NT 4.0 144
Figure 3-31. Device Options tab in Windows 98 145
Figure 4-1. An Incompatible Print Settings message 153
Figure 4-2. The default appearance of the Advanced tab 154
Figure 4-3. Paper/Quality tab 159
Figure 4-4. Paper Options group box 164
Figure 4-5. First Page options 167
Figure 4-6. Other Pages options 168
Figure 4-7. Back Cover setting 169
Figure 4-8. Finishing tab 170
Figure 4-9. Print on Both Sides Instructions....173
Figure 4-10. Page-order preview images 175
Figure 4-11. Effects tab 177
Figure 4-12. Preview images - Legal on Letter; Scale to Fit off (left) and on (right) 178
Figure 4-13. Watermark Details 180
Figure 4-14. Job Storage tab 184
Figure 4-15. Color tab....190
Figure 4-16. Color settings 192
Figure 4-17. Device Settings tab 195
Figure 4-18. Font Installer dialog box 197
Figure 4-19. Font Substitution Table 198
Figure 5-1. Installation path 212
Figure 5-2. Choose Setup Language dialog box 213
Figure 5-3. Preparing to Install dialog box 214
Figure 5-4. Welcome dialog box 215
Figure 5-5. HP Software License Agreement dialog box 216
Figure 5-6. Printer Connection dialog box 217
Figure 5-7. Network Setup dialog box 218
Figure 5-8. Connection type dialog box 219
Figure 5-9. Cable Connection dialog box 220
Figure 5-10. Print Job Management dialog box 221
Figure 5-11. Recommended Network Setup dialog box 222
Figure 5-12. Identify Printer dialog box 223
Figure 5-13. Select Printer dialog box 224
Figure 5-14. Network Configuration Options dialog box 225
Figure 5-15. Set Network Communication Mode dialog box 226
Figure 5-16. Model dialog box 227
Figure 5-17. Installation Type dialog box 228
Figure 5-18. Features dialog box 229
Figure 5-19. Printer Name dialog box 230
Figure 5-20. Printer Sharing Setup dialog box 231
Figure 5-21. Client Driver Support dialog box 232
Figure 5-22. Printer Location and Comment dialog box 233
Figure 5-23. Ready to Install dialog box 234
Figure 5-24. Features dialog box, Custom Installation 235
Figure 5-25. Installer Customization Wizard Welcome dialog box....238
Figure 5-26. Language dialog box....239
Figure 5-27. Printer Port dialog box....240
Figure 5-28. Specify Printer dialog box....241
Figure 5-29. IP Settings dialog box....242
Figure 5-30. Model dialog box....243
Figure 5-31. Features dialog box....244
Figure 5-32. Driver Configuration dialog box....245
Figure 5-33. Driver Configuration preconfigure driver dialog box....246
Figure 5-34. Printer Name dialog box....247

Figure 5-35. Printer Sharing dialog box....248
Figure 5-36. Client Driver Support dialog box....249
Figure 5-37. Printer Location and Comment support dialog box....250
Figure 5-38. Custom Installer Location dialog box....251
Figure 5-39. Change Current Destination Folder dialog box....252
Figure 5-40. Installing dialog box....253
Figure 5-41. Finish dialog box....254
Figure 6-1. HP LaserJet for Macintosh installer splash screen dialog box 265
Figure 6-2. HP LaserJet Installer dialog box (easy install) 265
Figure 6-3. HP LaserJet Installer dialog box (custom install) 266
Figure 6-4. Installing dialog box 266
Figure 6-5. Installation was successful dialog box 267
Figure 6-6. HP LaserJet Screen Fonts splash screen dialog box 267
Figure 6-7. HP LaserJet Screen Fonts installer dialog box (1 of 2) 268
Figure 6-8. Installation was successful dialog box 268
Figure 6-9. HP LaserJet for Macintosh installer splash screen dialog box 269
Figure 6-10. HP LaserJet Installer dialog box (easy install) 269
Figure 6-11. HP LaserJet Installer dialog box (custom install) 270
Figure 6-12. Installing dialog box 270

1 Purpose and scope

Introduction

This software technical reference (STR) provides information about and troubleshooting tips for the printing-system software for the HP Color LaserJet 4650 printer.

This document is prepared in an electronic format to serve as a quick-reference tool for Customer Care Center (CCC) agents, support engineers, system administrators, management information systems (MIS) personnel, and HP Color LaserJet 4650 end users, as appropriate.

Note

This STR describes drivers that are shipped with the printing-system software CD. This STR does *not* cover drivers that might be released for use by support personnel.

The following information is included in this technical reference:

- descriptions of drivers and platforms with system modifications
- procedures for installing and uninstalling software components

Note

An addendum to this STR includes system modification information and descriptions of problems that can arise while using the HP Color LaserJet 4650 printer, and known solutions to those problems.

The following table contains descriptions of the HP Color LaserJet 4650 printers that are described in this STR.

Note

Product configurations might vary among countries/regions.

HP Color LaserJet 4650 printers

Table 1-1. Features of the HP Color LaserJet 4650 printers

Feature	Model Specifications
Performance	• 22 pages per minute (ppm) for letter and A4 size paper.
Memory	• 160 megabytes (MB) of memory for the HP Color LaserJet 4650, 4650n, and 4650dn printers: 128 MB of dual data-rate (DDR) plus 32 MB of additional memory on the formatter board and an additional DDR slot. • 288 MB of memory for the HP Color LaserJet 4650dtn and 4650hdn printers: 256 MB DDR plus 32 MB of additional memory on the formatter board and an additional DDR slot. • Can be expanded to 512 MB. • Optional hard-disk drive: standard on the HP Color LaserJet 4650hdn printer and available for the other printer models.
User interface	• A graphical display on the product control panel. • Enhanced Help that features animated graphics. • An embedded Web server to get support and order supplies (available on network-connected printers). • HP Toolbox software to provide product status and alerts.
Supported printer personalities	• PCL 6 • PCL 5c • PDF • MIME • Postscript
Storage features	• Job storage. • Personal identification number (PIN) printing (for printers with hard disk). • Fonts and forms.
Environmental features	• PowerSave setting. • High content of recyclable components and materials. • Energy Star® compliant. • Blue Angel compliant.

Table 1-1. Features of the HP Color LaserJet 4650 printers (continued)

Feature	Model Specifications
Fonts	• 66 default TrueType fonts installed with typical installation. • 92 additional postscript fonts available on the installation CD. • Supports forms and fonts on the disk by using HP Web Jetadmin.
Paper Handling	• Prints on media from 77 mm by 127 mm (3 inches by 5 inches) to legal size. • Prints on media of weights from 60 g/m^2 to 200 g/m^2 (16 lb bond to 53 lb bond). • Prints on a wide range of media types including glossy paper, labels, transparencies, and envelopes. • Multiple gloss levels are supported. • 500-sheet paper feeder (Tray 2). • Optional 500-sheet paper feeder (Tray 3); standard on the HP Color LaserJet 4650dn printer. • Optional dual 500-sheet paper feeder (Tray 3 and Tray 4); standard on the HP Color LaserJet 4650hdn printer. • Duplexing unit: standard on the HP Color LaserJet 4650dn, 4650dtn, and 4650hdn printers. • 250-sheet face-down output bin.
Accessories	• CompactFlash slots for additional fonts and firmware upgrades. • Printer stand.
Connectivity	• Optional enhanced input/output (EIO) network card; standard on the HP Color LaserJet 4650n, 4650dn, 4650dtn, and 4650hdn printers. • HP Web Jetadmin software • Standard bidirectional parallel cable interface (IEEE-1284-C compliant). • HP Jetlink. • Universal Serial Bus (USB) 1.1 connection. **Note** Both USB and parallel connections are supported, but cannot be used at the same time.

Table 1-1. Features of the HP Color LaserJet 4650 printers (continued)

Feature	Model Specifications
Supplies	• Supplies-status page contains information about toner level, page count, and estimated pages remaining. • Product uses a no-shake cartridge design. • Product checks for authentic HP print cartridges at cartridge installation. • Product offers internet-enabled supply-ordering capabilities (by using the embedded Web server or the HP Toolbox software).

Printing-system software CD

This section contains information about the following topics:

- HP Color LaserJet print drivers
- Additional drivers
- Software features
- HP Color LaserJet documentation

HP Color LaserJet print drivers

HP Color LaserJet 4650 print drivers make the product features available and allow the computer to communicate with the product. The printing-system software includes software for end users and network administrators who are working in the following operating environments:

- Microsoft Windows 98 and Windows Me
- Microsoft Windows NT 4.0, Windows 2000, Windows XP (32-bit and 64-bit), and Windows Server 2003 (32-bit and 64-bit)
-

Note

For the latest information about the printing-system software components, view the Readme files on the CD. For additional information about installing the printing-system software, view the Install Notes on the CD that is included with the product.

Table 1-2. Print drivers included with the HP Color LaserJet 4650 printer

Operating System[1]	PCL 6	PS emulation
Windows 98, Me	X	X
Windows NT 4.0	X	X
Windows 2000	X	X
Windows XP	X	X
Windows Server 2003	X	X

Table 1-2. Print drivers included with the HP Color LaserJet 4650 printer (continued)

Operating System[1]	PCL 6	PS emulation
Macintosh OS		X

[1] Not all product features are available from all drivers or operating systems. See the online Help in your driver for information about the features that are available.

Note

For a list of print drivers, updated HP printing-system software, and product support information, go to http://www.hp.com/support/clj4650.

Additional drivers

The following drivers are not included on the CD, but are available from the Internet :

- PCL 5c printer drivers for Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003
- OS/2 PCL printer driver
- OS/2 PS printer driver
- UNIX model scripts
- Linux drivers
- HP OpenVMS drivers

Note

The OS/2 drivers are available from IBM and are packaged with OS/2.

Software features

Automatic configuration, driver updates after a new configuration, and Preconfiguration features are available with the HP Color LaserJet 4650 printers.

Driver Autoconfiguration

The HP Color LaserJet PCL 6 and PCL 5c drivers for Windows features automatic discovery and driver configuration for product accessories at the time of installation. Some supported accessories are the duplexing unit, optional paper trays, and dual inline memory modules (DIMMs).

Update Now

Note

The Update Now feature is not supported in environments where shared Windows NT 4.0, Windows 2000, or Windows XP clients are connected to Windows NT 4.0, Windows 2000, or Windows XP hosts.

HP Driver Preconfiguration

Printing system and installer

The following sections contain information about the printing-system software and the installer on the software CD that came with the product.

HP Color LaserJet 4650 printing-system software CD for Windows systems

For the Microsoft Windows environment (Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003), the HP Color LaserJet 4650 printer software CD provides an interactive software window that you can use not only to install the printer drivers and related components, but also to gain access to online user documentation, a customization utility, Adobe Acrobat Reader software, and optional HP software.

The following illustration shows the main screen of the HP Color LaserJet 4650 printer software CD, which appears when you insert the printing-system software CD in your CD-ROM drive. If the screen does not appear when you insert the software CD, click **Start**, click **Run**, click **Browse...**, navigate to the root directory of the software CD, and then double-click the SETUP.EXE file to start the installer.

Figure 1-1.

The main screen of the software CD contains installation options in the upper-left panel and documentation options in the lower-left panel. As you move your cursor over each option, a description of the option will display above the product image.

Note

The options on your product might vary from the illustration.

install printer. This wizard guides you through the installation of your HP Color LaserJet 4650 series printing-system software. You are given the choice of performing a Typical Installation or a Custom Installation. If you select Typical Installation, only the necessary software is installed. If you select Custom Installation, you can select the components that you want to install.

installer customization wizard. Use this wizard to customize the HP Color LaserJet 4650 printer installer by presetting the options for installation in a response file. The installer that you have customized can then be used for silent, unattended installation.

register product. Use this option to register your product online. Using the web registration, you can access support and services, manage your profile, and sign up for free support alerts, driver notices, and personalized newsletters

- **view user guide**
- **print user guide**
- **install notes**
- **web server user guide**
- **hp jetdirect guide**

Note

If your system does not have Adobe(R) Acrobat(R) Reader 4.0 or later installed, you are given the option to install that software. Clicking any of the links to documentation that is provided in the portable document format (PDF) file format opens a dialog box from which you can install Adobe Acrobat Reader software, from the HP Color LaserJet 4650 printing-system software CD.

- Click **hp web jetadmin** to download HP Web Jetadmin software from the Web for a Web browser-based network-product-management tool.
- Click **color matching information** for an introduction to color printing, with information about how to print the best simulation of the PANTONE (R)* Matching System colors, and installing and using International Color Consortium (ICC) profiles on your product.
- Click **supplies** for information about ordering HP Color LaserJet 4650 printer supplies.
- Click **product information** for HP Color LaserJet 4650 printer support information and updates.
- Click **hp.com** to go to the HP Web page for products and services, support, drivers, and HP online stores.

Installer features

The common installer is designed to provide a simple and consistent installation method for the product. The common installer is available for the Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 operating systems.

The common installer offers the following features:

- The HP Color LaserJet 4650 printer software CD features an interactive software interface. See HP Color LaserJet 4650 printing-system software CD for Windows systems .
- Acrobat Reader is available.

- Network connection is integrated so that you can install drivers and connect to a network product in a single process.
- The selection dialog box sets the operating-system language as the default language (for Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 only). You can use the installer to select any of the languages on the HP Color LaserJet 4650 printer software CD.

The HP Color LaserJet 4650 printer software CD also includes the following features:

- The HP Color LaserJet Uninstaller Utility
- The HP Customization Utility for custom installations
- HP Toolbox

All of the Windows system components are installed by using the HP Color LaserJet 4650 series printing-system installer. The installer automatically senses your language of choice and your operating system. You can select the type of installation that you prefer: Typical Installation or Custom Installation.

Installable print drivers

PCL 5c, PCL 6, and HP PS emulation drivers

The following drivers are available for the HP Color LaserJet 4650 printer:

- The HP Traditional PCL 5c driver for Windows 98, Windows Me, and Windows NT 4.0.
- The HP Traditional PCL 6 Driver for Windows 98, Windows Me, and Windows NT 4.0.
- The HP Traditional Postscript 3 Emulation Driver for Windows 98, Windows Me, and Windows NT 4.0.
- The HP PCL 6, HP PCL 5c, and HP Postscript 3 Emulation unidrivers for Windows 2000, Windows XP, and Windows Server 2003.

All of the drivers provide access to the paper-handling and print-quality features, and are described in chapters 3 and 4 of this reference document.

Note

If you select a Typical Installation during installation of the printing-system software, the HP PCL 6 driver is installed by default.

Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 driver versions

The HP Color LaserJet 4650 printer PCL 6 and PCL 5c print drivers support Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 operating systems. The HP Color LaserJet 4650 printer software provides postscript feature support for the HP Color LaserJet 4650.

If you are using an HP Traditional driver, you can view the print driver version number by clicking the HP logo in the lower-left corner of the following HP Traditional PCL 6 or HP Traditional PCL 5c Driver tabs:

- Configure
- Finishing
- Effects
- Paper

- Job Storage
- Basics

If you are using an HP Unidriver in Windows 2000, Windows XP, or Windows Server 2003 environments, follow these steps to find driver version information:

1. Click **Start**.
2. Click **Settings**.
3. Click **Printers** (or **Printers and Faxes** in Windows XP and Windows Server 2003).
4. Right-click the printer icon.
5. Click **Properties**.
6. Click the **About** tab.

Macintosh and Macintosh-compatible system-driver versions

The HP Color LaserJet 4650 series printing solution for Macintosh is composed of the Print Center for OS X and the Apple LaserWriter driver for OS 9, which are provided with the operating system, and HP-created PPD files. The driver uses these files to determine the features and postscript commands that the product supports. Bidirectional support in AppleTalk connections supports autoconfiguration of the software. The following are installable components:

- The HP Color LaserJet Installer for Mac OS 9, and Mac OS X.
- The HP Color LaserJet Screen Fonts Installer.
- SYSTEM/EXTENSIONS/PRODUCT DESCRIPTIONS (for Mac OS 9).
- LIBRARY/PRINTERS/PPDS/CONTENTS/RESOURCES/LANGUAGE.LPROJ (for Mac OS X).
- The HP LaserJet Utility, an HP utility that is installed in the HP LaserJet folder of Mac OS. The HP LaserJet Utility provides configuration and management support for postscript.
- Online Help, an HTML-based product and utility help that can be viewed through a browser or in the Macintosh OS Help Center (in English only).
- Install notes.

Additional driver availability

The following additional drivers are available from the Internet:

- UNIX model scripts. For further information about UNIX model scripts, go to http://www.hp.com/go/unixmodelscripts.
- Linux drivers. For further information, go to http://www.hp.com/go/linuxprinting.
- PCL 5c print drivers
- HP OpenVMS drivers
- OS/2 PCL 5c/6 print driver
- OS/2 PS print driver

HP Color LaserJet documentation

Table 1-3. Documentation availability

Document	Windows 98/Me	Windows NT 4.0	Windows 2K/XP/ Server 2003	Mac
HP Color LaserJet 4650 User Guide (.PDF)	x	x	x	x
HP Color LaserJet 4650 User Guide (.CHM)	x	x	x	x
HP Color LaserJet 4650 Printing-system Install Notes	x	x	x	
HP Embedded Web Server Guide	x	x	x	x
HP Jetdirect Administrator's Guide	x	x	x	x
HP Device Installer Customization Wizard	x	x	x	x

Access to HP Color LaserJet documents depends on the kind of document and its location. Some documents can be opened from the installer CD Browser. Others are found on the software CD and can be opened by navigating to the folder where they reside. Still others are available on the Web. Documents are available in the following formats:

- **Portable Document Format (.PDF)**. The HP Color LaserJet 4650 printer software CD includes Adobe Acrobat Reader for viewing online documentation. When you click a documentation link to a .PDF document on the software CD, the installer scans the system for an installed .PDF reader. If the installer cannot find a reader, the installer presents the option to install the Adobe Acrobat Reader.

Note

Adobe Acrobat Reader 4.0 or later is required in order to view the documents on the HP Color LaserJet 4650 printer software CD.

- **Compiled HTML (.CHM)**. When you click a documentation link to a .CHM document, a Microsoft HTML Viewer opens the file on your computer screen. The .CHM files can reside either on the printing-system software CD or on the Web.
- **Hypertext Markup (.HTM)**. This is the format for links to Web pages using Hypertext Markup Language (HTML). You must have a Web connection and Web browser to view these files. The .HTM link contains JavaScript(TM) code that links directly to the guide on the Web. The .HTM link directs your browser software to the guide on the Web.
- **Rich Text format (.RTF)**. This is a text file. You can navigate to .RTF files and open them in any text editor, such as NotePad or WordPad.

HP Color LaserJet 4650 User Guide

To view this guide, click **printer documentation** in the installer CD Browser, and then click **view user guide**. The guide opens as a Windows Help file (.CHM file). This readable, onscreen version of the guide is provided in accordance with the Americans with Disabilities Act (ADA).

The screen-readable version (.CHM) of the User Guide for the HP Color LaserJet 4650 printer is also available on the HP Color LaserJet 4650 printer software CD. To open the guide from the software CD, navigate to the **<language>** folder for your language, and then to the **Manuals** folder. There, open the file that has this file name:

-

Note

The "XX" in the file name varies in each language. For instance, the file name for the French version of the guide is LJ4650_USE_FRWW.CHM

To print the User Guide, click **printer documentation** in the installer CD Browser, and then click **print user guide**. The guide is displayed as a .PDF file, which you can print.
This document is also available on the software CD. To open the .PDF version of the guide, navigate to the **<language>** folder for your language, and then to the **Manuals** folder. There, open the file that has the following name:

- LJ4650_USE_XXWW.PDF

Note

The "XX" in the file name varies in each language. For instance, the file name for the French version of the guide is LJ4650_USE_FRWW.PDF

When you have the .PDF file open, you can click **File**, and then click **Save As** to save a copy of the file to another location.

HP Color LaserJet 4650 printing-system install notes

To view this file from the software CD, click **printer documentation** on the main screen in the installer CD Browser, and then click **install notes**.

You can also open the file by inserting the software CD into the CD-ROM drive and navigating to **<language>**. There, open the file that has the following file name:

- LJ4650_INSTALL-NOTE_XXWW.HTM

Note

The "XX" in the file name varies in each language. For instance, the file name for the English version of the document is LJ4650_INSTALL-NOTE_ENWW.HTM.

When you have the file open in a text editor (such as NotePad or WordPad), you can click **File**, and then click **Save As** to save a copy of the file to another location.

HP Embedded Web Server user guide

To view this guide, click **printer documentation** on the main screen in the installer CD Browser, and then click **web server user guide**.

- EWS77_USE_XXWW.PDF

Note

The "XX" in the file name varies in each language. In French, the file name is EWS77_USE_FRWW.HTM.

When you have the file open, you can click **File**, and then click **Save As** to save a copy of the file to another location.

HP Jetdirect administrator's guide

The *HP Jetdirect Administrator's Guide* is a network administrator's guide (in .PDF format) to information about connecting the product directly to a network.
To view this guide, click **printer documentation** on the main screen in the installer CD Browser, and then click **hp jetdirect guide**.

- HPJDAG_XXWW.PDF

Note

The "XX" in the file name varies in each language. In French, the file name is HPJDAG_FRWW.PDF.

When you have the file open, you can click **File**, and then click **Save As** to save a copy of the file to another location.

HP Device Installer Customization Wizard

The *HP Device Installer Customization Wizard* (in .RTF format) provides network administrators with information about pre-selectable options and installation settings for the Installer Customization Wizard.

- CUSTOMIZATIONDOC.RTF

Note

The file name is the same for all languages. The document itself has been localized. To open the French version of the document, for instance, navigate to the **francais** folder.

When you have the file open in a text editor (such as NotePad or WordPad), you can click **File**, and then click **Save As** to save a copy of the file to another location.

Structure and availability of the software CD

The software CD for the HP Color LaserJet 4650 printer contains a variety of files for installing the printing-system software on your computer. This section describes the files that are available on the software CD, as well as additional support and fulfillment information.

In-box file layout

The HP Color LaserJet 4650 series printing-system software consists of two partitions: one for installation using Windows operating systems, and the other for Macintosh operating systems. The files include documentation files and files that are required to install and uninstall the printing-system components.

HP LaserJet software CD, Windows partition

The root directory in the Windows partition of the software CD contains the AUTORUN.EXE file and the SETUP.EXE file, as well as the following directories and support files:

- autorun
- Fonts

- HW
- System32
- Temp
- toolbox
- WebReg
- Language directories for all the languages that are on the software CD

The printing-system files for each language reside in the following directories:

- Drivers
- Manuals
- Reader

File layouts differ by language for each regional version of the software CD.

To view the files, insert the HP Color LaserJet 4650 printer software CD, right-click **Start**, click **Explore**, and then select the CD-ROM drive.

HP LaserJet software CD, Macintosh partition

The files contained in the Macintosh partition of the HP LaserJet software CD are grouped by language and reside in the following directories:

- Root directory
- HP LASERJET INSTALLERS (for Macintosh operating systems)
- PDF (for guides and manuals)

File layouts differ by language for each regional version of the software CD.

Availability and fulfillment

This section provides information about the availability of the HP Color LaserJet 4650 software and related software and firmware. Printing-system software on a CD is available from HP fulfillment centers.

In-box CDs

- **CD 1 (Q3668-60101)** (DE = German (Deutsch), EN = English, ES = Spanish (Español), FR = French (Français), IT = Italian (Italiano), NL = Dutch (Nederland), PT = Portuguese (Português) - Brazilian), TR = Turkish (Turkçe))
- **CD 2 (Q3668-60102)** (AR = Arabic, CZ = Czech (Cesky), EL = Greek, EN = English, FR = French (Français), HU = Hungarian (Magyar), PL = Polish (Polski), RU = Russian (Russ))
- **CD 3 (Q3668-60103)** (EN = English, DN = Danish (Dansk), FI = Finnish (Suomi), HE = Hebrew, NO = Norwegian (Norsk), SV = Swedish)
- **CD 4 (Q3668-60104)** (EN = English, JA = Japanese, KO = Korean, TH = Thai, ZHCN = Chinese (Simplified), ZHTW = Chinese (Traditional))

Note

Drivers for various languages do not necessarily correspond to geographic countries/ regions. European languages, for instance, are distributed on three CDs.

Note

In the following tables, "98/Me" refers to Windows 98 and Windows Me; "2K" refers to Windows 2000; "4.0" refers to Windows NT 4.0; "XP" refers to Windows XP.

Table 1-4. CD 1 (Q3668-60101)

Component	DE	EN	ES	FR	IT	NL	PT	TR
HP Traditional Postscript 3 Emulation Driver	x	x	x	x	x	x	x	x
HP Traditional PCL 6 Driver	x	x	x	x	x	x	x	x
HP PCL 6 Unidriver	x	x	x	x	x	x	x	x
HP Postscript 3 Emulation Unidriver	x	x	x	x	x	x	x	x
Common Windows Installer	x	x	x	x	x	x	x	x
Customization Utility Wizard	x	x	x	x	x	x	x	x
CD Browser	x	x	x	x	x	x	x	x
HP Preconfiguration	x	x	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (PDF)	x	x	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (CHM)	x	x	x	x	x	x	x	x
HP Jetdirect Administrator's Guide	x	x	x	x	x	x	x	x
Install Notes	x	x	x	x	x	x	x	x
HP Embedded Web Server Guide	x	x	x	x	x	x		x
Customization Utility Doc	x	x	x	x	x	x	x	x
HP Toolbox	x	x	x	x	x	x	x	

Table 1-5. CD 2 (Q3668-60102)

Component	AR	CZ	EL	EN	FR	HU	PL	RU
HP Traditional Postscript 3 Emulation Driver	x	x	x	x	x	x	x	x

Table 1-5. CD 2 (Q3668-60102) (continued)

Component	AR	CZ	EL	EN	FR	HU	PL	RU
HP Traditional PCL 6 Driver	x	x	x	x	x	x	x	x
HP PCL 6 Unidriver	x	x	x	x	x	x	x	x
HP Postscript 3 Emulation Unidriver	x	x	x	x	x	x	x	x
Common Windows Installer	x	x	x	x	x	x	x	x
Customization Utility Wizard	x	x	x	x	x	x	x	x
CD Browser	x	x	x	x	x	x	x	x
HP Preconfiguration	x	x	x	x		x	x	x
HP Color LaserJet 4650 User Guide (PDF)	x	x	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (CHM)	x	x	x	x	x	x	x	x
HP Jetdirect Administrator's Guide		x	x	x	x	x	x	x
Install Notes	x	x	x	x	x	x	x	x
HP Embedded Web Server Guide		x	x	x	x	x	x	x
Customization Utility Doc		x	x	x	x	x	x	x
HP Toolbox		x		x	x	x	x	

Table 1-6. CD 3 (Q3668-60103)

Component	EN	DN	FI	HE	NO	SV
HP Traditional Postscript 3 Emulation Driver	x	x	x	x	x	x
HP Traditional PCL 6 driver	x	x	x	x	x	x
HP PCL 6 Unidriver	x	x	x	x	x	x
HP Postscript 3 Emulation Unidriver	x	x	x	x	x	x
Common Windows Installer	x	x	x	x	x	x
Customization Utility Wizard	x	x	x	x	x	x
CD Browser	x	x	x	x	x	x

Table 1-6. CD 3 (Q3668-60103) (continued)

Component	EN	DN	FI	HE	NO	SV
HP Preconfiguration	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (PDF)	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (CHM)	x	x	x	x	x	x
HP Jetdirect Administrator's Guide	x	x	x	x	x	x
Install Notes	x	x	x	x	x	x
HP Embedded Web Server Guide	x	x	x	x	x	x
Customization Utility Doc	x	x	x	x	x	x
HP Toolbox	x	x	x		x	x

Table 1-7. CD 4 (Q3668-60104)

Component	EN	JA	KO	TH	ZHCN	ZHTW
HP Traditional Postscript 3 Emulation Driver	x	x	x	x	x	x
HP Traditional PCL 6 driver	x	x	x	x	x	x
HP PCL 6 Unidriver	x	x	x	x	x	x
HP Postscript 3 Emulation Unidriver	x	x	x	x	x	x
Common Windows Installer	x	x	x	x	x	x
Customization Utility Wizard	x	x	x	x	x	x
CD Browser	x	x	x	x	x	x
HP Preconfiguration	x		x		x	x
HP Color LaserJet 4650 User Guide (PDF)	x	x	x	x	x	x
HP Color LaserJet 4650 User Guide (CHM)	x	x	x	x	x	x
HP Jetdirect Administrator's Guide	x	x	x		x	x
Install Notes	x	x	x	x	x	x
Customization Utility Doc	x	x	x	x	x	x
HP Toolbox	x					

Web deployment

All software contained on the installation CD is also available on the Web.

Web deployment is the preferred method for obtaining the latest software. The Web site offers a notification option for automatic e-mail notification about new software releases.

Printing-system software

The HP Color LaserJet 4650 series printing-system software is available for download from http://www.hp.com/support/clj4650.

The printing-system software supports the following operating systems:

Note

If your computer is running a 64-bit operating system, you must install a 64-bit print driver. Both 64-bit print drivers and 32-bit print drivers are available on the printing-system software CD. For more information about installing print drivers for Windows, see Chapter 5, Installing Windows printing-system components.

- Windows 98 and Windows Me
- Windows NT 4.0
- Windows XP Professional (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)
- Windows XP Home Edition
- Windows 2000 (32-bit)

Standalone drivers

The HP PCL 6, PCL 5c, and PS emulation drivers are available individually to support the following operating systems:

- Windows 98 and Windows Me
- Windows NT 4.0
- Windows 2000 (32-bit)
- Windows XP (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)

Other operating systems

Drivers and related software are available for these additional operating environments:

- UNIX
- Linux
- OS/2
- HP Open VMS
- Mac 9.*x*
- Mac OS X (10.1 or later)

Software component availability

The following table lists the availability of HP LaserJet software components by operating system.

Note

In the following table, "98/Me" refers to Windows 98 and Windows Me; "2K" refers to Windows 2000; "4.0" refers to Windows NT 4.0; "XP" refers to Windows XP; and "Mac" refers to Macintosh operating systems.

Table 1-8. Software component availability for HP Color LaserJet 4650 printer

Component	98/Me	4.0	2K/XP[2]	XP64
Drivers				
HP Traditional PCL 5c and PCL 6 driver	x	x		
HP PCL 5c and PCL 6 Unidrivers			x	x
HP Postscript 3 emulation Unidriver			x	x
HP Traditional Postscript 3 emulation Driver	x	x		
HP Preconfiguration	x	x	x	x
Installer				
Common Windows Installer	x	x	x	
Customization Utility Wizard	x	x	x	
CD Browser	x	x	x	
Add Printer Wizard install	x	x	x	x
Web Registration	x	x	x	

[2] This information also applies to Windows Server 2003.

2 Software description

Introduction

The HP Color LaserJet 4650 printer comes with software and installers for Microsoft Windows and Apple Computer, Inc., Macintosh systems. Linux, and UNIX systems are supported, and software is available on the Web. For information about specific system installers, drivers, and components, see the section that corresponds to that system.

This chapter contains information about the following topics:

- Supported operating systems
- Technology background information

Supported operating systems

The support for Windows operating systems (OSs) offers a full-featured configuration of the HP Color LaserJet 4650 printer; support for OSs that are not described in this document offer varying levels of functionality. The following OSs are supported by the HP Color LaserJet 4650 printing-system software, including HP PCL 5c, HP PCL6, and PS Emulation drivers:

- Windows 98
- Windows Millennium Edition (Me)
- Windows NT 4.0 (Service packs 3 through 6)
- Windows 2000 (Service packs 1 and 2)
- Windows XP Home Edition
- Windows XP Professional (Service pack 1 and greater)
- Windows Server 2003

Note

Throughout this manual, Windows XP is used to denote Windows XP Home Edition, Windows XP Professional, and Windows Server 2003 unless noted otherwise.

The following operating environments are also supported by the HP Color LaserJet 4650 printer:

- Mac OS 9 and Mac OS X (10.1 or later)
- Linux (available at http://www.hp.com/go/linux)
- UNIX (available at http://www.hp.com/go/jetdirectunix_software)
- Windows Terminal Server
- Citrix Terminal Server
- Windows Cluster Server 8
- HP OpenVMS (available at http://h71000.www7.hp.com/)

For more information about the HP Color LaserJet 4650, go to: http://www.hp.com/support/clj4650.

Technology background information

This section contains information about the following topics:

- Driver Configuration
- HP Driver Preconfiguration
- Euro character
- International Color Consortium profiles
- PANTONE (R)* color profiles
- HP Embedded Web Server
- HP Toolbox
- HP Web Jetadmin
- Bluetooth (R)*
- Remote firmware update
- Printing print-ready documents from a command line
- Driver-feature comparison in various operating systems

Driver Configuration

Automatic discovery and driver configuration through bidirectional communication occurs in the following circumstances:

- Upon the first installation of a driver, when using Enterprise Autoconfiguration (EAC)
- When you use the **Update Now** feature for a driver that is already installed

Bidirectional communication

In environments that support bidirectional communication, the computer communicates with the product during installation, determines the physical configuration, and then configures the driver accordingly.

Bidirectional communication enables the product to respond to data inquiries from the computer and report back information, such as what type of print media is available or what accessories are connected to the product. If the connection does not have this capability (that is, if it has no bidirectional mode), it can only accept commands from the host and cannot report back information to the host computer.

Bidirectional communication depends on your network operating system and on the type of connection you have between your computer and your product.

When you install the HP Toolbox, bidirectional communication is always enabled. Installing the HP Toolbox activates the HP Network Registry Agent (HPNRA) to ensure constant communication between your computer and the product. When you install a driver without installing the HP Toolbox at the same time, bidirectional communication is enabled only to configure the driver, and is then disabled unless the driver's **Update Now** feature is used to update the driver.

Enterprise AutoConfiguration

Enterprise AutoConfiguration (EAC) uses bidirectional communication to provide autoconfiguration functionality for installation of the print driver over a network, whether you use the installer on your printing-system software CD or the Add Printer wizard to install the driver. Driver installation that includes EAC is configured with the same settings as the physical configuration of the device. Configuration occurs without user interaction. If bidirectional-communication software has been installed previously, EAC is not activated, and the the pre-existing bidirectional-communication software is used to configure the print driver.

If bidirectional communication software has not been installed, EAC installs bidirectional-communication software that allows it to communicate with the product and automatically match the print driver with the actual product configuration. EAC is activated during installation of the driver or whenever the **Update Now** feature is used.

If the configuration of the HP Color LaserJet 4650 printer changes after installation, the driver can be automatically updated with the new configuration in environments that support bidirectional communication by using the **Update Now** feature. For example, if the HP Color LaserJet 4650 is installed and an optional paper-handling accessory is added later, you can use the **Update Now** feature to query the product and update the settings to match the product's configuration.

Note

If you are using an HP PCL or PS Emulation unidriver, you must select **Update Now** through the **Automatic Configuration** setting in **Device Settings** tab. If you are using an HP traditional PCL6 driver, you must click the **Update Now** button on the **Configure** tab. The Update Now feature is not available with the HP Traditional PS Emulation driver.

The following tables show the availability of EAC for various operating systems and network environments that support bidirectional communication.

Table 2-1. Enterprise AutoConfiguration availability in Microsoft Windows and Microsoft Share

Method	Connection type			Microsoft Windows					Microsoft Share[1]	
				98	Me	NT 4.0	2000	XP	2000/ XP host with 2000/ XP client	NT 4.0 host with NT 4.0 client
Installer	Direct connect	Parallel								
		USB								
	Network	HP Jetdirect	TCP/IP	x	x	x	x	x	x	x[2]
			IPX/ SPX	x	x	x	x	x	x	x[2]
		Standard	TCP/IP (HP)	x	x	x	x	x	x	x[2]
			TCP/IP (MS)	x	x	x	x	x	x	x[2]
			IPX/ SPX (HP)	x	x	x	x	x	x	x[2]
Add Printer	Direct connect	Parallel								
		USB								
	Network	HP Jetdirect	TCP/IP	x	x	x	x	x	x	
			IPX/ SPX	x	x	x	x	x	x	x[2]
		Standard	TCP/IP (HP)	x	x	x	x	x	x	x[2]
			TCP/IP (MS)				x	x	x	x[2]
			IPX/ SPX (HP)	x	x	x	x	x	x	x[2]

1 This column represents the following Microsoft Share configurations:
– Windows 2000, Windows XP, or Windows 2003 Server host with Windows NT 4.0, Windows 98, or Windows Me client
– Windows NT 4.0 host with Windows 2000, Windows XP, Windows 2003, Windows 98, or Windows Me client
– Windows 98 or Windows Me host with any client

2 In this environment, client machines use Point and Print to download the configured driver from the host.

Table 2-2. Enterprise Autoconfiguration availability in Novell Netware environments

Method	Connection type			Novell			
				Netware 4.x		Netware 5.x	
				Bindery queue	NDS queue	Bindery queue	NT 4.0
Installer	Direct connect	Universal serial bus (USB)					
		Parallel					
	Network	Jetdirect	TCP/IP	x	x	x	x
			IPX/SPX				
		Standard	TCP/IP (HP)				
			TCP/IP (MS[1])				
			IPX/SPX (HP)				

[1] Bidirectional functionality is supported only with the client software from Novell. It is not supported with Microsoft (MS) Client Service for NetWare.

HP Driver Preconfiguration

HP Driver Preconfiguration is a software architecture and set of tools that permits HP printing-system software to be customized and distributed in managed corporate printing environments. Using HP Driver Preconfiguration, information technology (IT) administrators in corporate and enterprise environments can preconfigure the printing and device defaults for HP print drivers before installing the drivers in the network environment.

HP Driver Preconfiguration is most beneficial when configuring print drivers for multiple workstations or print servers for print queues that share the same configuration. Two types of features can be configured: device settings and printing-preferences settings. The driver is configured to match the product hardware so that gaining access to all of the product accessories through the driver is enabled correctly (for example, for duplexing units and additional input trays). Most driver feature settings can also be configured.

HP Preconfiguration configures the driver to match the accessories installed on the printer, or to match the settings that IT administrators make in the configuration (.CFG) file (for example, optional trays, total amount of memory, job storage settings, mopier settings).

The preconfiguration process consists of three basic steps: driver acquisition, driver preconfiguration, and driver installation and deployment. These steps can be accomplished in different ways, depending on the tool that is being used to define the configuration.

The configuration process for driver preconfiguration is supported through three distinct tools. All three are designed with the same basic UI controls for interacting with the configuration (.CFG) file, but are packaged differently, either to support established product installation workflows or to leave the deployment and installation of the driver entirely up to the user.

- **HP Driver Configuration Editor**. The HP Driver Configuration Editor is a small standalone Windows software program that the administrator can use to open the .CFG file that is associated with a particular driver and make modifications that are applied when that driver is installed on the target computer. It is intended for use in environments that have an established process for deploying drivers. This is the preconfiguration tool of choice to support any Novell or HP Print Server Appliance (PSA) Point and Print environments. It is used in the way that any ordinary Windows software program is used.
  The HP Driver Configuration Editor is available at the following URL: http://www.hp.com/go/hpdpc_sw.
- **The HP Web Jetadmin Driver Configuration Plugin**. HP Web Jetadmin provides a queue creation program that can be used to create printers on any Windows NT 4.0, Windows 2000, Windows XP, or Windows 2003 server or workstation. The HP Web Jetadmin Driver Configuration Plugin adds a number of screens to the existing queue creation workflow from which the drivers that are being installed for the queues can be customized as part of the process. The plug-in is limited to Internet Explorer browsers. Netscape Navigator is not supported.
  The HP Web Jetadmin Driver Configuration Plugin is available at the following URL: http://www.hp.com/pond/wja/live/manual/html/wjacomp_winnt.html.
- **HP Customization Utility/Silent Installer**. The Customization Utility features an install-time mode of HP Driver Preconfiguration. IT administrators can use the utility to preconfigure the drivers for a printing-system software driver installation with the silent installer.

Detailed information about gaining access to and installing these tools can be found in the *HP Driver Preconfiguration Support Guide*, which is available on the printing-system software CD.

Lockable features

The following driver features can be locked to prevent end-users from changing settings:

- **Print on Both Sides (Duplex)**
- **Media Type**
- **Paper Source**
- **Print in Grayscale**

When a feature is locked, the selected default option is the only option that is available to users. Generally, the feature is simply unavailable in the driver UI after it has been installed.

Euro character

The euro is the name for the currency of the European Union (EU). This unit was launched on January 1, 1999. The euro has changed the way business is conducted in Europe and has affected every company and industry in the world. It is vital that companies understand and prepare for the changes the euro brings.

International Color Consortium profiles

HP provides cyan-magenta-yellow-black (CMYK) (HP4650C.ICM) and sustained redgreen-blue (sRGB) (HP4650R.ICM) International Color Consortium (ICC) profiles with its HP Color LaserJet 4650 printers. The CMYK profile can only be used with a postscript driver; the sRGB profile can be used with any of the HP Color LaserJet 4650 drivers. The profiles are available on the HP Web site at the following URL: http://www.hp.com/support/clj4650.

ICC profiles describe the way color will be interpreted in the default CMYK and RGB modes. The sRGB profile matches the default RGB mode (sRGB), which is enabled with the Screen Match or Automatic Color Smart II setting in either a PCL or postscript driver. The CMYK profile is based on the default mode, which is a Specifications for Web Offset Publications (SWOP) simulation with a CMYK Inkset setting of **FAST**in the postscript driver. These profiles can be used for color conversions in a color-managed workflow.

PANTONE (R)* color profiles

Automatic PANTONE (R)* Calibration is the default setting for HP Color LaserJet products. This feature automatically converts PANTONE (R)* colors to optimal color values for the product by recognizing the PANTONE (R)* color name or number in the data stream sent to the product. The feature is activated when printing colors that were chosen using the PANTONE (R)* Color picker in supported graphics applications.

Applications known to generate postscript files with graphic objects preserving the PANTONE (R)* name are listed below:

- Adobe Illustrator
- Adobe Photoshop (R)
- Adobe PageMaker
- Adobe InDesign
- CorelDRAW (TM)
- Macromedia Freehand
- QuarkXPress

Some applications substitute CMYK values to the product if they cannot provide PANTONE (R)* names. If your application does not pass the PANTONE (R)* names to the product, the application will substitute default CMYK values to be printed for each color. In this case, the accuracy of color matching will depend on the ink emulation selected - FAST, SWOP, Euro standard, or DIC (Dainippon). If your application does not pass the PANTONE (R)* names to the product, the custom CMYK values created by PANTONE (R)* for this product are available in the manual PANTONE (R)* palettes.

PANTONE (R)* Application Palettes might be available on the Web at the following URL: http://www.hp.com/support/clj4650.

Vector graphics such as company logos created in PANTONE (R)* Application Palettes can be imported into Microsoft Word, PowerPoint, or other MS Office applications. To do this, the color application must create an encapsulated postscript (EPS) file of the image for insertion as a file into the Office document (using the insert file function).

Note

Cutting and pasting from the clipboard does not work. These tasks do not preserve the PANTONE (R)* name or the CMYK palette value.

HP Embedded Web Server

The HP Embedded Web Server (EWS) is a standard feature for the HP Color LaserJet 4650 printer.

The EWS provides a simple, easy-to-use solution for one-to-one product management. In offices that have a limited number of products, remote management of printing devices can be accomplished without installing any management software, such as HP Web Jetadmin. The only requirement is that the management console have a supported Web browser.

In environments that have a larger number of products, where one-to-one management is impractical, the HP Embedded Web Server and HP Web Jetadmin work together to provide scalable remote product management. Use HP Web Jetadmin for consolidated management tasks, when you want to perform operations on a selected set of products instead of on individual products. For such environments, HP provides hooks between the HP Embedded Web Server and HP Web Jetadmin so that you can configure HP Embedded Web Server features on multiple products in one operation. For example, you can set the security password for the HP Embedded Web Server simultaneously on a population of products.

For additional information and a copy of the *HP Embedded Web Server User Guide*, go to: http://www.hp.com/support/clj4650.

To view information about the product by using the HP Embedded Web Server, open a supported Web browser and type in the product transmission control protocol/internet protocol (TCP/IP) address or host name. To find the TCP/IP address, look for **IP Address** on the enhanced input/output (EIO) Jetdirect page, in the **TCP/IP** section. To find the host name of the product, look for **Host Name** in the **TCP/IP** section.

You also can view information about an installed HP Jetdirect print server by clicking the **Networking** tab in the HP Embedded Web Server window.

To print a copy of the EIO Jetdirect page from the control-panel display, follow these steps:

1. Press the select button (the one with the check mark) to open the menus.
2. Press the up and down buttons to scroll to INFORMATION, and then press the select button.
3. Press the up and down buttons to scroll to PRINT CONFIGURATION.
4. Press the select button to print the configuration page.
5. Look in the configuration page section marked "Printer Information" for the firmware date code. The firmware date code looks something like this: 20031002 07.000.0. (The EIO Jetdirect page is the second page of the Configuration Page printout.)

The EWS frame

Each screen in the EWS has a frame that contains a top banner, three category tabs, a left-aligned navigation menu bar, and a main-content area. Selecting one of the category tabs causes the corresponding left-aligned navigation bar to appear. The left-aligned navigation menu includes links to content that is appropriate for that tab. The main-content area shows information and opens options in response to navigation tab selections and menu bar selections.

See the following sections for more information about each tab or area:

- Information tab
- Settings tab
- Networking tab

Links to off-product solutions

Links on the HP Web Server screens provide an easy way to locate information or complete tasks.

- **hp instant support**. This link connects you to a set of dynamic Web resources that help you solve specific problems and determine additional services that might be available for your product. Specific status and configuration information about the product is retained and directed to the "Solve a Problem" Web site. This site offers targeted support content and messages to help resolve problems as quickly as possible.
- **Order Supplies**. This link connects you to an HP product supplies screen from which you can order genuine HP supplies for your product.
- **Product Support**. This link connects to an HP product-support screen from which you can search for information, contact the HP customer care home page, or find additional resources for your product.

Information tab

The following information is available on the HP Embedded Web Server **Information** tab. To view the information, click the menu items on the left side of the HP Embedded Web Server **Information** tab.

Not all of the screens on the tab are shown in this document. For more information, see the *HP EWS User Guide*.

- **Device Status screen**. This screen provides current status information about the product.
- **Configuration Page**. This screen provides information about the configuration of the product.
- **Supplies Status**. This screen provides information about the print cartridge and the total pages that have been printed, and the serial number of the product.
- **Event log**. This screen provides information about reported product errors.
- **Usage page**. This screen provides a page count for each size of media that has passed through the device, as well as the number of duplexed pages.
- **Device Information**. This screen shows device information, such as the product TCP/IP address and serial number.
- **Control Panel**. This screen shows the product control panel.
- **Print**. You can use this screen to print documents that are print-ready, such as those generated by a "print to file" driver option, .PCL documents, .PS documents, .PDF files, and text (.TXT) files.

Device Status screen

Status information (such as whether the product is online or the toner is low) is available through your Web browser on a computer that is linked directly to the product. You can view this information without physically going to the product to identify the status. The following illustration shows how this information is presented on the product Web page:

Figure 2-1. **Device Status screen on the Information tab**

Configuration Page

Figure 2-2. **Configuration screen on Information tab**

Note

This illustration is provided as an example only. The complete screen is not shown.

Settings tab

The following information is available on the HP Embedded Web Server **Settings** tab. To view the information, click the menu items on the left side of the HP Embedded Web Server **Settings** tab. The **Settings** tab is shown in the Configure Device section.
Not all of the screens on the tab are shown in this document. For more information, see the *HP Embedded Web Server Guide*.

- **Configure Device**. You can use the Configure Device screen to print product information pages and configure the product remotely.
- **Email Server**. Use the Email Server screen to configure e-mail settings for outgoing e-mail.
- **Alerts**. IT Administrators can set up the product to send alerts to anyone through e-mail messages.
- **AutoSend**. Use the AutoSend screen to send device configuration and supplies-usage information periodically to your service provider.
- **Security**. Use this screen to manage security on the product.
- **Edit Other Links**. Use the Edit Other Links screen to add or customize up to five links to the Web sites of your choice.

- **Device Information**. Use the Device Information screen to provide a name of your choice for the product, assign an asset number, and configure the company name, the person to contact about the product, and the physical location of the product.
- **Language**. Use the Language screen to select the language in which the EWS screens appear.
- **Time Services**. Use the Time Services screen to manage network time settings on the product.

Configure Device

You can obtain product configuration information through a Web browser by opening the product HP Embedded Web Server screen and changing any of the basic configuration information on the **Settings** tab. Security and password controls give management information system managers the level of control that they require within their environments. The following illustration shows an example of product options that can be configured remotely.

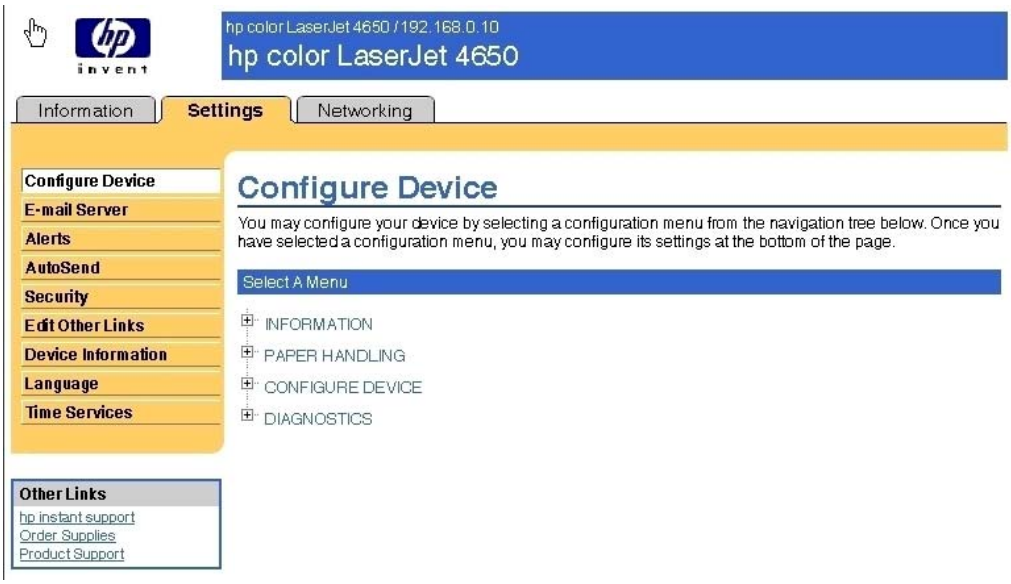


Figure 2-3. **Settings tab - Configure Device**

Alerts

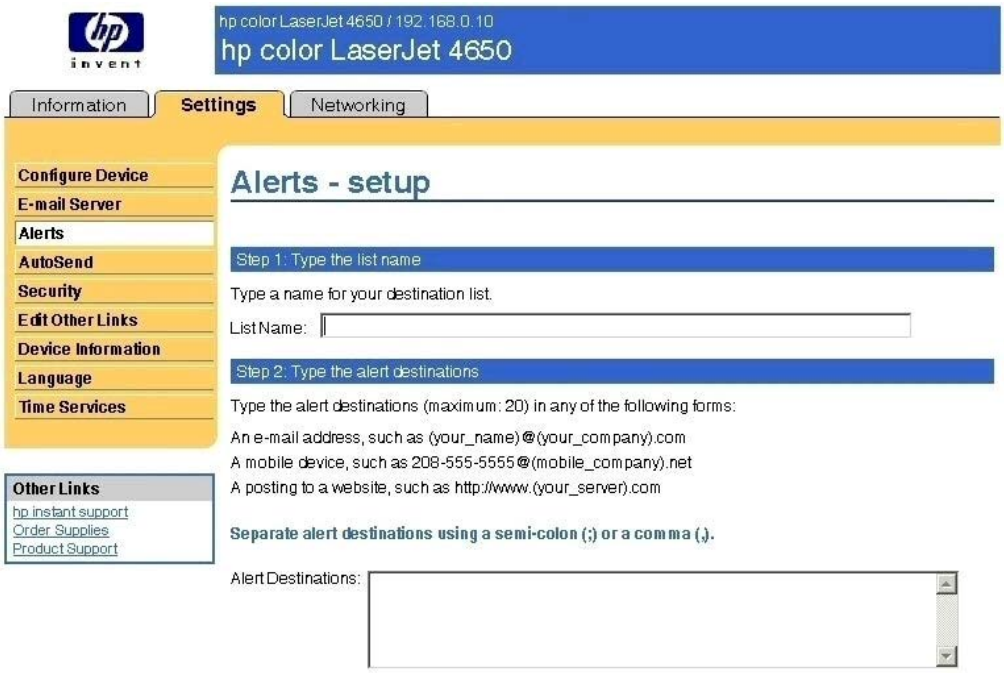


Figure 2-4. **Settings tab - Alerts screen**

Note

This illustration is provided as an example only. The complete screen is not shown.

Networking tab

The following options are available on the HP Embedded Web Server **Networking** tab. Not all of the screens on the tab are shown in this document. For more information, see the *HP EWS User Guide*.

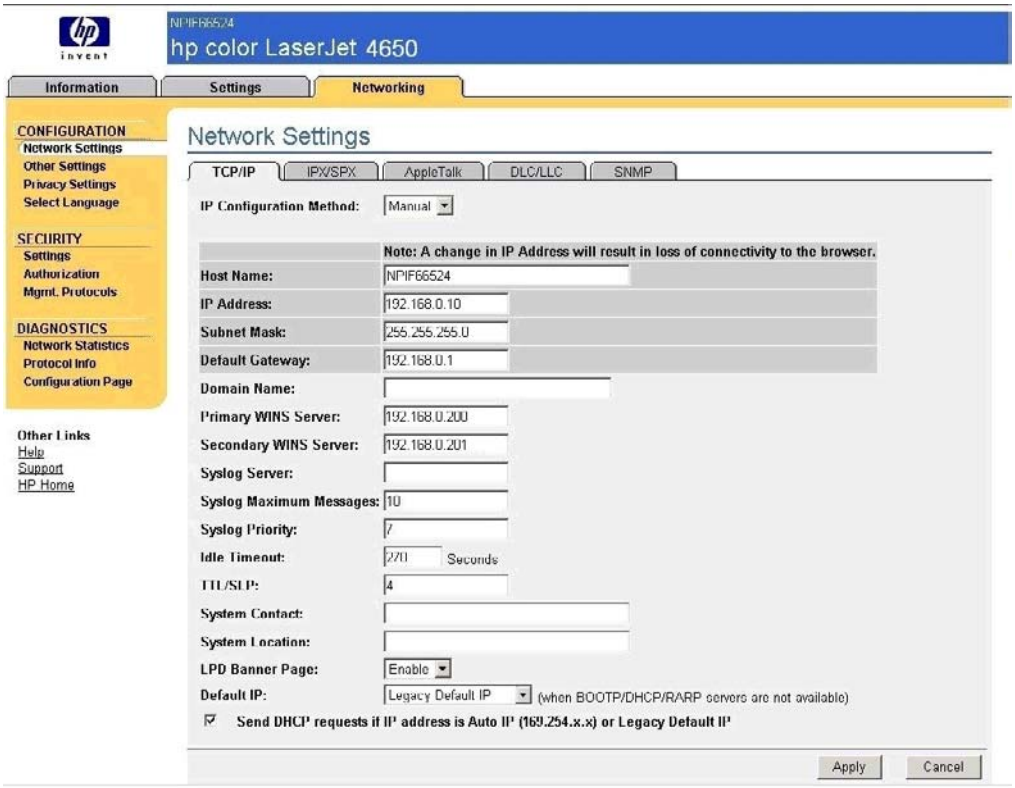


Figure 2-5. **Networking tab - Configuration section**

The menu on the left side of the screen contains other networking options under three categories: configuration, security, and diagnostics. For more information, see the *HP Jetdirect Administrator's Guide*.

Configuration section

- Network Settings
- Other Settings
- Privacy Settings
- Select Language

Security section

- Settings
- Authorization
- Mgmt. Protocols

Diagnostics section

- Network Statistics
- Protocol Info
- Configuration Page

Network settings

From the **Networking** tab, you can enable and configure the following network protocols:

- TCP/IP
- Internetwork packet exchange/Sequenced packet exchange (IPX/SPX)
- AppleTalk
- Data link control/logical link control (DLC/LLC)
- Simple network management protocol (SNMP)

HP Toolbox

The HP Toolbox is a series of Web pages and a supporting Windows-based software program that provide access to the HP Color LaserJet 4650 embedded Web servers and other firmware functions, making them available on a browser-driven user interface where product properties can be viewed and manipulated. Some screens are accessed through the toolbox interface.

The HP Toolbox provides links to printer status information, help information, and tools for diagnosing and solving problems. The HP Toolbox also provides product status and settings information from the embedded Web server, by clicking the **Advanced Settings** button in the upper-right corner of each of the four tabs.

HP Toolbox requirements

HP Toolbox requires one of these recent Internet browsers in order to show product embedded Web server pages:

- Microsoft Internet Explorer 5.5 or later (Internet Explorer 5.2 or later for Macintosh)
- Netscape Navigator 7.0 or later (Netscape Navigator 7.0 or later for Macintosh)
- Opera Software ASA Opera 7.0 for Windows
- Safari 1.0 software for Macintosh

These browser requirements are not necessarily minimum standards, but they are the minimum tested environments. Other, untested browsers might also provide access to HP Toolbox screens.

The HP Toolbox is supported only for Windows 98 and later operating systems (Windows Me, Windows 2000, and 32-bit Windows XP). You must have performed a complete software installation in order to use the HP Toolbox.

When the HP Color LaserJet 4650 printer is connected both through a network using a HP Jetdirect card and through a local parallel or USB connection, the network connection takes precedence. On a network connection, bidirectional communication is supported through a TCP/IP or an IPX/SPX connection. When the product is connected using both a parallel and a USB connection, the parallel connection takes precedence, and the USB connection is disconnected.

To view the HP Toolbox

To open the HP Color LaserJet 4650 Toolbox, on the **Start** menu, point to **Programs**, point to **hp color LaserJet 4650**, and then click **hp LaserJet toolbox**.

The HP Toolbox opens in your Web browser. The HP Toolbox software contains four tabs.

- The **Status** tab
- The **Troubleshooting** tab
- The **Alerts** tab
- The **Documentation** tab

These tabs are on local browser screens that are installed when you install the printing-system software, and you do not need an Internet service provider to view them.

The HP toolbox also contains an area with links to the HP Web site. While you do not need to have Internet access to open and use the HP Toolbox, you must have Internet access in order to gain access to the sites that are associated with the links in the Other Links area.

If your computer is connected to the HP Color LaserJet 4650 printer through a network, you can bookmark the URL of the HP Toolbox so that you can return to it quickly in the future.

The HP Toolbox frame

Each screen in the HP Toolbox has a frame that contains a top banner, three category tabs, a left-aligned navigation menu bar, and a main-content area. Selecting one of the category tabs causes the corresponding left-aligned navigation bar to appear. The left-aligned navigation menu includes links to the content that is appropriate for that tab. The main-content area shows information and options in response to selections that you make on a HP Toolbox screen navigation tab.

See the following sections for more information about each tab or area:

- Top banner
- Status
- Troubleshooting
- Alerts
- Documentation
- Other Links

Top banner

The top banner has an HP logo. Next to the HP logo, the title of the page appears followed by the product name and a copyright notice. The top banner is the same for all of the HP Toolbox Web pages. The HP logo contains a link to http://www.hp.com.

Status tab

The **Status** tab, with the **Device Status** setting selected, is shown in the following illustration.

Figure 2-6. **Toolbox Device Status tab**

The **Status** tab provides the following options:

- **Device Status**. This screen shows the percentage of life remaining for each consumable, the status and configuration information for the input trays and output, and the accessories that are installed on the product.
- **Supplies Status**. This screen shows the levels remaining for all consumables and the HP Part Numbers for each consumable. (It is helpful to have the part numbers available when it is time to order supplies.)
- **Print Info Pages**. Print the configuration page and various other information pages that are available for the product, such as the Supplies Status page, the Demo page, and Menu Map.
- **toolbox Links**. Select a device, view current alerts, or view the HP Toolbox Web site in text-only format (without graphics).
- **Other Links**. For information about these links, see Links to off-product solutions in the HP Embedded Web Server section of this guide.

Troubleshooting tab

- **Print Quality Tools**
- **Maintenance**
- **Error Messages**
- **Paper Jams**
- **Supported Media**
- **Printer Pages**

Note

Netscape users must download a plug-in so that product management features can operate correctly. A link and instructions are provided in the Other Links section. After you click a link, a pop-up window appears that provides information and instructions about how to locate this plug-in.

Print Quality Tools

The **Print Quality Tools** screen, shown in the following illustration, provides options for General Troubleshooting, Print Quality Troubleshooting Pages, a Print Quality Defect Chart, and a Calibrate Now function.

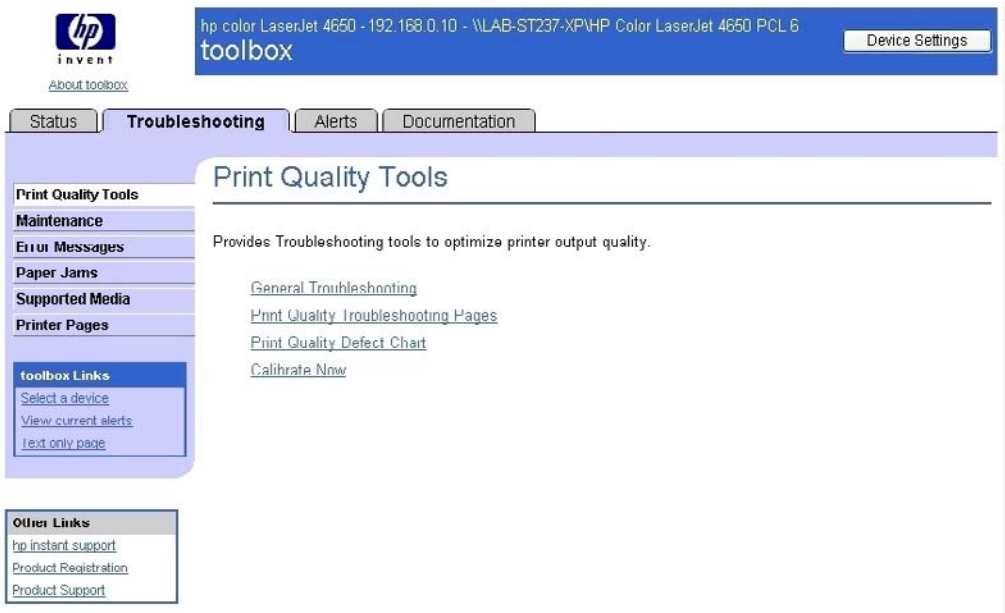


Figure 2-7. **Troubleshooting tab – Print Quality Tools**

Maintenance

The **Maintenance** screen is shown in the following illustration.

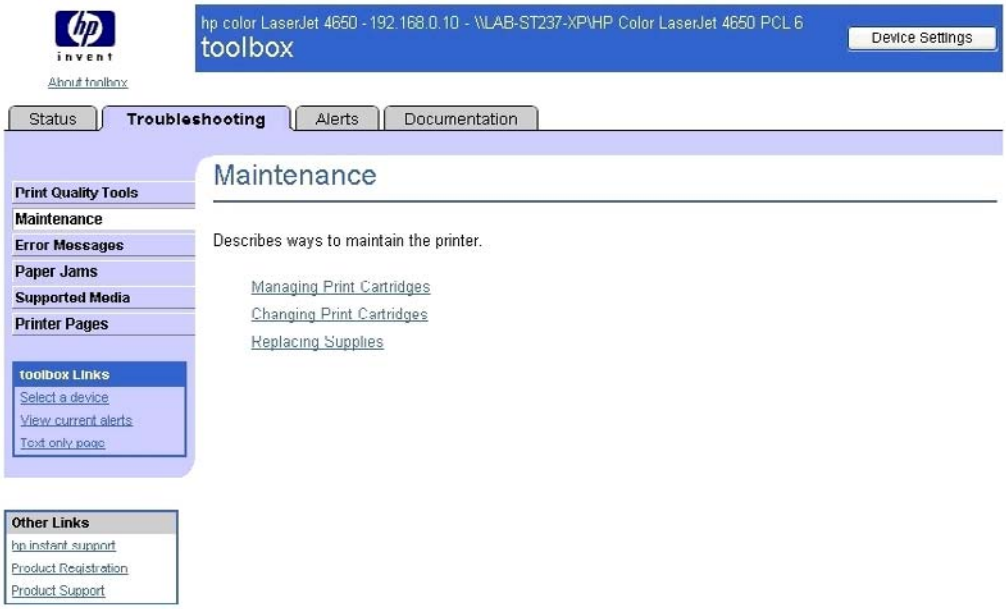


Figure 2-8. **Troubleshooting tab – Maintenance**

The **Maintenance** screen contains information about the following options:

- **Managing Print Cartridges**
- **Changing Print Cartridges**
- **Replacing Supplies**

Error Messages

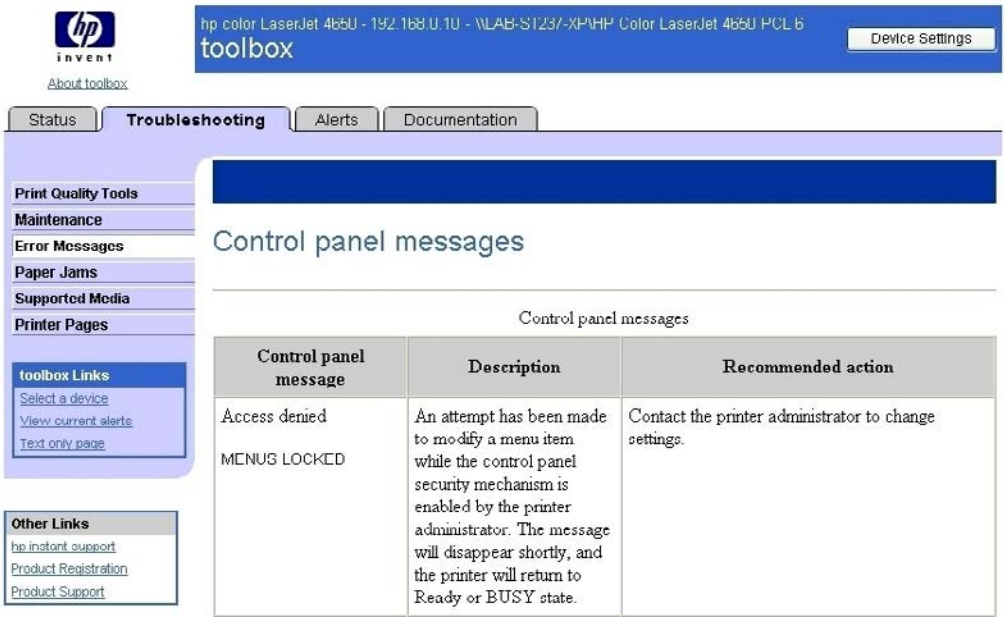


Figure 2-9. **Troubleshooting tab – Control panel messages**

The **Control panel messages** screen lists messages that might appear in the control panel on the product or in the HP Toolbox.

Note This illustration is provided as an example only. The complete screen is not shown.

Paper Jams

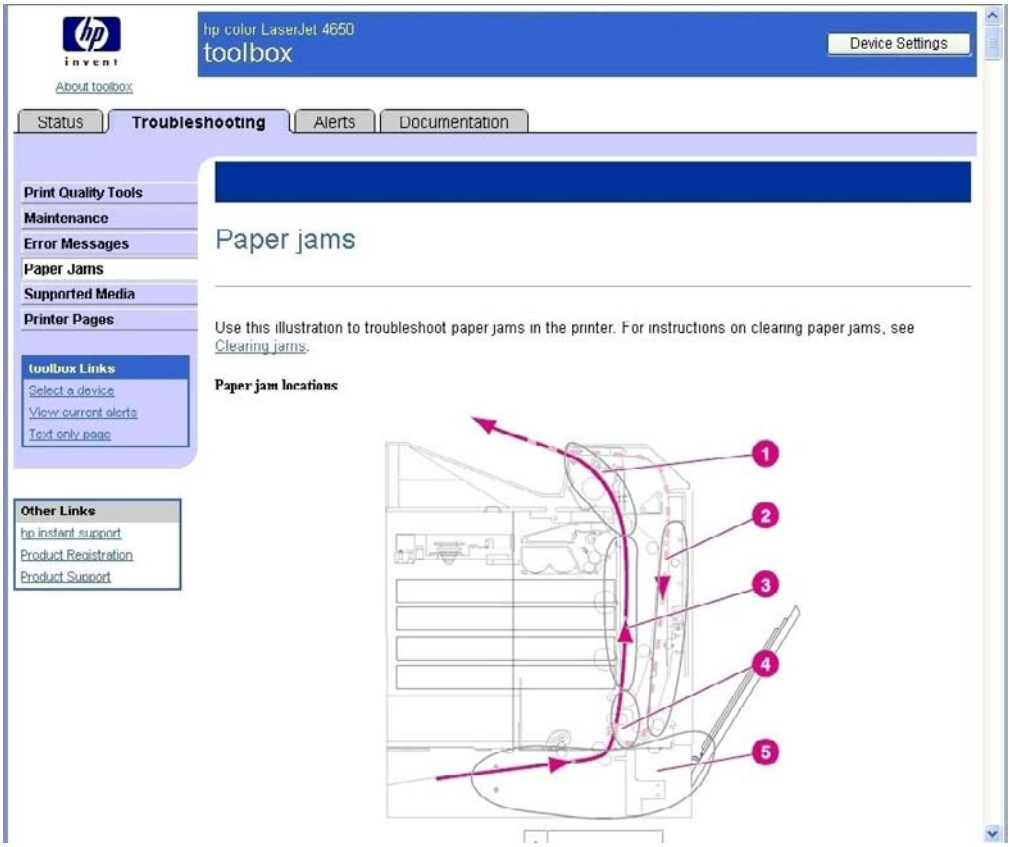


Figure 2-10. **Troubleshooting tab – Paper jams**

The **Paper Jam Option** screen shows the internal paper path and explains jam recovery.

Note This illustration is provided as an example only. The complete screen is not shown.

Supported Media

The **Supported Media** screen is shown in the following illustration.

Figure 2-11. **Troubleshooting tab – Supported Media**

The **Supported Media** screen shows a list of supported paper widths and sizes, explains how to configure trays, and discusses paper-handling problems.

Printer Pages

The **Printer Pages** screen is shown in the following illustration

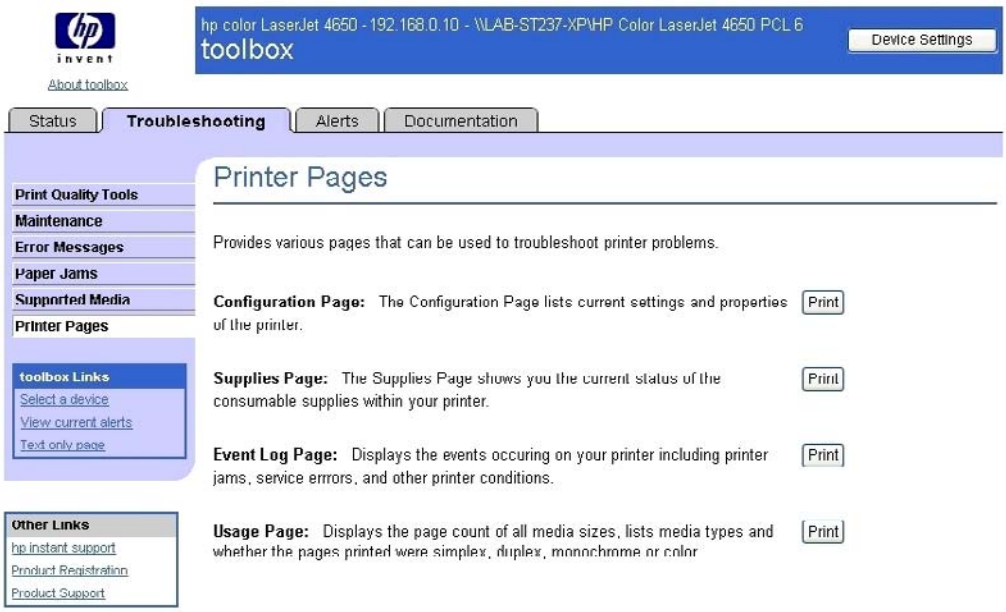


Figure 2-12. **Troubleshooting tab – Printer Pages**

The **Printer Pages** screen shows a list of useful information pages that the product generates, with a description of the purpose of each page.

Alerts tab

The **Alerts** tab is shown in the following illustration.

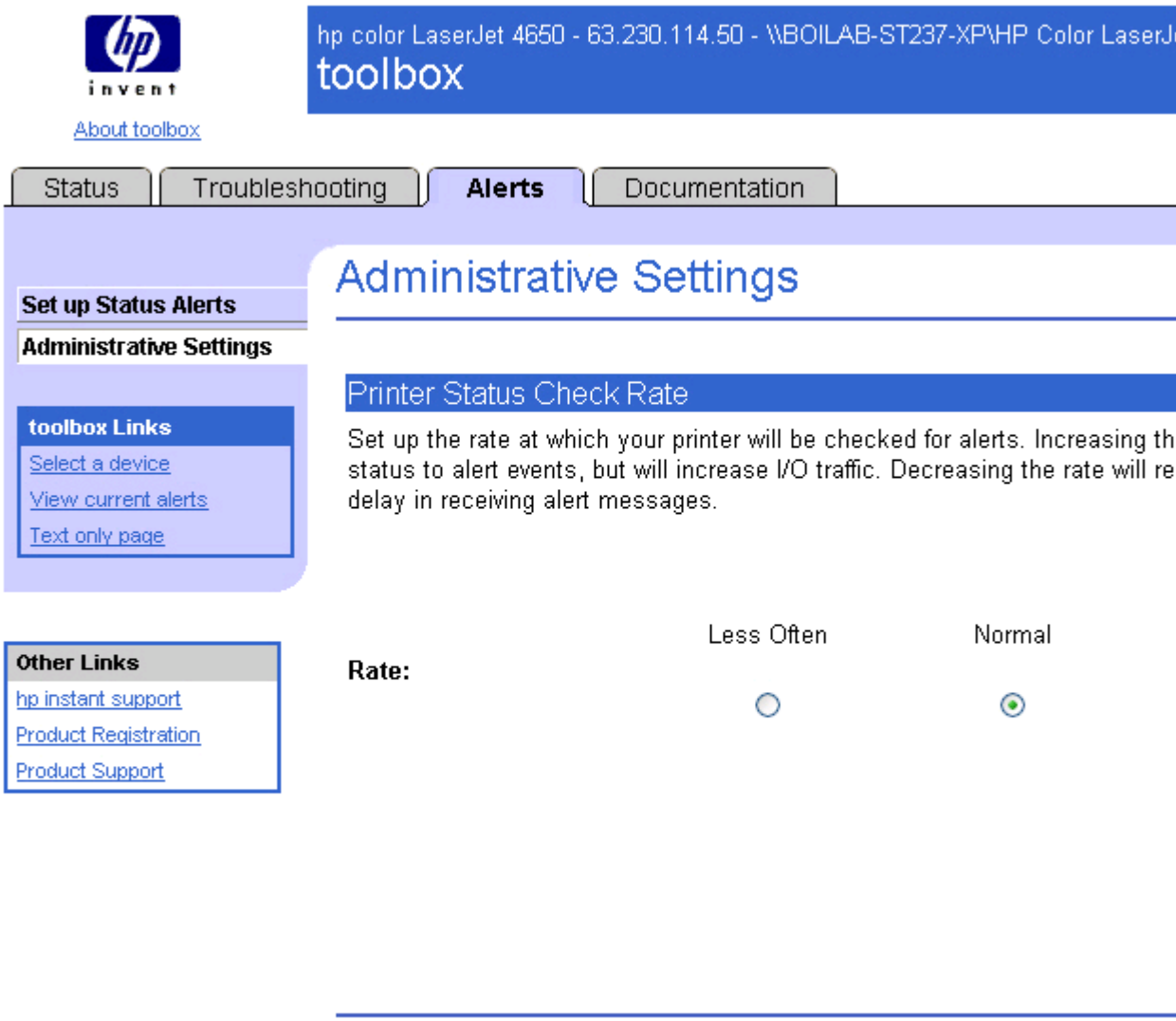


Figure 2-13. **Current Alerts**

The navigation bar on the **Alerts** tab contains links to the information pages for the product. Some of these pages are also available from other sources, such as the embedded Web server or the product itself. From this section, you can view the following screens:

- **Set up Status Alerts**
- **Administrative Settings**

Documentation tab

The **Documentation** tab is shown in the following illustration.

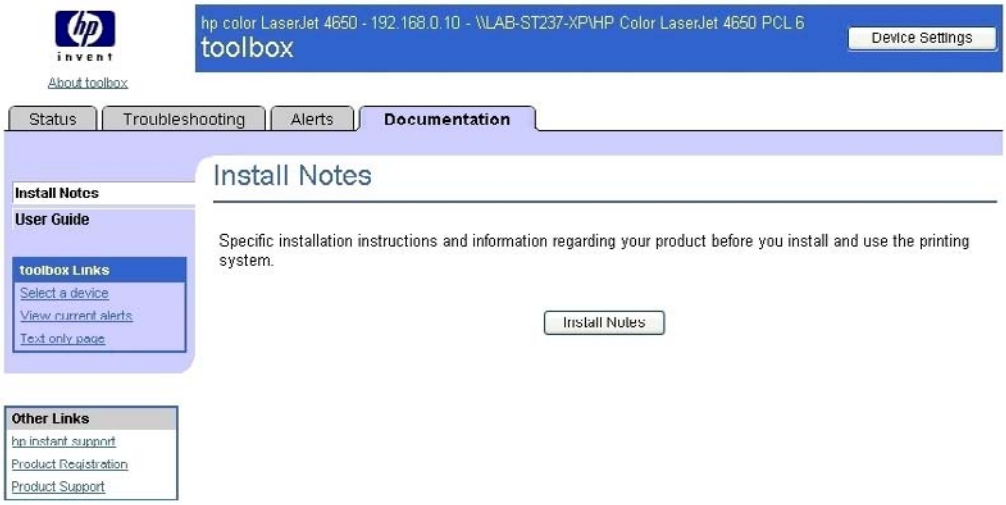


Figure 2-14. **Documentation tab Install Notes**

The navigation bar on the **Documentation** tab contains links to these information sources:

- **Install Notes.** Contains specific installation instructions and information regarding your product.
- **User Guide.** Contains information about product usage, warranty, specifications, and support. The HTML format (for Windows-based computers only) allows you to search easily for specific topics and jump between topics.
  The User Guide is also available in .PDF file format, which can be printed by page or by chapter, or you can print the entire document. The printed document is formatted as a traditional book.

Linking to the HP Embedded Web Server

To gain access to the HP Embedded Web Server, click the **Advanced Printer Settings** button in the upper right of any HP Toolbox screen. You can also open a browser window and type in the HP Jetdirect IP address.

The HP Toolbox **Device Status** option on the **Status** tab is shown in the following illustration:

Figure 2-15. **Status tab with Advanced Printer Settings button**

For additional information and a copy of the *HP Embedded Web Server Guide*, go to the following URL: http://www.hp.com/support/clj4650

Other Links

This section contains links that connect you to the Internet. These links appear on the left navigational bar throughout the HP Toolbox screens. You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the HP Toolbox, you must connect before you can visit these Web sites. Connecting might require that you close the HP Toolbox and reopen it.

HP Instant Support (TM). This link connects you to a set of dynamic Web resources that you can use to solve specific problems and determine additional services that might be available for your product. Specific status and configuration information about the product is retained and directed to the Solve a Problem Web site, which offers targeted support content and messages to help resolve problems as quickly as possible.

Product Registration. Click this link to connect to a screen where you can register your HP Color LaserJet 4650 printer.

Product Support. This link connects you with an HP product support page from which you can search for information, contact the HP customer care home page, or find additional resources for your product.

HP Web Jetadmin

HP Web Jetadmin allows you to manage HP Jetdirect connected products within your intranet using a browser. HP Web Jetadmin is a browser-based management tool, and should be installed only on a single network administration server. It can be installed and run on Red Hat Linux; Suse Linux; Windows NT 4.0 Server and Workstation; Windows 2000 Professional, Server, and Advanced Server; and Windows XP Professional Service Pack 1 systems.
To download a current version of HP Web Jetadmin and for the latest list of supported host systems, visit http://www.hp.com/go/webjetadmin

When installed on a host server, HP Web Jetadmin can be accessed by any client through a supported web browser (such as Microsoft Internet Explorer 5.5 and 6.0 or Netscape Navigator 7.0).

HP Web Jetadmin has the following features:

- Task-oriented user interface that provides configurable views for network managers
- User profiles that can be customized to let network administrators include only the function that is being viewed or used
- Routing of instant e-mail notification of hardware failure, low supplies, and other product problems to different people
- Remote installation and management from anywhere, using only a standard Web browser
- Advanced automatic discovery of peripherals on the network without manually typing information about each product into a database
- Simple integration into enterprise-management packages
- Capacity to find peripherals based on parameters such as the Internet protocol (IP) address, color capability, and model name
- Capacity to organize peripherals into logical groups, with an option that provides virtual office maps for easy navigation
- Manages and configures multiple products at once.

The HP Color LaserJet 4650 printer software CD provides the following link to download the latest version of the HP Web Jetadmin software: http://www.hp.com/go/webjetadmin.

Click **support** on the main screen in the installer CD Browser, and then click **hp web jetadmin**. The following table shows the supporting operating systems and hardware for HP Web Jetadmin.

Table 2-3. HP Web Jetadmin support

Protocols	• TCP/IP • IPX/SPX

Table 2-3. HP Web Jetadmin support (continued)

Compatible operating systems	• Microsoft Windows 2000 Professional, Windows Server, and Windows Advanced Server • Microsoft Windows XP Professional with service pack 1 and Windows Server 2003 • Microsoft Windows NT Server and Workstation with service pack 3 or later • Red Hat Linux 8.0 • SuSE Linux V8.1 **Shared print queue creation support** • Microsoft Windows 2000 Professional, Server and Advanced Server • Microsoft Windows XP Professional and Windows Server 2003 • Microsoft Windows NT 4.0 Server and Workstation • HP-UX (R) 11.0 • Red Hat Linux 8.0 • Solaris 2.6, 7 and 8 • SuSE Linux V8.1 • Novell NetWare 5.1 and 6.0 (IPX only) using Netware Client 4.83 (using HP Web Jetadmin only on a Microsoft Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003 system)
Supported products	All HP and non-HP products that are connected through HP Jetdirect print servers, and standard Management Information Base-compliant (MIB-compliant) third-party network-connected products
Supported browsers	• Microsoft Internet Explorer 5.5 and 6.0, for Windows only • Netscape 7.0 (English) for for all operating systems
Supported products	All HP and non-HP products connected through HP Jetdirect print servers, and standard MIB-compliant third-party network connected products

Bluetooth (R)*

Bluetooth (R) wireless technology is a low-power, short-range radio technology that can be used to wirelessly connect computers, products, personal digital assistants (PDAs), cell phones, and other devices.

Since Bluetooth wireless technology uses radio signals, devices do not have to be in the same room, office, or cubicle with an unobstructed line of sight in order to communicate. This wireless technology increases portability and efficiency within business network applications.

The HP Color LaserJet 4650 can use a Bluetooth adapter (hp bt1300) to incorporate Bluetooth wireless technology. The adapter is available for either USB or parallel connections. The adapter has a 10-meter, line-of-site operation range in the 2.5 GHz ISM band and can achieve data transfer rates up to 723 Kbps. The device supports the following Bluetooth profiles:

- Hardcopy Cable Replacement Profile (HCRP)
- Serial Port Profile (SPP)
- Object Push Profile (OPP)
- Basic Imaging Profile (BIP)
- Basic Printing Profile (BPP) with XHTML-Print

The HP Color LaserJet 4650 is compatible with the following Nokia imaging phones using Bluetooth (R) wireless technology :

- Nokia 3600
- Nokia 3650
- Nokia 3660
- Nokia 6600
- Nokia 7650

Remote firmware update

The process for remotely upgrading product firmware involves three steps:

1. Determine the current level of firmware that is installed on the HP Color LaserJet 4650 printer.
2. Go to the HP Web site and download the latest firmware to your computer.
3. Download the new firmware to the product.

Determining the current level of firmware

To determine the current level of firmware, view the configuration page. To print a configuration page, follow these instructions.

1. Press the select button (the one with the check mark) to open the menus.
2. Press the up and down buttons to scroll to INFORMATION, and then press the select button.
3. Press the up and down buttons to scroll to PRINT CONFIGURATION.
4. Press the select button to print the configuration page.
5. Look in the "Printer Information" section on the configuration page for the firmware date code. The firmware date code looks something like this: 20031002 07.000.0.

Downloading the new firmware from the HP Web site

For support information about downloading new firmware from the Web, go to http://www.hp.com/support/clj4650.

The product can receive an .RFU update to a product when the product is in a **READY** state. The product waits for all of the I/O channels to become idle before performing the update.

Note

If the firmware update involves a change in the format of nonvolatile random-access memory (NVRAM), any menu settings that are changed from the default settings will return to default settings. The settings must be changed again if you want them to be different from the defaults. Examples of settings that are affected in this way are tray types, default symbol sets, and Web-access alerts.

The elapsed time for an update depends on the I/O transfer time, as well as the time that it takes for the product to reinitialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update and the I/O method (parallel or network). The reinitialization time depends on the specific hardware configuration of the product, such as the number of EIO devices installed, the presence of external paper-handling devices, and the amount of memory that is installed.

If the remote firmware update process is interrupted before the firmware is downloaded (while **RECEIVING UPGRADE** appears on the control-panel display), the firmware file must be sent again. If power is lost during the flash dual inline memory module (DIMM) update (while **PERFORMING UPGRADE** appears on the control-panel display), the update is interrupted and the message **RESEND UPGRADE** appears (in English only) on the control panel display. The update must now be sent only by a computer that is attached to the parallel port of the product.

Finally, any print jobs that are ahead of the .RFU job in the queue are printed before the update is processed.

Use one of the following methods to update your product.

Remote firmware update by using the FTP through a browser

Complete the following steps to update the product firmware by using file transfer protocol (FTP) through a browser.

Note

The following instructions can be used on Windows or Macintosh operating systems.

1. Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the configuration page printout. To print a configuration page, see Determining the current level of firmware .
2. Open a browser window.
3. In the address line of the browser, type `ftp://<IPADDRESS>`, where <IPADDRESS> is the TCP/IP address for your product. For example, if the TCP/IP address is 192.168.0.90, type `FTP://192.168.0.90`
4. Locate the downloaded .RFU file for the product.
5. Drag and drop the .RFU file onto the **PORT1** icon in the browser window.

Note

The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update by using FTP on a direct network connection

If the HP Color LaserJet 4650 printer uses a direct network connection, (FTP) to update your HP LaserJet firmware. Complete the following steps for your operating system.

Windows operating systems

1. Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the configuration page printout. To print a configuration page, see Determining the current level of firmware .

Note Before connecting to the product, make sure that the product is not in Powersave mode. Also make sure that any error messages are cleared from the control-panel display.

2. Open a command window on your computer.
3. Type `ftp <TCP/IP printer ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`.
4. Press **Enter** on the keyboard.
5. When prompted for the user name, press **Enter**.
6. When prompted for the password, press **Enter**.
7. Type `bin` at the command prompt.
8. Press **Enter**. The message **200 Type set to I, Using binary mode to transfer files** appears in the command window.
9. Type `put <FILENAME>`, where <FILENAME> is the name of the .RFU file that was downloaded from the Web, including the path. For example, type `put C:\LJ \4650FW.RFU` and then press **Enter**.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `put "c:\My Documents\LJ\4650fw.rfu".`

The following series of messages appears in the command window:

- **200 PORT command successful**
- **150 Opening BINARY mode data connection**
- **226 Ready**
- **226 Processing Job**
- **226 Transfer complete**

After these messages appear, a message containing transfer-speed information appears.

10. The download process begins and the firmware is updated on the product. This can take about five minutes. Let the process finish without further interaction with the product or the computer.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

11. At the command prompt, type `bye` to exit the FTP command.
12. At the command prompt, type `exit` to return to the Windows interface.

Macintosh operating systems

1. Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the configuration page printout. To print a configuration page, see Determining the current level of firmware .
2. Open a Terminal window on your Macintosh. You can find the Terminal program on the computer hard drive in the Applications/Utilities folder.

3. Type `FTP <TCP/IP printer ADDRESS>` For example, if the TCP/IP address is 192.168.0.90, type `FTP 192.168.0.90`
4. Press **Enter** on the keyboard.
5. When prompted for a user name and password, press **Enter**.
6. Type `put <path>`, where <path> is the location where the .RFU file was downloaded from the Web, including the path. For example, type `put /username/desktop/4650fw.rfu` and then press **Enter**.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `put "/user name/desktop/4650FW.RFU".`
To ensure that the entire path to the .RFU file is placed in the `put` command, type `put` and a space, and then drag and drop the .RFU file onto the terminal window. The complete path to the file is automatically placed after the `put` command.

7. The download process begins and the firmware is updated on the product. This can take about five minutes. Let the process finish without further interaction with the product or computer.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update through a local Windows port

If the product is connected through a local port (parallel), then you can send the .RFU file directly to the product by using a `COPY` command from a command prompt or an MS-DOS window. At the command prompt, perform the following steps for your operating system.

Windows 98 or Windows Me

1. From a command prompt or in an MS-DOS window, type:
   `Mode lpt1:,,p`

Note If the product is attached to a parallel port other than LPT1, then substitute the correct LPT port number in the **mode** command.

2. Press **Enter** on the keyboard. The response that you receive should be similar to these examples:
   > LPT1 Not Rerouted
   > Resident portion of MODE loaded
   > Infinite retry on parallel printer time-out
3. At a command prompt, type `copy/b <FILENAME> <PORTNAME>`, where <FILENAME> is the name of the .RFU file (including the path) and <PORTNAME> is the name of the appropriate product port (such as LPT1). For example, `C:\>copy/b c:\4650fw.rfu lpt1`

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.rfu" lpt1`

4. Press **Enter** on the keyboard. The messages that are described in the section Printer messages during the firmware update appear on the control panel.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

5 Print a configuration page and verify that the firmware revision number matches the revision of the current update.

6 Type `exit` at the command prompt to close the command window.

Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003

The .RFU file can be sent directly to the product by typing a **copy** command at a command prompt or in an MS-DOS window.

1 At a command prompt, type `copy/b <FILENAME> <PORTNAME>` , where <FILENAME> is the name of the .RFU file (including the path) and <PORTNAME> is the name of the appropriate product port (such as LPT1). For example, `C:\>copy/b c:\4650fw.rfu lpt1`.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.rfu" lpt1`.

2 Press **Enter** on the keyboard. The messages described in the section Printer messages during the firmware update appear on the control panel.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

3 At the command prompt, type `exit` to close the command window.

Remote firmware update through a Windows network

If the product is shared on a Windows network, follow these instructions.

1 From a command prompt or in an MS-DOS window, type `copy/b <FILENAME> \ \<COMPUTERNAME>\<SHARENAME>`, where <FILENAME> is the name of the .RFU file (including the path), <COMPUTERNAME> is the name of the computer from which the product is being shared, and <SHARENAME> is the product share name. For example, `C:\>copy/b c:\4650fw.rfu \\your_server\your_computer`

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.rfu" \ \your_server\your_computer`

2 Press **Enter** on the keyboard. The messages that are described in the section Printer messages during the firmware update appear on the control panel. The message **1 file (s) copied** appears on the computer screen.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update for UNIX systems

For UNIX systems, any command method that delivers the .RFU file to the product is acceptable, including the following:

1 At the command prompt, type `cp /home/yourmachine/FILENAME /dev/parallel`>, where </home/yourmachine/FILENAME> contains the .RFU file.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update by using Fetch (Mac OS 9.*x* only)

For Mac OS 9.*x*, a shareware program called Fetch provides FTP control for a `put` command. Download and install the program from: http://download.com.com/3000-2151-10182446.html.

Complete the following steps to update the product firmware by using Fetch.

1 Start the program by clicking the **Fetch** icon.
2 Type the IP address of the product in the **Host:** box.
3 Click the **Put Files** button and browse to the location of the .RFU file.
4 Double-click the file to select it and download it to the product. A confirmation message appears in the main window.
5 Click **OK**.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update by using the HP LaserJet Utility (Mac OS 9.*x* only)

Complete the following steps to update the firmware by using the HP LaserJet Utility.

1 Make sure that you have the tools and files that are necessary for the update. You will need the HP LaserJet Utility and the 4650FW.RFU file, which is the firmware file for the product. The HP LaserJet Utility can be found on the HP LaserJet 4650 printing-system software CD that came with the product. If you do not have the CD, you can obtain the HP LaserJet Utility by downloading the latest product installer from: http://www.hp.com. The firmware file (4650FW.RFU) can be downloaded from: http://www.hp.com/support/clj4650 .
See Downloading the new firmware from the HP Web site for more information.
After you have the firmware file and the HP LaserJet Utility, you are ready to begin the update process.
2 Open the HP LaserJet Utility.
3 Click **Select Printer** and locate the product that you would like to update on the network. Select the product on the right side of the dialog box, and then click **OK**. An information dialog box for the HP Color LaserJet 4650 printer appears.
4 On the left side of the information dialog box, click **Files**. A dialog box appears where you can select a file to be downloaded to the product.
5 Click **Select File**.

6 Locate the 4650FW.RFU file on your hard disk, and click the file name to highlight it. Click **Select**. The **Files** dialog boxes update to show the 4650FW.RFU file under **File to download**.

7 Click **Download**. The HP LaserJet Utility starts downloading the file to the product. A progress bar shows how much of the file has been downloaded. While the file is downloading, the **RECEIVING UPGRADE** message appears on the control panel display on the product. After the file has been downloaded to the product the **PERFORMING UPGRADE** message appears on the control-panel display.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

Remote firmware update by using the LPR command

Note This remote firmware update method is for use in Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003.

Complete the following steps to update the firmware by using the LPR command.

1 From a command window, type `lpr -P <IPADDRESS> -S <IPADDRESS> -o l <FILENAME>` -OR- `lpr -S <IPADDRESS> -Pbinps <FILENAME>`, where <IPADDRESS> can be either the TCP/IP address or the hostname of the product, and where <FILENAME> is the filename of the .RFU file.

Note The parameter (-o l) consists of a lowercase "O", not a zero, and a lowercase "L", not the numeral 1. This parameter sets the transport protocol to binary mode.

2 Press **Enter** on the keyboard. The messages that are described in Printer messages during the firmware update appear on the control panel.

Note The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

3 Type `exit` at the command prompt to close the command window.

Remote firmware update by using HP Web Jetadmin

This procedure requires that you install HP Web Jetadmin version 7.0 or later on your computer. Complete the following steps to update a single product through HP Web Jetadmin after downloading the .RFU file from the HP Web site.

1 Start HP Web Jetadmin.

2 Type the TCP/IP address or IP host name of the product in the **Quick Device Find** field, and then click **Go**. The product Status window opens.

3 Open the **Device Management** folder in the drop-down list in the Navigation panel. Navigate to the **Device Lists** folder.

4 Expand the **Device Lists** folder and select **All Devices**. Locate the product that you want to update in the list of products, and click to select it.

5 Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the **choose action** list.

6 If the name of the .RFU file is not listed in the **All Available Images** dialog box, click **Browse** in the **Upload New Firmware Image** dialog box and navigate to the location of the .RFU file that you downloaded from the Web at the start of this procedure. If the filename is listed, select it.

7 Click **Upload** to move the .RFU file from your hard drive to the HP Web Jetadmin server.

8 Refresh the browser.

9 Select the .RFU file from the **Printer Firmware Update** drop-down menu.

10 Click **Update Firmware**. HP Web Jetadmin sends the selected .RFU file to the product. The messages that are described in Printer messages during the firmware update appear on the control panel.

Note

The product automatically turns off and then on again to activate the update. At the end of the update process, the **READY** message appears on the control panel.

HP Web Jetadmin version 7.0 and later can also be used to perform multiple or unattended installations. Complete the following steps for multiple or unattended installations.

1 Start HP Web Jetadmin.

2 Create a device group. A simple way to do this is to follow these steps:

a. Click **Device Management**, then click **All Devices**.

b. Shift-click to select products that you want to be included in the group, and then click **OK**.

c. When prompted, type a name for the new device group, and then click **OK.**

3 To modify several products in a group, click the group name, and then click **Open**.

4 The drop-down menu for **Device Group Tools** appears in the right side of the window. Scroll if necessary to view it.

5 In the **Device Group Tools** drop-down box, select an action. Type in the appropriate information. Click **Return to Device Group** when finished.

Printer messages during the firmware update

Table 2-4. Update messages

Product message	Explanation
RECEIVING UPGRADE	This message appears from the time the product recognizes the beginning of an .RFU update until the time the product has verified the validity and integrity of the .RFU update.
PERFORMING UPGRADE	This message appears while the product is actually reprogramming the firmware.
INITIALIZING	This message appears from the time the product has finished reprogramming the DIMM until the product reinitializes.

Note

To verify that the firmware update succeeded, print a new Configuration page from the control panel and verify that the firmware date code on the Configuration page has changed.

Troubleshooting a firmware update

The following table lists the causes and results of possible interruptions to the firmware update.

Table 2-5. Troubleshooting a firmware update

Cause	Result
The job was cancelled from the control panel.	No update has occurred.
A break in the I/O stream occurred during send (for example, the parallel cable was removed).	No update has occurred.
A power cycle occurred during the **RECEIVING UPGRADE** process.	No update has occurred.
A power cycle occurred during the **PERFORMING UPGRADE** process.	No update has occurred. Resend the update through a parallel port.
A power cycle occurred during the **INITIALIZING** process.	The update has been completed.

Print jobs that are sent to the product while an update is in process do not interrupt the update.

The following table lists possible reasons for the failure of a remote firmware update and the corrective action required for each situation.

Table 2-6. Troubleshooting a firmware update failure

Reason for firmware update failure	Corrective action
The .RFU file is corrupted.	The product recognizes that the file is corrupted and rejects the update. Download the file again and send the new file to the product. Download the file from: http://www.hp.com/support/clj4650.
The wrong product is contained in the .RFU file.	The product recognizes the product mismatch and rejects the update. Download the correct file and send it to the product. Download the file from: http://www.hp.com/support/clj4650 .
The upgrade was interrupted.	See Troubleshooting a firmware update .
A flash hardware failure occurred.	Although it is extremely unlikely, the device might have a hardware failure. Call technical support to address the problem (see the flyer that came with the product for a local telephone support list).

Note

All HP LaserJet products leave the factory with the latest available firmware version installed. If a remote firmware update fails, the .RFU file must be sent over a parallel port connection.

Printing print-ready documents from a command line

- HP LaserJet Printer Control Language (.PCL)
- Portable document format (.PDF)

- Postscript (.PS)
- Text (.TXT)

Note

The examples used in this section are for printing .PDF documents. However, any print-ready file type may be substituted.

Print-ready file printing by using FTP through a browser

Complete the following steps to print print-ready files from a command line by using FTP through a browser.

Note

The following instructions can be used on Windows or Macintosh operating systems.

1. Take note of the TCP/IP address on the EIO-Jetdirect page. The Jetdirect page is the second page of the configuration page printout. To print a configuration page, see Determining the current level of firmware.
2. Open a browser window.
3. In the address line of the browser, type `ftp://<IPADDRESS>`. For example, if the TCP/IP address of your product is 192.168.0.90, type `FTP 192.168.0.90`
4. Locate the print-ready file for the product.
5. Drag and drop the print-ready file onto the **PORT1** icon in the browser window.

Print-ready file printing by using FTP on a direct network connection

If the HP Color LaserJet 4650 printer uses a direct network connection, use FTP to print a print-ready file. Complete the appropriate steps for the operating system:

Windows operating systems

1. Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the Configuration page printout. To print a Configuration page, see Determining the current level of firmware.
2. Open a command window on your computer.
3. Type `ftp <TCP/IP printer ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`
4. Press **Enter** on the keyboard.
5. When prompted for the user name, press **Enter**.
6. When prompted for the password, press **Enter**.
7. Type `bin` at the command prompt.
8. Press **Enter**. The message **200 Types set to I, Using binary mode to transfer files** appears in the command window.

9 Type `put <FILENAME>`, where <FILENAME> is the name of the print-ready file to be printed, including the path. For example, type `put C:\LJ\4650FW.PDF` and then press **Enter**.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `put "c:\My Documents\LJ\4650fw.pdf"`

The following series of messages appears in the command window:

200 PORT command successful

150 Opening BINARY mode data connection

226 Ready

226 Processing Job

10 Your print-ready file prints.

Macintosh operating systems

1 Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the Configuration page printout. To print a Configuration page, see Determining the current level of firmware .

2 Open a Terminal window on your Macintosh computer. You can find the Terminal application on the computer hard drive in the Applications/Utilities folder.

3 Type `FTP <TCP/IP printer ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `FTP 192.168.0.90`

4 Press **Enter** on the keyboard.

5 When prompted for a user name and password, press **Enter**.

6 Type `put <path>`, where <path> is the location where the print-ready file was downloaded from the Web. For example, type `put /username/desktop/4650FW.PDF` and then press **Enter**.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `put "/user name/desktop/4650FW.PDF"`

Note To ensure that the entire proper path to the print-ready file is placed in the `put` command, type `put` and a space and then click and drag the print-ready file onto the terminal window. The complete path to the file is placed after the `put` command automatically.

7 The download process begins and the firmware is updated on the product. This can take about five minutes. Let the process finish without further interaction with the product or computer.

8 The product automatically turns off and on again to activate the update.

Print-ready printing by using a local Windows port

To print from the command line by using a local Windows port, follow the instructions in this section for your operating system.

Windows 98 or Windows Me

1. From a command prompt or in an MS-DOS window, type `Mode lpt1:,,p`

Note If the product is attached to a parallel port other than LPT1, then substitute the proper LPT port number in the `mode` command.

2. Press **Enter** on the keyboard. The response that you receive should be similar to these examples: **> LPT1 Not Rerouted** , **> Resident portion of MODE loaded**, **> Infinite retry on parallel printer time-out**
3. At a command prompt, type `copy/b <FILENAME> <PORTNAME>`, where <FILENAME> is the name of the print-ready file (including the path) and <PORTNAME> is the name of the appropriate product port (such as LPT1). For example, at the `c:\>` command prompt, type `copy/b c:\4650fw.pdf lpt1`

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.pdf"`

4. Press **Enter** on the keyboard. The message **PROCESSING JOB** appears on the control panel, and the job prints.
5. At the command prompt, type `exit` to close the command window.

Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003

The print-ready file can be sent directly to the product by typing a `copy` command at a command prompt or in an MS-DOS window.

1. At a command prompt, type `copy/b <FILENAME> <PORTNAME>`, where <FILENAME> is the name of the print-ready file (including the path) and <PORTNAME> is the name of the appropriate printer port (such as LPT1). For example, type `C:\>copy/b c:\4650fw.pdf lpt1`
2. Press **Enter** on the keyboard.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.pdf"`. The message **PROCESSING JOB** appears on the control panel, and the job prints.

3. At the command prompt, type `exit` to close the command window.

Print-ready file printing in a Windows network

If the product is shared on a Windows network, complete the following steps.

1. From a command prompt or in an MS-DOS window, type `copy/b <FILENAME> \ \<COMPUTERNAME>\<SHARENAME>`, where <FILENAME> is the name of the print-ready file (including the path), <COMPUTERNAME> is the name of the computer from which the product is being shared, and <SHARENAME> is the product share name. For example, type `C:\>copy/b c:\4650fw.pdf \\your_server\sharename`

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `C:\>copy/b "c:\My Documents\4650fw.pdf" \ \your_server\sharename`

2. Press **Enter** on the keyboard. The message **PROCESSING JOB** appears on the control panel, and the job prints. The message **1 file(s) copied** appears on the computer screen.

Print-ready file printing in UNIX systems

For UNIX systems, any command method that delivers the print-ready file to the product is acceptable, including the following:

1. At the command prompt, type `$cp </home/yourmachine/FILENAME/dev/parallel>`, where </home/yourmachine/FILENAME> contains the print-ready file.

Print-ready file printing by using Fetch (Mac OS 9.*x* only)

For Mac OS 9.*x*, a shareware program called Fetch provides FTP control for a `Put` command. Download and install the program from: http://download.com.com/3000-2151-10182446.html.

Complete the following steps to print print-ready files by using Fetch.

1. Start the program by clicking the **Fetch** icon.
2. Type IP address of the product in the **Host:** box
3. Click the **Put Files** button and browse to the location of the print-ready file.
4. Double-click the file to select it and download it to the product. A confirmation message appears in the main window.
5. Click **OK**.

File printing by using the HP LaserJet Utility (Mac OS 9.*x* only)

Complete the following steps to print a print-ready file by using the HP LaserJet Utility.

1. Make sure that you have the tools and files that are necessary for the update. You will need the HP LaserJet Utility and the print-ready file that you want to print.
   The HP LaserJet Utility can be found on the HP Color LaserJet 4650 printing-system software CD that came with the product. If you do not have the CD, you can obtain the HP LaserJet Utility by downloading the latest printer installer from: http://www.hp.com. After you have the HP LaserJet Utility and you know the location of the print-ready file that you want to print, you are ready to begin the command-line printing process.
2. Open the HP LaserJet Utility.
3. Click **Select Printer** and locate the product that you would like to upgrade on the network.
4. Select the product on the right side of the dialog box, and click **OK**. An information dialog box for the HP Color LaserJet 4650 printer appears.
5. On the left side of the **Information** dialog box, click **Files**. A dialog box appears where you can select a file to be downloaded to the product.
6. Click **Select File**.

7 On your hard disk, locate the print-ready file that you want to print, and then click the file name to highlight it. Then click **Select**. The **Files** dialog box updates and shows the print-ready file that you want to print under **File to download**.

8 Click **Download**.
The HP LaserJet Utility starts downloading the file to the product. A progress bar keeps you updated about how much of the file has been downloaded. While the file is downloading, the **PROCESSING JOB** message appears on the product control-panel, and the the print-ready file prints.

Print-ready file printing by using the LPR command

Note

This command-line printing method is for use in Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003.

Complete the following steps to print a print-ready file by using the LPR command.

1 Take note of the TCP/IP address on the EIO-Jetdirect page. The EIO-Jetdirect page is the second page of the Configuration page printout. To print a Configuration page, see Determining the current level of firmware .

2 From a command window, type `lpr -P IPADDRESS -S IPADDRESS -o l FILENAME`

`lpr -S <IPADDRESS> -Pbinps <FILENAME>`, where IPADDRESS can be either the TCP/IP address or the host name of the product, and where FILENAME is the file name of the print-ready file.

Note

The parameter (-o l) consists of a lowercase "O", not a zero, and a lowercase "L", not the numeral 1. This parameter sets the transport protocol to binary mode.

3 The file prints, but no further messages appear in the command-prompt window.

4 Type `exit` at the command prompt to close the command window.

Driver-feature comparison in various operating systems

The following tables detail the software features that are available for each driver type and for each supported operating system that the HP Color LaserJet 4650 printer supports. The printing-system drivers for Windows 98, Windows Me, and Windows NT 4.0 are the HP Traditional PCL 5c, HP Traditional PCL 6, and PS Emulation drivers. The printing-system drivers for Windows 2000, Windows XP, and Windows Server 2003 are the new HP unidrivers, with a user interface look and feel that is consistent across the HP PCL 5c, HP PCL 6, and PS Emulation unidrivers.

For more information about the HP Traditional HP PCL 6, PCL 5c, and PS Emulation drivers, see Chapter 3, HP traditional print drivers for Windows. For more information about the HP PCL 6, HP PCL 5c, and PS Emulation unidrivers, see Chapter 4, HP PCL 6, HP PCL 5c, and HP PS 3 emulation unidrivers for Windows.

Job stream output

Table 2-7. Driver support for the job stream output feature

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	Postscript
PCL 6 support	x			x			x			
PCL 5c pass-through support	x			x			x			
PCL6 XL Color	x			x			x			
Postscript 3			x			x				x
Postscript 1, 2			x			x			x	x

PCL6 raster compression

Table 2-8. PCL6 color raster compression support

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	Postscript
PCL 6 color raster compression	x			x			x			

PJL/PJL Encoding

Table 2-9. Printer Job Language (PJL) and PJL encoding

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	Postscript
PJL support	x	x	x	x	x	x	x	x	x	
UTF-8 encoding for PJL (Unicode to 8-bit)	x	x	x	x			x			

Job tracking

Table 2-10. Driver support for job tracking

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
PRN file driver identification	x	x	x	x	x	x	x	x	x	
Job accounting information	x	x	x	x	x	x	x	x	x	
Job accounting enhancements (UUID)	x	x	x				x	x	x	
Reliable Time - born on date (PJL DMINFO)	x	x	x	x	x	x	x	x	x	
Sending user name with every job	x	x	x	x	x		x	x		

Connectivity

Table 2-11. Driver support for connectivity features

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5**	**PS Emulation**	**Postscript**
Parallel (direct connect)	x	x	x	x	x	x	x	x	x	
Network	x	x	x	x	x	x	x	x	x	x
USB (direct connect)	x	x	x				x	x	x	x
Wireless	x	x	x	x	x	x	x	x	x	x

Bidirectional communication

Table 2-12. Driver support for bidirectional communication features

Operating System	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
EAC	x	x	x	x	x		x	x		
Parallel (direct connect)	x	x	x	x	x		x	x		x
Network	x	x	x	x	x		x	x		x
USB (direct connect)	x	x	x				x	x		x
Update Now	x	x	x	x	x		x	x		x
Language Monitor	x	x	x	x	x		x	x		

[1] MasterMon, a pseudo-language monitor that is used for all HP LaserJet products for the duplex communication channel with bidirectional communication products and to insert PJL commands into the job stream. It loads TCPMON for TCP/IP ports.

HP Driver Preconfiguration

Table 2-13. Driver support for HP Driver Preconfiguration

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
HP Driver Preconfiguration	x	x	x	x	x		x	x		
Feature lockout	x	x	x	x	x		x	x		
Enterprise Autoconfiguration (EAC)	x	x	x	x	x		x	x		
Continuous export	x	x	x	x	x		x	x		
DMC macro automation	x	x	x	x	x		x	x		

Bundle support

Table 2-14. Bundle support

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Assign Bundle support through HP Preconfiguration	x	x	x	x	x		x	x	x	
Printer bundle setting in driver UI				x	x		x	x		

Tray and paper assignment

Table 2-15. Tray and paper assignment

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Assign paper size to tray	x	x	x	x	x	x			x	
Assign paper type to tray				x	x					

Installable options

Table 2-16. Driver support for installable options

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Duplexing unit	x	x	x	x	x	x	x	x	x	x
Manual duplex enable	x	x	x	x	x	x	x	x	x	x
Printer hard disk	x	x	x	x	x	x	x	x	x	x
Total Memory	x	x	x	x	x	x	x	x	x	

Table 2-16. Driver support for installable options (continued)

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Paper Driver Workspace (DWS)	x	x	x	x	x		x	x		
Additional source trays	x	x	x	x	x	x	x	x	x	x
Font DIMM Installer	x	x		x	x		x	x		x
Mopier Enabled	x	x	x	x	x	x	x	x	x	x
Job Storage Enabled	x	x	x	x	x	x	x	x	x	x

UI features

Table 2-17. Driver support for UI features

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
UI tabs	x	x	x	x	x	x	x	x	x	x
UI extensions	x	x	x			x				x
Page preview images	x	x	x	x	x		x			x
printer image bitmaps with hot spots				x	x		x	x		
Paper size dimensions	x	x	x	x	x	x	x	x	x	
Page layout graphical representation	x	x	x	x	x	x	x	x	x	
About . . .	x	x	x	x	x	x	x	x	x	
Accessibility/ Disability	x	x	x	x	x		x	x		x
Accessibility architecture	x	x	x	x	x		x	x		

Help features

Table 2-18. Driver support for Help features

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
What's this Help (F1)	x	x	x	x	x	x	x	x	x	
Help button	x	x	x	x	x		x	x		
Bubble Help				x	x		x			x
MS Windows "?" Help	x	x	x	x	x	x	x	x	x	

Job storage

Table 2-19. Driver support for job storage features

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac[1]
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Proof and hold	x	x	x	x	x	x	x	x	x	x
Private job	x	x	x	x	x	x	x	x	x	x
Quick Copy	x	x	x	x	x	x	x	x	x	x
Stored Job	x	x	x	x	x	x	x	x	x	x
Job name	x	x	x	x	x	x	x	x		x
User name	x	x	x	x	x	x	x	x	x	x
PIN	x	x	x	x	x	x	x	x	x	x
Job storage pop-up	x	x	x	x	x	x	x	x	x	
Automatic job and user name	x	x	x	x	x	x	x	x		x

[1] Job Storage features are available only in Mac OS 9.*x*. They are not available for Mac OS X.

Print quality and resolution

Table 2-20. Print quality and resolution features

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Print quality options	x	x	x	x	x		x	x		
Print quality - custom options recall				x	x		x	x		
Rendering mode (automatic)					x			x		
Send graphics as vector		x			x			x		
Send graphics as raster		x			x			x		
Send page as raster					x			x		
Color REt	x	x	x	x	x	x	x	x	x	x
Scale patterns (WYSIWYG)				x	x	x	x	x		
Image mode	x	x	x	x	x	x	x	x	x	x

Resizing options

Table 2-21. Resizing options

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Print Document On	x	x	x	x	x		x	x		
Scale to Fit	x	x	x	x	x		x	x		
Allow Scaling from Large Paper	x	x	x	x	x		x	x		
% of Normal Size	x	x	x	x	x	x	x	x	x	

Color settings

Table 2-22. Color settings

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Color Options	x	x	x	x	x	x	x	x	x	x
Manual color options recall	x	x	x	x	x	x	x	x	x	x
Gloss print media	x	x	x	x	x		x	x	x	x
Print in grayscale	x	x	x	x	x	x	x	x	x	
Color/ monochrome switching	x	x	x	x	x	x	x	x	x	x

Other document options

Table 2-23. Other document options

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Orientation (Portrait/ Landscape)	x	x	x	x	x	x	x	x	x	x
Rotate by 180 degrees	x	x	x	x	x	x	x	x	x	
Number of copies	x	x	x	x	x	x	x	x	x	x
Ignore Application Collation				x	x		x	x		
Collate - feature in driver UI	x	x	x			x			x	x
Collate through mopy	x	x	x	x	x	x	x	x	x	x
Collate through OS/server	x	x	x	x	x	x	x	x	x	x

Watermarks

Table 2-24. Driver support for watermarks feature

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
Watermarks on/ off	x	x	x	x	x	x	x	x	x	x
First page only	x	x	x	x	x	x	x	x	x	x
Custom watermark definition	x	x	x	x	x	x	x	x	x	x
Watermark angle	x	x	x	x	x	x	x	x	x	x
Watermark font name	x	x	x	x	x	x	x	x	x	x
Watermark font color	x	x	x	x	x		x	x	x	x
Watermark font shading	x	x	x	x	x		x	x	x	x
Watermark font size	x	x	x	x	x	x	x	x	x	x
Watermark font style	x	x	x	x	x	x	x	x	x	x
Locally defined watermarks	x	x	x	x	x		x	x		

[1] Mac 8.5 through 9.x only; not supported by Mac X or later.

Alternative source/paper type

Table 2-25. Driver support for alternate source/paper type feature

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	**HP unidriver**			**HP traditional driver**			**HP traditional driver**			**Mac**
Driver	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**PCL 6**	**PCL 5c**	**PS Emulation**	**Postscript**
All pages the same	x	x	x	x	x	x	x	x	x	x
First Page	x	x	x	x	x		x	x		x
Other pages	x	x	x	x	x		x	x		x

Table 2-25. Driver support for alternate source/paper type feature (continued)

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	Postscript
Back Cover - Insert Blank Back Cover	x	x	x	x	x		x	x		

Printing destination

Table 2-26. Driver support for printing destination feature

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	PCL 6	PCL 5c	PS Emulation	Postscript
Main bin	x	x	x	x	x	x	x	x	x	x

Font support

Table 2-27. Font support

Operating system	Windows XP (32-bit), Windows 2000			Windows NT 4.0			Windows 98, Me			Mac
Driver type	HP unidriver			HP traditional driver			HP traditional driver			Mac
Driver	PCL6	PCL 5c	PS Emulation	PCL6	PCL 5c	PS Emulation	PCL6	PCL 5c	PS Emulation	Postscript
General device font support	x	x	x	x	x	x	x	x	x	x
Font substitution			x			x			x	x
Arabic, Cyrillic, Hebrew, Greek device	x	x		x	x	x	x	x	x	
Font DIMM (on/off)	x	x		x	x		x	x		
Send TrueType as Bitmap	x	x		x	x		x	x		
TrueType Fonts (UI option)			x			x			x	
Print Text as Black	x	x	x	x	x		x	x		

Postscript-specific features

Table 2-28. Driver support for postscript-specific features

Operating system	**Windows XP**	**Windows NT 4.0**	**Windows 98, Me**	**Mac**
Driver	**PS Emulation**	**PS Emulation**	**PS Emulation**	**Postscript**
Postscript memory	x	x	x	
Output protocol	x	x	x	
Send CTRL-D before each job	x	x	x	
Send CTRL-D after each job	x	x	x	
Job timeout	x	x	x	
Wait timeout	x	x	x	
Minimum font size to download as outline	x	x		
Minimum font size to download as bitmap	x	x		
Postscript language level	x	x	x	x
Send postscript error handler	x	x	x	
Mirrored output	x	x	x	
Negative output	x	x	x	
Output options				
Optimize for speed	x	x	x	
Optimize for portability	x	x	x	
Encapsulated postscript (EPS)	x	x	x	x
Archive format	x	x	x	
Fit to Page	x	x	x	
TrueType font download option				
Outline	x	x	x	
Bitmap	x	x	x	
Native TrueType	x	x	x	

3 HP traditional print drivers for Windows

Introduction

This chapter describes the features of the HP Color LaserJet 4650 printer traditional print drivers. The chapter contains the following sections:

- HP Traditional PCL 6 Driver and HP Traditional PCL 5c Driver features. This section describes the HP PCL 6 and HP PCL 5c drivers for Windows 98, Windows Me, and Windows NT 4.0.
- HP Traditional Postscript 3 Emulation Driver (PS Emulation Driver) features. This section describes the PS Emulation Driver for Windows 98, Windows Me, and Windows NT 4.0.

You can control print jobs from several places: the product control panel, the software program, and the driver user interface. Generally, for features that are common to two or more of these places (for instance, you can select the media input tray from any of them), settings that are established in the software program take precedence over print-driver settings. Print-driver settings override product control-panel settings.

HP Traditional PCL 6 and HP Traditional PCL 5c Driver features

When you install the print drivers using the printing-system installer in Windows 98 or Windows Me, the HP Traditional PCL 6 Driver is installed. The Traditional HP PCL 5c Driver can be installed by performing a Custom Installation.

This section describes the options that are available on each tab of the HP Traditional PCL 6 and the HP Traditional PCL 5c **Document Default** print-driver interface and on some of the tabs of the HP Traditional PCL 6 and HP Traditional PCL 5c **Properties** print-driver interface.

This section also describes differences between the HP Traditional PCL 6 Driver and the HP Traditional PCL 5c Driver.

Access to print drivers

Depending on the operating system that you are installing the print drivers on, there are different ways to gain access to the print drivers and different print-driver interfaces.

To gain access to the print-driver settings from within most software programs, click **File**, click **Print**, and then click **Properties**. These driver settings apply only while the software program is open.

Access to print drivers in Windows NT 4.0

In Windows NT 4.0, you can gain access to the Document Default driver tabs and the Properties driver tabs. The settings that you make on these driver tabs control print job output.

Document Default driver tabs

In Windows NT 4.0, click **Start**, select **Settings**, and then click **Printers**. Right-click the product name, and then click **Document Defaults...** to gain access to all Document Default print-driver tabs, which are the same set of driver tabs that the software program controls. These driver settings change the default settings that are used across all software programs.

The following Document Default print-driver tabs are available in Windows NT 4.0:

- **Finishing** tab
- **Effects** tab
- **Paper** tab
- **Job Storage** tab

Note

If your HP Color LaserJet 4650 printer is equipped with a hard disk drive, all **Job Storage** options are available (**Proof and Hold**, **Private Job**, **Quick Copy**, and **Stored Job**). If your HP Color LaserJet 4650 printer is *not* equipped with a hard disk drive, but has a minimum of 288 MB of memory, the **Proof and Hold** and **Private Job** options are available.

- **Basics** tab
- **Color** tab

HP driver tabs are indicated by the HP logo in the lower-left corner of the driver tab. Only HP tabs are documented in this STR.

Properties driver tabs

In Windows NT 4.0, click **Start**, select **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties** to gain access to all Properties print-driver tabs. The following Properties driver tabs are available in Windows NT 4.0:

- **General**
- **Ports**
- **Scheduling**
- **Sharing**
- **Security**
- **NT Forms**
- **Configure**

Note

Only the **NT Forms** tab and the **Configure** tab are described in this guide. See the Properties tabs section in this chapter.

Access to print drivers in Windows 98 and Windows Me

In Windows 98 and Windows Me, click **Start**, click **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties** to gain access to all print-driver tabs. The settings that you make on these driver tabs control print job output. The following print-driver tabs are available in Windows 98 and Windows Me:

- **General**
- **Details**
- **Color Management**
- **Paper**
- **Graphics**
- **Fonts**
- **Device Options**
- **PostScript**

Note

Only the **Device Options** tab is described in this guide. See Device Settings tab in this chapter.

Help system

The HP Traditional PCL 6 Driver and the HP Traditional PCL 5c Driver include a full-featured Help system to provide assistance with printing and configuration options.

What's this? Help

What's this? Help is supported in Windows 98, Windows Me, and Windows NT 4.0. You can gain access to What's this? Help messages in any of the following ways:

- Right-click a control and click **What's this?**, and a pop-up Help window appears.
- Click the **?** button at the upper-right corner of the frame, next to the X, to change the cursor to an arrow with a question mark. Use this special cursor to select a control, and the pop-up Help window for that feature appears.
- Press the **F1** key, and the Help window for the currently selected control appears.

Context-sensitive Help

Press the **Help** button on a driver tab or in a dialog box, and a context-sensitive Help message appears.

Incompatible Options messages

Incompatible Options settings (constraint) messages are unsolicited messages that appear in response to specific actions that you take. These messages alert you to selections that are illogical or impossible given the capabilities of the product or the current settings of other controls. For example, if you click **Print on Both Sides** and then change the media type to **Transparency**, a message appears asking you to resolve this conflict.

Figure 3-1. **A typical constraint message with an OK button**

Whenever a constraint message appears with the **OK** or **Cancel** button, the interpretation of the button is as follows:

- Clicking **OK** accepts the change that was just made, and the driver then resets the conflicting control to a setting that is compatible with the new value.
- Clicking **Cancel** rejects the change that was just made, and the control returns to its previous value.

Bubble Help

Bubble Help features a graphical icon that resembles a cartoon speech bubble with a lowercase "i" in it, representing the international symbol for information. The following illustration shows a Bubble Help icon on a driver tab.

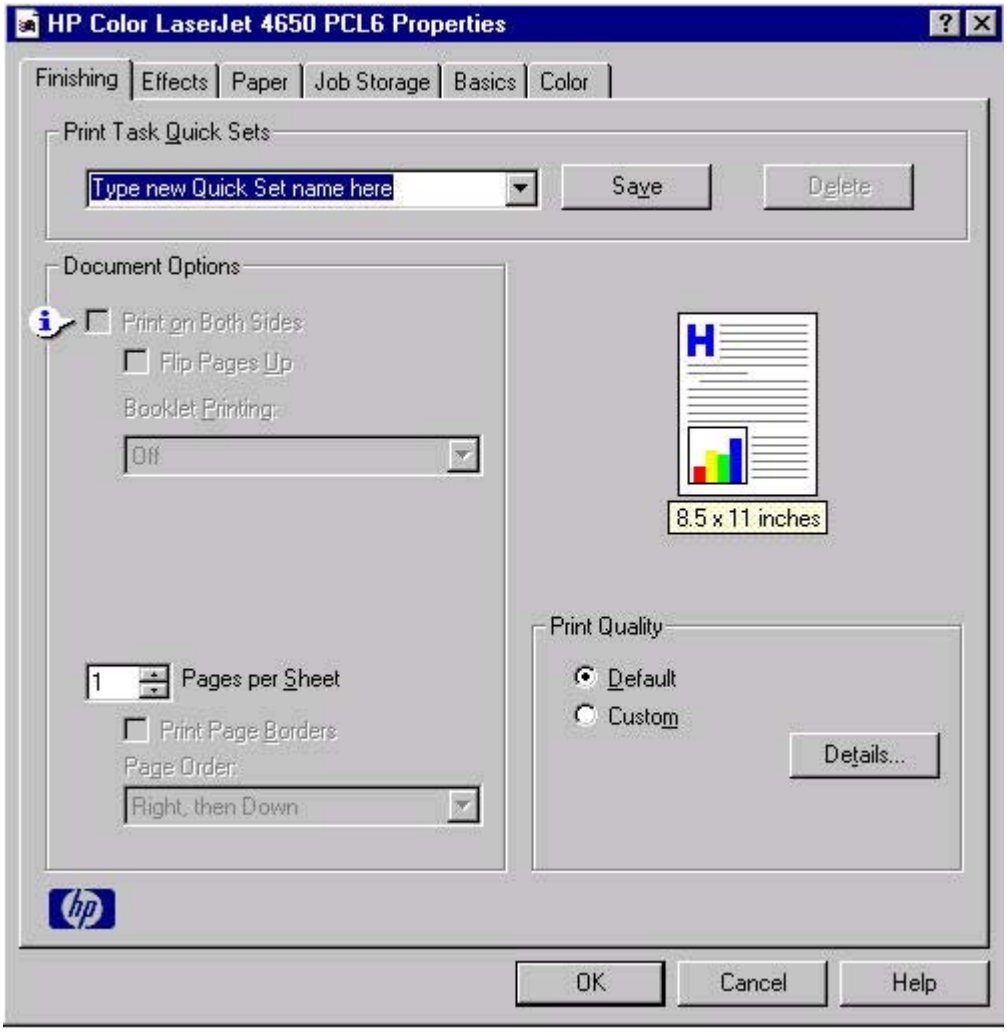


Figure 3-2. **A property page with a Bubble Help icon**

The bubble typically appears next to a control that is unavailable, although it can also accompany an available control if an important note concerning its use is available within the Help. Moving the pointer over the bubble changes the arrow to a gloved hand, which indicates that the area underneath the pointer is selectable. When the bubble is selected by using either the mouse or the keyboard, a message box appears that contains a brief explanation about why the control is disabled and what can be done to enable it. If the control is not disabled, the message is a tip or a precaution that you should be aware of when using that particular feature.

Finishing tab features

Use the **Finishing** tab to print booklets and control the media output. The following illustration shows the **Finishing** tab.

Figure 3-3. **The default appearance of the Finishing tab**

The **Finishing** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Document Options** group box
- Document preview image
- **Print Quality** group box

Print Task Quick Sets

Use the **Print Task Quick Sets** setting to store the current combination of driver settings that are found on all of the other print driver tabs. **Print Task Quick Sets** are either preset by network-administrator settings or user-defined printing specifications (such as media size, pages per sheet, and so on). The **Print Task Quick Sets** control does *not* appear on the driver **Properties** tabs.

Note

Administrators can predefine Print Task Quick Sets for their users. These administrator Print Task Quick Sets are defined on the server and are available to users, but usually cannot be modified by users. Users can also define Print Task Quick Sets for their own use. User-defined Print Task Quick Sets are described later in this section.

The following settings are available in the **Print Task Quick Sets** drop-down menu:

- **Default Print Settings**
- **HP CLJ 4550 Color Emulation**
- **User Guide Print Settings**

Default Print Settings

When you select **Default Print Settings**, nearly all of the settings are restored to the combination that existed after the driver was installed (the original settings). However, if the attribute combinations that are associated with watermark definitions, custom media sizes, or the other quick sets have been changed or deleted, the original settings for those items are not restored.

The following table shows the default settings for **Print Task Quick Sets**. See HP Driver Preconfiguration for information about preconfigurable driver settings.

Table 3-1. Print Task Quick Set default values for the HP Color LaserJet 4650 printer

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Preconfigurable[1]
Print on Both Sides	**Finishing** tab, **Document Options** group box	Off	Yes
Flip Pages Up	**Finishing** tab, **Document Options** group box	Unavailable	Yes
Booklet Printing	**Finishing** tab, **Document Options** group box	Unavailable	Yes
Pages per sheet	**Finishing** tab, **Document Options** group box	1	Yes
Print page borders	**Finishing** tab, **Document Options** group box	Unavailable	Yes
Page order	**Finishing** tab, **Document Options** group box	Unavailable	Yes
Print Quality	**Finishing** tab, **Print Quality** group box	On	Yes
Print document on	**Effects** tab, **Fit to Page** group box	Off - print on the size that is specified on the **Paper** tab	Yes
Size to print on	**Effects** tab, **Fit to Page** group box	Actual size specified on the **Paper** tab	Yes[2]
Scale to fit	**Effects** tab, **Fit to Page** group box	Unavailable	Yes
Watermarks	**Effects** tab	(none)	Yes
Watermarks first page only	**Effects** tab, **Watermark Details** dialog box (**Edit** for **Watermark Details**)	Unavailable	Yes

Table 3-1. Print Task Quick Set default values for the HP Color LaserJet 4650 printer (continued)

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Preconfigurable[1]
Current watermarks	**Effects** tab, **Watermark Details** dialog box (**Edit** for **Watermark Details**)	(none)	Yes[2]
Watermark message	**Effects** tab, **Watermark Details** dialog box (**Edit** for **Watermark Details**)	(none)	Yes[2]
Watermark message angle	**Effects** tab, **Watermark Details** dialog box (**Edit** for **Watermark Details**)	Diagonal	Yes[2]
Watermark message angle (angle)	**Effects** tab, **Watermark Details** dialog box (**Edit** for **Watermark Details**)	Unavailable unless **Angle** option is selected	Yes
Watermark font name	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Arial	Yes[2]
Watermark font color	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Gray	Yes
Watermark font shading	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Very Light	Yes[2]
Watermark font size	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	150	No
Watermark font style	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Regular	Yes
Use different paper/covers	**Paper** tab, **Paper Options** group box	Off - all of the pages use the same media	No
Size is:	**Paper** tab, **Paper Options** group box	Letter	Yes
Source is:	**Paper** tab, **Paper Options** group box	Automatically Select	Yes
Type is:	**Paper** tab, **Paper Options** group box	Unspecified	Yes
Unlabeled group box	**Job Storage** tab	Status message about destination of job	No

Table 3-1. Print Task Quick Set default values for the HP Color LaserJet 4650 printer (continued)

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Preconfigurable[1]
Job storage mode	**Job Storage** tab, **Job Storage Mode** group box	Off	No
Proof and Hold	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected	No
Private Job	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected	No
Quick Copy	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected	No
Stored Job	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected	No
Require PIN to print option	**Job Storage** tab, **Job Storage Mode** group box	Unavailable	No
Windows user name	**Job Storage** tab, **User Name** group box	Unavailable, selected	No
Job name	**Job Storage** tab, **Job Name** group box	Unavailable, **Automatic** selected	No
PIN to print	**Job Storage** tab, **PIN** group box	Unavailable	No
Display Job ID when printing	**Job Storage** tab, **Job Notification Options** group box	Unavailable	No
Copy	**Basics** tab, **Copies** group box	1	Yes
Portrait	**Basics** tab, **Orientation** group box	On	Yes
Landscape	**Basics** tab, **Orientation** group box	Off	Yes
Rotate by 180 degrees	**Basics** tab, **Orientation** group box	Off	Yes
About	**Basics** tab		No

[1] Preconfigurable by using one of the HP Preconfiguration tools. For more information, See HP Driver Preconfiguration, or go to: http://www.hp.com/support/clj4650.

[2] Not supported in Windows 98 and Windows Me.

HP Color LaserJet 4550 Color Emulation

The settings for the HP Color LaserJet 4650 printer's color rendering of RGB color can be made to emulate the standard settings for the HP Color LaserJet 4550 printer.

When you select **HP CLJ 4550 Color Emulation**, all of the settings are restored to the default settings, except for the following differences in the **Color** tab **Manual** settings:

- Text RGB Color is set to Vivid
- Graphics RGB Color is set to Vivid
- Photographs RGB Color is set to Vivid

User Guide Print Settings

The **User Guide Print Settings** option provides a Print Task Quick Set for optimal printing of the *hp color LaserJet 4650 series printer User Guide*.

When you select **User Guide Print Settings**, all of the settings are restored to the default settings, except for the following:

- Print on Both Sides is set to ON
- Left Edge Binding is set to ON
- Pages per Sheet is set to 2
- Page Order is set to Right then Down

Document Options

The **Document Options** group box contains the following controls:

- **Print on Both Sides** check box
- **Flip Pages Up** check box
- **Booklet Printing** drop-down menu
- **Pages Per Sheet** spin box
- **Print Page Borders** check box
- **Page Order** drop-down menu

Print on Both Sides check box

The default setting for the **Print on Both Sides** option is off (not selected). **Print on Both Sides** is available when the following conditions exist:

- **Type is:** on the **Paper** tab is set to any type except : **Labels**, **Transparency**, **Envelope**, **Envelope #10**, **Envelope #DL**, **Envelope #C5**, **Envelope #D5**, **Envelope Monarch**, or **Tough Paper**.

Note

Print on Both Sides (Manually) is available for **Ex Heavy 120 x 163 g/m**^{2} and **Cardstock 164 x 200 g/m**^{2}.

- **Size is:** is set to any size except for **A6**, **B6 (JIS)**, or **Custom**.

When **Paper Size** is set to Letter, Legal, or A4, selecting **Print on Both Sides** makes the **Flip Pages Up** and **Booklet Printing** options available.

Automatically printing on both sides

The duplexing unit in the product prints on two sides of a sheet of media when the **Print on Both Sides** option is specified in the print job. The HP Color LaserJet 4650dn, 4650dtn, and 4650hdn models come with a duplexing unit installed.

The HP Color LaserJet 4650 printer supports smart duplexing. The smart duplexing feature increases printing performance by not sending one-page print jobs or single-sided pages of a duplexed print job through the duplexing unit even when the duplexing feature has been enabled in the driver.

All media types support the smart duplexing feature, except for media types that cannot be printed on both sides, such as labels, and the following media types:

- Prepunched
- Preprinted
- Letterhead

When the media type is set to **Unspecified**, the smart duplexing feature is disabled.

Manually printing on both sides

Note

To make the Print on Both Sides (Manually) check box available in the document options, select the **Allow Manual Duplexing** check box on the **Configure** tab in the Properties print-driver tabs. See Paper Handling Options in this chapter.

Manually printing on the second side of a page is available when you are using the HP Traditional PCL 6 Driver or the HP Traditional PCL 5c Driver. The HP Traditional Postscript 3 Emulation Driver does not support the manual duplexing feature. If a duplexing unit is installed and manual duplexing is enabled in the driver, the printer automatically duplexes media types that are supported by automatic duplexing (Letter, A4, Legal, 8.5 x 13, and Executive (JIS) only), and forces manual printing on both sides for media types that are not supported.

- Plain
- Preprinted
- Letterhead
- Prepunched
- Bond
- Recycled
- Colored
- Rough

Heavy and Cardstock media can be manually printed on the second side, but there is no change to the print mode. Transparencies and labels should not be manually printed on the second side.

To print a multiple-page document, follow these steps:

1. Select the **Print on Both Sides (Manually)** check box.
2. Click **OK**. The even-number pages of the document print.
3. When the control panel shows the MANUALLY FEED message, insert the stack of media (on which the even-number pages have been printed) as indicated in the following figure.

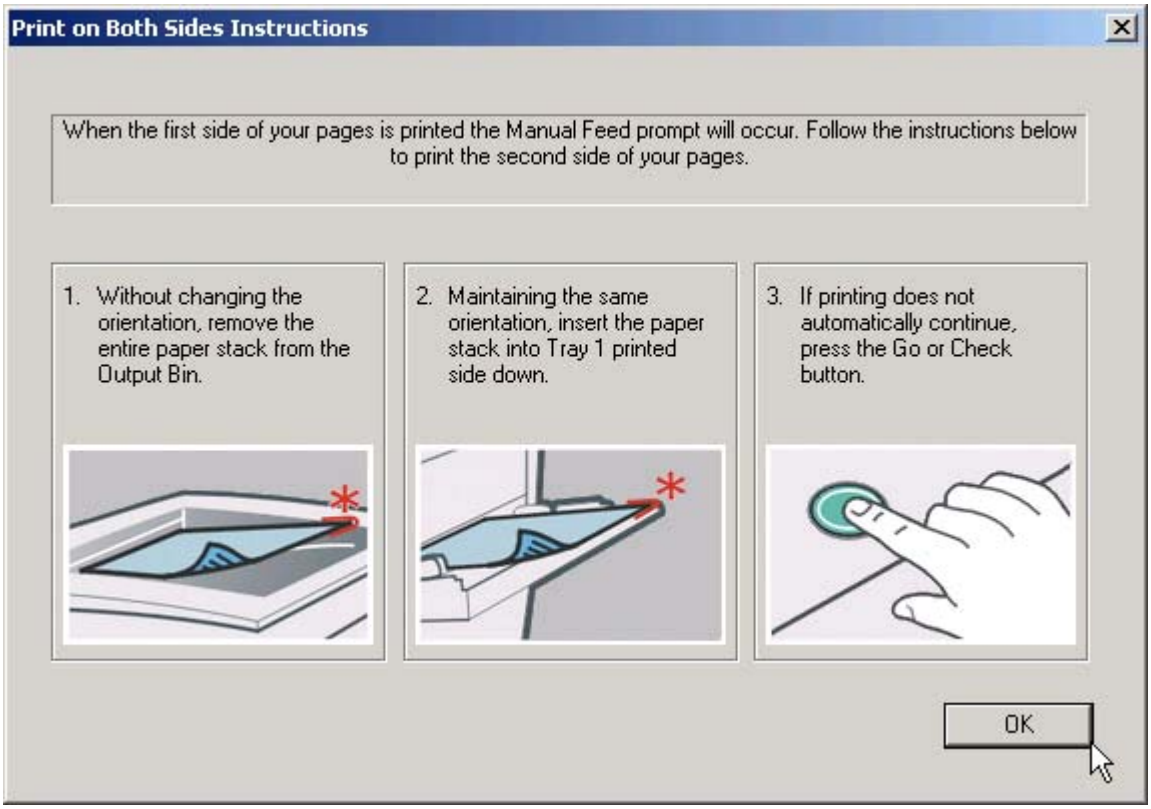


Figure 3-4. **Print on Both Sides Instructions**

When you have completed the steps that appear in the dialog box, the second half of the print job prints on the back side of the stack of media. The driver does not require the application to specifically support odd- and even-page printing, because the driver coordinates this function.

Flip Pages Up

The **Flip Pages Up** check box, which is available only when **Print on Both Sides** is selected, is used to specify the duplex-binding option. By default, the **Flip Pages Up** check box is not available. The following table demonstrates the results of selecting this box, depending on the media orientation that is selected on the **Basics** tab.

Table 3-2. Page orientation

Orientation (Basics tab)	Flip Pages Up selected	Flip Pages Up not selected
Portrait	Short-edge binding	Long-edge binding
Landscape	Long-edge binding	Short-edge binding

When **Print on Both Sides** is selected, the document preview image changes to show a spiral binding along either the left edge or the top edge of the page. In addition, a folded-over corner appears in the lower-right portion of the preview image, indicating that printing occurs on the back side. An arrow on the folded-over corner points in the direction that the pages would be flipped if they were bound together.

Short-side binding is for print jobs with pages that read by flipping over like the pages of a note pad. Long-side binding is for print jobs with pages that read by turning like the pages of a book.

Booklet Printing

The **Booklet Printing** drop-down menu is visible when **Print on Both Sides** is selected and a supported media size is selected in the **Size is:** drop-down menu on the **Paper** tab. The **Booklet Printing** drop-down menu offers choices that are based on the current media size. The default setting is **Off**. The other settings have the following format, where **[paper size]** depends on the media size that is set on the **Paper** tab.

- **[paper size] (Left Binding)**
- **[paper size] (Right Binding)**

When you select **[paper size] (Left Binding)** or **[paper size] (Right Binding)**, the document preview image changes to show the location of the binding. If you change the **Pages per Sheet** setting manually to 4, 6, 9, or 16 pages per sheet, the booklet setting is disabled. See the Pages per Sheet section of this document for more information.

Booklet printing is disabled when A6 or B6 (JIS) is selected as the media size, and an incompatibility error message appears when you click **OK** to close the driver.

The **Booklet Printing** drop-down menu appears only when the following conditions exist:

- **Print on Both Sides** (on the **Finishing** tab) is selected.
- **%of Normal Size** (on the **Effects** tab) is 100.
- **Pages per Sheet** (on the **Finishing** tab) is 1.
- **Size is** (on the **Paper** tab) is set to Letter, Legal, or A4.

If any of these conditions is not met (except the first), a Bubble Help appears next to **Booklet Printing** to tell you why it is disabled.

Book and Booklet Printing

The HP Color LaserJet 4650 supports both book and booklet printing.

A book is a print job that consists of at least two pages and that can have a different media type for the first page, other pages, or back cover. Use the **First Page**, **Other Pages**, or **Back Cover** settings on the **Paper** tab (available when you select the **Use Different Paper/ Covers** check box) to select different printing options for the book.

A booklet is a print job that places two pages on each side of a sheet that can be folded into a booklet that is half the size of the media type. Use the **Booklet Printing** drop-down menu on the **Finishing** tab to control booklet settings.

Printing a Booklet

1. In the software program, click **File**, click **Print**, and then click **Properties**.
2. Click the **Finishing** tab.

3 Select the **Print on Both Sides** check box.

4 In the **Booklet Printing** drop-down menu, select the type of booklet printing that you want. The booklet printing type consists of the media size and the location of the binding (for example, **Letter [Left binding]**).

5 Click **OK** in the print driver.

6 Click **OK** in the print dialog box to print.

Figure 3-5. **Printing a booklet**

Printing a Book

You can print a book in which the first page, other pages, and back cover have different media types. For more information, see Paper tab features of this chapter.

Pages per Sheet

Use the **Pages per Sheet** option to select the number of pages that you want to print on a single sheet of media. If you choose to print more than one page per sheet, the pages appear smaller and are arranged on the sheet in the order that they would otherwise be printed. The **Pages per Sheet** drop-down menu provides six settings:

- 1 page per sheet (this is the default)
- 2 pages per sheet
- 4 pages per sheet
- 6 pages per sheet
- 9 pages per sheet
- 16 pages per sheet

Print Page Borders

Related controls that are indented beneath the **Pages per Sheet** edit box are **Print Page Borders** and **Page Order**, which become active when **Pages per Sheet** is greater than 1.

Print Page Borders sets a line around each page image on a printed sheet to help visually define the borders of each logical page.

Page Order

The **Page Order** drop-down menu contains four selections:

- **Right, then Down**
- **Down, then Right**
- **Left, then Down**
- **Down, then Left**

The document preview image changes to reflect alterations in these settings, as shown by the examples in the following illustration.

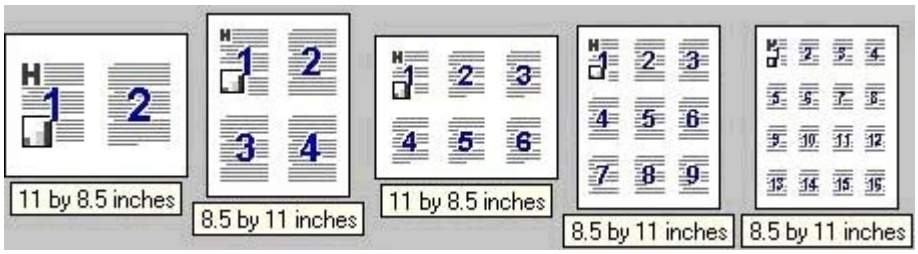


Figure 3-6. **Page-order preview images**

- **2 pages per sheet**
- **4 pages per sheet**
- **6 pages per sheet**
- **9 pages per sheet**
- **16 pages per sheet**

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image is always oriented so that the contents of the page are right-side up. The document preview image appears in the upper-right corner of the **Finishing**, **Output**, **Effects**, **Paper**, and **Basics** tabs.

Switching between tabs does not change the location or appearance of the document preview image. When you move the mouse over the document preview image, the mouse cursor changes from an arrow to a gloved hand. You can toggle between portrait and landscape page orientation by clicking on the image. The dimensions label that appears below the preview image reflects the selected page size. The horizontal dimension is always first, so the order of the numbers reverses when the orientation changes. Click the dimensions label to toggle between English and metric units.

Print Quality group box

The HP Color LaserJet 4650 print driver **Print Quality** group box provides options that output settings and font settings.

The default setting for **Print Quality** is **Default**. To change the default print-quality settings, click the **Details** button. Clicking the **Details** button opens the **Print Quality Details** dialog box. The **Print Quality Details** dialog box has different options depending on the driver that you are using.

Print Quality Details for the PCL 6 Driver

The **Print Quality Details** dialog box provides the options for print-quality settings in the HP Traditional PCL 6 Driver as shown in the following illustration.

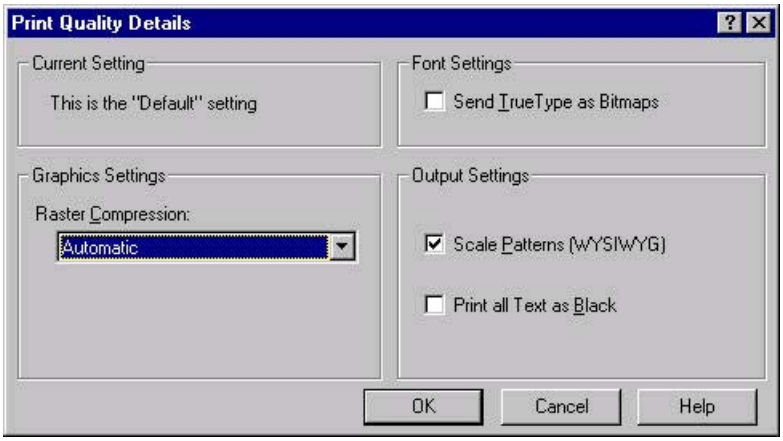


Figure 3-7. **Print Quality Details dialog box for the HP Traditional PCL 6 Driver**

The following options are available:

- **Current Settings** group box
- **Graphics Settings** group box
- **Font Settings** group box
- **Output Settings** group box

Current Setting group box

The **Current Setting** group box has two settings in the HP traditional PCL 6 driver. When you make a change in the **Print Quality Details** dialog box, the setting changes from **This is the "Default" setting** to **This is a "Custom" setting**.

Graphics Settings group box

Use the **Graphics Settings** group box to set the amount of raster compression that is applied to the print job. The **Graphics Settings** drop-down menu provides three settings:

- **Automatic** (default)
- **Best Quality**
- **Maximum Compression**

Font Settings group box

In the **Font Settings** group box, the only available option is **Send TrueType as Bitmaps**, which provides an alternative for software programs that cannot easily use TrueType fonts for special graphic purposes, such as shading, rotation, or slanting. The **Send TrueType as Bitmaps** check box is not selected (clear) by default. If you select this option, the driver sends TrueType fonts to the printer as outlines, which retains the standard format (outlines) of the fonts.

Output Settings

The **Output Settings** group box contains controls for pattern scaling, and to print all text as black.

The default values for the **Output Settings** are as follows:

- **Scale Patterns (WYSIWYG)** is selected
- **Print all Text as Black** is *not* selected

Scale Patterns (WYSIWYG)

Use the **Scale Patterns (WYSIWYG)** feature to address the moiré effect that is created when certain programs encounter certain patterns. Use this feature to turn off the pattern scaling. What you lose is WYSIWYG with patterns, but the printed result might look better. The feature works only with programs that use vector hatch patterns. This option is selected by default.

Print all Text as Black

The **Print All Text as Black** feature is not selected by default. When the feature is selected, the driver prints all text as black regardless of the original document text color. Color text is printed as black, except for white text, which remains white. (White text is a reliable method of printing reverse typeface against a dark background.) This setting does not affect graphic images on the page, nor does it affect any text that is part of a graphic.

Print Quality Details for the PCL 5c driver

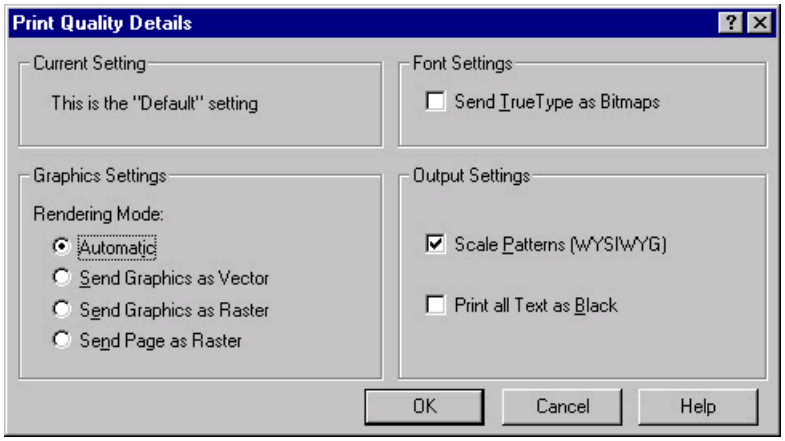


Figure 3-8. **Print Quality Details dialog box for HP traditional PCL 5c driver**

The following options are available:

- **Current Setting** group box
- **Font Settings** group box

- **Output Settings** group box
- **Graphic Settings** group box

Current Setting

The **Current Setting** group box has two settings in the HP Traditional PCL 5c Driver. When you make a change in the **Print Quality Details** dialog box, the setting changes from **This is the "Default" setting** to **This is a "Custom" setting**.

Font Settings

In the **Font Settings** group box, the only available option is **Send TrueType as Bitmaps**, which provides an alternative for software programs that cannot easily use TrueType fonts for special graphic purposes, such as shading, rotation, or slanting. The **Send TrueType as Bitmaps** check box is not selected (clear) by default. If you select this option, the driver sends TrueType fonts to the printer as outlines, which retains the standard format (outlines) of the fonts.

Output Settings

The **Output Settings** group box contains controls for pattern scaling, and to print all text as black.

The default values for the **Output Settings** are as follows:

- **Scale Patterns (WYSIWYG)** is selected
- **Print all Text as Black** is *not* selected

Scale Patterns (WYSIWYG)

Use the **Scale Patterns (WYSIWYG)** feature to address the moiré effect that is created when certain programs encounter certain patterns. Use this feature to turn off the pattern scaling. What you lose is WYSIWYG with patterns, but the printed result might look better. The feature works only with programs that use vector hatch patterns. This option is selected by default.

Print all Text as Black

The **Print All Text as Black** feature is not selected by default. When the feature is selected, the driver prints all text as black regardless of the original document text color. Color text is printed as black, except for white text, which remains white. (White text is a reliable method of printing reverse typeface against a dark background.) This setting does not affect graphic images on the page, nor does it affect any text that is part of a graphic.

Graphic Settings

The **Graphic Settings** group box in the HP Traditional PCL 5c Driver has settings for the graphics rendering mode. The following **Rendering Mode:** option buttons are available:

- **Automatic**. This is the default setting.
- **Send Graphics as Vector**. Select this setting to send graphics to the product as a combination of HP Graphics Language, version 2 (HP-GL/2) and raster images. This setting might produce higher-quality output.
- **Send Graphics as Raster**. Select this setting to send all graphics to the product as images composed of individual dots. This setting might improve printing speed in some cases.
- **Send Page as Raster**. Select this setting to send all graphics and text (TrueType fonts) to the product as images composed of individual dots. Use **Send Page as Raster** if you are experiencing problems with overlapping text and graphics. With this setting, the **Send TrueType as Bitmaps** option has no effect.

Effects tab features

The **Effects** tab is used to create unique media effects such as scaling and watermarks. The following illustration shows the **Effects** tab.

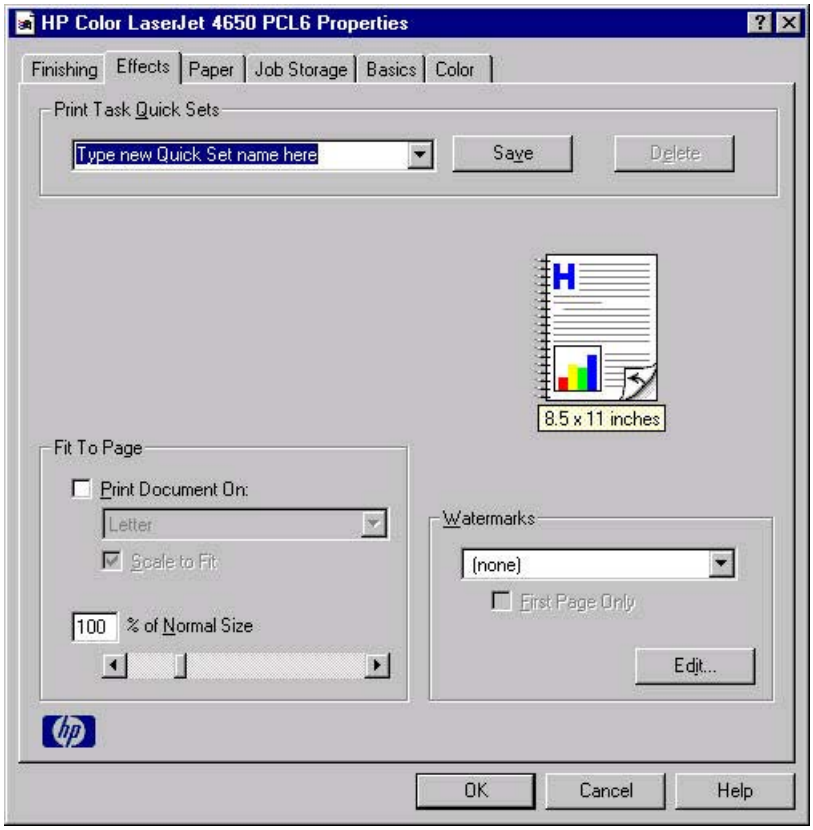


Figure 3-9. **Effects tab**

The **Effects** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Fit to Page** group box
- Document preview image
- **Watermarks** group box

Print Task Quick Sets

The **Print Task Quick Sets** control is used to store the current combination of driver settings that are found on all other **Document Defaults** driver tabs. Print Task Quick Sets are either preset (by the administrator) or user-defined printing specifications, such as media size and pages per sheet. For more information, see Finishing tab features.

Fit To Page group box

The **Fit To Page** group box contains the following controls:

- **Print Document on** setting
- **Scale to Fit** check box
- **% of Normal Size** setting

Print Document On setting

Use **Print Document On** to format the document for one media size, and then print the document on a different media size, with or without scaling the page image to fit the new media size.

The **Print Document On** control is disabled by either of the following conditions:

- **% of Normal Size** is not 100.
- **Pages per Sheet** (on the **Finishing** tab) is not 1.

When **Print Document On** is selected, the drop-down menu shows the media sizes on which you can print. The list contains all of the standard media sizes that are supported by the selected media source, and any custom size that you have created. When **Print Document On** is selected, **Scale to Fit** is automatically selected. Clear this check box if you do not want your document reduced or enlarged to fit on the selected media size.

Scale to Fit option

The **Scale to Fit** option specifies whether each formatted document page image is scaled to fit the target media size. By default, **Scale to Fit** is selected when **Print Document On** is selected. If the setting is turned off, then the document page images will not be scaled, and are instead centered at full size on the target media. If the document size is larger than the target media size, then the document image is clipped. If the document size is smaller, then it is centered within the target media. The following illustration shows preview images for a document formatted for Legal-size media with the **Print Document On** option selected, and the target size specified as **Letter**.

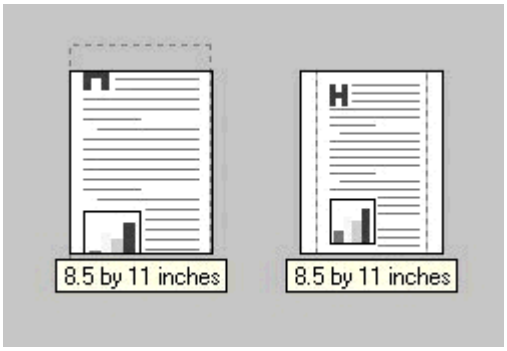


Figure 3-10. **Preview images - Legal on Letter; Scale to Fit off (left) and on (right)**

When the size for which the document is formatted (that is, the logical size) differs from the target size, the document preview image uses a dashed gray line to show the boundaries of the logical page in relation to the target page size.

% of Normal Size option

The **% of Normal Size** option provides a slider bar for scaling the percentage setting. The default setting in the entry box is 100 percent of the normal size. The normal size is defined as the media size that is selected within the driver or what the driver receives from the software program (if the software program does not negotiate the media size with the driver). The driver scales the page by the appropriate factor and sends it to the printer.

The limits of the range are from 25 percent to 400 percent, and any values outside the range are adjusted to those limits as soon as the focus is removed from the control (that is, when the **Tab** key is pressed or another control is selected).

Any change to the scale also changes the document preview image, which increases or decreases from the upper-left corner of the preview.

The slider bar controls the scale directly. The value in the edit box changes as the scroll bar indicator is dragged, and the document preview image is updated to the new image scale. Each click on the scroll bar arrows increases or decreases the scale by one percent. Each click on the slider bar affects the scale by 10 percent.

You cannot achieve an exact value by dragging the scroll bar indicator at the default Windows resolution; use the scroll bar indicator to approximate the value that you want, and then use the scroll bar arrows to refine the value. Or, type the value into the entry box.

The following settings disable **% of Normal Size**:

- **Print Document On** (on the **Effects** tab) is selected.
- **Pages per Sheet** (on the **Finishing** tab) is not 1.

Watermarks group box

Use the **Watermarks** feature to select a watermark, create your own custom watermarks (text only), or edit an existing watermark.

The **Watermarks** group box contains the following controls:

- **Watermarks** drop-down menu
- **First Page Only** check box
- **Edit** button (opens the **Watermark Details** dialog box)

Watermarks drop-down menu

The following watermarks are preset in the driver:

- **(None)**
- **Confidential**
- **Draft**
- **SAMPLE**

The drop-down menu shows alphabetically-sorted watermarks that are currently available on the system, plus the string "(none)", which indicates that no watermark is selected. This is the default setting. Any watermark selected from this list appears in the document preview image.

First Page Only check box

When **First Page Only** is selected, the watermark is printed only on the first page of the document. The **First Page Only** check box is not available when the current watermark selection is "(none)".

Watermarks are applied to logical pages. For example, when **Pages per Sheet** is set to "4" and **First Page Only** is turned off, four watermarks appear on the physical page (one on each logical page).

Edit button (Watermark Details)

Click **Edit**, and the **Watermark Details** dialog box appears. The following illustration shows the **Watermark Details** dialog box.

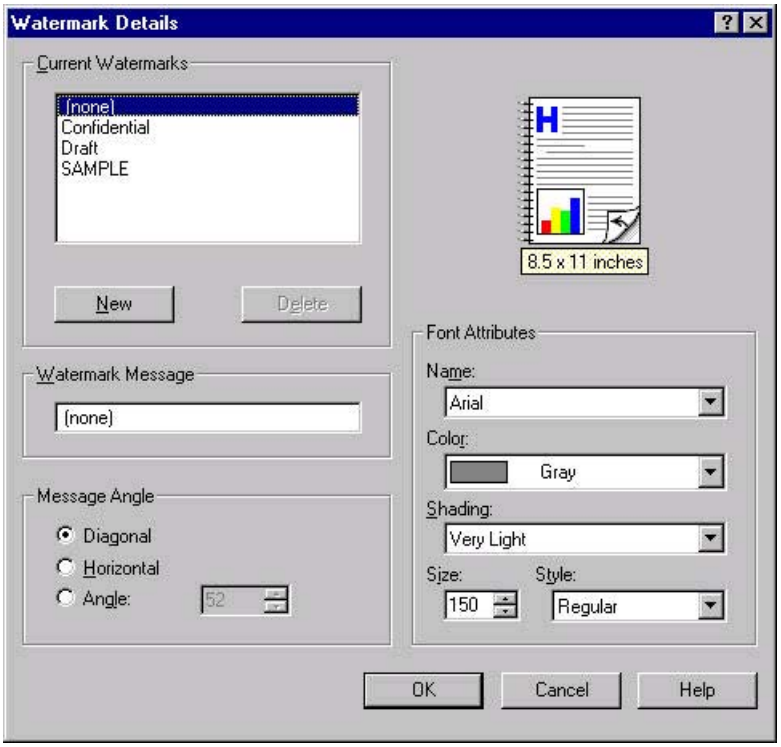


Figure 3-11. **Watermark Details**

The dialog box shows a document preview image and provides options for creating a new watermark and controlling the message angle and the font attributes.

The **Watermark Details** dialog box contains the following controls:

- **Current Watermarks** group box
- **Watermark Message** text box
- **Message Angle** group box
- **Font Attributes** group box

Current Watermarks

The **Current Watermarks** group box contains a list of available watermarks, both predefined watermarks that are available in the driver and any new watermarks that you have created. To create a new watermark, click **New**. The new watermark appears in the **Current Watermarks** list and in the **Watermark Message** edit box as **Untitled** until you name it. To name the new watermark, type the selected watermark text in the **Watermark Message** edit box. To delete a watermark, select the watermark in the **Current Watermarks** list and click **Delete**.

Note

You can have no more that 30 watermarks in the **Current Watermarks** list at one time. When you reach the limit of 30 watermarks, the **New** button is disabled, and a Bubble Help message appears that explains why the button is disabled and how to make it available.

To edit an existing watermark, select the watermark in the **Current Watermarks** list. If you change the **Watermark Message** for that watermark, you are, in effect, creating a new watermark.

Watermark Message

The **Watermark Message** is also the name that identifies the watermark in the **Current Watermarks** list, except when more than one watermark has the same message. For example, you might want several different watermarks with the message DRAFT, each in a different font or size. When this occurs, the string is appended with a space, a pound sign, and a number (for example, **Draft #2**). When a number is added, the number two is used first, but if the resulting name is also in the list, then the number increases until the name is unique.

Message Angle

Use the controls in the **Message Angle** group box to print the watermark in a diagonal, horizontal, or angle (custom) orientation to the text on the page. The default is **Diagonal**. All three settings automatically center the watermark string within the page; the selection of a particular setting affects only the angle of the string placement. **Diagonal** places the text along a line that spans the lower-left to upper-right corners of the page.

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image appears in the upper-right corner of the **Watermark Details** dialog box. The document preview image changes to reflect the modifications that you make in the **Watermark Details** dialog box.

Font Attributes

Use the controls in the **Font Attributes** group box to change the font and the shading, size, and style of the font.

The **Font Attributes** group box contains the following controls:

- **Name** drop-down menu
- **Color** drop-down menu
- **Shading** drop-down menu
- **Size** spin box
- **Style** drop-down menu

Name

The **Name** drop-down menu lists TrueType fonts that are currently installed on the system. The default is language-dependent.

Color

The **Color** drop-down menu contains seven settings: **Gray**, **Red**, **Yellow**, **Green**, **Cyan**, **Blue**, and **Magenta**.

Shading

The default **Shading** setting for new and preset watermarks is **Very Light**. The following range of shades is available from the **Shading** drop-down menu:

- **Lightest**
- **Very Light** (default)
- **Light**
- **Medium Light**
- **Medium**
- **Medium Dark**
- **Dark**
- **Very Dark**
- **Darkest**

Size

Font sizes from 1 to 999 points are available from the **Size** menu. The default point size is language-dependent. The default point size for preset watermarks is language-dependent.

Style

The choice of **Regular**, **Bold**, **Italic**, and **Bold Italic** is available from the **Style** drop-down menu. The default **Style** setting for new and current watermarks is **Regular**.

Default settings

The default settings for new watermarks are **Arial** font, **Gray** color, **Very Light** shading, **150** points, and **Regular** style. The default settings for preset watermarks are **Arial** font, **Very Light** shading, and **Bold** style. The default font name and point size for preset watermarks are language-dependent, and vary.

Click **OK** to accept all of the changes that have been made in the **Watermark Details** dialog box. Clicking **Cancel** does not cancel all of the changes. If you make changes to a watermark, and then select a different watermark or click **New**, all of the changes made to the previous watermark are saved, and only the current, unsaved changes can be canceled.

Paper tab features

Figure 3-12. **Paper tab**

The **Paper** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Paper Options** group box
- Document preview image
- printer image

Print Task Quick Sets

The **Print Task Quick Sets** control is used to store the current combination of driver settings that are found on all of the other **Document Defaults** driver tabs. Print task quick sets are either preset (by the administrator) or user-defined printing specifications, such as media size and pages per sheet. For more information, see Finishing tab features.

Paper Options

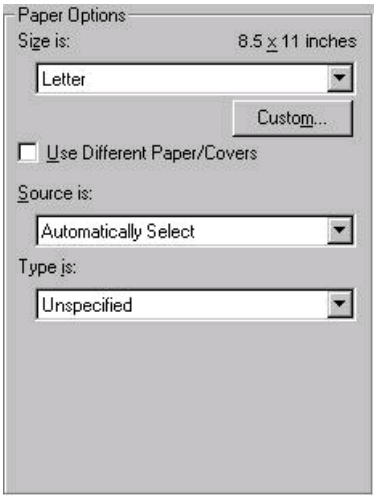


Figure 3-13. **Paper Options group box (default)**

The appearance of the Paper Options group box changes when the **Use Different Paper/ Covers** check box is selected. For convenience, the settings in the **Paper Options** group box are described in the following order:

- Size is
- Source Is
- Type is
- Custom
- Use Different Paper/Covers

Size is

You can specify size for all of the settings in the **Paper Options** group box. When you set the media size in the driver, the entire print-job output uses that media size. That is, if the print job uses Letter-size media, any option that you select from the available **Use Different Paper/ Covers** options must also use Letter-size media.

Because driver settings are overridden by media-size settings in most software programs, it is generally best to use the driver to set media size only for software programs that lack a media-size setting, such as NotePad, or when you are producing a book or a booklet that does not require different media sizes.

Note

Certain software programs can override the size command and specify different media sizes within a single document.

For information about media sizes, see the Media attributes section of this guide.

Use Different Paper/Covers

When the **Use Different Paper/Covers** check box is selected and different options are configured, the Size is:, Source is:, and Type is: menus change, offering a variety of options. For more information, see Use Different Paper/Covers.

Source Is

The **Source is:** setting specifies the source tray to use for printing a document. The list of source trays depends on the printer accessories. Any optional source trays that are installed through the **Configure** tab also appear here.

The **Source is:** drop-down menu can contain the following options:

- **Automatically select**
- **Manual Feed in Tray 1**
- **Tray 1** (100-sheet multipurpose tray)
- **Tray 2** (500-sheet tray)
- **Tray 3** (500-sheet tray)
- **Tray 4** (500-sheet tray)

The default setting is **Automatically Select**. When this setting is selected, the printer uses the source tray that supports the media size that you have selected. If you select a source tray other than **Automatically select**, make sure that the correct media size is loaded in the source tray. For more information about media sources, see the Media attributes section of this guide.

Type is

The **Type is:** drop-down menu shows all the media types that the HP Color LaserJet 4650 printer supports. When you use the default setting, Unspecified, the product uses the default media type, which is usually **Plain**.

The following standard types appear in the lists:

- Unspecified
- Plain
- Preprinted
- Letterhead
- Transparency
- Prepunched
- Labels
- Bond
- Recycled
- Color
- Cardstock (164 to 200 g/m^2 or 43 to 53 lb.)
- Heavy (105 to 119 g/m^2 or 28 to 31 lb.)
- Envelope
- Light (60 to 75 g/m^2 or 16 to 20 lb.)
- Intermediate (90 to 104 g/m^2 or 24 to 27 lb.)
- Ex Heavy (120 to 163 g/m^2 or 31 to 43 lb.)
- Glossy (75 to 105 g/m^2 or 20 to 28 lb.)
- Heavy Glossy (106 to 120 g/m^2 or 28 to 31 lb.)

- HP High Glossy (Images)
- Tough Paper

The default setting is **Unspecified**, and the program selects the media type. If you select a different setting, make sure that the correct media type is loaded in the tray that you selected in the **Source is:** setting. For more information about media types, see the Media attributes section of this guide.

Custom

Note

The **Custom** button is not available when **Use Different Paper/Covers** is selected *and* any setting other than **First Page** is also selected.

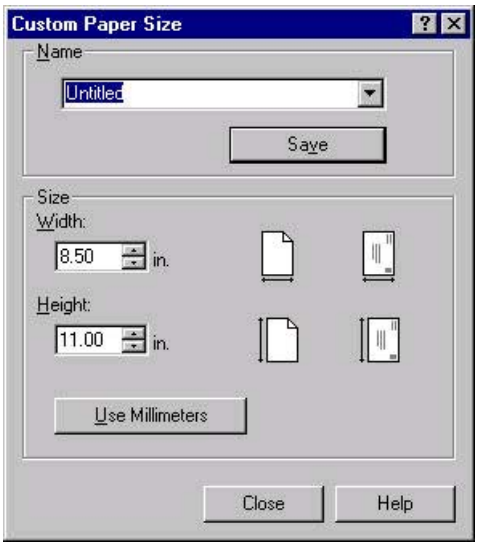


Figure 3-14. **Custom Paper Size dialog box**

When the **Custom Paper Size** dialog box appears, the drop-down menu in the **Name** group contains one of two things, depending on the current media-size selection on the **Paper** tab:

- If the media-size selection is a previously defined custom size, then the drop-down menu contains the name of that custom size.
- If the media-size selection is a standard media size, then the drop-down menu shows the default name **Untitled** (plus a number sign "**#**" and a numerical value) for a custom media size.

Note

In Windows 98 and Windows Me, two names for the same size media can coexist (for example, "big" and "BIG" can both be used as names for custom-size media measuring 8.4 inches by 11 inches). In Windows NT 4.0, Windows 2000, and Windows XP, both uppercase and lowercase names can be used, but they cannot be used to name the same media size.

The new name is compared only against the list of user-defined custom media-size names, and not against the standard media-size names.

The complete set of titles for this button and the specific characteristics that determine its title and capabilities are discussed in the Save, Delete, or Rename section.

Name

The **Name** drop-down menu shows the name of the custom media size that was selected most recently. Use the **Name** drop-down menu to select from the list of currently defined custom media sizes, or to type a new name for a custom media size.

The name that appears in the **Name** drop-down menu is one of three things, depending on the following conditions:

- If a saved custom media size has been selected from the drop-down menu and the other controls in the dialog box have not been changed since then, the **Name** drop-down menu shows the name of the last selected custom media size.
- If the width or height controls have been changed since a custom size was selected or saved, or if a saved media size has just been deleted, then the **Name** drop-down menu shows the default name of "Untitled."
- If a new name has been typed into the **Name** drop-down menu for the purpose of saving a new size or renaming an existing size, then that new name will remain in the drop-down menu until a saved custom media size has been selected from the drop-down menu.

If you type a new name into the **Name** drop-down menu, but then do not click the **Save** button, you should be able to change the width and height values without losing the name. However, if a saved media-size name is selected from the drop-down menu, any unsaved name or size values are lost without warning, and replaced by the values of the selected custom media size.

Save, Delete, or Rename

The dynamic command button located under the **Name** drop-down menu has three possible labels: **Save**, **Delete**, and **Rename**.

- **Save** is the button title whenever the height and width values have been changed since the most recent save action or since the selection of an existing custom media size. Clicking the button causes the name in the **Name** drop-down menu to be compared against each of the saved names. If a duplicate is found, a dialog box appears, asking if it is okay to replace the existing item. If you click **Yes**, the old item is updated with the new values. If you click **No**, the driver returns to the **Custom Paper Size** dialog box, where you can type a different name. The new name is compared only against the list of user-defined custom media names, and not against the standard media-size names. Whenever the command button has the **Save** title, it is the default button.
- **Delete** is the button title whenever the name of an existing (previously saved) custom media size appears in the **Name** drop-down menu, such as immediately after selecting an item from the drop-down menu or clicking the **Save** button. Clicking the **Delete** button causes the saved custom media size to be deleted, after which the **Name** drop-down menu changes to **Untitled**, the height and width controls are unchanged, and the button title changes to **Save**.
- **Rename** is the button title when you type something into the **Name** drop-down menu after selecting an existing custom media size from the drop-down menu. If no duplicate is found, then the name of the stored custom media size changes to match the contents of the **Name** drop-down menu.

The following table illustrates the relationships between the **Name** drop-down menu, the command button, and the actions that take users from one state to another.

Table 3-3. Name drop-down menu text strings

State	Drop-down menu contents	Button label	Action	Next state
1	Untitled	Save	Click **Save**.	3
			Type something into the **Name** drop-down menu.	2
			Change the width or height values.	1
			Select a saved item from the drop-down menu.	3
2	<user-typed text>	Save	Click **Save**.	3
			Type something into the **Name** drop-down menu.	2
			Change the width or height values.	2
			Select a saved item from the drop-down menu.	3
3	<name of saved item>	Delete	Click **Delete**.	1
			Type something into the **Name** drop-down menu.	4
			Change the width or height values.	1
			Select a saved item from the drop-down menu.	3
4	<user-typed text>	Rename	Click **Rename** (when the name is unique).	3
			Click **Rename** (when the name is a duplicate).	4
			Type something into the **Name** drop-down menu.	4
			Change the width or height values.	2
			Select a saved item from the drop-down menu.	3

Custom size (width and height controls)

The width and height values can be changed either by typing numeric strings into the edit boxes, or by using the up and down arrows.

Any entry that is greater than the maximum limits of the width and height control is rounded down to the maximum valid entry, while any entry that is smaller than the minimum limits of the width and height control is rounded up to the minimum valid entry. See Custom width and height control limits.

If units are in millimeters, the custom media-size range minimum is the limit rounded up to the nearest whole millimeter. The custom media-size range maximum is the limit rounded down to the nearest whole millimeter. Any non-numerical entry reverts to the last valid entry. Width and height entries are validated when the focus has changed.

The resolution of each control is one millimeter or one-tenth of an inch, depending on the current measurement units. Clicking the up and down arrows increases or decreases the current value by the increment amount (within the allowed range of values). The computer determines the rate at which the values change.

Unit indicator labels change dynamically to indicate inches or millimeters, depending on the measurement units the driver is currently using. To change measurement units, click the dynamic Measurement Units button (either **Use Inches** or **Use Metric**).

Custom width and height control limits

The minimum media size for the HP Color LaserJet 4650 is 76.2 by 127 mm (3 by 5 inches) and the maximum is 215.9 by 355.6 mm (8.5 by 14 inches). The following table summarizes media size limits for each media-handling device.

Table 3-4. PCL 6 custom media sizes

Tray	Dimensions	Minimum	Maximum
Tray 1 (multipurpose)	Width	76.2 mm (3 inches)	215.9 mm (8.5 inches)
	Height	127.0 mm (5 inches)	355.6 mm (14 inches)
Tray 2 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Tray 3 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Tray 4 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Duplexing unit	Width	Custom sizes not supported	Custom sizes not supported
	Height	Custom sizes not supported	Custom sizes not supported

Paper and envelope icons

The paper and envelope icons visually define width and height.

Dynamic measurement units

Use the **Dynamic Measurement Units** button to toggle the unit of measurement between standard (inches) and metric (millimeters) units of measurement. The label on this button is dynamic, depending on the measurement units that are in use. If the custom size currently shows the measurements in inches, the button is labeled **Use Millimeters**. If the custom size currently shows the measurements in millimeters, the button is labeled **Use Inches**. Click the button to switch measurement-unit types.

Close

The **Close** button closes the **Custom Paper Size** dialog box according to the logic in the following table. In all cases, any custom media sizes that are successfully saved (and not renamed or deleted) while the dialog box is open will remain in the **Size is:** drop-down menu on the **Paper** tab. The following table lists options that appear when you click the **Close** button.

Table 3-5. Close dialog box text strings

If the drop-down menu contains	And the button says	Then this happens when the Close button is clicked
Untitled	Save	The dialog box closes, but you lose the changes that were not saved. The current media size remains the same as it was when the **Custom** button was selected.
<user-typed text>	Save	The dialog box closes, but you lose the changes that were not saved. The current media size remains the same as it was when the **Custom** button was selected.
<name of saved item>	Delete	The dialog box closes, and the current media size is set to that which was last shown in the drop-down menu.
<user-typed text>	Rename	The dialog box closes, but you lose the changes that were not saved. The current media size remains the same as it was when the **Custom** button was selected.

Use Different Paper/Covers

You can print books that are comprised of different media types using the **Use Different Paper/Covers** options.

When you select the **Use Different Paper/Covers** check box, the following settings can appear in the group box, along with associated options.

- **First Page**
- **Other Pages**
- **Back Cover**

Note

You must use the same size of media for the entire print job. All options that you select from the available **Use Different Paper/Covers** options use the size that you selected in the First Page settings.
When you change the type and source of the media and covers, the settings you select remain configured until you close the software program.

Each option for the **Use Different Paper/Covers** setting is described in the following sections, beginning with the **First Page** option, which is selected by default. The other options are described in the order that they appear.

First Page

Figure 3-15. **First Page options**

The **First Page** options are as follows:

- **Size is:** drop-down menu
- **Source is:** drop-down menu
- **Type is:** drop-down menu

The **Size is:** driver setting for the first page applies to the entire print job. When this is set, the setting becomes unavailable for all the other **Use Different Paper/Covers** options.

Other Pages

Use the **Other Pages** options to select an alternative media source (or the same source as **First Page**) for the other pages of the document.

The **Other Pages** setting and options are shown in the following illustration.

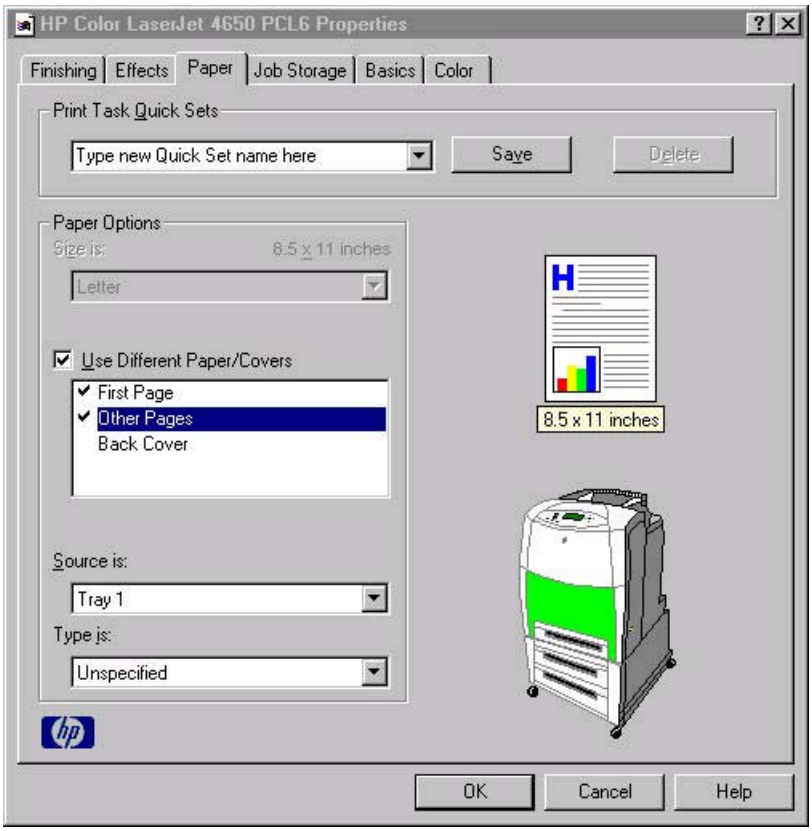


Figure 3-16. **Other Pages options**

The **Other Pages** options are as follows:

- **Source is:** drop-down menu
- **Type is:** drop-down menu

The **Source is:** setting specifies the source tray to use for printing a document. The list of source trays depends on the product accessories. Any optional media trays that are installed through the **Configure** tab also appear here. For more information about the **Source is:** setting, see the Source Is section of this chapter.

The **Type is:** drop-down menu shows all of the media types that the product supports. For more information about the **Type is:** drop-down menu settings, see the description for **Type is:** in the Type is section of this chapter.

Back Cover

Use the **Back Cover** options to include a blank or preprinted back cover on a document.

The following illustration shows the **Back Cover** setting and options.

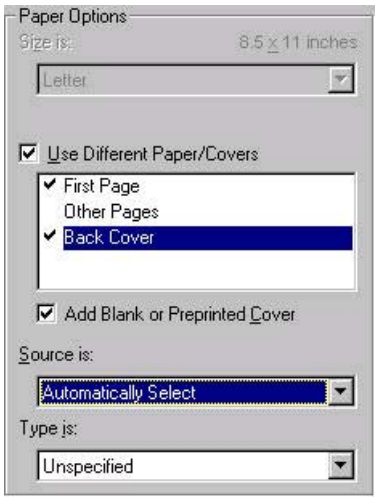


Figure 3-17. **Back Cover setting**

The **Back Cover** options are as follows:

- **Add a Blank or Preprinted Cover** check box
- **Source is:** drop-down menu
- **Type is:** drop-down menu

When you select **Back Cover**, you must also select the **Add a Blank or Preprinted Cover** check box to enable the setting. When you select this check box, the **Source is:** and **Type is:** drop-down menus become available and a check mark appears next to the **Back Cover** option.

Note

The **Back Cover** options are not available when the **Booklet Printing Layout** setting is enabled on the **Finishing** tab. The back cover setting is unavailable, because this page would otherwise be printed in the middle of a booklet.

The **Source is:** setting specifies the source tray to use for adding a back cover to the document. The list of source trays depends on the product accessories. Any optional media trays that are installed through the **Configure** tab also appear here. For more information about the **Source is:** setting, see the Source Is section of this chapter.

The **Type is:** drop-down menu shows all of the media types that the product supports. For more information about the **Type is:** drop-down menu settings, see the **Type is:** in the Type is _ section of this chapter.

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image appears in the upper-right corner of all of the **Document Defaults** driver tabs except the **Job Storage** tab. For more information about the document preview image, see the Finishing tab features section of this chapter.

Product image

The bitmap image in the lower-right portion of the **Paper** tab represents the current physical configuration of the product and corresponds to its configuration data. It should look the same as the image that appears in the same location on the **Configure** tab in the Printer **Properties**.

On the **Paper** tab, the product image contains hot spots where you can select a media source. When you use the mouse to move the pointer over a hot spot, the arrow reverts to a gloved hand. The current media source tray, whether selected from the drop-down menu or from a product image hot spot, is highlighted on the product image. The following points are worth noting:

- The **Automatically Select** setting in the **Source is:** drop-down menu does not have a corresponding area to highlight in the product image. Selecting other settings in this menu highlights the corresponding part in the product image.
- Selecting the area that represents a tray in the image always selects the corresponding tray in the **Source is:** option. **Manual Feed in Tray 1**, which is available from the **Source is:** drop-down menu, cannot be selected by selecting the image.
- On the **Paper** tab, only source trays have product image hot spots and can be highlighted.

Job Storage tab features

The HP Color LaserJet 4650 printer lets you store print jobs in the product's memory for printing at a later time. These job-storage features are described in the following sections.

The Job Storage tab appears among the driver tabs *only* if Job Storage is enabled. To support job-storage features for complex jobs, or if you often print complex graphics, print postscript (.PS) documents, or use many downloaded fonts, HP recommends that you install additional memory, install a hard disk, or both. Added memory also gives you more flexibility in supporting job storage features. A minimum total memory of 288 MB is required to use Job Storage features.

After a hard disk or additional memory is installed, the driver must be configured to reflect the changes in the product. If bidirectional communication is enabled in your environment, the Update Now feature can be used to update the drivers. For more information, see the Configure tab features in this chapter.
To configure the drivers manually after installing a hard disk or additional memory, follow these steps:

1. Click **Start**, select **Settings**, and then click **Printers**.
2. Right-click the product name, click **Properties**, and then click the **Configure** tab.
3. Under **Other Options**, click **More...**.
4. If additional memory has been installed, change the setting in the **Total Memory:** drop-down menu. If you select a minimum of 288 MB, this also selects the **Job Storage Enabled** check box.
5. If a hard disk has been installed, select the **Printer Hard Disk** check box in the **Storage** group box. This also selects the **Job Storage Enabled** check box.
6. Click **OK** to make the printer hard disk and job-storage features available.

Note

You can disable Job Storage while leaving the product hard-disk enabled. To disable Job Storage, click **Start**, select **Settings**, and then click **Printers**. Right-click the product name, click **Properties**, click the **Configure** tab, click **More...**, and then click to clear the **Job Storage Enabled** check box in the **More Configuration Options** box. When **Job Storage** is disabled, the **Job Storage** tab is not visible.

If Job Storage is enabled (without installing a hard disk), two **Job Storage Mode** settings are available on the **Job Storage** tab:

- **Proof and Hold**
- **Private Job**

Two additional **Job Storage Mode** settings become available on the **Job Storage** tab if a hard disk is installed:

- **Quick Copy**
- **Stored Job**

Job Storage tab

The following illustration shows the **Job Storage** tab.

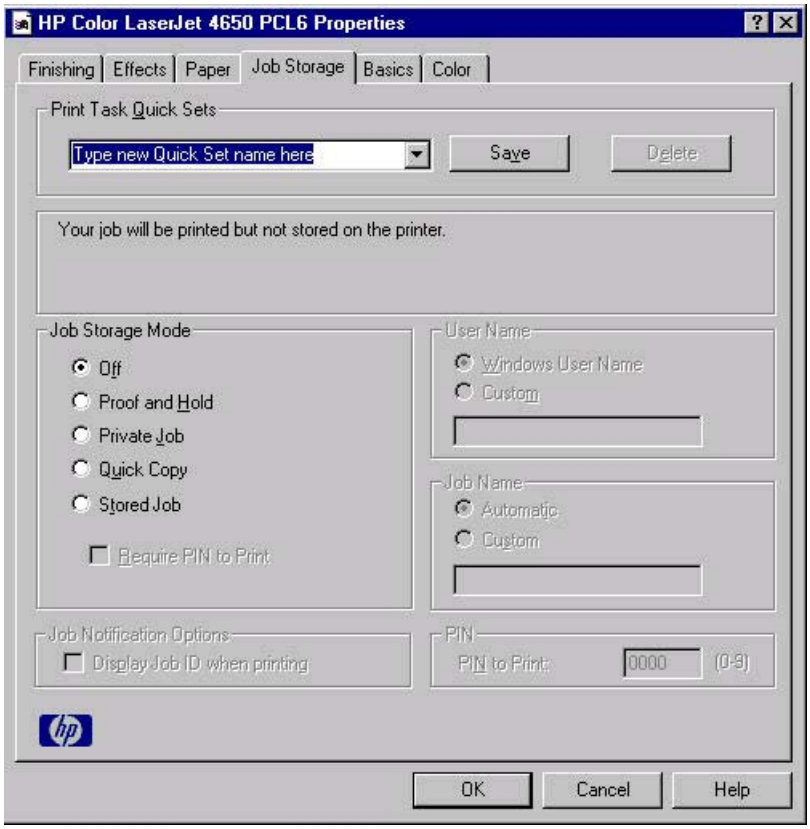


Figure 3-18. **Job Storage tab**

The **Job Storage** tab contains the following controls:

- **Print Task Quick Sets** group box
- Status group box (unlabeled)

- **Job Storage Mode** group box
- **Job Notification Options** group box
- **User Name** group box
- **Job Name** group box
- **PIN** group box

Print Task Quick Sets

Use the **Print Task Quick Sets** control to store the current combination of driver settings that are found on all other **Document Defaults** driver tabs. Print Task Quick Sets are either preset (by the administrator) or user-defined printing specifications, such as media size and pages per sheet. For more information, see Finishing tab features.

Status group box

The unlabeled group box on the **Job Storage** tab contains a status message about the destination of a print job. The status information changes depending on the selections that are made on the **Job Storage** tab.

Job Storage Mode

Use the **Job Storage Mode** options on the HP Color LaserJet 4650 printer to store documents at the product and then control their printing at the product control panel. This feature is intended to provide greater flexibility, convenience, security, and cost savings.

The HP Color LaserJet 4650 printer offers the following **Job Storage Mode** options:

- **Off**
- **Proof and Hold**
- **Private Job**
- **Quick Copy**
- **Stored Job**
  - **Require PIN to Print** (available when **Stored Job** is selected)

These options and the settings that control them are described in the following sections.

Off

When selected, this option turns the **Job Storage** feature off (it is disabled), which means that the print job will not be stored in the product.

Proof and Hold

To use the **Proof and Hold** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When selected, this option stores the print job in memory and prints only the first copy of the job, allowing you to check the first copy. If the document prints correctly, you can print the remaining copies of the print job at the control panel. You can set the number of proof-and-hold print jobs that can be stored in the product at the control panel.

After it is released for printing, the proof-and-hold job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second proof-and-hold job to the product with the same user name and job name as an existing proof-and-hold job (and you have not released the original job for printing), the job will overwrite the existing job. Proof-and-hold jobs are deleted if you turn off the product.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the product control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, the new document overwrites the oldest held document. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document.

Private Job

To use the **Private Job** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Private Job**, the print job is sent to the product, but is not printed until you request the job at the product control panel. Selecting **Private Job** activates the **PIN** group box. The print job can be printed only after you type the correct PIN at the control panel. After the job is printed, the job is deleted from the product. This feature is useful when you are printing sensitive or confidential documents that you do not want to leave in an output bin after printing.

After it is released for printing, the private job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second private job that has the same user name and job name as an existing private job (and you have not released the original job for printing), the job will overwrite the existing job, regardless of the PIN. Private jobs are deleted if you turn off the product.

Using a PIN for Private Job

The **Private Job** option can be secured by a four-digit personal identification number (PIN). You must type in this number at the product control panel before the product can print the job.

The group box labeled **PIN** is usually inactive. It becomes active when you select the **Private Job** option.

The Private Job/PIN coupling has a PIN restriction of four ASCII numeric characters (0 though 9). If you type non-numeric characters, they are removed immediately. If you type more than four characters, the characters past the fourth are truncated. The field temporarily accepts fewer than four digits in the string, but when the edit field loses focus, the zeroes pad the left end until the PIN contains exactly four digits. The default initialized value for the PIN is 0000 for **Private Job**.

Quick Copy

To use the **Quick Copy** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Quick Copy**, the entire print job prints and a copy of the print job is stored on the product, after which you can print additional copies of the print job at the product control panel. The number of quick-copy print jobs that can be stored in the product is set by using the product control panel.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the product control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, the new document overwrites the oldest held document. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document. **Quick Copy** jobs are deleted if you turn off the product.

Stored Job

To use the **Stored Job** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

Use the **Stored Job** option to send a print job directly to the product hard disk without printing it. The print job is stored in the product as if it is an electronic file cabinet. After the print job is stored on the product hard disk, you can print the job at the product control panel.

The job remains stored in the product until it is deleted or overwritten by a document that has the same user and job names. Stored jobs remain on the product hard disk when the product is turned off. Use this feature for forms and other common or shared documents.

A stored job can be managed in two ways: as either a private or a public job. Use a private stored job to send a print job directly to the product, which can then be printed only after you type in a PIN at the product control panel. (You can set the PIN in the **PIN** group box.) After the job is printed, the job remains in the product and can be printed again at the product control panel. The private mode is initiated by selecting the **Require PIN to Print** check box. In this mode, a PIN that is typed at the product control panel is required in order to release the job.

The box labeled **PIN** is usually inactive. The **Require PIN to Print** option becomes available when you select **Stored Job**. If you select the **Require PIN to Print** box, you must type a PIN to make the stored job private.

Note

A private stored job is not the same as a private job (see above). *Private* jobs are deleted from the product after they are printed. *Private stored* jobs are retained in the product after printing, but require that a PIN be typed each time they are printed.

Job notification

Clicking a job storage mode selection causes the **User Name** and **Job Name** options to become available. The **Display Job ID when printing** check box is selected by default. The **Display Job ID when printing** option causes a pop-up dialog box to appear when the job-storage print job is printed. The dialog box shows the user name and job name that are associated with the stored print job, as well as the product name, port, and location.

User Name

Use the **User Name** settings to help identify the job at the product control panel. The following are the **User Name** settings:

- **User Name.** This option associates your Windows user name with the stored print job. The Windows user name automatically appears in the text field below the **User Name** options.
- **Custom.** Use this option to type a custom name for the stored print job. When you click the **Custom** radio button, the text field below the option becomes available. The **User Name** field can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

Job Name

Use the **Job Name** text box to specify a name to identify the job at the product control panel. This text box uses **Untitled** as the default job name associated with the stored print job. The file name of the print job is used if it is available to the print driver. Otherwise, the software program name or a time stamp is used for the job name. To enter a custom name, type the custom job name in the text box. The **Job Name** text box can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

PIN

The **PIN** group box is usually inactive. The option within the PIN group box, **PIN to Print**, is activated if you select either of the following options:

- Select **Private Job**. If selected, you must type in the PIN number at the product control panel in order to make the job print. For more information, see Using a PIN for Private Job .
- Select **Stored Job**, and then select the **Require PIN to Print** check box. If the **Require PIN to Print** check box is selected, you must type a PIN in order to make the stored job private. For more information, see the Stored Job.

Using Job Storage features when printing

1 Click **File** and then click **Print** from the software program. The **Print** dialog box appears.

Note

Clicking the print icon in the software program toolbar prints the job without Job Storage features.

2 Click **Properties**. The **Properties** dialog box appears.

3 Click the **Job Storage** tab.

4 Select the Job Storage options described above by clicking the appropriate option button and complete any required fields.

5 Click **OK**.

Releasing a Job Storage print job

After you send a print job that uses the **Job Storage** feature, you can release the job to print from the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button. PRINT JOB is highlighted.
5. Press the select button.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the up and down buttons to select the number of copies to print.
8. Press the select button to print the job.

Deleting a Job Storage print job

Sometimes it is necessary to delete a print job from the product hard disk. You can do this from the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button.
5. Press the up and down buttons to select Delete.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the select button to delete the job.

The stored print job is deleted and the product returns to the **READY** state.

Basics tab features

The **Basics** tab provides options for setting the number of copies to be printed and for the orientation of the print job. You can also use it to retrieve information about the driver.

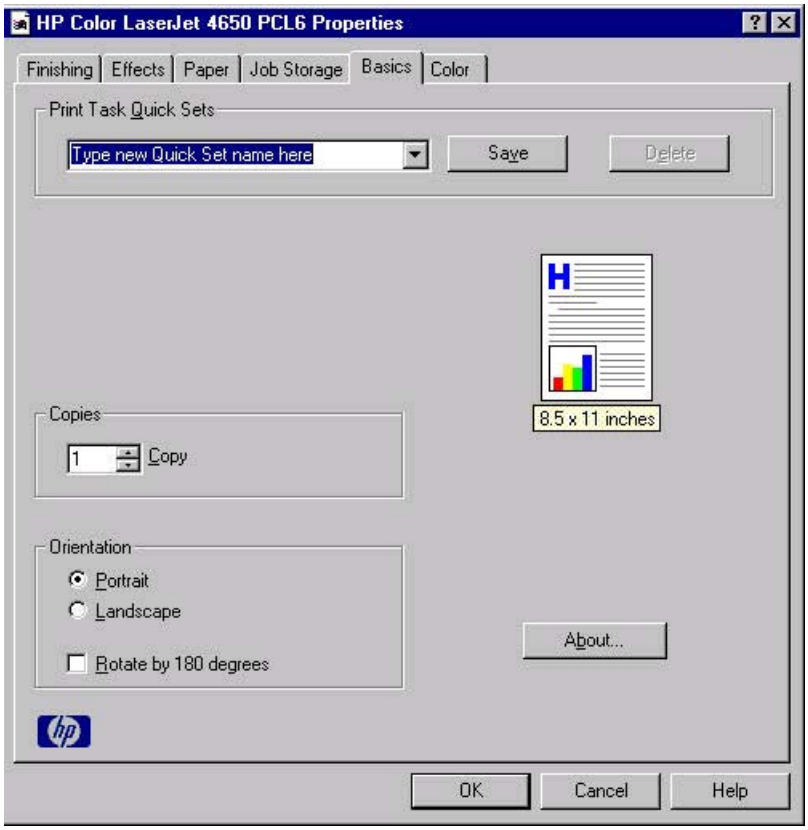


Figure 3-19. **Basics tab**

The **Basics** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Copies** group box
- **Orientation** group box
- Document preview image
- **About** button

Print Task Quick Sets

The **Print Task Quick Sets** control is available on all of the **Properties** driver tabs (the **Finishing**, **Output**, **Effects**, **Paper**, **Job Storage**, and **Basics** tabs). The feature is used to store the current combination of driver settings that are found on all other tabs. Print Task Quick Sets are either preset (by the administrator) or user-defined printing specifications, such as media size and pages per sheet. For more information, see the Finishing tab features section of this chapter.

Copies

Use the **Copies** option to specify the number of copies to print.

The number of copies that you request appears in the **Copies** group box. You can select the number by typing in the box or by using the up and down arrows to the right of the text box. Valid entries are numbers from 1 to 9999 for the HP Color LaserJet 4650. The copies value will not advance from the maximum number (9999) to 1 when the up arrow is used, or change from 1 to the maximum number (9999) when the down arrow is used. When you click another group box or leave the **Basics** tab, invalid entries into the edit box (such as non-numerical input, numbers less than 1, or numbers greater than the maximum allowed) are changed to the last valid value that appeared in the box. The default number of copies is 1.

Because you can set the number of copies that you want from some software programs, conflicts between the software program you are using and the driver can arise. In most cases, the software program and the driver communicate, so that the number of copies set in one location (such as the program) will appear in the other (such as the driver). For some programs, this communication does not take place, and the copies values are treated independently. For these programs, setting 10 copies in the program and then setting 10 copies in the driver will result in 100 copies (10 x 10) being printed. It is recommended that you set the number of copies in the program, wherever possible.

Orientation

Orientation refers to the layout of the image on the page, and does not affect the manner in which media is fed into the printer. You can specify the orientation of the print job. The three available orientations are portrait, landscape, and rotated. The default orientation is **Portrait**.

Note

Nearly all software programs establish the orientation for the printed page, so the page orientation in the driver is useful only for the few software programs that do not set an orientation.

The **Orientation** group box contains three options:

- **Portrait.** The top edge of the document is the shorter edge of the media.
- **Landscape.** The top edge of the document is the longer edge of the media.
- **Rotate by 180 degrees.** This creates a landscape or portrait orientation in which the image is rotated 180 degrees. This setting is useful for printing prepunched media.

You can toggle orientation between portrait and landscape by clicking the document preview image. If you select the **Rotate by 180 degrees** check box, no change occurs in the document preview image.

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image appears in the upper-right corner of all of the **Properties** driver tabs (the **Finishing**, **Output**, **Effects**, **Paper**, **Job Storage**, and **Basics** tabs). For more information about the document preview image, see Finishing tab features.

About

When you click the **About** button on the **Basics** tab, or you click the HP logo on any of the driver **Properties** tabs, the **About This Driver** dialog box appears. To close the **About** box, click **OK**, press **Esc**, press **Alt** + **F4**, or press **Enter**. The following figure shows the **About This Driver** dialog box. The information it contains varies according to driver, date, and version.

Figure 3-20. **About This Driver dialog box**

The **About This Driver** dialog box provides the following information:

- Printer name
- Driver name
- Print driver version number
- Copyright information
- Driver Extensions (if any)
- Configuration Status

The printer name, the driver name, the print driver version number, and the copyright information appear at the top of the **About This Driver** dialog box.

The **Driver Extensions** group box lists the driver extensions, if any.

The **Configuration Status** group box indicates whether the driver was autoconfigured, whether administrator preferences were set, the date the driver was last configured, and whether the configuration is default or user-defined.

Color tab features

Use the **Color** tab to specify predefined color-option settings or to fine-tune the color treatments and half-toning. Color output can also be converted to grayscale. The **Color** tab is shown in the following illustration.

Figure 3-21. **Color tab**

The **Color** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Color Options** group box
- Document preview image

Print Task Quick Sets

The **Print Task Quick Sets** control is available on each Printing Preference tab, and is used to store the current combination of driver settings found on all of the other tabs. **Print Task Quick Sets** are either preset or user-defined printing specifications, such as media size and pages per sheet. For more information, see Paper tab features.

Color Options

Use the **Color Options** group box to adjust the independent color controls. The settings affect the print job color rendering and print quality. The **Color Options** group box contains the following controls:

- **Automatic** option (default)
- **Manual** option
- **Settings** button (that opens the **Color Settings** dialog box)
- **Print in Grayscale** check box

Automatic

Use the **Automatic** option for default color settings that automatically tune the printed output. The HP **Automatic** default color settings provide high-quality output for most color printing needs.

Manual

To change the default color settings, select the **Manual** option, and then click the **Settings** button. The **Color Settings** dialog box appears.
To change the settings, make your selections by using the drop-down menus in the **Color Settings** dialog box, and then click **OK**. The following illustration shows the **Color Settings** dialog box with "Custom" settings.

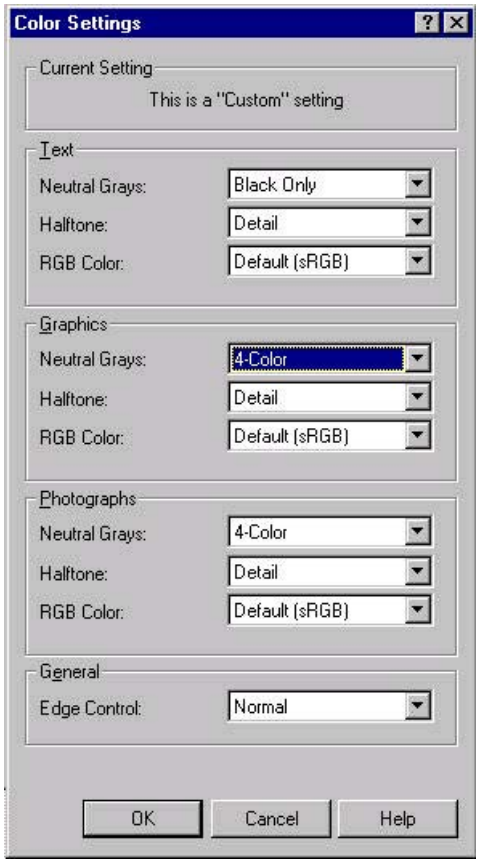


Figure 3-22. **Color Settings dialog box**

The **Color Settings** dialog box contains the following controls for each of the following components:

- **Text**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **Graphics**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **Photographs**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **General**
  - **Edge Control**

Neutral Grays

The **Neutral Grays** drop-down menu controls the selection of a device-dependent color table that is embedded in the product firmware. The options are **Black Only** or **4-Color**. You can adjust the **Neutral Grays** setting independently for text, graphics, or photographs.

- **Black Only.** This option generates neutral colors (grays and black) by using only black toner. This option guarantees that neutral colors do not have a color cast. **Black Only** is the default setting for the **Text** and **Graphics** components.
- **4-Color.** This option generates neutral colors by combining all four colors of toner, which produces smoother gradients and transitions to non-neutral colors. It also produces the darkest possible black. **4-Color** is the default setting for **Photographs**.

Halftone

The **Halftone** setting controls the selection of a product-dependent halftone algorithm that is embedded in the product firmware. The **Halftone** options, **Smooth** and **Detail**, affect the resolution and clarity of your color output.

- **Detail.** This option is optimized for the best reproduction of images, graphics, and large, solid-filled print areas. It also enhances photographs by smoothing out the fine color gradations. Select this option when the color fidelity of large objects is the top priority. **Detail** is the default setting for all components.
- **Smooth.** This option is optimized for the best readability and sharpness of small text.

RGB Color

The **RGB Color** settings affect the color treatment for object types and determines how colors are rendered. The options are **Default (sRGB), Device,** and **Vivid**.

- **Default (sRGB).** This option interprets RGB color space (sRGB), which is the accepted standard for many software companies and organizations such as Microsoft and the Worldwide Web Consortium. **Default (sRGB)** is the default setting for all components.
- **Vivid.** This option sets the product to increase the color saturation in the midtones. Less colorful objects are rendered more colorfully. This value is recommended for printing business graphics.
- **Device.** This option sets the product to print RGB data in raw device mode. To render photographs correctly when this option is selected, you must manage color in the software program in which you are working or in the operating system.

Note

If your software program converts text and graphics to raster, the **Photographs** settings also control the **Text** and **Graphics** settings.

General

Use the **General** setting group to control **Edge Control** settings for all color printing. **Edge Control** determines how edges are rendered. **Edge Control** consists of three components: Adaptive Halftoning, Trapping, and C-REt. Adaptive Halftoning increases the edge sharpness. Trapping reduces the effect of color plane misregistration by slightly overlapping the edges of adjacent objects. C-REt increases the apparent resolution by placing each dot for the smoothest edges.
The **Edge Control** option offers four settings:

- **Normal.** The **Normal** setting provides the default trapping settings. Adaptive Halftoning is set to On, and C-REt is set to On.
- **Light.** The **Light** setting provides minimal trapping. Adaptive Halftoning is set to On and C-REt is set to On.
- **Maximum.** The **Maximum** setting provides the most trapping. Adaptive Halftoning is set to On, and C-REt is set to On.
- **Off.** The **Off** setting turns Trapping, Adaptive Halftoning, and C-REt to Off.

Print in Grayscale

Select **Print in Grayscale** to print a document in black and white. This option is useful for previewing preliminary copies of slides and hardcopy output quickly or for printing color documents that will be photocopied or faxed.

Properties tabs

The **Properties** tabs contain information about and options for configuring the product.

NT Forms tab features

Note

The **NT Forms** tab is in the Properties for the print driver.
To gain access to the Properties tabs, click **Start** on the Window task bar, click **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties**.

The **NT Forms** tab appears only in the Microsoft Windows NT 4.0 operating environment. The **NT Forms** tab (like the **Configure** tab) can be viewed only from the Properties window. The following illustration shows the **NT Forms** tab.

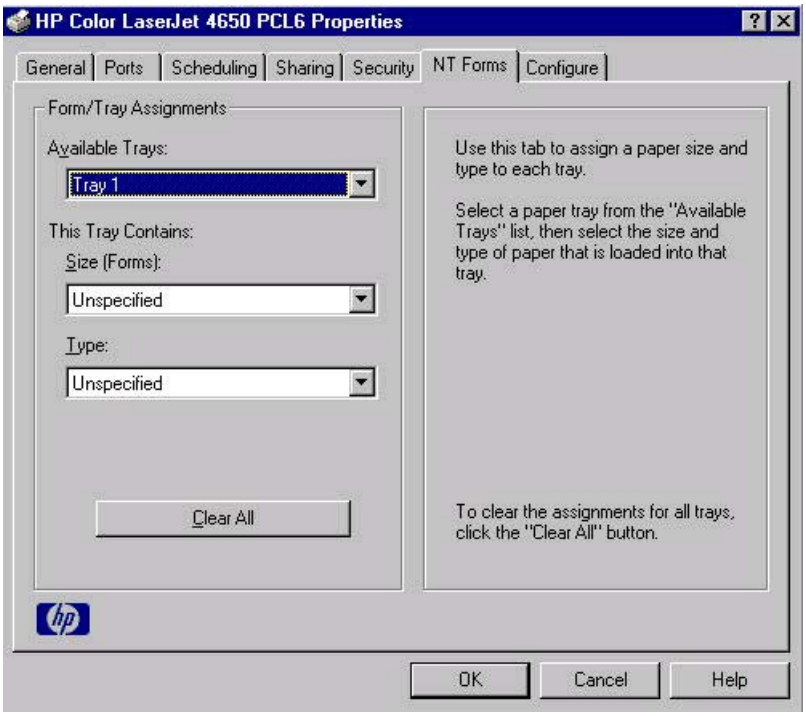


Figure 3-23. **Driver NT Forms tab**

Use the **NT Forms** tab to specify which media sizes and types are loaded in each of the available source trays. This constrains the choices that are available in the **Size** and **Type** lists on the **Paper** tab.

The **NT Forms** tab contains a single group box (the **Form/Tray Assignments** group box) which contains the following controls:

- **Available Trays** is a drop-down menu that contains all the trays that are specified on the **Configure** tab.
- **This Tray Contains/Size (Forms)** drop-down menu contains a list of standard media sizes that the HP Color LaserJet 4650 printer supports, as well as any custom forms that are defined on the **NT Forms** tab.
- **This Tray Contains/Type** drop-down menu lists all of the media types that the HP Color LaserJet 4650 printer supports.
- **Clear All** button removes all the size and type constraints on the **Paper** tab.

Configuring the trays

1. Select the appropriate tray from the **Available Trays** drop-down menu.
2. Use the **This Tray Contains/Size (Forms)** drop-down menu to select the media size (or form) that is loaded in that tray.
3. Use the **This Tray Contains/Type** drop-down menu to select the media type that is configured for the tray.
4. Repeat steps 1 through 3 for the remaining trays.
5. Click **OK** to enable your settings, or, if necessary, click the **Clear All** button to reconfigure all of the trays, and remove the size and type constraints that have been imposed on the **Paper** tab.

Configure tab features

Note

The **Configure** tab is in the Properties for the print driver.
To gain access to the Properties tabs, click **Start** on the Window task bar, click **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties**.

Use the **Configure** tab to tell the driver about the product hardware configuration. If bidirectional communication is enabled in a supported environment, set up this tab by clicking the **Update Now** button. If your environment does not support bidirectional communication, the **Update Now** button is unavailable, so you must manually configure the options on this tab.

The **Configure** tab is available when the driver is opened from the **Printers** folder by clicking **Properties**. When you open the driver from within a program, the **Configure** tab is not visible (with a few exceptions, such as when using Excel 5.0 or Corel (R) Chart 4.0). When opened from the **Printers** folder, the **Configure** tab looks like the following illustration.

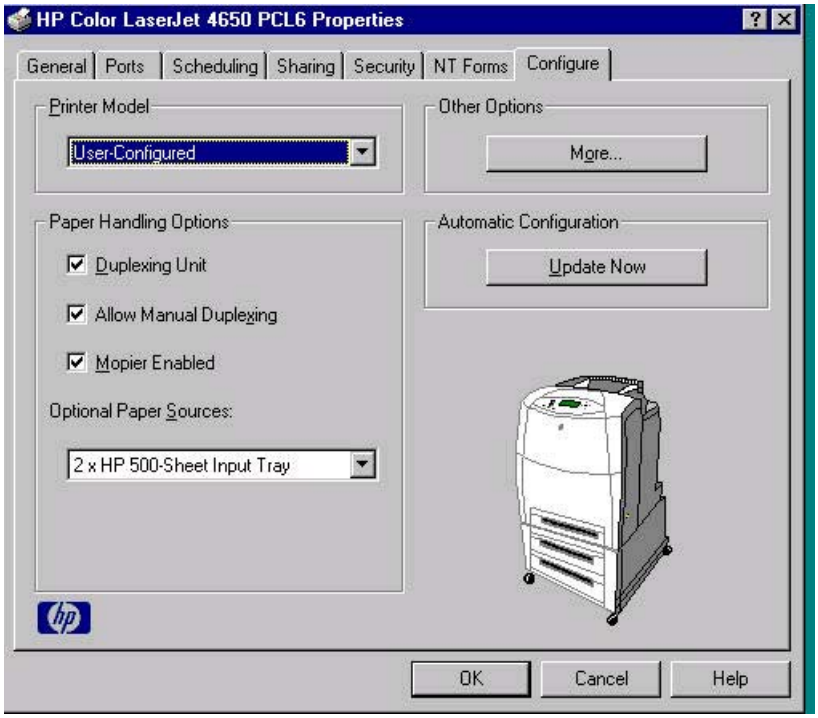


Figure 3-24. **Configure tab**

The **Configure** tab contains the following controls.

- **Printer Model** group box
- **Paper Handling Options** group box
- **Other Options** group box
- **Automatic Configuration** group box
- product image

Printer Model

In the **Printer Model** group box, the driver title remains HP Color LaserJet 4650 for all models. Selection of another product bundle makes the appropriate changes to other configuration options on the tab. The list of models and the changes they produce are described below.

When the HP Color LaserJet 4650 model or the HP Color LaserJet 4650n model is selected, the following settings apply:

- The **Driver Work Space (DWS)** value shown in the **Other Options** dialog box is 6.0 MB.
- The **Total Printer Memory** value is 160 MB.
- No optional media destinations, media sources, duplexing unit, or hard disk are selected.

HP Color LaserJet 4650dn resets all configuration settings to match the capabilities of the 4650dn model. Settings affected are:

- The **Total Printer Memory** value is 160 MB.
- **Duplexing Unit** is selected.
- No optional media destinations, media sources, duplexing unit, or hard disk are selected.

When the HP Color LaserJet 4650dtn model is selected, the following changes are made to the default settings:

- The **Total Printer Memory** value is 288 MB.
- **Duplexing Unit** is selected.
- **Mopier Enabled** is selected.
- **HP 500-Sheet Input Tray** is selected in **Optional Paper Sources**.
- No optional media destinations are selected.

When the HP Color LaserJet 4650hdn model is selected, the following changes are made to the default settings:

- The **Total Printer Memory** value is 288 MB.
- **Duplexing Unit** is selected.
- **Mopier Enabled** is selected.
- **Printer Hard Disk** and **Job Storage Enabled** are selected.
- **2 x 500-Sheet Input Tray** is selected.

If it is installed and working, the bidirectional mechanism will detect the correct model and update the configuration accordingly, either during installation or when you select **Update Now** on the **Configure** tab. However, the printer model name shown in the **Printer Model** text box does not change.

Paper Handling Options

The **Paper Handling Options** group box contains the following controls:

- **Duplexing Unit** check box
- **Allow Manual Duplexing** check box
- **Mopier Enabled** check box
- **Optional Paper Sources** drop-down menu

Duplexing Unit

The HP Color LaserJet 4650dn, 4650dtn, and 4650hdtn models are equipped with automatic 2-sided printing (duplexing), which allows you to print on both sides of supported media. Automatic 2-sided printing is not supported for certain media types, including transparencies, labels, envelopes, heavy, extra heavy, cardstock, and glossy film.

Note

The HP Color LaserJet 4650 printer supports smart duplexing. The product uses the smart duplexing feature to detect information on both sides of the print job pages and only runs the pages through the duplexing unit if there is printable information on the second side of the page.

Allow Manual Duplexing

Select **Allow Manual Duplexing** to print on both sides of any size and most types of media (except transparencies, envelopes, and labels). To use this feature, you must reinsert the media stack into the input tray to print the second side. The product pauses while you make this adjustment.

Mopier Enabled

The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job. Multiple-original printing (mopying) increases performance and reduces network traffic by transmitting the job to the product once, and then storing it on the hard disk. The remainder of the copies are printed at the fastest speed. All documents that are printed in mopier mode can be created, controlled, managed, and finished from the computer, which eliminates the extra step of using a photocopier.

The HP Color LaserJet 4650 printer supports the transmit-once mopying feature when the product has an installed hard disk or a minimum total memory of 288 MB, and the **Mopier Enabled** setting on the **Configure** tab is on.

Mopier mode and collation

Mopying and collating print jobs are independent but closely related functions. Mopying, the ability to send multiple original print jobs to the product , is performed by the print driver and the product . Collating can be controlled by using either the print driver or the document software program. The mopying mode is selected by default in the driver, and can be disabled by clearing the **Mopier Enabled** selection on the **Configure** tab to disable the feature.

You can control collation through the print driver by selecting or clearing the **Ignore Application Collation** check box on the **More Configuration Options** dialog box that appears when you click the **More...** button on the **Configure** tab. You can clear the check box, which is available only when the **Mopier Enabled** setting on the **Configure** tab is selected, to allow the software program to control collation.

To receive uncollated multiple copies of a print job with the mopier enabled, you must clear the **Ignore Application Collation** check box *and* make sure that the software program collation feature is not selected.

The following table shows the relation between **Mopier Enabled** settings and collation settings in the software program and the driver. The first three columns show the settings; the last column, "Expected result", shows how a 3-page print job would appear.

Table 3-6. Driver Mopier mode and collation settings

Mopier Enabled	Application collation	Ignore Application Collation	Expected result
Not selected	Not selected	Not available	3 copies uncollated
Not selected	Selected	Not available	3 copies collated
Selected	Not selected	Not selected	3 copies uncollated
Selected	Not selected	Selected	3 copies uncollated
Selected	Selected	Not selected	3 copies collated by printer
Selected	Selected	Selected	3 copies collated by printer

Optional Paper Sources

The **Optional Paper Sources** drop-down menu lists optional media source trays for the HP Color LaserJet 4650 printer. The list of available source trays varies depending on your product , its input accessories, and the product configuration settings on the **Configure** tab.

For the HP Color LaserJet 4650 printer, the following settings are available in the **Optional Paper Sources** drop-down menu:

- **(None).** This is the default setting for the HP Color LaserJet 4650 printer.
- 2x HP 500-Sheet Input tray.
- HP 500-Sheet Input tray.

Other Options

The **Other Options** group box contains a single **More...** command button. Clicking the **More...** button opens the **More Configuration Options** dialog box.

More configuration options

When you click the **More...** button under **Other Options**, more configuration options are available. The **More Configuration Options** dialog box is shown in the following illustration.

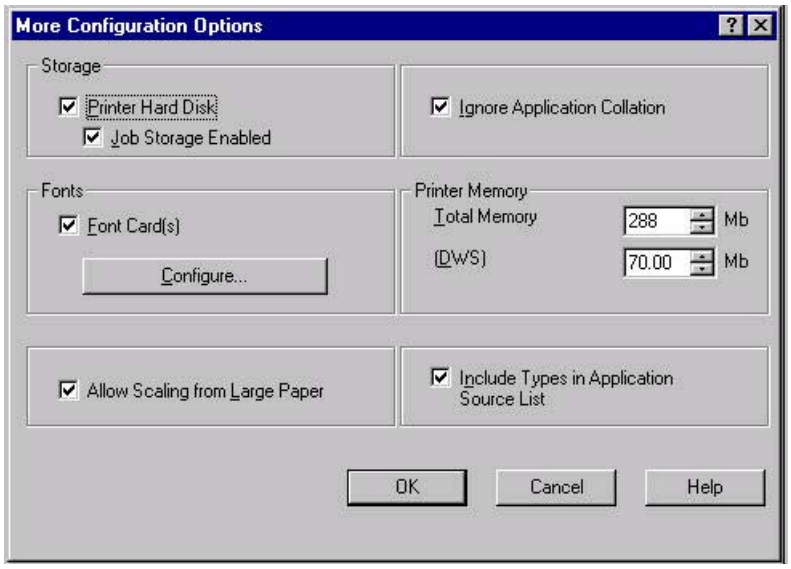


Figure 3-25. **More Configuration Options dialog box**

The **More Configuration Options** dialog box contains the following controls:

- **Storage** group box
- **Fonts** group box
- **Allow Scaling from Large Paper** check box
- **Ignore Application Collation** check box
- **Printer Memory** group box
- **Include Types in Application Source List** check box

Storage

The **Storage** group box contains the **Printer Hard Disk** and **Job Storage Enabled** check boxes. If your HP Color LaserJet 4650 printer is equipped with a hard disk drive, the **Printer Hard Disk** check box should be selected and all job storage options are available. If your HP Color LaserJet 4650 printer is *not* equipped with a hard disk drive but has a minimum of 288 MB of memory, limited job storage options are available. When job storage is enabled, the product can store print jobs so that you can gain access to those print jobs later at the product control panel.

Fonts

The **Fonts** group box contains a **Font Card(s)** check box and a corresponding **Configure** button. Selecting the **Font Card(s)** check box tells the driver that a Font card is installed, and that stored data about the fonts on the card is available. When the check box is selected, the **Configure** button is enabled. Click the **Configure** button to open the **Configure Font Card(s)** dialog box. If the **Font Card(s)** check box was not selected when you opened the **More Configuration Options** dialog box, selecting that check box automatically opens the **Configure Font Cards** dialog box.

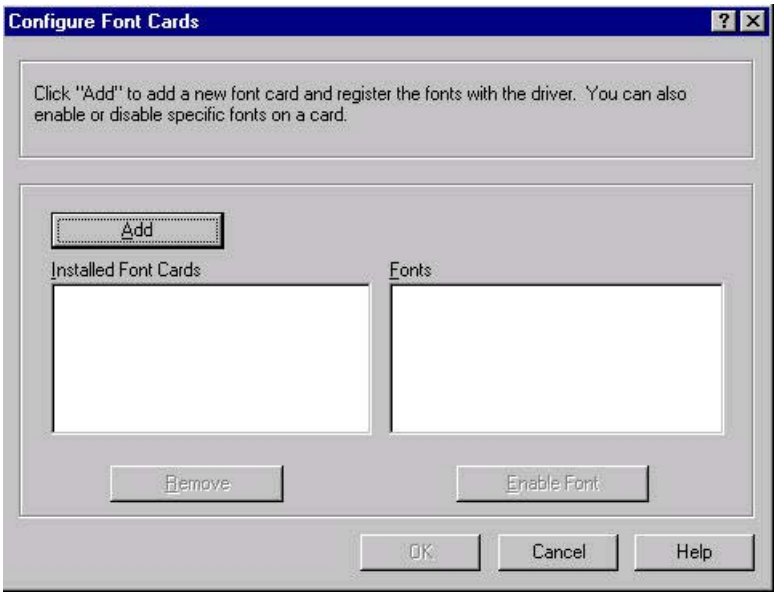


Figure 3-26. **Configure Font Cards dialog box**

Use the **Configure Font Cards** dialog box to perform the following tasks:

- Add up to two font cards by clicking the **Add** button.
- Specify a unique font-card name.
- Select specific font card data files that contain lists of fonts on specified cards.
- Select one or more installed cards in the **Installed Font Cards** list. The list to the right (**Fonts**) shows all of the fonts that are available on the selected card(s).
- Enable or disable one or more of the selected font(s).

1 Make sure that the font card is installed correctly.

2 Click **Add**. The **Add Font Card** dialog box appears.

3 Click **Browse**. The **Font Card Files** dialog box appears.

4 Find and select the appropriate Printer Cartridge Metrics (PCM) file that came with the font card.

5 Click **OK**.

6 If you want, you can specify a Font Card Name in the **Add Font Card** dialog box.

7 Click **OK**. The selected .PCM file appears in the **Installed Font Cards** list. Select the .PCM file to see a list of available fonts in the **Fonts** list.

8 Click **OK** to close the **Add Font Card** dialog box. The fonts on the card should now be available on the system.

Note

When using font cards with the PCL 6c drivers: To install screen fonts that match the font card, use the .HPB file that is specifically designed to work with that card. If no screen fonts exist for the card, use the .PCM file that is specifically designed to work with that card.

Allow Scaling from Large Paper

The **Allow Scaling from Large Paper** selection can be helpful, for example, when printing a document with a large media size of 11 x 17 or A3. You can use the **Print Document On:** setting on the **Effects** tab to print the document on a media size that is supported by the printer.

Ignore Application Collation

This setting overrides collation options that are selected in a software program's print options. **Ignore Application Collation** allows the print driver to collate in the most appropriate way for the print job. The performance of this feature depends on the software program that you are using.

Printer memory

The **Total Memory** group box shows the total amount of memory that is physically installed in the product. The default values for total product memory are specified on the **Configuration** tab. Total product memory is updated through a successful bidirectional query, or can be set manually.

The Driver Work Space **(DWS)** value shows the amount of memory that is available for keeping track of fonts that are downloaded from the driver. The driver deletes downloaded fonts if it has exceeded the available memory value. The **(DWS)** value is a dynamic value that varies depending on the specific configuration of the product. An accurate **(DWS)** value optimizes driver performance.

The HP Traditional PCL 6 and HP Traditional PCL 5c drivers automatically configure the **(DWS)** value in Windows 98, Windows Me, and Windows NT 4.0 environments that support bidirectional communication. Use the **(DWS)** option to specify the amount of work-space memory that is available to the product. To manually set the **(DWS)** value, print a Configuration page and find the DWS value in the Memory section of the page. Then, click the **More...** button on the **Configuration** tab, and type the DWS value in the **(DWS)** field of the **More Configuration Options** dialog box.

Include types in application source list

Note

The **Include types in application source list** check box is available only when using a computer that is running Windows NT 4.0.

When the **Include types in application source list** check box is selected, all media types (such as heavy media and transparencies) are available from the **Source is:** list on the **Paper** tab. When you are in a software program, you can open the **Paper** tab by clicking **Print** from the **File** menu, and then clicking **Properties**.

Automatic configuration

If you have modified the configuration of the HP Color LaserJet 4650 printer since installation, click the **Update Now** button to automatically reflect the new configuration in the driver. For more information about the print driver's automatic configuration feature, see the Driver Configuration section of this guide.

If the **Update Now** button is not available, select the appropriate configuration options on the **Configure** tab.

Printer image

The bitmap image in the lower-right portion of the **Configure** tab represents the current physical configuration of the product according to the driver configuration data. It should have the same appearance as the image in the same location on the **Paper** tab.

Note

The printer image shown on the **Configure** tab might differ from your HP Color LaserJet 4650 printer, depending on the installed accessory devices.

HP Traditional Postscript 3 Emulation Driver features

When you install the printing-system software in Windows 98 or Windows Me, the HP Traditional PCL 6 Driver is installed by default. The HP Traditional PCL 5c Driver and the PS Emulation Driver can be installed by performing a Custom Installation.

Depending on the operating system that you are using when you install the print drivers, different methods are available to gain access to the print drivers and different print-driver interfaces.

This section describes the options that are available on each tab of the PS Emulation Driver **Document Default** interface and on one of the tabs of the PS Emulation Driver**Properties** interface. It also shows the tabs that are available on the PS Emulation Driver interface for Windows 98 and Windows Me.

Note

The information and illustrations in this section reflect the PS Emulation Driver when the computer is running Windows NT 4.0. The PS Emulation Driver looks significantly different for computers that are running Windows 98 and Windows Me.

Access to Document Default drivers in Windows NT 4.0

To gain access to the Document Default print-driver settings from within most software programs, click **File**, click **Print**, and then click **Properties**. These driver settings apply only while the software program is open.

You can also control the Document Default print drivers directly from the Printers folder. In Windows NT 4.0, click **Start**, select **Settings**, click **Printers**, right-click the product name, and then click **Document Defaults...** to gain access to the same set of driver tabs that the software program controls. These driver settings change the default settings used across all software programs.

The following Document Default print driver tabs are available in Windows NT 4.0:

- **Page Setup** tab
- **Advanced** tab
- **Job Storage** tab

Note

If your HP Color LaserJet 4650 printer is equipped with a hard disk drive, all **Job Storage** options are available (**Proof and Hold**, **Private Job**, **Quick Copy**, and **Stored Job**). If your HP Color LaserJet 4650 printer is *not* equipped with a hard disk drive, but has a minimum of 288 MB of memory, the **Proof and Hold** and **Private Job** options are available.

Access to Properties print-driver settings in Windows NT 4.0

In Windows NT 4.0, click **Start**, select **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties** to gain access to all Properties print-driver tabs. The following Properties print-driver tabs are available in Windows NT 4.0:

- **General**
- **Ports**
- **Scheduling**
- **Sharing**
- **Security**
- **Device Setting**

Note

Only the **Device Setting** tab is described in this section.

Access to drivers in Windows 98 and Windows Me

In Windows 98 and Windows Me, click **Start**, click **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties** to gain access to all print-driver tabs.

PS 3 emulation support for the HP Color LaserJet 4650 printer

A set of 92 postscript soft fonts is included with the printing-system software. If you want to permanently install the fonts in the product, postscript fonts are also available from HP in an optional font DIMM. The PS emulation maintains full compatibility with Adobe PostScript when PostScript fonts are purchased from Adobe.

See the Font support section of this guide for a list of the additional fonts.

Help system

Note

Bubble Help, a feature of HP Traditional PCL Drivers, is not available in the PS Emulation Driver.

What's this Help

In Windows 98, Windows Me, and Windows NT 4.0, What's this? Help is supported. You can gain access to What's this? Help messages in any of the following ways:

- Right-click a control and click **What's this?**, and a pop-up Help window appears.
- Click the **?** button at the upper-right corner of the frame, next to the X, to change the cursor to an arrow with a question mark. Use this special cursor to select a control, and the pop-up Help window for that feature appears.
- Press the **F1** key, and the Help window for the currently selected control appears.

Context-sensitive Help

Press the **Help** button on a driver tab or in a dialog box, and a context-sensitive Help message appears.

Page Setup tab features

The **Page Setup** tab controls media and finishing options for the HP Traditional PScript Driver. The following illustration shows the **Page Setup** tab.

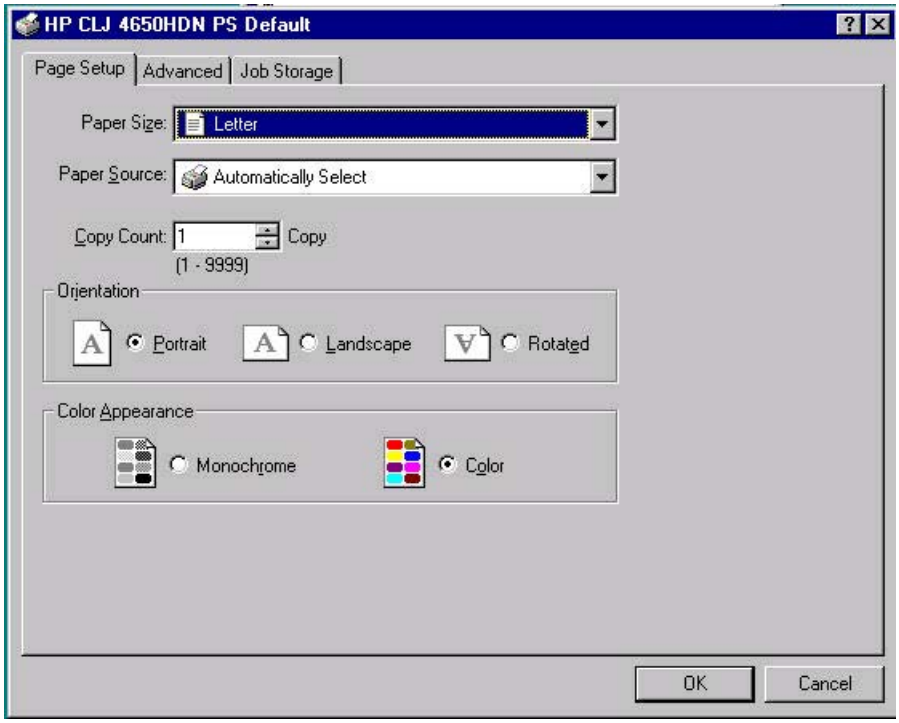


Figure 3-27. **Page Setup tab**

- **Paper Size** drop-down menu. Click this to specify the media size (form). The list of available forms matches those that the product supports.
- **Paper Source** drop-down menu. Use these settings to select a tray. The default setting is **Automatically Select**.
- **Copy Count** spin box. Use this box to specify the number of copies.
- **Orientation** group box. The settings in this group box specify how the document is positioned on the page.
- **Color Appearance** group box. The settings in this group box specify **Monochrome** or **Color** output.

Advanced tab features

The **Advanced** tab controls the settings for output, graphics, and printer features. The following illustration shows the **Advanced** tab.

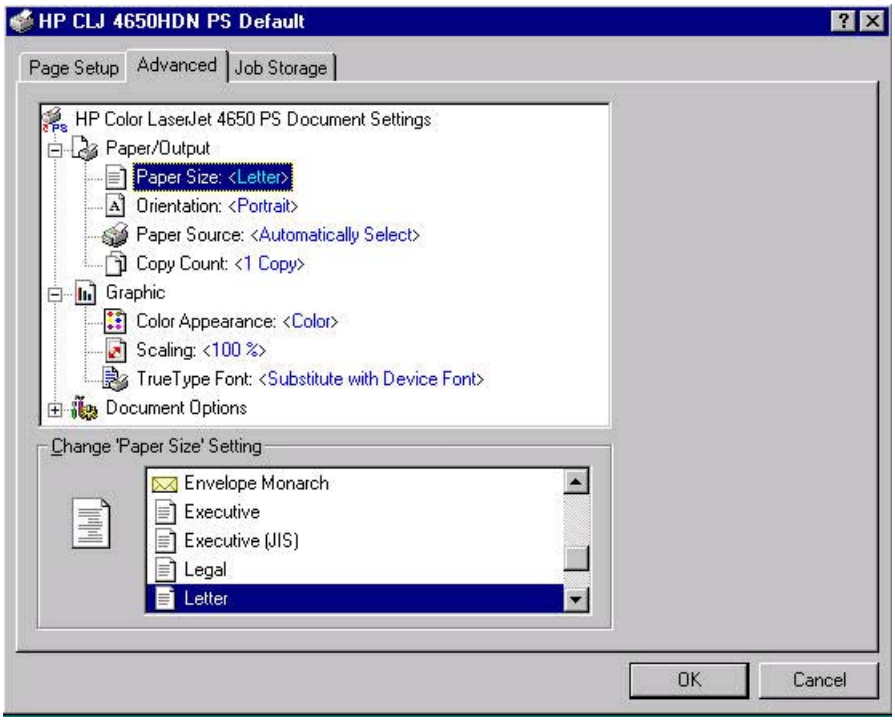


Figure 3-28. **Advanced tab**

The **Advanced** tab contains the following controls:

- **Paper/Output** drop-down menu (advanced control over the options that are available on the **Page Setup** tab)
- **Graphic** drop-down menu (including resolution, scaling, and TrueType font controls)
- **Document Options** drop-down menu (including product features and postscript options)

Paper/Output

The **Paper/Output** settings are as follows:

- **Paper Size**
- **Orientation**
- **Paper Source**
- **Copy Count**

These settings are also available on the **Page Setup** tab. For more information, see Page Setup tab features .

Graphic

The **Graphic** settings are as follows:

- **Color Appearance**. The settings in this group specify **Monochrome** or **Color** output.
- **Scaling**. Use this setting to reduce or enlarge documents by a specified percentage. When you enlarge a document, only the portion of the document that fits on the page will print. The default setting is **100%**.
- **TrueType Font**. The default setting is **Substitute with Device Font**. The other available setting is **Download as Softfont**. Use this setting when when your document has overlapping text and graphics.

Document Options

The **Document Options** settings are as follows:

- **Page Layout Option**
- **PostScript Options**
- **Printer features**

Page Layout Option

The **Page Layout Option** specifies whether the N-up printing feature is enabled. The settings are as follows:

- **Normal (One-up)**. This is the default setting.
- **Two-up**. The print job prints two pages per sheet.
- **Four-up**. The print job prints four pages per sheet.
- **Six-up**. The print job prints six pages per sheet.
- **Nine-up**. The print job prints nine pages per sheet.
- **Sixteen-up**. The print job prints 16 pages per sheet.

PostScript Options

The settings for **PostScript Options** are as follows:

- **PostScript Output Options** offers the following settings:
  - **Optimize for Speed**. This is the default setting.
  - **Optimize for Portability**. Use this setting to create a file that conforms to the Adobe Document Structuring Conventions (ADSC). Each page of the document will be a self-contained object. This is useful, for instance, if you want to create a PostScript file and print it on a different product.
  - **Encapsulated PostScript (EPS)**. Use this setting to include the file as an image in another document that is to be printed from a different program.
  - **Archive Format**. Use this setting to create a PostScript file that you can use later.
- **TrueType Font Download Option** offers the following settings:
  - **Automatic (default)**
  - **Outline**
  - **Bitmap**
  - **Native TrueType**
- The **PostScript Language Level** specifies which PostScript language level to use, from 1 to the highest level that your product supports. Some products support multiple levels. It is usually best to select the highest level that is available, because a higher language-level provides more features. In some instances, however, you would still use level 1. For example, if you are printing a file to disk and that file will be printed by someone who has a level-1 printer, you would need to select level 1. The **PostScript Language Level** spin box offers settings **1** through **3**.
- **Send PostScript Error Handler** specifies whether a PostScript error handler message is sent. If you want the product to print an error page when an error occurs in the print job, click **Yes**.
- **Mirrored Output**specifies mirrored print output. Click **Yes** to print a mirror image of your document by reversing the horizontal coordinates.

Printer Features

- **Print Color as Gray**
  - On
  - Off (default)
- **Fit to Page**
  - Prompt User (default)
  - Nearest Size Scale
  - Nearest Size Crop
  - Letter
  - A4
- **Output Bin**
  - Automatically Select (default)
  - 150-Sheet Top Bin (Face down)
  - 75-Sheet Rear Bin (Face up)

- **CMYK Inkset Emulation**
  - Default (default)
  - SWOP
  - Euroscale
  - DIC (dianippon)
  - Device
- **Color Options**
  - Automatic (default)
  - Manual
- **Text Neutral Grays**
  - Black Only (default)
  - 4-Color
- **Text Halftone**
  - Detail (default)
  - Smooth
- **Text RGB Color**
  - Default (sRGB) (default)
  - Vivid
  - Device
- **Graphic Neutral Grays**
  - Black Only (default)
  - 4-Color
- **Graphics Halftone**
  - Detail (default)
  - Smooth
- **Graphics RGB Color**
  - Default (sRGB) (default)
  - Vivid
  - Device
- **Photographs Neutral Grays**
  - Black Only
  - 4-Color (default)
- **Photographs Halftone**
  - Detail (default)
  - Smooth
- **Photo RGB Color**
  - Default (sRGB) (default)
  - Vivid
  - Device

- **Edge Control**
  - Maximum
  - Normal (default)
  - Light
  - Off
- **Manually Print on 2nd Side**
  - On
  - Off (default)
- **Print Watermark**
  - No (default)
  - All Pages
  - First Page Only
- **Watermark**. The following settings are available:
  - Draft (this is the default setting)
  - Company Confidential
  - Company Proprietary
  - Company Private
  - Confidential
  - Copy
  - Copyright
  - File Copy
  - Final
  - For Internal Use Only
  - Preliminary
  - Proof
  - Review Copy
  - Sample
  - Top Secret
  - Urgent
  - Custom
- **Watermark Font**
  - Courier Bold
  - Times Bold
  - Helvetica Bold (default)
- **Watermark Size**. Settings for the watermark size range from 24 points to 90 points. 48 points is the default.
- **Watermark Angle**. Settings for the watermark angle range from 90 degrees to -90 degrees in 15-degree intervals. A 45-degree angle is the default.

- **Watermark Style**
  - Narrow Outline
  - Medium Outline (default)
  - Wide Outline
  - Wide Halo Outline
  - Filled
- **Watermark Color**
  - Gray (default)
  - Red
  - Orange
  - Yellow
  - Green
  - Blue
  - Violet
- **Watermark Intensity**
  - Darkest
  - Darker
  - Dark
  - Medium Dark
  - Medium (default)
  - Medium Light
  - Light
  - Lighter
  - Lightest

Job Storage tab features

The HP Color LaserJet 4650 printer lets you store print jobs in the product's memory for printing at a later time. These job-storage features are described in the following sections.

The Job Storage tab appears among the driver tabs *only* if Job Storage is enabled. To support job-storage features for complex jobs, or if you often print complex graphics, print postscript (.PS) documents, or use many downloaded fonts, HP recommends that you install additional memory, install a hard disk, or both. Added memory also gives you more flexibility in supporting job storage features. A minimum total memory of 288 MB is required to use Job Storage features.

Bidirectional communication is not supported in Windows 98, Windows Me, or Windows NT 4.0, the operating environments that support the HP PS Emulation Driver. The driver must therefore be updated manually.

1. Click **Start**, select **Settings**, and then click **Printers**.
2. Right-click the product name, click **Properties**, and then click the **Device Settings**tab.
3. If additional memory has been installed, select Printer Memory: under Installable Options, and then select either 288-415 MB or 416-544 MB, depending on the amount of additional memory installed.

4 If a hard disk has been installed, select **Printer Hard Disk:** under **Installable Options**, and then select **Installed** in the **Change 'Printer Hard Disk' Setting** dialog box that appears.

5

Note

You can disable Job Storage while leaving the product hard-disk enabled. To disable Job Storage, click **Start**, select **Settings**, and then click **Printers**. Right-click the product name, click **Properties**, click the **Device Settings** tab, select **Job Storage:**, and then select **Disabled** in the **Change 'Job Storage' Setting** dialog box that appears. When Job Storage is disabled, the **Job Storage** driver tab is not visible.

Job Storage tab

The following illustration shows the **Job Storage** tab.

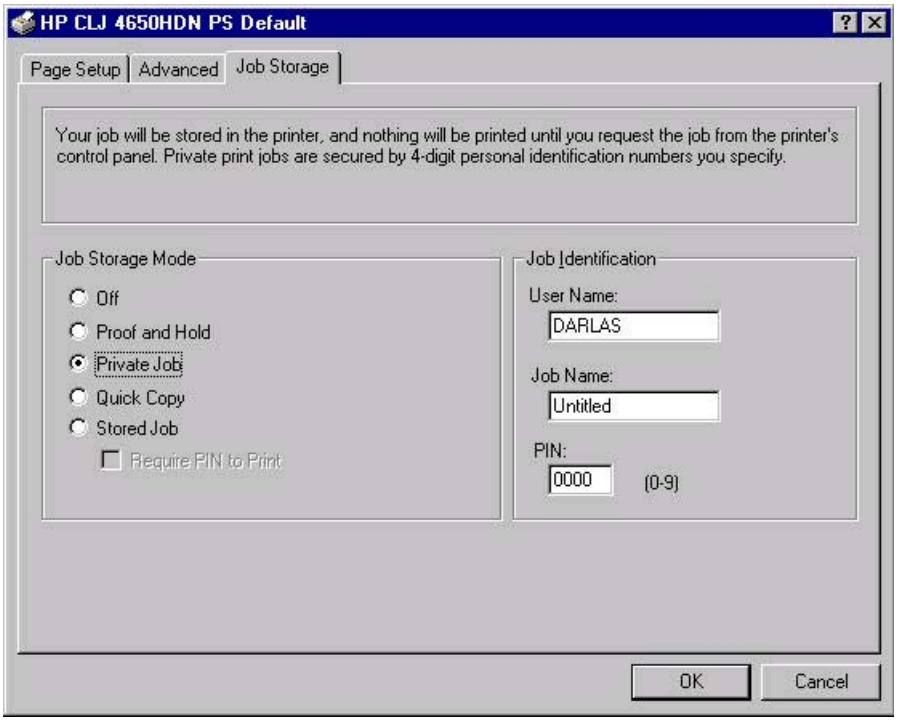


Figure 3-29. **Job Storage tab**

The **Job Storage** tab contains the following controls:

- Status group box (unlabeled)
- **Job Storage Mode** group box
- **Job Identification** group box

Status group box

The unlabeled group box on the **Job Storage** tab contains a status message about the destination of a print job. The status information changes depending on the selections that are made on the **Job Storage** tab.

Job Storage Mode

Use the **Job Storage Mode** options on the HP Color LaserJet 4650 printer to store documents at the product and then control their printing at the product control panel. This feature is intended to provide greater flexibility, convenience, security, and cost savings.

The HP Color LaserJet 4650 printer offers the following **Job Storage Mode** options:

- **Off**
- **Proof and Hold**
- **Private Job**
- **Quick Copy**
- **Stored Job**
  - **Require PIN to Print** (available when **Stored Job** is selected)

These options and the settings that control them are described below.

Off

When selected, this option turns the **Job Storage** feature off (it is disabled), which means that the print job will not be stored in the product.

Proof and Hold

To use the **Proof and Hold** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When selected, this option stores the print job in memory and prints only the first copy of the job, allowing you to check the first copy. If the document prints correctly, you can print the remaining copies of the print job at the control panel. You can set the number of proof-and-hold print jobs that can be stored in the product at the control panel.

After it is released for printing, the proof-and-hold job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second proof-and-hold job to the product with the same user name and job name as an existing proof-and-hold job (and you have not released the original job for printing), the job will overwrite the existing job. Proof-and-hold jobs are deleted if you turn off the product.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the product control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, the new document overwrites the oldest held document. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document.

Private Job

To use the **Private Job** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Private Job**, the print job is sent to the product, but is not printed until you request the job at the product control panel. Selecting **Private Job** activates the **PIN** group box. The print job can be printed only after you type the correct PIN at the control panel. After the job is printed, the job is deleted from the product. This feature is useful when you are printing sensitive or confidential documents that you do not want to leave in an output bin after printing.

After it is released for printing, the private job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second private job that has the same user name and job name as an existing private job (and you have not released the original job for printing), the job will overwrite the existing job, regardless of the PIN. Private jobs are deleted if you turn off the product.

Using a PIN for Private Job

The **Private Job** option can be secured by a four-digit personal identification number (PIN). You must type in this number at the product control panel before the product can print the job.

The group box labeled **PIN** is usually inactive. It becomes active when you select the **Private Job** option.

The Private Job/PIN coupling has a PIN restriction of four ASCII numeric characters (0 though 9). If you type non-numeric characters, they are removed immediately. If you type more than four characters, the characters past the fourth are truncated. The field temporarily accepts fewer than four digits in the string, but when the edit field loses focus, the zeroes pad the left end until the PIN contains exactly four digits. The default initialized value for the PIN is 0000 for **Private Job**.

Quick Copy

To use the **Quick Copy** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Quick Copy**, the entire print job prints and a copy of the print job is stored on the product, after which you can print additional copies of the print job at the product control panel. The number of quick-copy print jobs that can be stored in the product is set by using the product control panel.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the product control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, the new document overwrites the oldest held document. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document. **Quick Copy** jobs are deleted if you turn off the product.

Stored Job

To use the **Stored Job** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

Use the **Stored Job** option to send a print job directly to the product hard disk without printing it. The print job is stored in the product as if it is an electronic file cabinet. After the print job is stored on the product hard disk, you can print the job at the product control panel.

The job remains stored in the product until it is deleted or overwritten by a document that has the same user and job names. Stored jobs remain on the product hard disk when the product is turned off. Use this feature for forms and other common or shared documents.

A stored job can be managed in two ways: as either a private or a public job. Use a private stored job to send a print job directly to the product, which can then be printed only after you type in a PIN at the product control panel. (You can set the PIN in the **PIN** group box.) After the job is printed, the job remains in the product and can be printed again at the product control panel. The private mode is initiated by selecting the **Require PIN to Print** check box. In this mode, a PIN that is typed at the product control panel is required in order to release the job.

The box labeled **PIN** is usually inactive. The **Require PIN to Print** option becomes available when you select **Stored Job**. If you select the **Require PIN to Print** box, you must type a PIN to make the stored job private.

Note

A private stored job is not the same as a private job (see above). *Private* jobs are deleted from the product after they are printed. *Private stored* jobs are retained in the product after printing, but require that a PIN be typed each time they are printed.

Job Identification

- **User Name** text box
- **Job Name** text box
- **PIN** text box

User Name

Use the **User Name** text box to help identify the job at the product control panel. The Windows user name is automatically displayed in the **User Name** text box. To enter a custom user name, type the custom user name in the text box. The **User Name** text box can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

Job Name

Use the **Job Name** text box to specify a name to identify the job at the product control panel. This text box uses **Untitled** as the default job name associated with the stored print job. The file name of the print job is used if it is available to the print driver. Otherwise, the software program name or a time stamp is used for the job name. To enter a custom name, type the custom job name in the text box. The **Job Name** text box can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

PIN

The box labeled **PIN** is usually inactive. The **Require PIN to Print** option is activated if you select either of the following options:

- Select **Private Job**. If selected, you must type in the PIN number at the product control panel in order to make the job print. For more information, see Using a PIN for Private Job .
- Select **Stored Job**, and then select the **Require PIN to Print** check box. If the **Require PIN to Print** check box is selected, you must type a PIN in order to make the stored job private. For more information, see Stored Job.

Using Job Storage features when printing

Note

The print driver that is installed on your computer must be configured to use the **Job Storage** features. **Job Storage** is enabled by default when the printer is equipped with a hard disk drive. To enable **Job Storage** (if it has been disabled), follow these steps:

1. Click **Start**, select **Settings**, and then click **Printers**.
2. Right-click the printer name, click **Properties**, click the **Device Settings** tab, and then click the **Job Storage** option.
3. Use the drop-down menu to select **Enabled**,
4.

To use Job Storage features when printing, follow these steps:

1. Click **File** and then click **Print** from the software program. The **Print** dialog box appears.

Note

Clicking the print icon in the software program toolbar prints the job without Job Storage features.

2. Click **Properties**. The **Properties** dialog box appears.
3. Click the **Job Storage** tab.
4. Select the Job Storage options described above by clicking the appropriate option button and complete any required fields.
5. Click **OK**.

Releasing a Job Storage print job

After you send a print job that uses the **Job Storage** feature, you can release the job to print from the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button. PRINT JOB is highlighted.
5. Press the select button.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the up and down buttons to select the number of copies to print.
8. Press the select button to print the job.

Deleting a Job Storage print job

Sometimes it is necessary to delete a print job from the product hard disk. You can do this from the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button.
5. Press the up and down buttons to select Delete.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the select button to delete the job.

The stored print job is deleted and the product returns to the **READY** state.

Device Settings tab

Note

The **Device Settings** tab is in the **Properties** for the print driver in Windows NT 4.0. In Windows 98 and Windows Me, a tab with similar options and settings is called the **Device Options** tab.
To gain access to the print driver **Properties**, click **Start** on the Window task bar, select **Settings**, and then click **Printers**. Right-click the product name, and then click **Properties**.

The **Device Settings** tab communicates information about the hardware configuration to the print driver. The **Device Settings** tab appears when you open the driver from the **Printers** folder by selecting and right-clicking the printer, and then clicking **Properties** for the driver. When the driver is opened from within a software program, the **Configure** tab is not visible.

When opened from the **Printers** folder, the **Device Settings** tab appears, as shown in the following illustration.

Note

The illustration below shows the **Device Settings** tab in Windows NT 4.0. The appearance of the equivalent tab in Windows 98 follows this illustration.

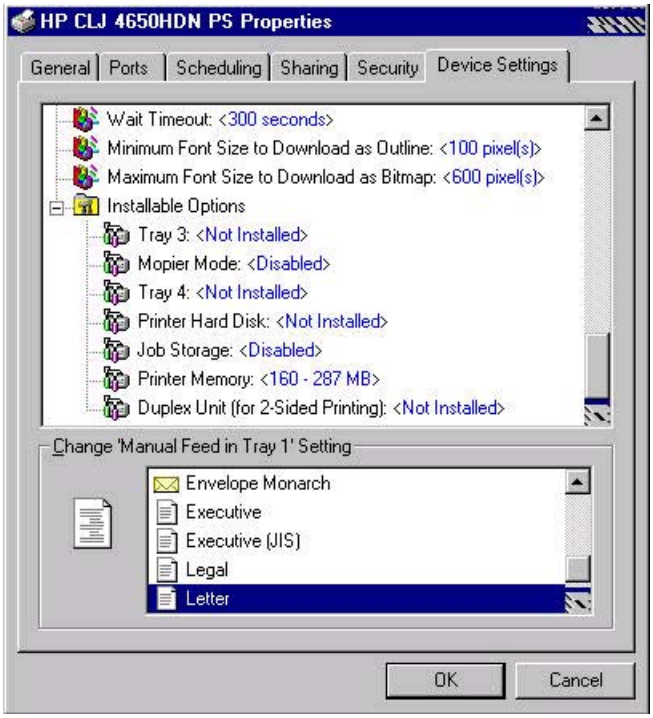


Figure 3-30. **Device Settings tab in Windows NT 4.0**

The following illustration shows the **Device Options** tab in Windows 98.

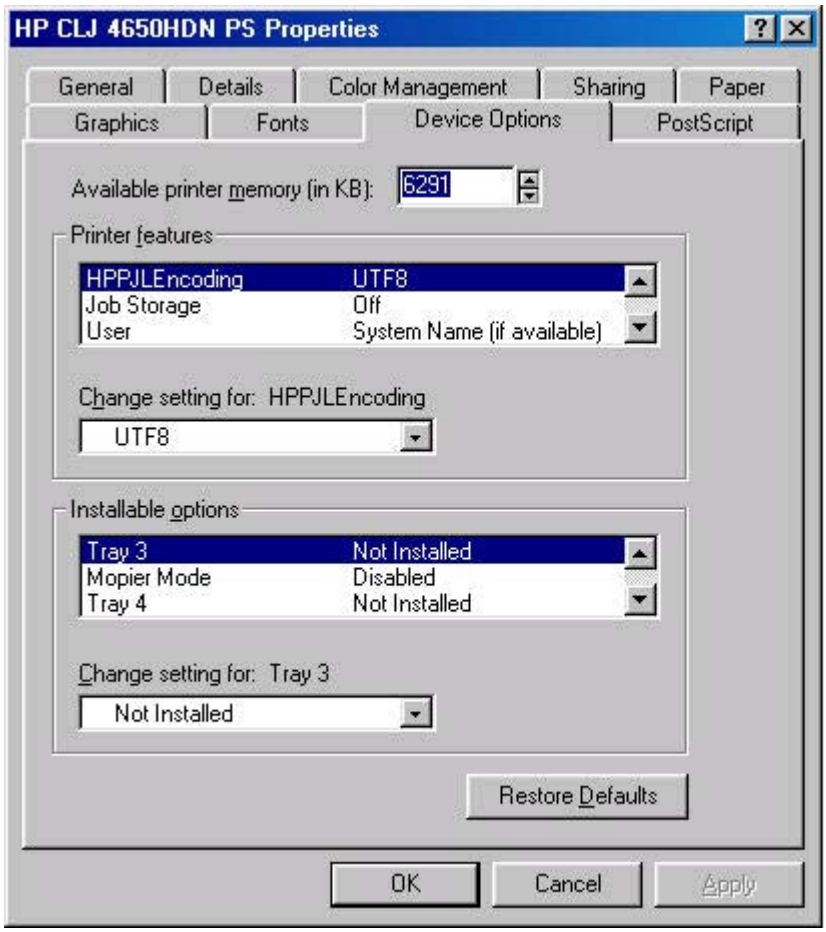


Figure 3-31. **Device Options tab in Windows 98**

Note

Changes made to the **Device Settings** tab are not reflected in the **Document Defaults** settings until the modified device settings have been applied. For example, the duplexing unit will not appear until you modify the **Configure** tab, apply the settings, and then re-open **Document Defaults**.

The **Device Settings** tab contains the following options:

- **Form to Tray Assignment**
- **Font Substitution Table**
- **PostScript Configure**
- **Installable Options**

Form to Tray Assignment

Many products support more than one source of media, such as upper and lower trays. You can assign a form (which defines the media size and margins) to each of your product media sources. When a form is matched to a source, you can select the form when you print from your software programs. The product prints from the tray to which that form is assigned.

Network administrators can use the **Form to Tray Assignment** setting to specify, in the driver, the media size that is loaded into each available input tray. The use of forms constrains the choices that are available in the media-size list on the **Advanced** tab in the **Document Defaults** driver tabs. This constraint prevents (or reduces the likelihood of) tying up the printer with media-mount messages that occur when users request sizes or types that are not available.

The trays listed in the **Form to Tray Assignment** setting include standard trays and optional accessory trays. Generally, items that are installed separately have a separate **Installable Options** setting. For example, for the HP Color LaserJet 4650 printer, trays 3 and 4 are listed in both the **Form to Tray Assignment** setting and the **Installable Options** setting.

The input trays listed here are also listed as media sources on the **Page Setup** tab.

Font Substitution Table

Clicking this option opens the font substitution table and makes available the options for changing the TrueType-to-PostScript font mapping.

PostScript Device Settings

The following controls are available and appear in the PS Emulation Driver:

Available PostScript Memory

This control specifies the amount of available postscript memory and provides a spin box for changing this value. The available postscript memory is a subset of the product total physical memory. It is usually best to set the postscript memory to match what is shown on the Configuration page. To print a Configuration page from the control panel, press the **Select** button (the one with the check mark) to open the menus. Next, press the up and down buttons to scroll to **INFORMATION**, and then press the select button. Next, press the up and down buttons to scroll to **PRINT CONFIGURATION**, and then press the select button.

Output Protocol

This control specifies the protocol that the product uses for print jobs. The following options are available:

- **ASCII** (default)
- **TBCP**
- **Binary**

When you click **ASCII**, data is sent in ASCII format (7-bit), which might take longer to print but can be sent through any I/O channel, such as a serial, parallel, or network port.

When you click **TBCP** (Tagged Binary Communications Protocol), all data except special control characters is sent in binary (8-bit) format. The binary formats can be sent over parallel or serial communications ports and are faster than sending data in ASCII format.

When you click **Binary**, all data except special control characters is sent in binary (8-bit) format. The binary formats can be sent over parallel or serial communications ports and are faster than sending data in ASCII format.

Send Ctrl-D Before Each Job

This control specifies whether the product will be reset at the beginning of every postscript document. The default setting is **No**. Ctrl-D resets the product to its default setting to ensure that previous print jobs do not affect the current print job. Ctrl-D might cause a print job to fail if the product is connected through a network. If your document fails to print when sent to a product connected through parallel or serial ports, change **No** to **Yes**.

Send Ctrl-D After Each Job

This control specifies whether the product will be reset at the end of every postscript document. The default setting is **Yes**. Ctrl-D resets the product to its default setting to ensure that future print jobs are not affected by the current print job. Ctrl-D might cause a print job to fail if the product is connected through a network. If your document fails to print when sent to a network printer, change **Yes** to **No**.

Job Timeout

This control specifies how long the document can take to get from the computer to the product before the product stops trying to print the document. If you specify **0 seconds**, the product continues trying to print indefinitely. The default setting is **0 seconds**. You can use the spin box to change this value to a maximum of **32,767 seconds**.

Wait Timeout

This control specifies how long the product waits to get more postscript information from the computer. After the specified time passes, the product stops trying to print the document and prints an error message. If you are trying to print a very complicated document, you might want to increase this value. If you specify **0 seconds**, the product waits indefinitely. The default setting is **300 seconds**. You can use the spin box to change this value to a maximum of **32,767 seconds**.

Minimum Font Size to Download as Outline

This control specifies the minimum font size (in pixels) for which the postscript driver downloads TrueType fonts as outline (Type 1) fonts. A font smaller than the minimum setting is downloaded as a bitmap (Type 3) font. Use this option to fine-tune the **Automatic** setting for the **TrueType Font Download** option on the **Advanced** tab in **Document Defaults**. The default setting is **100** pixels. You can use the spin box to change this value to a maximum of **32,767** pixels.

Maximum Font Size to Download as Outline

This control specifies the maximum font size (in pixels) for which the postscript driver will download TrueType fonts as bitmap (Type 3) fonts. A font larger than the maximum setting will be downloaded as an outline (Type 1) font. Use this option to fine-tune the **Automatic** setting or override the **Send TrueType as Bitmap** setting for the **TrueType Font Download** option on the **Advanced** tab in **Document Defaults**. The default setting is **600** pixels. You can use the spin box to change this value to a maximum of **32,767** pixels.

Installable Options

This section provides information to configure the printing options that you can install for the HP Color LaserJet 4650 printer. The following controls are available:

- **Tray 3**
- **Tray 4**
- **Duplex Unit** (for 2-sided Printing)

- **Printer Memory**
- **Printer Hard Disk**
- **Job Storage**
- **Mopier Mode**

Tray 3

This control specifies whether you have **Tray 3**, an additional 500-sheet media feeder, installed on your product. The default setting is **Not Installed**. In order to use **Tray 3**, you must change this setting to **Installed**.

Tray 4

This control specifies whether you have **Tray 4**, an additional 500-sheet media feeder, installed on your product. The default setting is **Not Installed**. In order to use **Tray 4**, you must change this setting to **Installed**.

Duplex Unit (for 2-sided Printing)

The HP Color LaserJet 4650dn, 4650dtn, and 4650hdtn models are equipped with automatic 2-sided printing (duplexing), which allows you to print on both sides of supported media. Automatic 2-sided printing is not supported for certain media types, including transparencies, labels, envelopes, heavy, extra heavy, cardstock, and glossy film.

Note

The HP Color LaserJet 4650 printer supports smart duplexing. The product uses the smart duplexing feature to detect information on both sides of the print job pages and only runs the pages through the duplexing unit if there is printable information on the second side of the page.

Printer Memory

This option matches the setting to the amount of memory that is installed in the product. The driver generates ranges of memory that can be selected, up to the maximum that the product can accept. The driver can use this information to manage how the print driver uses the product memory.

When a minimum total memory of 288 MB is installed, the **Stored Job** option and the **Mopier Mode** are enabled in the print driver. The **Stored Job** option allows you to store print jobs, and then print them later from the control panel. The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job.

Printer Hard Disk

When this option is enabled, the **Stored Job** option and the **Mopier Mode** are enabled in the print driver. The **Stored Job** option allows you to store print jobs, and then print them later from the control panel. The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job.

Only the HP Color LaserJet 4650hdn comes with a hard disk installed.

Job Storage

If your HP Color LaserJet 4650 is equipped with a hard disk drive, the **Job Storage** option should be enabled and all job storage options are available. If your HP Color LaserJet 4650 is *not* equipped with a hard disk drive but has a minimum of 288 MB of memory, limited job storage options are available. When job storage is enabled, the product can store print jobs so that you can gain access to those print jobs later at the control panel.

Mopier Mode

The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job. Multiple-original printing (mopying) increases performance and reduces network traffic by transmitting the job to the product once, and then storing it on the hard disk. The remainder of the copies are printed at the fastest speed. All documents that are printed in mopier mode can be created, controlled, managed, and finished from the computer, which eliminates the extra step of using a photocopier.

4 HP PCL 6, HP PCL 5c, and HP PS 3 emulation unidrivers for Windows

Introduction

This chapter describes the features of the HP Color LaserJet 4650 printer unidrivers. The unidrivers are the HP PCL 6 Unidriver, the HP PCL 5c Unidriver, and the HP Postscript 3 Emulation Unidriver (the PS Emulation Unidriver) for Windows 2000, Windows XP, and Windows Server 2003.

You can control print jobs from several places: the product control panel, the software program, and the driver user interface. Generally, for features that are common to two or more of these places (for instance, you can select the media input tray from any of them), settings that are established in the software program take precedence over print-driver settings. Print-driver settings override product control-panel settings.

HP PCL 6, HP PCL 5c, and PS emulation unidriver features

Note

For a comparison of features between the HP unidrivers and HP traditional print drivers in various operating systems, see the Driver-feature comparison in various operating systems section of this guide.

When you install the print-system software in Windows 2000, Windows XP, and Windows Server 2003, the HP PCL 6 Unidriver is installed by default. The HP PCL 5c Unidriver and the PS Emulation Unidriver can be installed by performing a Custom Installation.

The following sections describe the options that are available on each tab of the HP PCL 6, the HP PCL 5c, and the PS Emulation Unidriver interface.

The sections also describe differences between the HP PCL 6, the HP PCL 5c, and the PS Emulation unidrivers.

Access to drivers

To gain access to driver settings from within most software programs, click **File**, click **Print**, and then click **Properties**. The appearance and names of the driver tabs can vary, depending on the operating system. These settings apply only while the software program is open.

You can also control the drivers directly from the printers folder. These settings change the default settings used across all software programs. To gain access to the printers folder, click **Start**, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home). Right-click the product name, and then click **Printing Preferences** to gain access to the same set of driver tabs that the software program controls.

Note

If your HP Color LaserJet 4650 printer is equipped with a hard disk drive, all **Job Storage** options are available (**Proof and Hold**, **Private Job**, **Quick Copy**, and **Stored Job**). If your HP Color LaserJet 4650 printer is *not* equipped with a hard disk drive, but has a minimum of 288 MB of memory, the **Proof and Hold** and **Private Job** options are available.

If, after right-clicking the product name, you click **Properties**, you gain access to a different set of tabs that control the driver behavior and driver connections.

Help system

The HP PCL 6 Unidriver, the HP PCL 5c Unidriver, and the PS Emulation Unidriver include a full-featured Help system to provide assistance with printing and configuration options.

Note

Bubble Help, a feature of HP Traditional PCL 6 and HP Traditional PCL 5c Drivers, is not available in the HP PCL 6, PCL 5c, and PS Emulation unidrivers.

What's this? Help

Windows 2000, Windows XP, and Windows Server 2003 support "What's this?" Help. You can gain access to "What's this?" Help messages in any of the following ways:

- Click the **Help** button in the lower-right corner of the **Paper/Quality**, **Finishing**, **Effects**, or **Job Storage** tabs for a general Help message that describes the use of the driver tabs.
- Right-click a control and click **What's this?**, and a pop-up Help window appears.
- Click the **?** button in the upper-right corner of the frame, next to the **X**, to change the cursor to an arrow with a question mark. Use this special cursor to select a control, and the pop-up Help window for that feature appears.
- Press the **F1** key, and the Help window for the currently selected control appears.

Context-sensitive Help

Click the **Help** button on a driver tab or in a dialog box, and a context-sensitive Help message appears.

Incompatible Print Settings messages

Incompatible print settings (constraint) messages are unsolicited messages that appear in response to specific actions that you take. These messages alert you that the selections are illogical or impossible given the capabilities of the printer or the current settings of other controls.

Note

Constraint messages are limited for HP unidrivers. The HP unidrivers allow some settings that are illogical or impossible for the printer to perform. If you try to print with incompatible settings, the printed documents might have unexpected results because the print driver did not provide feedback that the settings were incompatible. If print jobs do not print as expected, check the printer's documentation for the product capabilities.

In Windows 2000, Windows XP, and Windows Server 2003 operating environments, some technically invalid print-driver configurations result in the appearance of warning messages. Duplexing, for instance, is not possible when the Transparency media type is selected. The following illustration shows an **Incompatible Print Settings** message that appears.

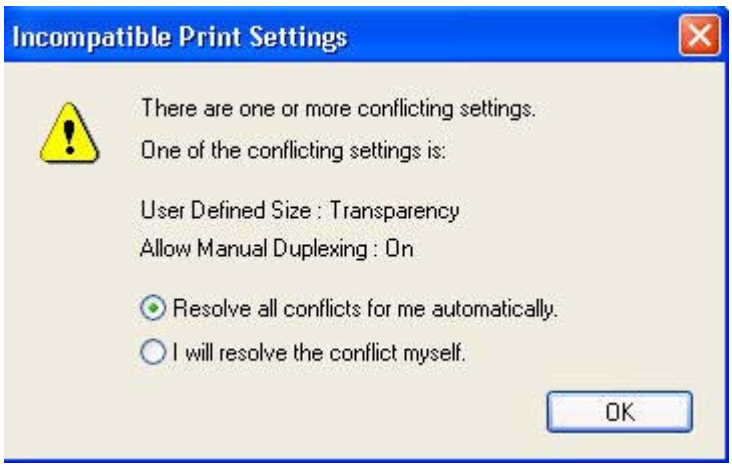


Figure 4-1. **An Incompatible Print Settings message**

Clicking the **Resolve all conflicts for me automatically** option button and then clicking **OK** accepts the change that was just made, and the driver then resets the conflicting control to a setting that is compatible with the new value. If you want to keep the conflicting setting, click **I will resolve the conflict myself** and then click **OK**.

Advanced tab features

You can use the **Advanced** tab to change the layout of printed pages. Use this tab to configure special controls that are not commonly used, as well as features such as media size and copies in the driver (although most current software programs support these features in the print dialog box or through the software program page settings). The following illustration shows the **Advanced** tab:

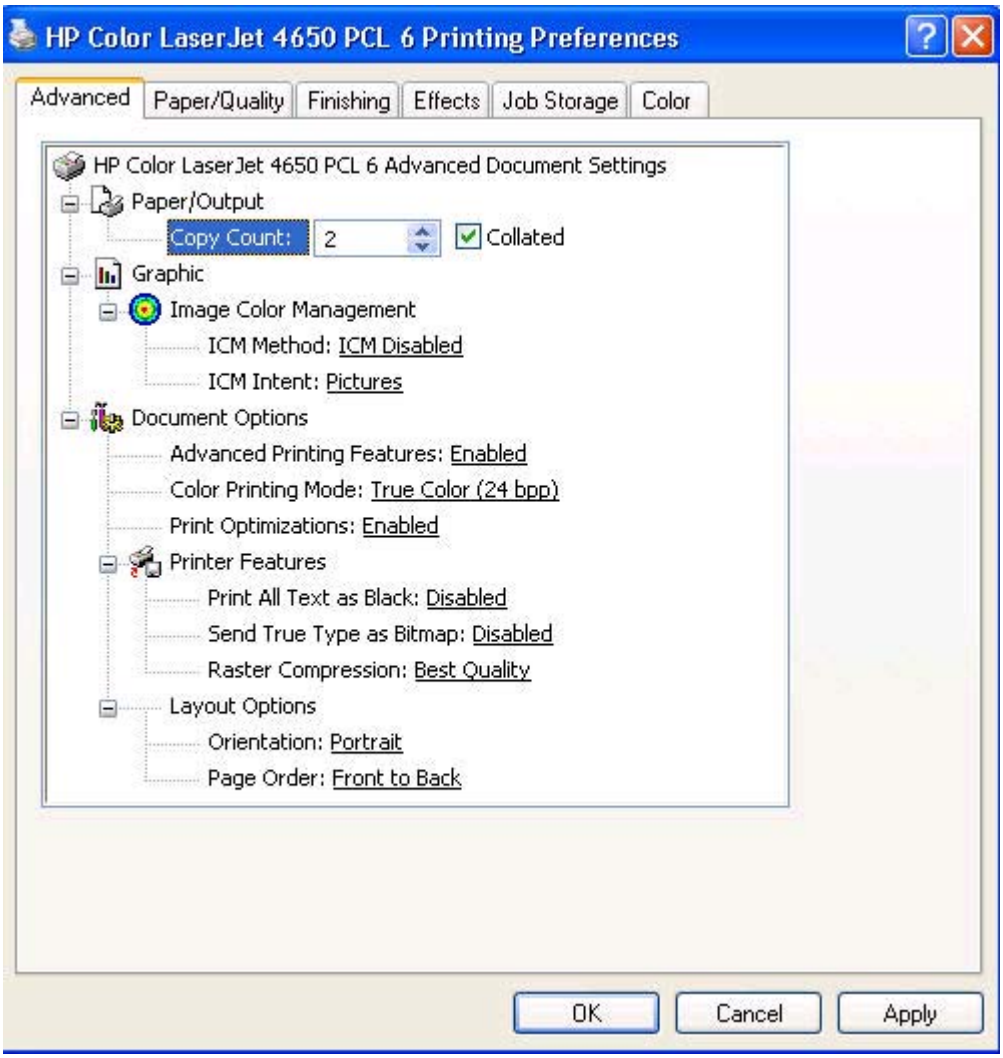


Figure 4-2. **The default appearance of the Advanced tab**

The **Advanced** tab contains the following controls:

- **Paper/Output** settings
- **Graphic** settings
- **Document Options** settings (containing Advanced Printing Features, Print Optimizations, Printer Features, and Layout Options)

Paper/Output

The **Paper/Output** settings contain the following controls:

- **Copy Count** setting
- **Collated** check box (appears when you select **Copy Count**)

Copy Count

This driver setting is useful for software programs that do not provide a copy count. If a copy count is available in the software program, set the copy count in the software program. **Copy Count** specifies the number of copies to print.

Because you can set the number of copies that you want from some software programs, conflicts between the software program you are using and the driver can arise. In most cases, the software program and the driver communicate, so that the number of copies set in one location (such as the program) will appear in the other (such as the driver). For some programs, this communication does not take place, and the copies values are treated independently. For these programs, setting 10 copies in the program and then setting 10 copies in the driver will result in 100 copies (10 x 10) being printed. It is recommended that you set the number of copies in the program, wherever possible.

Collated

The **Collated** check box appears next to the **Copy Count** setting. The check box is selected, but is not available. It becomes available and can be changed when the **Copy Count** setting is greater than 1.

When collated, pages print consecutively for each copy of the document. When not collated, copies of each page print together.

This setting is not synchronized with the collate setting in the software program print dialog box. Settings in the software program override settings in the print driver. For instance, when using Microsoft Word, the **Collate** check box in the **Print** dialog box is selected by default. However, in the print driver, the **Collated** check box in the **Advanced** tab is not selected by default. The software program setting takes precedence over the driver setting, and the printed output is collated by default. To obtain uncollated printed output, clear the **Collate** setting in both the driver and the software program. Similarly, if the **Collated** check box is selected in the driver, but the **Collate** setting is not enabled in the software program, the printed output is uncollated.

Graphic

The **Graphic** settings contain the following option:

- **Image Color Management** settings.

Image Color Management

This control lists the available Image Color Management (ICM) options used for printing color graphics. ICM, a set of calculations for color matching, makes it possible for programs to adjust colors before printing so that the color of images displayed on the screen more closely match the color of images when printed. The following options are available:

- **ICM Method**. The ICM Method setting specifies how to print your color graphics.
  - To enable Image Color Management, click on the option and then select **ICM Enabled**.
  - If you want the calculations for color matching to be performed on the host computer before it sends the document to the product, click **ICM Handled by Host System**.
  - If you want the calculations for color matching to be performed on your product, click **ICM Handled by Printer**. In this case, a set of rules for mapping the colors will be created and downloaded to the product. The product will use these rules to adjust colors in the document.
  - If you want the calculations for color matching to be performed on your product, click **ICM Handled by Printer** using printer calibration. In this case, the set of rules for mapping the colors has already been downloaded to the product (which must be postscript language level 2 or higher), so they will not be created or downloaded again.
- **ICM Intent**.The ICM Intent setting specifies how color images are created to produce the best looking image on the printed page.
  - If you are printing a chart or using fully saturated, bright colors, click **Graphics**.
  - For photographs or pictures where the colors blend together, click **Pictures** to maximize the contrast.
  - If your document uses a color that you need to match exactly, and you are sending the document to a product that has that specific color of ink, click **Proof**.
  - If you want to preview the color settings from another product, click **Match**.

Document Options

The **Document Options** settings contain the following controls:

- **Advanced Printing Features**
- **Color Printing Mode**
- **Print Optimizations**

Advanced Printing Features

When the **Advanced Printing Features** setting is **Enabled**, metafile spooling is turned on and **Finishing** tab options such as **Page Order**, **Booklet Layout**, and **Pages per Sheet** are available, depending on your product. For normal printing, leave the **Advanced Printing Features** setting at the default (**Enabled**). If compatibility problems occur, you can disable the feature. However, some advanced printing features might still be available in the print driver, even though they have been disabled. If you select an advanced printing feature in the print driver that has been disabled on the **Advanced** tab, the feature is automatically re-enabled.

Color Printing Mode

Color Printing Mode specifies whether to print in Black and White or color. Use **Monochrome** mode to sharpen details in graphics or to speed up the printing of your color document.

Print Optimizations

Note

Print Optimization settings are available only in the HP PCL 6 and HP PCL 5c unidrivers. They are not available in the PS Emulation Unidriver.

The default setting for **Print Optimizations** is **Enabled**. When this feature is enabled and your document contains overlapping text and graphics, text placed on top of a graphic might not print correctly. If the printed output is not correct, you can disable this feature. When disabled, print optimization features, such as substituting device fonts for TrueType fonts and scanning for horizontal and vertical rules, are turned off.

Printer Features

The following **Printer Features** are available:

- **Print All Text as Black**
- **Send True Type as Bitmap** (HP PCL 6 and HP PCL 5c unidrivers only)
- **Raster Compression**

Print All Text as Black

The **Print All Text as Black** feature is **Disabled** by default. When **Enabled** is selected, the driver prints all text as black regardless of the original document text color. Color text is printed as black, except for white text, which remains white. (White text is a reliable method of printing reverse typeface against a dark background.) This setting does not affect graphic images on the page, nor does it affect any text that is part of a graphic.

Send TrueType as Bitmap

Note

The **Send TrueType as Bitmap** option is available only in the HP PCL 6 and HP PCL 5c unidrivers. It is not available in the PS Emulation Unidriver.

Send True Type as Bitmap provides an alternative for those software programs that have trouble using TrueType fonts for special graphic purposes such as shading, rotation, or slanting. The setting is **Disabled** (off) by default. The TrueType fonts are first converted to bitmap soft fonts before downloading. The **Enabled** setting causes the driver to send TrueType fonts to the printer as outlines, which retains the standard format (outline) of the fonts.

Raster Compression

Note

The **Raster Compression** option is available only in the HP PCL 6 and HP PS Emulation unidrivers. It is not available in the HP PCL 5c Unidriver.

Use the **Raster Compression** feature to select the graphics compression method:

- **Automatic**. The software determines the best compression method to use.
- **Best Quality**. Forces the software to use a lossless compression method. (Lossless means that no data is lost during compression.)
- **Maximum Compression**. Where applicable, requires the software to always use a lossy compression method (some data is lost).

Graphics Mode

Note

The **Graphics Mode** option is available only in the HP PCL 5c Unidriver. It is not available in the HP PCL 6 and HP PS Emulation unidrivers.

Use the **Graphics Mode** feature to select one of the following settings:

- **Send Graphics as Vector**. Select this setting to send graphics to the product as a combination of HP Graphics Language, version 2 (HP-GL/2) and raster images. This setting might produce higher-quality output.
- **Send Graphics as Raster**. Select this setting to send all graphics to the product as images composed of individual dots. This setting might improve printing speed in some cases.

Layout Options

The following **Layout Options** are available:

- **Orientation**
- **Page Order**

Orientation

Orientation specifies how the document is positioned on the page. **Portrait** orients the print vertically so that the printed image is taller than it is wide. **Landscape** orients the print horizontally so that the printed image is wider than it is tall.

Page Order

Page Order specifies the order in which the pages of your document are printed. **Front to Back** prints the document so that page 1 prints first. **Back to Front** prints the document so that page 1 prints last. The **Back to Front** setting is useful if you are printing to a face-up output bin to achieve output in the correct order.

Note

The page-ordering operation works on whole sheets of media rather than on individual logical pages. Accordingly, if you set **Pages per Sheet** (on the **Finishing** tab) to be greater than one, the ordering of logical pages on a physical sheet of media does not change.

Paper/Quality tab features

Use the **Paper/Quality** tab to specify the size, type, and source of the media. You can also use this tab to indicate different media-selection choices for the first page, other pages, and back cover of the document. The following illustration shows the **Paper/Quality** tab.

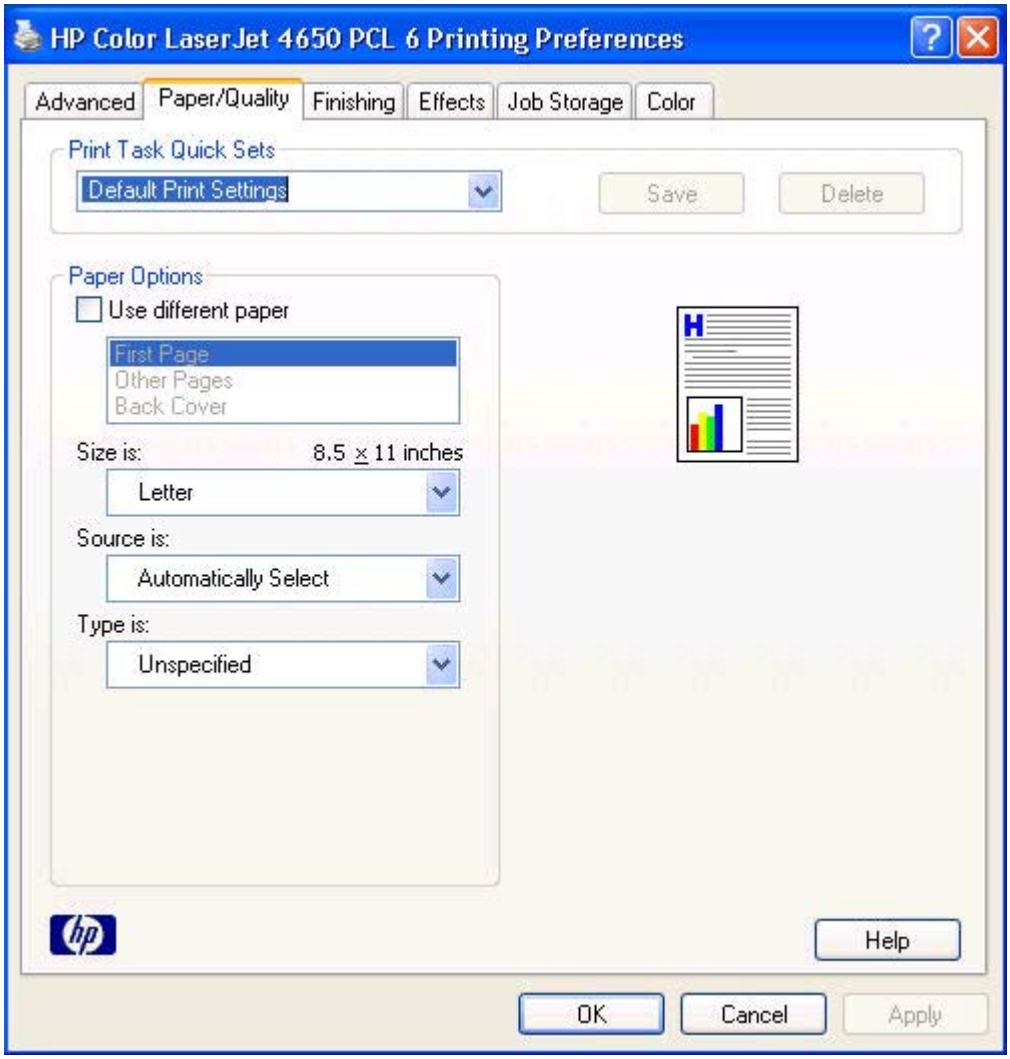


Figure 4-3. **Paper/Quality tab**

The **Paper/Quality** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Paper Options** group box
- Document preview image

Print Task Quick Sets

Use the **Print Task Quick Sets** setting to store the current combination of driver settings that are found on all of the other print driver tabs (except the **Advanced** tab, where the setting is not available). **Print Task Quick Sets** are either preset by network-administrator settings or user-defined printing specifications (such as media size, pages per sheet, and so on). The **Print Task Quick Sets** control does *not* appear on the driver **Properties** tabs.

Note

Administrators can predefine Print Task Quick Sets for their users. These administrator Print Task Quick Sets are defined on the server and are available to users, but usually cannot be modified by users. Users can also define Print Task Quick Sets for their own use. User-defined Print Task Quick Sets are described later in this section.

The following selections are available in the **Print Task Quick Sets** drop-down menu:

- **Default Print Settings**
- **HP CLJ 4550 Color Emulation**
- **User Guide Print Settings**

Default Print Settings

When you select **Default Print Settings**, nearly all of the settings are restored to the combination that existed after the driver was installed (the original settings). However, if the attribute combinations that are associated with watermark definitions, custom media sizes, or the other quick sets have been changed or deleted, the original settings for those items are not restored.

Type a new Quick Set name here appears in the **Print Task Quick Sets** menu automatically if no other driver settings have been changed since the driver was installed, or if all of the driver settings match the original settings. Otherwise, the setting in the **Print Task Quick Sets** menu is the same label that appeared when you last closed the printing **Properties** dialog box by clicking **OK**.

The following table shows the default settings for **Print Task Quick Sets**. See the HP Driver Preconfiguration section for information about preconfigurable driver settings.

Table 4-1. Print Task Quick Set default values for the HP Color LaserJet 4650

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Other language default setting (if different)	Preconfigurable[1]
Print on Both Sides	**Finishing** tab, **Document Options** group box	Off		Yes
Flip Pages Up	**Finishing** tab, **Document Options** group box	Unavailable		Yes
Booklet Layout	**Finishing** tab, **Document Options** group box	Unavailable		Yes
Pages per Sheet	**Finishing** tab, **Document Options** group box	1		Yes
Print Page Borders	**Finishing** tab, **Document Options** group box	Unavailable		Yes

Table 4-1. Print Task Quick Set default values for the HP Color LaserJet 4650 (continued)

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Other language default setting (if different)	Preconfigurable[1]
Page Order	**Finishing** tab, **Document Options** group box	Unavailable		Yes
Orientation	**Finishing** tab, **Orientation** group box	Portrait		Yes
Rotate by 180 degrees	**Finishing** tab, **Orientation** group box	Off		Yes
Resizing Options	**Effects** tab, **Resizing Options** group box	Actual Size		Yes
Print document on	**Effects** tab, **Resizing Options** group box	Off - print on the size specified in the **Paper/ Quality** tab		Yes
Size to print on	**Effects** tab, **Resizing Options** group box	Actual Size	Default value depends on regional media size	Yes
Scale to Fit	**Effects** tab, **Resizing Options** group box	Unavailable		Yes
% of Normal Size	**Effects** tab, **Resizing Options** group box	Off		Yes
Watermarks	**Effects** tab	(none)		Yes
Watermarks First Page Only	**Effects** tab, **Watermark Details** dialog box	Unavailable		Yes
Current watermarks	**Effects** tab, **Watermark Details** dialog box (Click **Edit** for **Watermark Details**)	(none)		Yes[2]
Watermark Message	**Effects** tab, **Watermark Details** dialog box (Click **Edit** for **Watermark Details**)	(none)		Yes[2]
Watermark Message Angle	**Effects** tab, **Watermark Details** dialog box (Click **Edit** for **Watermark Details**)	Diagonal		Yes[2]
Watermark Message Angle (angle)	**Effects** tab, **Watermark Details** dialog box (Click **Edit** for **Watermark Details**)	Unavailable unless **Angle** option is selected		Yes
Watermark Font Name	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Arial	Language dependent	Yes[2]

Table 4-1. Print Task Quick Set default values for the HP Color LaserJet 4650 (continued)

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Other language default setting (if different)	Preconfigurable[1]
Watermark Font Color	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Gray		Yes
Watermark Font Shading	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Very Light		Yes[2]
Watermark Font Size	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	80		No
Watermark Font Style	**Effects** tab, **Watermark Details** dialog box, **Font Attributes** group box	Regular		Yes[2]
Size is:	**Paper/Quality** tab, **Paper Options** group box	Letter	Default value depends on regional media size	Yes
Use Different Paper	**Paper/Quality** tab, **Paper Options** group box	Off - all of the pages use the same media		No
Source is:	**Paper/Quality** tab, **Paper Options** group box	Automatically Select		Yes
Type is:	**Paper/Quality** tab, **Paper Options** group box	Unspecified		Yes
EconoMode (may save Print Cartridges)	**Paper/Quality** tab, **Print Quality** group box	Off		Yes
Unlabeled group box	**Job Storage** tab	Status message about destination of job		No
Job Storage Mode	**Job Storage** tab, **Job Storage Mode** group box	Off is selected		No
Proof and Hold	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected		No
Private Job	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected		No
Quick Copy	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected		No

Table 4-1. Print Task Quick Set default values for the HP Color LaserJet 4650 (continued)

Driver feature	Feature setting location	U.S. English Print Task Quick Sets default values	Other language default setting (if different)	Preconfigurable[1]
Stored Job	**Job Storage** tab, **Job Storage Mode** group box	Available, not selected		No
Require PIN to Print	**Job Storage** tab, **Job Storage Mode** group box	Unavailable		No
Windows User Name	**Job Storage** tab, **User Name** group box	Unavailable		No
Job Name	**Job Storage** tab, **Job Name** group box	Unavailable		No
PIN to Print	**Job Storage** tab, PIN group box	Unavailable	No	No
Display Job ID when printing	**Job Storage** tab, **Job Notification Options** group box	Unavailable	No	No

1 Preconfigurable by using one of the HP Preconfiguration tools. For more information, See HP Driver Preconfiguration, or go to: http://www.hp.com/support/clj4650.

2 Not supported in Windows 98 and Windows Me.

HP Color LaserJet 4550 Color Emulation

The settings for the HP Color LaserJet 4650 printer's color rendering of RGB color can be made to emulate the standard settings for the HP Color LaserJet 4550 printer.

When you select **HP CLJ 4550 Color Emulation**, all of the settings are restored to the default settings, except for the following differences in the **Color** tab **Manual** settings:

- **Text RGB Color** is set to **Vivid**
- **Graphics RGB Color** is set to **Vivid**
- **Photographs RGB Color** is set to **Vivid**

User Guide Print Settings

The **User Guide Print Settings** option provides a Print Task Quick Set for optimal printing of the *hp color LaserJet 4650 series printer User Guide*.

When you select **User Guide Print Settings**, all of the settings are restored to the default settings, except for the following:

- Print on Both Sides is set to ON
- Left Edge Binding is set to ON
- Pages per Sheet is set to 2
- Page Order is set to Right then Down

Type new Quick Set name here

By default, the **Print Task Quick Sets** menu is set to **Type new Quick Set name here**. When you change any of the default settings on any of the **Printing Preferences** driver tabs and you want to save the configuration as a Print Task Quick Set, highlight the words **Type new Quick Set name here**, type the name you want for your new Print Task Quick Set, and then click **Save**. Print Task Quick Sets are saved in the system registry. To delete a Print Task Quick Set, select it from the drop-down menu and click **Delete**.

Note

Administrators can predefine Print Task Quick Sets for their users. These administrator Print Task Quick Sets are defined on the server and are available to users, but usually cannot be modified by users. Users can also define Print Task Quick Sets for their own use. User-defined Print Task Quick Sets are described later in this section.

You can store a maximum of 25 **Print Task Quick Sets** on a particular system. If you attempt to save too many, a message box appears that reads, "There are too many Print Task Quick Sets defined. Please delete some before adding new ones."

Paper Options

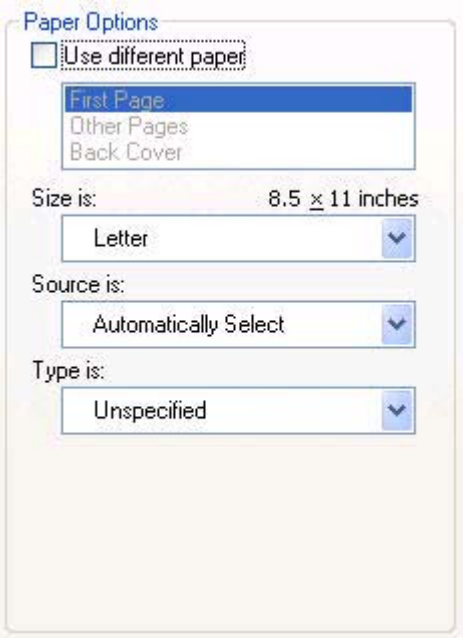


Figure 4-4. **Paper Options group box**

The appearance of the **Paper Options** group box changes when the **Use different paper** check box is selected. For convenience, the settings in the **Paper Options** group box are described below in the following order:

- Size is
- Source Is
- Type is
- Use different paper

Size is

The **Size is:** setting is a drop-down menu that lists all of the supported media sizes.

When you move the mouse over the dimensions label, the mouse cursor changes from an arrow to a gloved hand. Click the dimensions label to toggle between English and metric units.

Because driver settings are overridden by media-size settings in most software applications, it is generally best to use the driver to set media size only when you are printing from software applications that lack a media-size setting, such as NotePad, or when you are producing a book or a booklet that does not require different media sizes.

Note

Certain software programs can override the size command and specify different media sizes within a single document.

For information about media sizes, see the Media attributes section of this guide.

Custom paper sizes

1. Click **Start**, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home) to gain access to the same set of driver tabs that the software program controls.
2. Right-click in the blank space in the window.
3. Click **Server Properties**. The **Print Server Properties** dialog box appears.
4. Select the **Create a new form** check box.
5. Type a name for the new paper size in the **Form name:** field.
6. Select the **Units:** setting, either **Metric** or **English**.
7. In the **Paper size:** fields, assign the width and height values of your custom paper size.
8. In the **Printer area margins:** fields, assign left, right, top, and bottom print-area margins.
9. Click **OK** to save the form and exit the **Print Server Properties** dialog box. If you want to create other custom paper sizes, click **Save Form**, create the custom paper size, and click **Close** to exit the dialog box.

The custom paper name appears in the **Size is:** drop-down menu in the **Paper/Quality** driver tab.

Use different paper

When the **Use different paper** check box is selected and different options are configured, the **Size is:**, **Source is:**, and **Type is:** menus change, offering a variety of options. For more information, see Use different paper.

Source Is

The **Source is:** setting specifies the source tray to use for printing a document. The list of source trays depends on the printer accessories. Any optional source trays that are installed through the **Device Settings** tab also appear here.

The **Source is:** drop-down menu can contain the following options:

- **Automatically select**
- **Printer Auto Select**
- **Manual Feed in Tray 1**

- **Tray 1** (100-sheet multipurpose tray)
- **Tray 2** (500-sheet tray)
- **Tray 3** (500-sheet tray)
- **Tray 4** (500-sheet tray)

The default setting is **Automatically Select**. When this setting is selected, the HP Color LaserJet 4650 uses the source tray that supports the media size that you have selected. If you select a source tray other than **Automatically select**, make sure that the correct media size is loaded in the source tray. For information about media sources, see the Media attributes section of this guide.

Type is

The **Type is:** drop-down menu shows all the media types that the HP Color LaserJet 4650 supports. When you use the default setting, Unspecified, the printer uses the default media type, which is usually **Plain**.

No mechanism exists for manually adding custom media types through the driver. Custom types can be added only by using the bidirectional communication mechanism, so they must already exist in the product when the bidirectional query occurs. If bidirectional communication is enabled, then the information returned is an updated list of media types. If bidirectional communication is not enabled, then the driver looks for custom media types saved from a previous bidirectional communication query, and uses those. Otherwise, no custom media types are available through the driver.

The following standard types appear in the lists:

- Unspecified
- Plain
- Preprinted
- Letterhead
- Transparency
- Prepunched
- Labels
- Bond
- Recycled
- Color
- Cardstock (164 to 200 g/m^2 or 43 to 53 lb.)
- Heavy (105 to 119 g/m^2)
- Envelope
- Light (60 to 75 g/m^2)
- Intermediate (90 to 104 g/m^2)
- Ex Heavy (120 to 163 g/m^2)
- Glossy (75 to 105 g/m^2)
- Heavy Glossy (106 to 120 g/m^2)
- HP High Glossy (Images)
- Tough Paper

The default setting is **Unspecified**, and the program selects the media type. If you select a different setting, make sure the correct media type is loaded in the tray you selected in the **Source is:** setting. For more information about media types, see the Media attributes section of this guide.

Use different paper

You can print books with different media types using the **Use different paper** options.

- **First Page**
- **Other Pages**
- **Back Cover**

Each option for the **Use different paper** setting is described in the following sections, in the order they appear in the pane below the **Use different paper** check box.

First Page

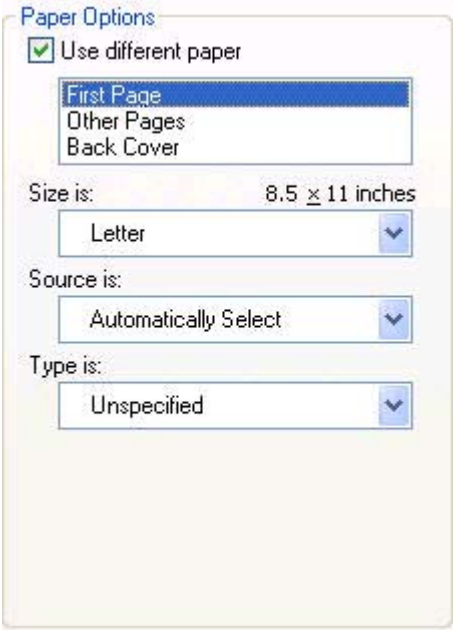


Figure 4-5. **First Page options**

The **First Page** options are as follows:

- **Size is:** drop-down menu
- **Source is:** drop-down menu
- **Type is:** drop-down menu

The **Size is:** driver setting for the first page applies to the entire print job. When this is set, the setting becomes unavailable for all the other **Use different paper** options.

The **Source is:** setting specifies the source tray to use for printing a document. The list of source trays depends on the printer accessories. Any optional media trays that are installed through the **Device Settings** tab also appear here. For more information about the **Source is:** setting, see the Source Is section of this chapter.

The **Type is:** drop-down menu shows all of the media types that the printer supports. For more information about the **Type is:** drop-down menu settings, see the description for **Type is:** in the Type is section of this chapter.

Other Pages

Use the **Other Pages** options to select an alternative media source (or the same source as **First Page**) for the other pages of the document.

The following illustration shows the appearance of the Paper Options group box when you select the Use different paper check box.

Figure 4-6. **Other Pages options**

The **Other Pages** options are as follows:

- **Source is:** drop-down menu
- **Type is:** drop-down menu

The **Source is:** setting specifies the source tray to use for printing a document. The list of source trays depends on the printer accessories. Any optional media trays that are installed through the **Device Settings** tab also appear here. For more information about the **Source is:** setting, see the Source Is section of this chapter.

The **Type is:** drop-down menu shows all of the media types that the printer supports. For more information about the **Type is:** drop-down menu settings, see the description for **Type is:** in the Type is section of this chapter.

Back Cover

The following illustration shows the **Back Cover** setting and options.

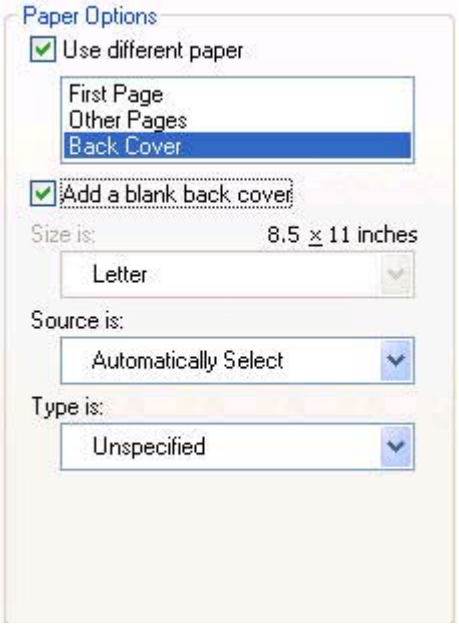


Figure 4-7. **Back Cover setting**

The **Back Cover** options are as follows

- **Add a blank back cover** check box
- **Source is:** drop-down menu
- **Type is:** drop-down menu

When you select **Back Cover**, you must also select the **Add a blank back cover** check box to enable the setting. When you select this check box, the **Source is:** and **Type is:** drop-down menus become available and a check mark appears next to the **Back Cover** option.

Note

The **Back Cover** options are not available when the **Booklet Printing Layout** setting is enabled on the **Finishing** tab. The back cover setting is unavailable, because this page would otherwise be printed in the middle of a booklet.

The **Source is:** setting specifies the source tray to use for adding a back cover to the document. The list of source trays depends on the printer accessories. Any optional media trays that are installed through the **Device Settings** tab also appear here. For more information about the **Source is:** setting, see the Source Is section of this chapter.

The **Type is:** drop-down menu shows all of the media types that the printer supports. For more information about the **Type is:** drop-down menu settings, see the **Type is:** in the Type is _ section of this chapter.

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image is always oriented so that the contents of the page are right-side up. The document preview image appears in the upper-right corner of the **Finishing**, **Effects**, **Paper/Quality**, and **Color** tabs.

Switching between tabs does not change the location or appearance of the document preview image. When you move the mouse over the document preview image, the mouse cursor changes from an arrow to a gloved hand. You can toggle between portrait and landscape page orientation by clicking on the image.

Finishing tab features

Use the **Finishing** tab to print booklets and control the media output. The following illustration shows the **Finishing** tab.

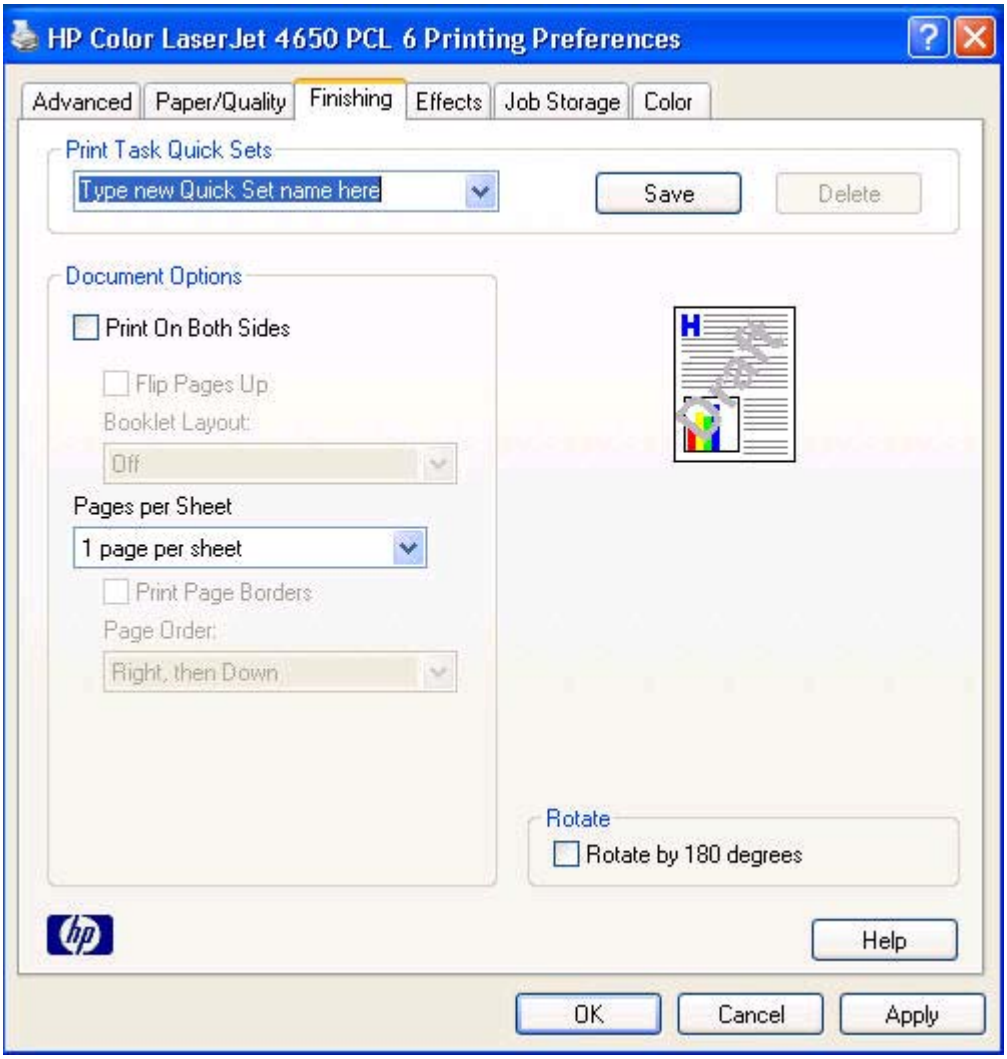


Figure 4-8. **Finishing tab**

The **Finishing** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Document Options** group box
- Document preview image
- **Rotate** check box

Print Task Quick Sets

Use the **Print Task Quick Sets** control to store the current combination of driver settings that are found on all other **Printing Preferences** driver tabs. Print task quick sets are either preset or user-defined printing specifications, such as media size and pages per sheet. For more information, see the Paper/Quality tab features section of this guide.

Document Options

The **Document Options** group box contains the following controls.

- **Print on Both Sides** check box
- **Flip Pages Up** option
- **Booklet Layout** drop-down menu
- **Pages per Sheet** drop-down menu
- **Print Page Borders** check box
- **Page Order** drop-down menu

Print on Both Sides

The default setting for the **Print on Both Sides** option is off (not selected). **Print on Both Sides** is available when the following conditions exist:

- **Type is:** on the **Paper** tab is set to any type except : **Labels**, **Transparency**, **Envelope**, **Envelope #10**, **Envelope #DL**, **Envelope #C5**, **Envelope #D5**, **Envelope Monarch**, or **Tough Paper**.

Note

Print on Both Sides (Manually) is available for **Ex Heavy 120 x 163 g/m^2** and **Cardstock 164 x 200 g/m^2**.

- **Size is:** is set to any size except for **A6**, **B6 (JIS)**, or **Custom**.

When **Paper Size** is set to Letter, Legal, or A4, selecting **Print on Both Sides** makes the **Flip Pages Up** and **Booklet Printing** options available.

Automatically printing on both sides

The duplexing unit in the product prints on two sides of a sheet of media when the **Print on Both Sides** option is specified in the print job. The HP Color LaserJet 4650dn, 4650dtn, and 4650hdn models come with a duplexing unit installed.

The HP Color LaserJet 4650 printer supports smart duplexing. The smart duplexing feature increases printing performance by not sending one-page print jobs or single-sided pages of a duplexed print job through the duplexing unit even when the duplexing feature has been enabled in the driver.

All media types support the smart duplexing feature, except for media types that cannot be printed on both sides, such as labels, and the following media types:

- Prepunched
- Preprinted
- Letterhead

When the media type is set to **Unspecified**, the smart duplexing feature is disabled.

To achieve the best print quality when printing on the second side of the page, the printer needs to make adjustments to its print modes. When you select a media type, you are, in effect, instructing the printer to use a group of settings (such as fuser temperature and print speed) to print the media with the best possible quality. This group of settings is known as a mode or print mode, and a different print mode is used with each media type. Print-mode adjustments are automatic when the duplexing unit is used.

Manually printing on both sides

Note

To make the Print on Both Sides (Manually) check box available in the document options, enable the **Allow Manual Duplexing** option on the **Device Settings** tab in the Properties print driver tabs. See Installable Options in this chapter.

Manually printing on the second side of a page is available when you are using the HP PCL 6, HP PCL 5c, or the PS Emulation Unidriver. If a duplexing unit is installed and manual duplexing is enabled in the driver, the printer automatically duplexes media types that are supported by automatic duplexing (Letter, A4, Legal, 8.5 x 13, and Executive (JIS) only), and forces manual printing on both sides for media types that are not supported.

- Plain
- Preprinted
- Letterhead
- Prepunched
- Bond
- Recycled
- Colored
- Rough

Heavy and Cardstock media can be manually printed on the second side, but there is no change to the print mode. Transparencies and labels should not be manually printed on the second side.

To print a multiple-page document, follow these steps:

1. Select the **Print on Both Sides (Manually)** check box.
2. Click **OK**.
3. When the product control panel shows the MANUALLY FEED message, insert the stack of media (on which the even-number pages have been printed) as indicated in the following figure.

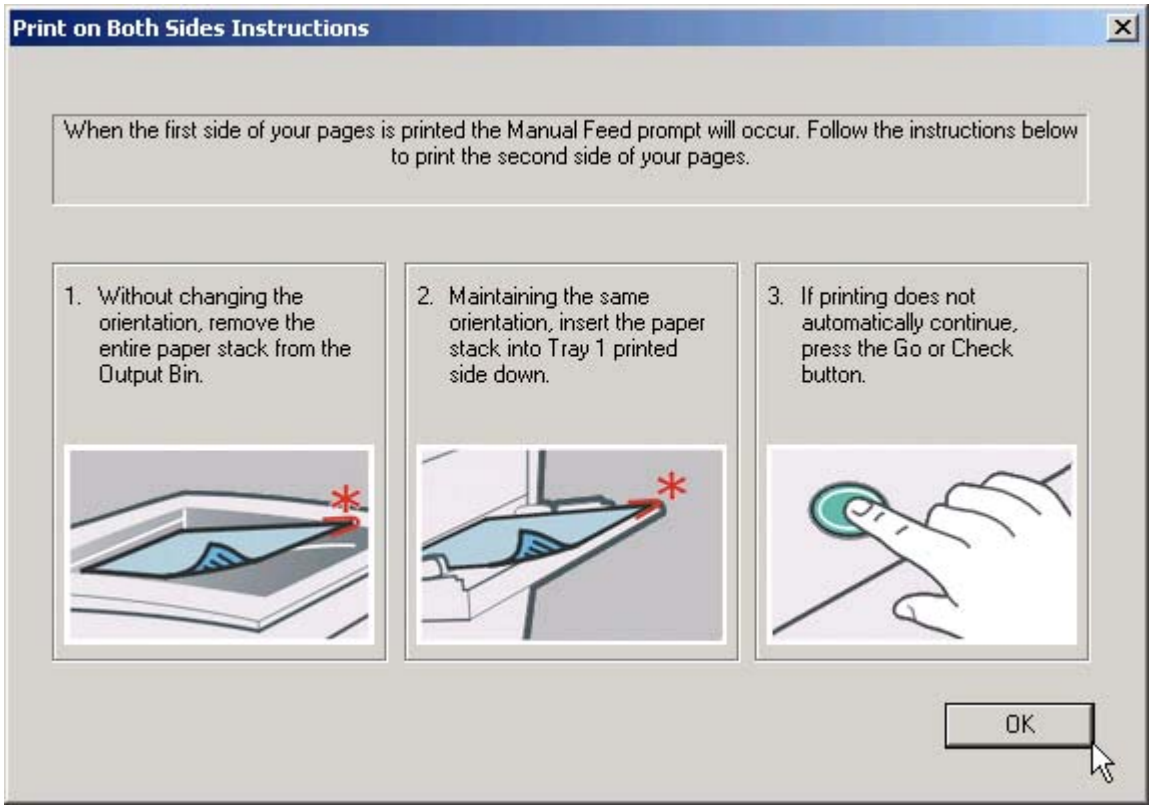


Figure 4-9. **Print on Both Sides Instructions**

When you have completed the steps that appear in the dialog box, the second half of the print job prints on the back side of the stack of paper. The driver does not require the application to specifically support odd- and even-page printing, because the driver coordinates this function.

Flip Pages Up

The **Flip Pages Up** check box, enabled only when **Print on Both Sides** is selected, is used to specify the duplex-binding option. By default, the **Flip Pages Up** check box is not selected. The following table demonstrates the results of selecting this box, depending on the media orientation selected on the **Finishing** tab.

Table 4-2. Page orientation

Orientation (Finishing tab)	Flip Pages Up selected	Flip Pages Up not selected
Portrait	Short-edge binding	Long-edge binding
Landscape	Long-edge binding	Short-edge binding

When **Print on Both Sides** is selected, the document preview image changes to show a spiral binding along either the left edge or the top edge of the page. In addition, a folded-over corner appears in the lower-right portion of the preview image, indicating that printing occurs on the back side. An arrow on the folded-over corner points in the direction that the pages would be flipped if they were bound together.

Short-side binding is for print jobs with pages that read by flipping over like the pages of a note pad. Long-side binding is for print jobs with pages that read by turning like the pages of a book.

Booklet layout

The **Booklet Layout** drop-down menu, visible when **Print on Both Sides** is selected, offers choices that are based on the current media size. The default setting for the **Booklet Printing** drop-down menu is **Off**.

- **Left Edge Binding**
- **Right Edge Binding**

When you select **Left Edge Binding** or **Right Edge Binding**, the document preview image changes to show the location of the binding. If the **Pages per Sheet** setting is on the default setting of 1, it automatically changes to **2 pages per sheet**. If you change the **Pages per Sheet** setting manually to 4, 6, 9, or 16 pages per sheet, the booklet setting is disabled. See the Printing a Booklet section of this chapter for more information.

The **Booklet Layout** setting is disabled when A6 or B6 (JIS) is selected as the media size, and an incompatibility error message appears when you click **OK** to close the driver.

Book and Booklet Printing

The HP Color LaserJet 4650 supports book and booklet printing.

A book is a print job consisting of at least two pages that can have a different media type for the first page, other pages, or back cover. Use the **First Page**, **Other Pages**, and **Back Cover** settings on the **Paper/Quality** tab (available when you select the **Use Different Paper** check box) to select different media for the first page, other pages, and back cover.

A booklet is a print job that places two pages on each side of a sheet that can be folded into a booklet that is half the size of the media. Use the **Booklet Layout** drop-down menu on the **Finishing** tab to control booklet settings.

Printing a Booklet

1. Click **File**, click **Print**, and then click **Properties**.
2. Click the **Finishing** tab and select the **Print on Both Sides** check box.
3. In the **Booklet Layout** drop-down menu, select the type of booklet printing that you want (for example, **Right Edge Binding**).
4. Click **OK** in the print driver.
5. Click **OK** in the print dialog box to print.

Printing a Book

You can print a book in which the first page, other pages, and back cover have different media types. For more information, see Paper/Quality tab features of this chapter.

Pages per Sheet

Use the **Pages per Sheet** option to select the number of pages that you want to print on a single sheet of media. If you choose to print more than one page per sheet, the pages appear smaller and are arranged on the sheet in the order that they would otherwise be printed. The **Pages per Sheet** drop-down menu provides six settings:

- 1 page per sheet (default)
- 2 pages per sheet
- 4 pages per sheet
- 6 pages per sheet
- 9 pages per sheet
- 16 pages per sheet

Note

When you select an option other than **2 pages per sheet**, booklet printing is unavailable.

Print Page Borders

Related controls indented beneath the **Pages per Sheet** edit box are **Print Page Borders** and **Page Order**, which become active when **Pages per Sheet** is greater than 1.

Print Page Borders sets a line around each page image on a printed sheet to help visually define the borders of each logical page.

Page Order

The **Page Order** drop-down menu contains four selections:

- **Right, then Down**
- **Down, then Right**
- **Left, then Down**
- **Down, then Left**

The preview document image changes to reflect alterations in these settings, as shown by the examples in the following illustration.

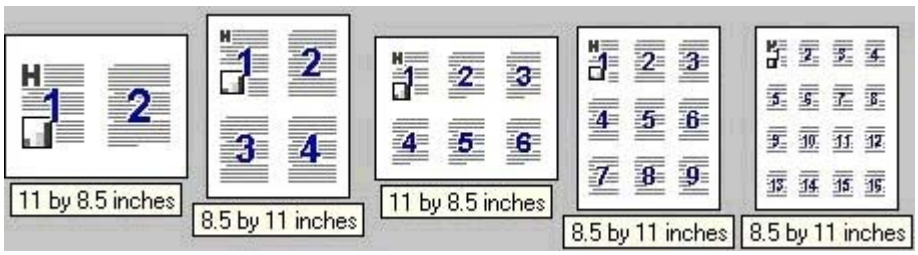


Figure 4-10. **Page-order preview images**

- **2 pages per sheet**
- **4 pages per sheet**
- **6 pages per sheet**
- **9 pages per sheet**
- **16 pages per sheet**

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image is always oriented so that the contents of the page are right-side up. The document preview image appears in the upper-right corner of most **Printing Preferences** driver tabs (the **Paper/Quality**, **Effects**, **Finishing**, and **Color** tabs).

Switching between tabs does not change the location or appearance of the document preview image. When you move the mouse over the document preview image, the mouse cursor changes from an arrow to a gloved hand. You can toggle between portrait and landscape page orientation by clicking the document preview image.

Rotate

Select this feature to rotate the document image on the media 180 degrees. For example: If the return address on an envelope is smudged, try this setting and feed the envelope so the return address area is fed first into the printer.

Effects tab features

Use the **Effects** tab to create unique media effects such as scaling and watermarks. The following illustration shows the **Effects** tab.

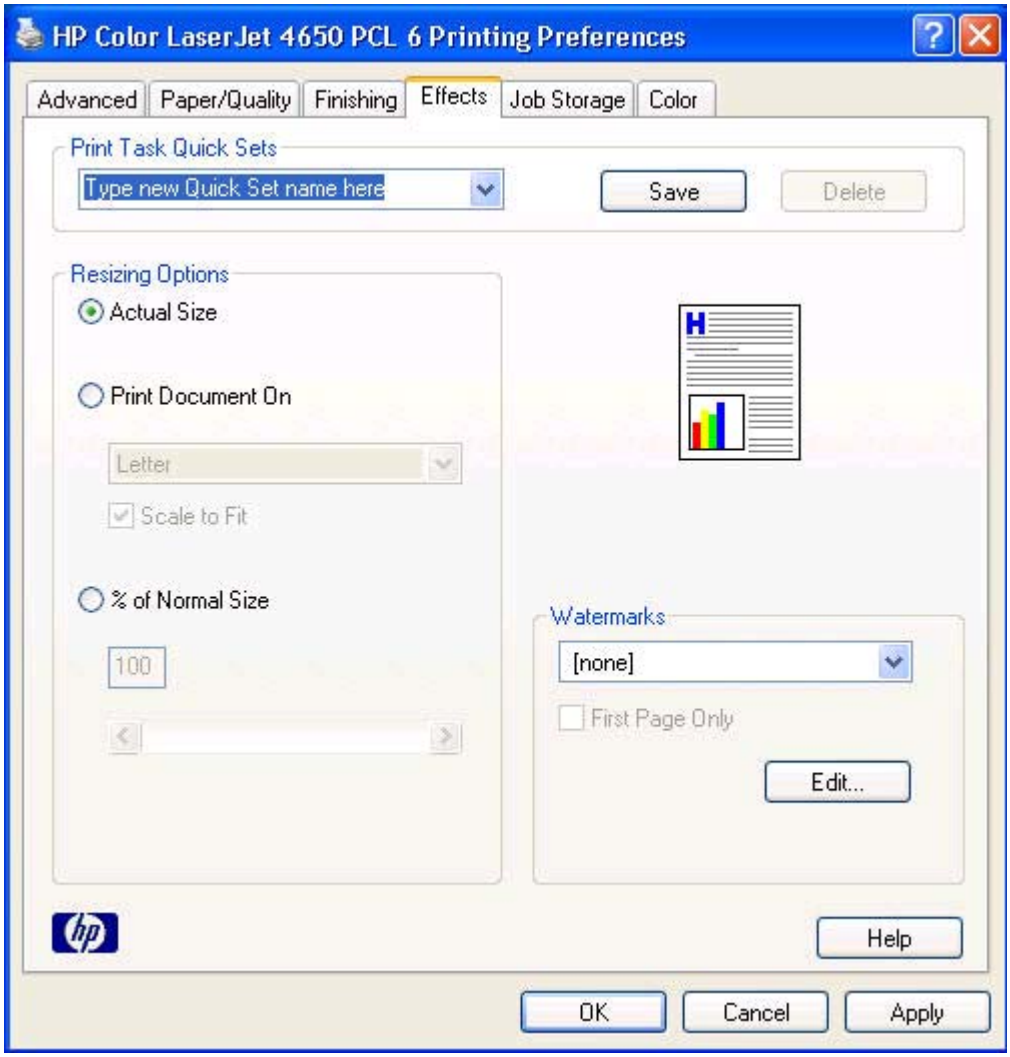


Figure 4-11. **Effects tab**

The **Effects** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Resizing Options** group box
- Document preview image
- **Watermarks** group box

Print Task Quick Sets

Use the **Print Task Quick Sets** control to store the current combination of driver settings that are found on all other **Printing Preferences** driver tabs. Print task quick sets are either preset or user-defined printing specifications, such as media size and pages per sheet. For more information, see the Paper/Quality tab features section of this guide.

Resizing options

The **Resizing Options** group box consists of the following controls.

- **Actual Size** (default)
- **Print Document On** setting
- **Scale to Fit** option
- **% of Normal Size** setting

Actual Size

Actual Size is the default setting. It prints the document without changing the document size.

Print Document On

Select the **Print Document On** radio button to format the document for one media size and then print the document on a different media size, with or without scaling the image to fit the new media size.

The **Print Document On** control is disabled by either of the following conditions:

- The **% of Normal Size** value is not 100.
- The **Pages per Sheet** value (on the **Finishing** tab) is not 1.

When **Print Document On** is selected, the drop-down menu shows the media sizes on which you can print. The list contains all of the standard media sizes that are supported by the selected media source and any custom sizes that you have created. When **Print Document On** is selected, **Scale to Fit** is automatically selected.

Scale to Fit

The **Scale to Fit** option box specifies whether each formatted document page image is scaled to fit the target media size. By default, **Scale to Fit** is selected when **Print Document On** is selected. If the setting is turned off, then the document page images will not be scaled, and are instead centered at full size on the target media. If the document size is larger than the target media size, then the document image is clipped. If it is smaller, then it is centered within the target media. The following illustration shows preview images for a document formatted for legal-size media with the **Print Document On** check box selected, and the target size specified as **Letter**.

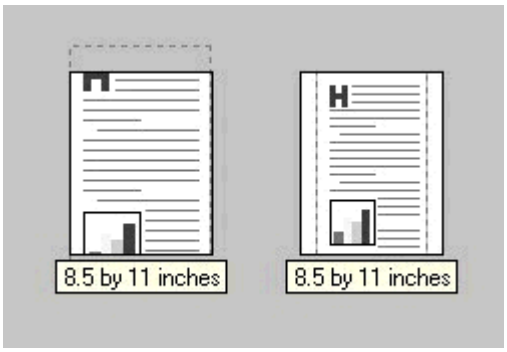


Figure 4-12. **Preview images - Legal on Letter; Scale to Fit off (left) and on (right)**

When the size for which the document is formatted (that is, the logical size) differs from the target size, the preview image uses a dashed gray line to show the boundaries of the logical page in relation to the target page size.

% of Normal Size

The **% of Normal Size** option provides a slider bar to use for scaling the percentage setting. The default setting in the entry box is 100 percent of normal size. Normal size is defined as the media size that is selected within the driver or what the driver receives from the software program (if the software program does not negotiate the media size with the driver). The driver scales the page by the appropriate factor and sends it to the printer.

The limits of the range are from 25 percent to 400 percent, and any values outside the range are adjusted to those limits as soon as the focus is removed from the control (that is, when the **Tab** key is pressed or another control is selected).

Any change to the scale also changes the page preview, which increases or decreases from the upper-left corner of the preview.

The slider bar controls the scale directly. The value in the edit box changes as the scroll bar indicator is dragged, and the preview image is updated to the new image scale. Each click on the scroll bar arrows increases or decreases the scale by one percent. Each click on the slider bar affects the scale by 10 percent.

You cannot achieve an exact value by dragging the scroll bar indicator at the default Windows resolution; use the scroll bar indicator to approximate the desired value, and then use the scroll bar arrows to refine the value.

The following settings disable **% of Normal Size**:

- **Print Document On** (on the **Effects** tab) is selected
- **Pages per Sheet** (on the **Finishing** tab) is not 1

Document preview image

The document preview image is a line-drawn image of a page that represents graphics and text. The document preview image is always oriented so that the contents of the page are right-side up. The document preview image appears in the upper-right corner of most **Printing Preferences** driver tabs (the **Paper/Quality**, **Finishing**, **Effects** and **Color** tabs).

Switching between tabs does not change the location or appearance of the document preview image. When you move the mouse over the document preview image, the mouse cursor changes from an arrow to a gloved hand. You can toggle between portrait and landscape page orientation by clicking the document preview image.

Watermarks

Use the **Watermarks** feature to choose a watermark, create your own custom watermarks (text only), or edit an existing watermark. The following watermarks are preset in the driver:

- **(none)**
- **Confidential**
- **Draft**
- **SAMPLE**

The drop-down menu shows alphabetically sorted watermarks that are currently available on the system, plus the string "(none)", which indicates that no watermark is selected. This is the default setting. Any watermark selected from this list appears in the preview image.

When the **First Page Only** check box is selected, the watermark is printed only on the first page of the document. The **First Page Only** check box is disabled when the current watermark selection is "(none)".

Watermarks are applied to logical pages. For example, when **Pages per Sheet** is set to "4" and **First Page Only** is turned off, four watermarks appear on the physical page (one on each logical page).

Click **Edit**, and the **Watermark Details** dialog box appears.

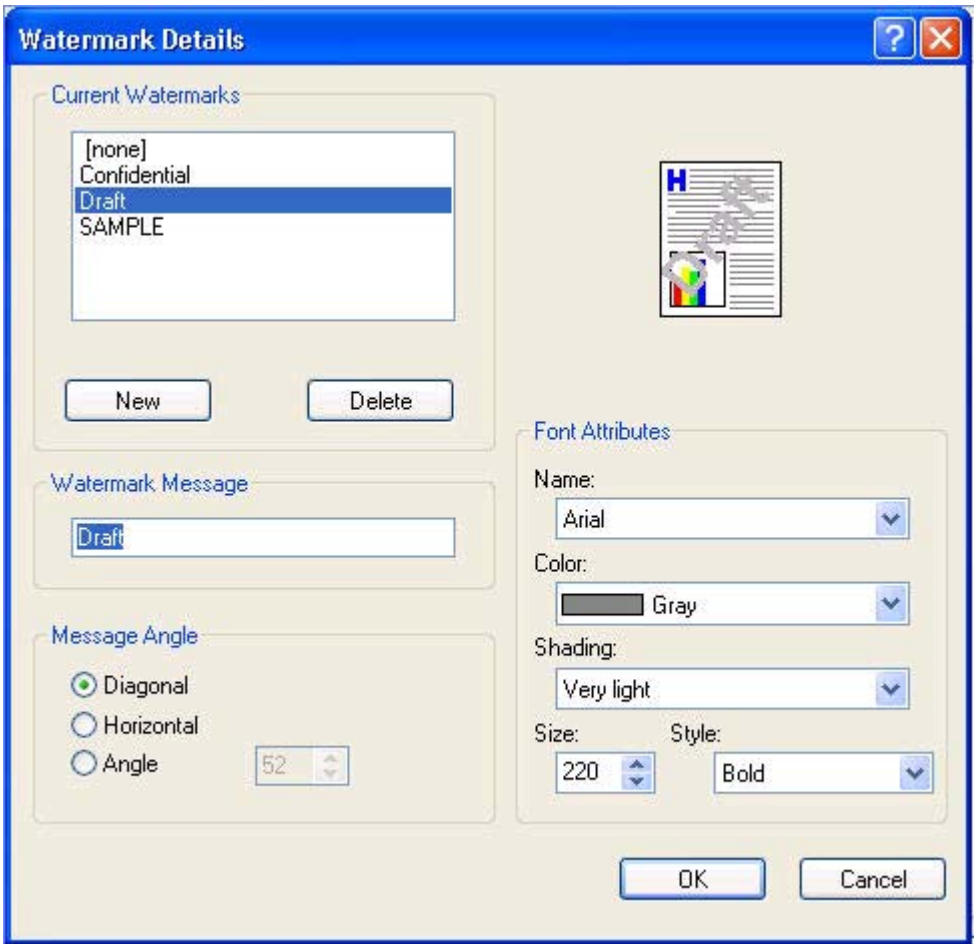


Figure 4-13. **Watermark Details**

The dialog box shows a preview image and provides options for creating a new watermark and controlling the message angle and font attributes.

Click **OK** to accept all of the changes that are made in the **Watermark Details** dialog box. However, clicking **Cancel** does not cancel all of the changes. If you make changes to a watermark, and then select a different watermark or click **New**, all of the changes made to the previous watermark are saved, and only the current, unsaved changes can be canceled.

Current watermarks

The **Current Watermarks** group box contains a list of available watermarks, both predefined watermarks made available in the driver and any new watermarks you have created.

To create a new watermark, click **New**. The new watermark appears in the **Current Watermarks** list and in the **Watermark Message** edit box as "Untitled" until you name it. The name that you type in the **Watermark Message** field appears in the **Current Watermarks** group box in the **Watermark Details** dialog box and in the **Watermarks** group box on the **Effects** tab.

To name the new watermark, type the selected watermark text in the **Watermark Message** edit box. To delete a watermark, select the watermark in the **Current Watermarks** list and click **Delete**. A warning appears asking whether you are sure you want to delete the selected item. Click **Cancel** if you want to keep the watermark. Click **OK** to delete the selected watermark.

Note

You can have no more that 30 watermarks in the **Current Watermarks** list at one time. When you reach the limit of 30 watermarks, the **New** button is disabled.

To edit an existing watermark, select the watermark in the **Current Watermarks** list. If you change the **Watermark Message** for that watermark, you are, in effect, creating a new watermark.

Watermark Message

The **Watermark Message** is also the name that identifies the watermark in the **Current Watermarks** list, except when more than one watermark has the same message. For example, you might want several different watermarks with the message DRAFT, each with a different typeface or font size. When this occurs, the string is appended with a space, a pound sign, and a number (for example, **Draft #2**). When a number is added, the number two is used first, but if the resulting name is also in the list, then the number increases until the name is unique (**Draft #3**, **Draft #4**, and so on).

Message Angle

Use the controls in the **Message Angle** group box to print the watermark in different orientations on the page. The settings are **Diagonal**, **Horizontal**, or **Angle** (custom). The default is **Diagonal**. All three settings automatically center the watermark string within the page; the selection of a particular setting affects only the angle of the string placement. **Diagonal** places the text along a line that spans the lower-left to upper-right corners of the page. **Horizontal** places the text along a line that spans the mid-left and mid-right edges of the page. **Angle** places the text at the specified angle across the page.

Font Attributes

Use the controls in the **Font Attributes** group box to change the font and the shading, size, and style of the font.

The **Font Attributes** group box contains the following controls.

- **Name** drop-down menu
- **Color** drop-down menu
- **Shading** drop-down menu
- **Size** spin box
- **Style** drop-down menu

Name

The **Name** drop-down menu lists fonts that are currently installed on the system. The default is language-dependent.

Color

The **Color** drop-down menu contains a single setting: **Gray**.

Shading

The default **Shading** setting for new and preset watermarks is **Very Light**. The following range of shades is available from the **Shading** drop-down menu.

- **Lightest**
- **Very Light** (default)
- **Light**
- **Medium Light**
- **Medium**
- **Medium Dark**
- **Dark**
- **Very Dark**
- **Darkest**

These values represent the intensity of the gray that is used. A choice of **Light** produces a lightly saturated gray watermark. A choice of **Lightest** produces the lightest shade of watermark; **Darkest** produces a black watermark.

Size

Font sizes from 1 to 999 points are available from the **Size** menu. The default point size is language-dependent. The choice of **Regular**, **Bold**, **Italic**, and **Bold Italic** is available from the **Style** drop-down menu.

Style

The choice of **Regular**, **Bold**, **Italic**, and **Bold Italic** is available from the **Style** drop-down menu. The default **Style** setting for new and preset watermarks is **Regular**.

Default settings

The default settings for new watermarks are **Arial** font, **Gray** color, **Very Light** shading, **80** points, and **Regular** style. The default settings for preset watermarks are **Arial** font, **Very Light** shading, and **Bold** style. The default point size for preset watermarks is language-dependent, and varies.

Job Storage tab features

The HP Color LaserJet 4650 printer lets you store print jobs in the product's memory for printing at a later time. These job-storage features are described in the following sections.

The Job Storage tab appears among the driver tabs *only* if Job Storage is enabled. To support job-storage features for complex jobs, or if you often print complex graphics, print postscript (.PS) documents, or use many downloaded fonts, HP recommends that you install additional memory, install a hard disk, or both. Added memory also gives you more flexibility in supporting job storage features. A minimum total memory of 288 MB is required to use Job Storage features.

After a hard disk or additional memory is installed, the driver must be configured to reflect the changes in the product. If bidirectional communication is enabled in your environment, the Update Now feature can be used to update the drivers. For more information, see the Automatic Configuration in this chapter.
To configure the drivers manually after installing a hard disk or additional memory, follow these steps:

1. Click **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional) or **Printers and Other Hardware Devices** (Windows XP Home)
2. Right-click the product name, click **Properties**, and then click the **Device Settings** tab.
3. If additional memory has been installed, select Printer Memory: under Installable Options, and then select either 288-415 MB or 416-544 MB, depending on the amount of additional memory installed.
4. If a hard disk has been installed, select **Printer Hard Disk:** under **Installable Options**, and then select **Installed** in the drop-down menu.
5. Click **OK** to make the printer hard disk and job-storage features available.

Note

You can disable Job Storage while leaving the product hard-disk enabled. To disable Job Storage, click **Start**, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home). Right-click the product name, click **Properties**, click the **Device Settings** tab, select **Job Storage:**, and then select Disabled in the Change 'Job Storage' Setting dialog box that appears. When **Job Storage** is disabled, the **Job Storage** driver tab is not visible.

Job Storage tab

The following illustration shows the **Job Storage** tab.

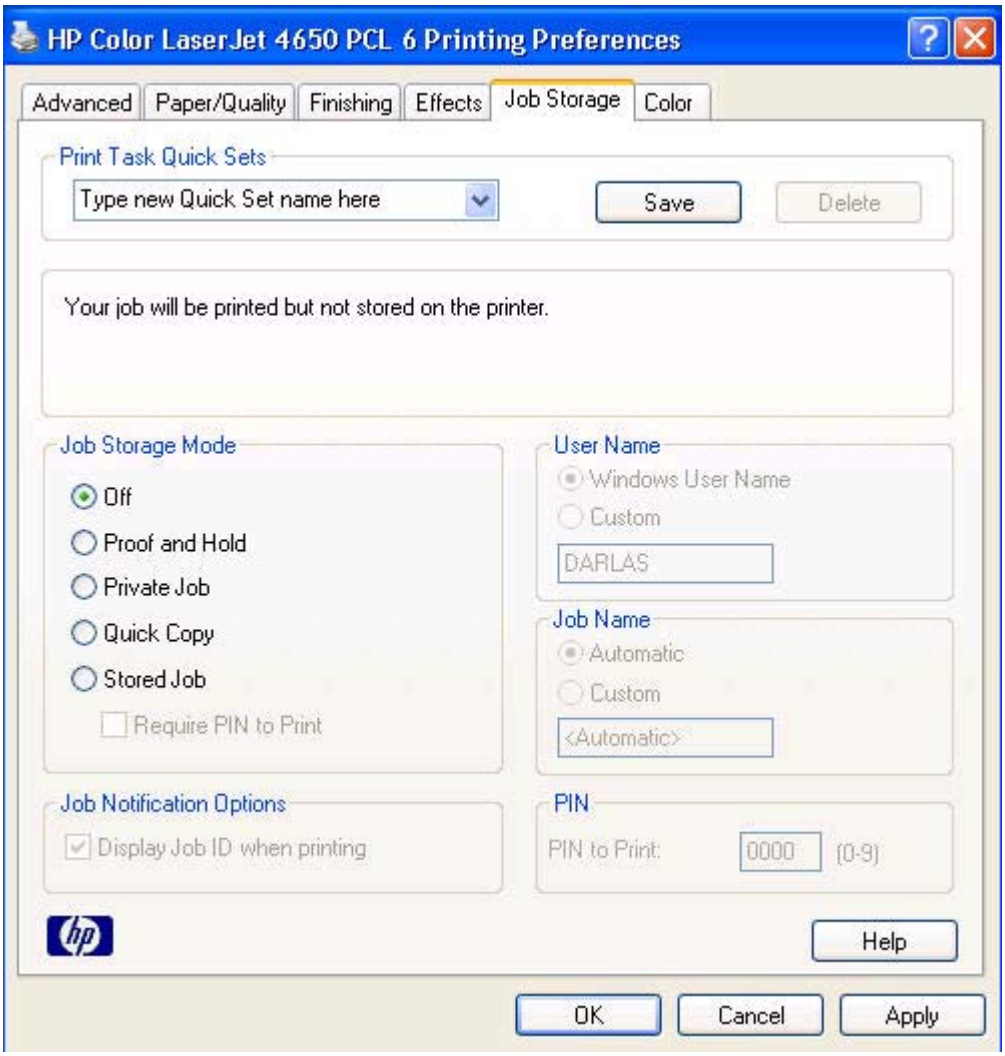


Figure 4-14. **Job Storage tab**

The **Job Storage** tab contains the following controls:

- **Print Task Quick Sets** group box
- Status group box (unlabeled)
- **Job Storage Mode** group box
- **Job Notification Options** group box
- **User Name** group box
- **Job Name** group box
- **PIN** group box

Print Task Quick Sets

Use the **Print Task Quick Sets** control to store the current combination of driver settings that are found on all other **Printing Preferences** driver tabs. Print task quick sets are either preset or user-defined printing specifications, such as media size and pages per sheet. For more information, see the Paper/Quality tab features section of this guide.

Status group box

The unlabeled group box on the **Job Storage** tab contains a status message about the destination of a print job. The status information changes depending on the selections that are made on the **Job Storage** tab.

Job Storage Mode

Use the **Job Storage Mode** options on the HP Color LaserJet 4650 printer to store documents at the product and then control their printing at the product control panel. This feature is intended to provide greater flexibility, convenience, security, and cost savings.

The HP Color LaserJet 4650 printer offers the following **Job Storage Mode** options:

- **Off**
- **Proof and Hold**
- **Private Job**
- **Quick Copy**
- **Stored Job**
  - **Require PIN to Print** (available when **Stored Job** is selected)

These options and the settings that control them are described below.

Off

When selected, this option turns the **Job Storage** feature off (it is disabled), which means that the print job will not be stored in the product.

Proof and Hold

To use the **Proof and Hold** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When selected, this option stores the print job in memory and prints only the first copy of the job, allowing you to check the first copy. If the document prints correctly, you can print the remaining copies of the print job at the control panel. You can set the number of proof-and-hold print jobs that can be stored in the product at the control panel.

After it is released for printing, the proof-and-hold job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second proof-and-hold job to the product with the same user name and job name as an existing proof-and-hold job (and you have not released the original job for printing), the job will overwrite the existing job. Proof-and-hold jobs are deleted if you turn off the product.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, a newer document will overwrite the oldest. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document.

Private Job

To use the **Private Job** option, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Private Job**, the print job is sent to the product, but is not printed until you request the job at the product control panel. Selecting **Private Job** activates the **PIN** group box. The print job can be printed only after you type the correct PIN at the control panel. After the job is printed, the job is deleted from the product. This feature is useful when you are printing sensitive or confidential documents that you do not want to leave in an output bin after printing.

After it is released for printing, the private job is immediately deleted from the product. If more copies are needed, you must reprint the job from the software program. If you send a second private job that has the same user name and job name as an existing private job (and you have not released the original job for printing), the job will overwrite the existing job, regardless of the PIN. Private jobs are deleted if you turn off the product.

Using a PIN for Private Job

The **Private Job** option can be secured by a four-digit personal identification number (PIN). You must type in this number at the product control panel before the product can print the job.

The group box labeled **PIN** is usually inactive. It becomes active when you select the **Private Job** option.

The Private Job/PIN coupling has a PIN restriction of four ASCII numeric characters (0 though 9). If you type non-numeric characters, they are removed immediately. If you type more than four characters, the characters past the fourth are truncated. The field temporarily accepts fewer than four digits in the string, but when the edit field loses focus, the zeroes pad the left end until the PIN contains exactly four digits. The default initialized value for the PIN is 0000 for **Private Job**.

Quick Copy

To use the **Quick Copy** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

When you select **Quick Copy**, the entire print job prints and a copy of the print job is stored on the product, after which you can print additional copies of the print job at the product control panel. The number of quick-copy print jobs that can be stored in the product is set by using the product control panel.

Note

The product configuration can be set to hold a maximum of 50 quick-copy or proof-and-hold jobs. The number is set at the product control panel in the **CONFIGURATION** menu, and the default is 32. When this preset limit is reached, the new document overwrites the oldest held document. Also, a document that has the same user and job name as one that is already stored on the hard disk will overwrite the existing document. **Quick Copy** jobs are deleted if you turn off the product.

Stored Job

To use the **Stored Job** option, a hard disk must be installed, Job Storage must be enabled, and the product must have a minimum total memory of 288 MB.

Use the **Stored Job** option to send a print job directly to the product hard disk without printing it. The print job is stored in the product as if it is an electronic file cabinet. After the print job is stored on the product hard disk, you can print the job at the product control panel.

The job remains stored in the product until it is deleted or overwritten by a document that has the same user and job names. Stored jobs remain on the product hard disk when the product is turned off. Use this feature for forms and other common or shared documents.

A stored job can be managed in two ways: as either a private or a public job. Use a private stored job to send a print job directly to the product, which can then be printed only after you type in a PIN at the product control panel. (You can set the PIN in the **PIN** group box.) After the job is printed, the job remains in the product and can be printed again at the product control panel. The private mode is initiated by selecting the **Require PIN to Print** check box. In this mode, a PIN that is typed at the product control panel is required in order to release the job.

The box labeled **PIN** is usually inactive. The **Require PIN to Print** option becomes available when you select **Stored Job**. If you select the **Require PIN to Print** box, you must type a PIN to make the stored job private.

Note

A private stored job is not the same as a private job (see above). *Private* jobs are deleted from the product after they are printed. *Private stored* jobs are retained in the product after printing, but require that a PIN be typed each time they are printed.

Job notification

Clicking a job storage mode selection causes the **User Name** and **Job Name** options to become available. The **Display Job ID when printing** check box is selected by default. The **Display Job ID when printing** option causes a pop-up dialog box to appear when the job-storage print job is printed. The dialog box shows the user name and job name that are associated with the stored print job, as well as the product name, port, and location.

User Name

Use the **User Name** settings to help identify the job at the product control panel. The following are the **User Name** settings:

- **Windows User Name.** This option associates your Windows user name with the stored print job. The Windows user name is automatically displayed in the text field below the **Windows User Name** options.
- **Custom.** Use this option to type a custom name for the stored print job. When you click the **Custom** option button, the text field below the option becomes available. The **User Name** field can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

Job Name

Use the **Job Name** options to specify a name to identify the job at the product control panel. The following are the **Job Name** settings:

- **Automatic**. This option automatically generates the job name associated with the stored print job. The file name of the print job is used if it is available to the print driver. Otherwise, the software program name or a time stamp is used for the job name.
- **Custom**. Use this to type a custom job name for the stored print job. When you click the **Custom** option button, the text field below the option becomes available.

The **Job Name** field can contain no more than 16 characters, and is limited to A through Z and 0 through 9 because the name appears on the product control-panel display. If you try to type a lowercase character, it automatically shifts to uppercase. If you try to type a character in an ASCII code of fewer than 32 or more than 126 characters, the character is removed from the edit field, along with all of the characters that follow it. If you try to type more than 16 characters, any character beyond 16 is truncated.

When the dialog box is closed, or as soon as the focus is removed from the control (that is, when the **Tab** key is pressed or another control is selected), an empty string is replaced with **Automatic**. The acceptable characters for job name and user name vary for each operating system. The string must be of a length and type that can appear on the product control-panel display.

PIN

The **PIN** group box is usually inactive. The option within the PIN group box, **PIN to Print**, is activated if you select either of the following options:

- Select **Private Job**. If selected, you must type in the PIN number at the product control panel in order to make the job print. For more information, see Using a PIN for Private Job .
- Select **Stored Job**, and then select the **Require PIN to Print** check box. If the **Require PIN to Print** check box is selected, you must type a PIN in order to make the stored job private. For more information, see Stored Job .

Using Job Storage features when printing

1 Click **File** and then click **Print** from the software program. The **Print** dialog box appears.

Note Clicking the print icon in the software program toolbar prints the job without Job Storage features.

2 Click **Properties**. The **Properties** dialog box appears.

3 Click the **Job Storage** tab.

4 Select the Job Storage options described above by clicking the appropriate option button and complete any required fields.

5 Click **OK**.

Releasing a Job Storage print job

After you send a print job that uses the **Job Storage** feature, you can release the job to print by using the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button. PRINT JOB is highlighted.
5. Press the select button.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the up and down buttons to select the number of copies to print.
8. Press the select button to print the job.

Deleting a Job Storage print job

Sometimes it is necessary to delete a print job from the product hard disk. You can do this from the product control panel.

1. Press the select button (the one with the check mark) to open the menus. RETRIEVE JOB is highlighted.
2. Press the select button.
3. Press the up and down buttons to scroll to your User Name, and then press the select button.
4. Press the up and down buttons to scroll to the Job Name, and then press the select button.
5. Press the up and down buttons to select Delete.
6. If a PIN number is assigned to the job, press the up and down buttons to select the first digit of the PIN, and then press the select button. The number in the product control-panel display changes to an asterisk. Repeat this step for each of the remaining three digits of the PIN number.

   If no PIN number is assigned to the job, continue with step 7.
7. Press the select button to delete the job.

The stored print job is deleted and the product returns to the **READY** state.

Color tab

Use the **Color** tab to specify predefined color-option settings or to fine-tune the color treatments and half-toning. Color output can also be converted to grayscale. The **Color** tab is shown in the following illustration.

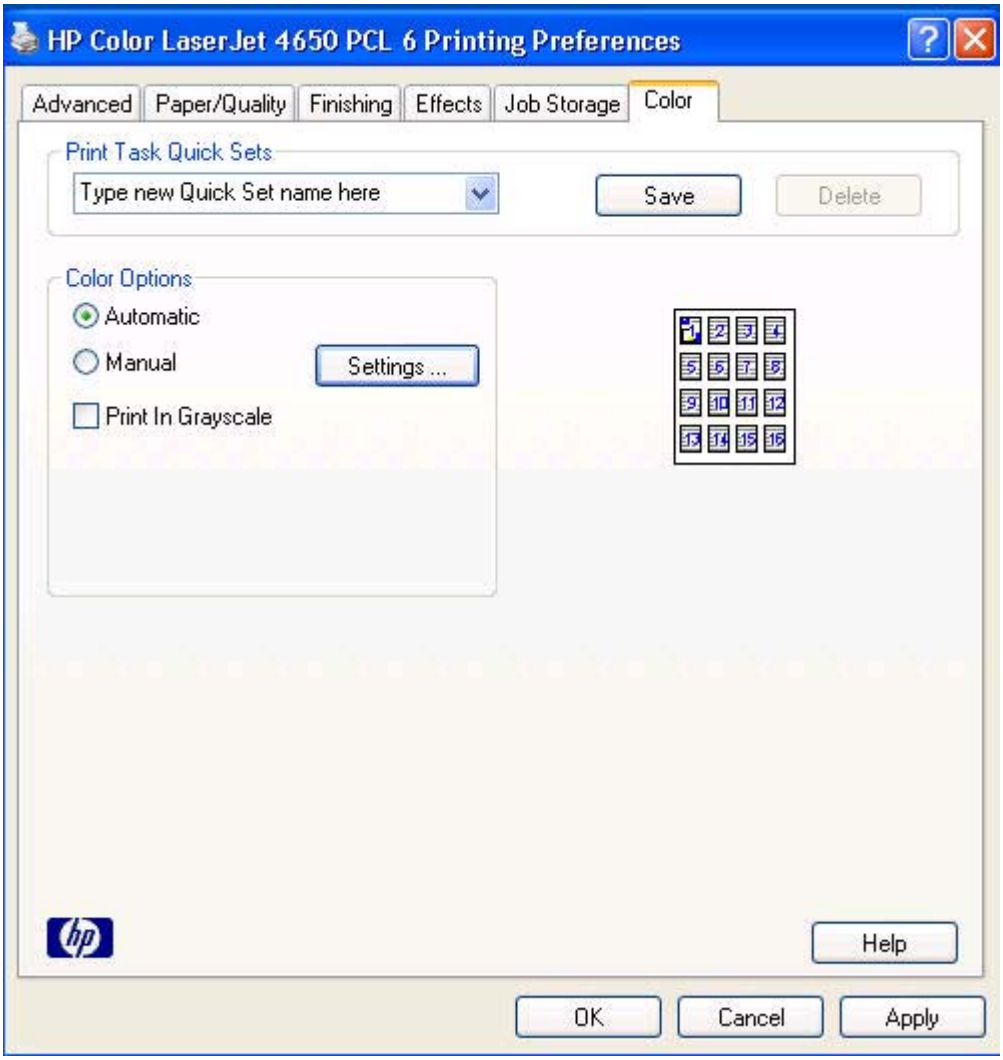


Figure 4-15. **Color tab**

The **Color** tab contains the following controls:

- **Print Task Quick Sets** group box
- **Color Options** group box
- Document preview image

Print Task Quick Sets

The **Print Task Quick Sets** control is available on each Printing Preference tab, and is used to store the current combination of driver settings found on all of the other tabs. **Print Task Quick Sets** are either preset or user-defined printing specifications, such as media size and pages per sheet. For more information, see Paper tab features.

Color Options

Use the **Color Options** group box to adjust the independent color controls. The settings affect the print job color rendering and print quality. The **Color Options** group box contains the following controls:

- **Automatic** option (default)
- **Manual** option
- **Settings** button (opens the **Color Settings**dialog box)
- **Print in Grayscale**check box

Automatic

Use the **Automatic** option for default coloration settings that automatically tune the printed output. The HP **Automatic** default color settings provide high-quality output for most color printing needs.

Manual

To change the default coloration settings, select the **Manual** option, and then click the **Settings** button. The **Color Settings** dialog box appears.
To change the settings, make your selections by using the drop-down menus in the **Color Settings** dialog box, and then click **OK**. The following illustration shows the **Color Settings** dialog box:

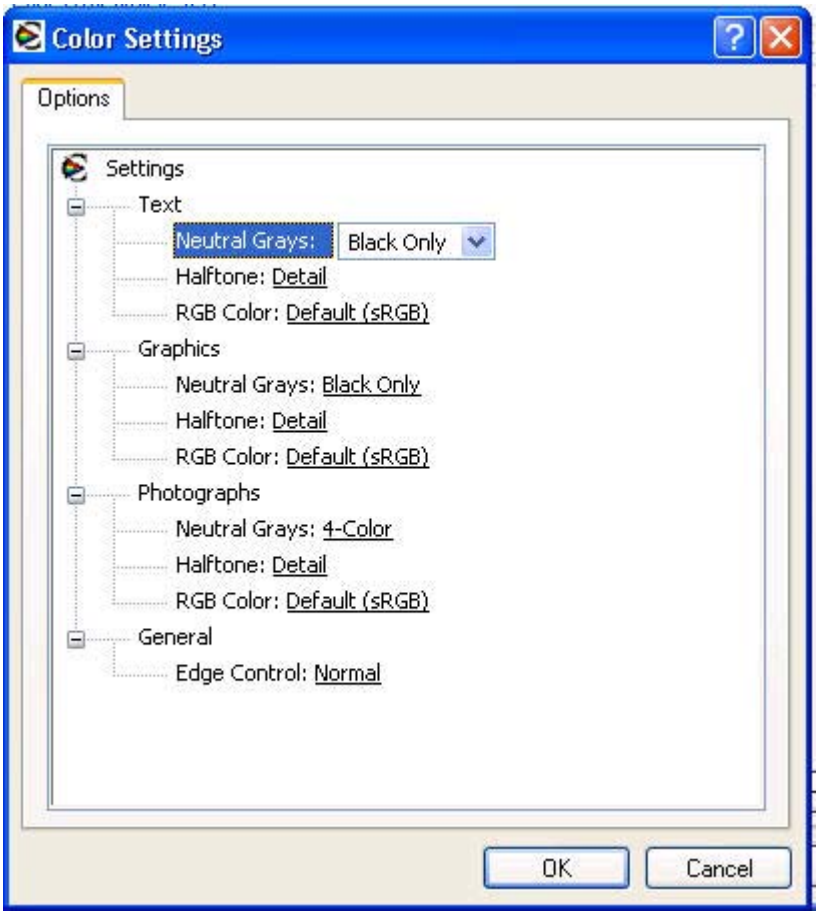


Figure 4-16. **Color settings**

The **Color Settings** dialog box contains controls for each of the following components:

- **Text**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **Graphics**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **Photographs**
  - **Neutral Grays**
  - **Halftone**
  - **RGB Color**
- **General**
  - **Edge Control**

Neutral Grays

The **Neutral Grays** drop-down menu controls the selection of a device-dependent color table that is embedded in the product firmware. The options are **Black Only** or **4-Color**. You can adjust the **Neutral Grays** setting independently for text, graphics, or photographs.

- **Black Only.** This option generates neutral colors (grays and black) by using only black toner. This option guarantees that neutral colors do not have a color cast. **Black Only** is the default setting for the **Text** and **Graphics** components.
- **4-Color.** This option generates neutral colors by combining all four colors of toner, which produces smoother gradients and transitions to non-neutral colors. It also produces the darkest possible black. **4-Color** is the default setting for **Photographs**.

Halftone

The **Halftone** setting controls the selection of a product-dependent halftone algorithm that is embedded in the product firmware. The **Halftone** options, **Smooth** and **Detail**, affect the resolution and clarity of your color output.

- **Detail.** This option is optimized for the best reproduction of images, graphics, and large, solid-filled print areas. It also enhances photographs by smoothing out the fine color gradations. Select this option when the color fidelity of large objects is the top priority. **Detail** is the default setting for all components.
- **Smooth.** This option is optimized for the best readability and sharpness of small text.

RGB Color

The **RGB Color** settings affect the color treatment for object types and determines how colors are rendered. The options are **Default (sRGB)**, **Device**, and **Vivid**.

- **Default (sRGB).** This option interprets RGB color space (sRGB), which is the accepted standard for many software companies and organizations such as Microsoft and the Worldwide Web Consortium. **Default (sRGB)** is the default setting for all components.
- **Vivid.** This option sets the product to increase the color saturation in the midtones. Less colorful objects are rendered more colorfully. This value is recommended for printing business graphics.
- **Device.** This option sets the product to print RGB data in raw device mode. To render photographs correctly when this option is selected, you must manage color in the software program in which you are working or in the operating system.

Note

If your software program converts text and graphics to raster, the **Photographs** settings also control the **Text** and **Graphics** settings.

General

Use the **General** setting group to control **Edge Control** settings for all color printing. **Edge Control** determines how edges are rendered. **Edge Control** consists of three components: Adaptive Halftoning, Trapping, and C-REt. Adaptive Halftoning increases the edge sharpness. Trapping reduces the effect of color plane misregistration by slightly overlapping the edges of adjacent objects. C-REt increases the apparent resolution by placing each dot for the smoothest edges.

The **Edge Control** option offers four settings:

- **Normal.** The **Normal** setting provides the default trapping settings. Adaptive Halftoning is set to On, and C-REt is set to On.
- **Light.** The **Light** setting provides minimal trapping. Adaptive Halftoning is set to On and C-REt is set to On.
- **Maximum.** The **Maximum** setting provides the most trapping. Adaptive Halftoning is set to On, and C-REt is set to On.
- **Off.** The **Off** setting turns Trapping, Adaptive Halftoning, and C-REt to Off.

Print in Grayscale

Select **Print in Grayscale** to print a document in black and white. This option is useful for previewing preliminary copies of slides and hardcopy output quickly or for printing color documents that will be photocopied or faxed.

Properties tabs

The **Properties** tabs contain information about and options for configuring the product.

Device Settings

Note

The **Device Settings** tab is in the **Properties** for the print driver. To gain access to the print driver **Properties**, click **Start** on the Window task bar, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home). Right-click the product name, and then click **Properties**.

Available options depend on the feature. The following illustration shows the **Device Settings** tab.

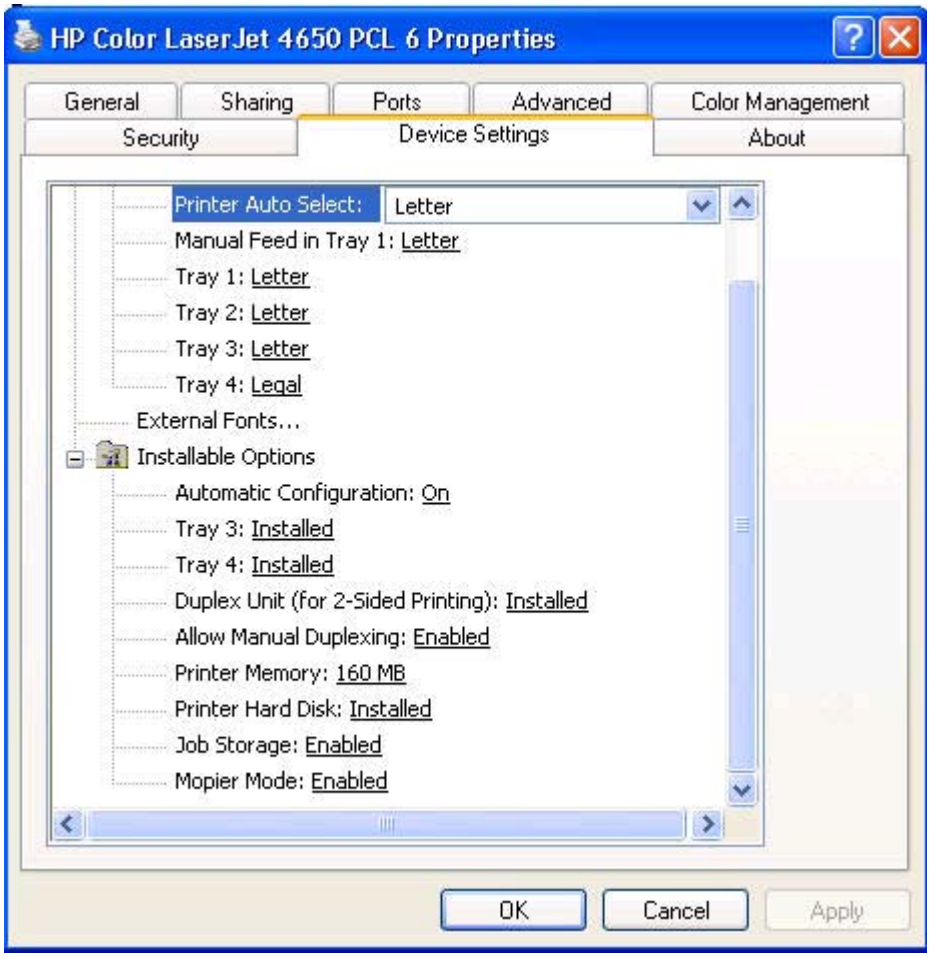


Figure 4-17. **Device Settings tab**

The **Device Settings** tab contains controls for media-handling devices and controls for managing the HP Color LaserJet 4650.

The **Device Settings** tab contains the following controls:

- **Form to Tray Assignment** options
- **External Fonts** option
- **Installable Options** options

Form to Tray Assignment

A network administrator can use **Form to Tray Assignment** to specify the media size in each input tray.

The HP Color LaserJet 4650 supports more than one source of media. You can assign a form (which defines the media size and margins) to each of your printer media sources. When a form is matched to a source, you can select the form when you print. The product prints from the tray to which that form is assigned.

Network administrators can use the **Form to Tray Assignment** setting to specify, in the driver, the media size that is loaded into each available input tray. The use of forms constrains the choices that are available in the media-size list on the **Advanced** tab in the **Document Defaults** driver tabs. This constraint prevents (or reduces the likelihood of) tying up the printer with media-mount messages that occur when users request sizes or types that are not available.

The trays listed in the **Form to Tray Assignment** setting include standard trays and optional accessory trays. Generally, items that are installed separately have a separate **Installable Options** setting. For example, for the HP Color LaserJet 4650 printer, trays 3 and 4 are listed in both the **Form to Tray Assignment** setting and the **Installable Options** setting.

The input trays listed here are also listed as media sources on the **Paper/Quality** tab.

Configuring the trays

1. Select the appropriate tray in the **Form to Tray Assignment** list.
2. Use the drop-down menu to select the media size (or form) that is loaded in that tray.
3. Repeat steps 1 and 2 for the remaining trays.
4. Click **OK** to enable your settings, or, if necessary, click the **Cancel** button to reconfigure all the trays, and remove the size and type constraints that have been imposed on the **Paper/Quality** tab.

External Fonts

Note

The External Fonts option is available only in the HP PCL 6 and HP PCL 5c unidrivers. It is not available in the PS Emulation Unidriver.

Use the **External Fonts** option to install and remove external fonts for the product. External fonts can be soft fonts or DIMM fonts.

Clicking the **External Fonts** option causes the **Properties** button to appear. Clicking the **Properties** button opens the **Font Installer** dialog box, which is shown in the following illustration.

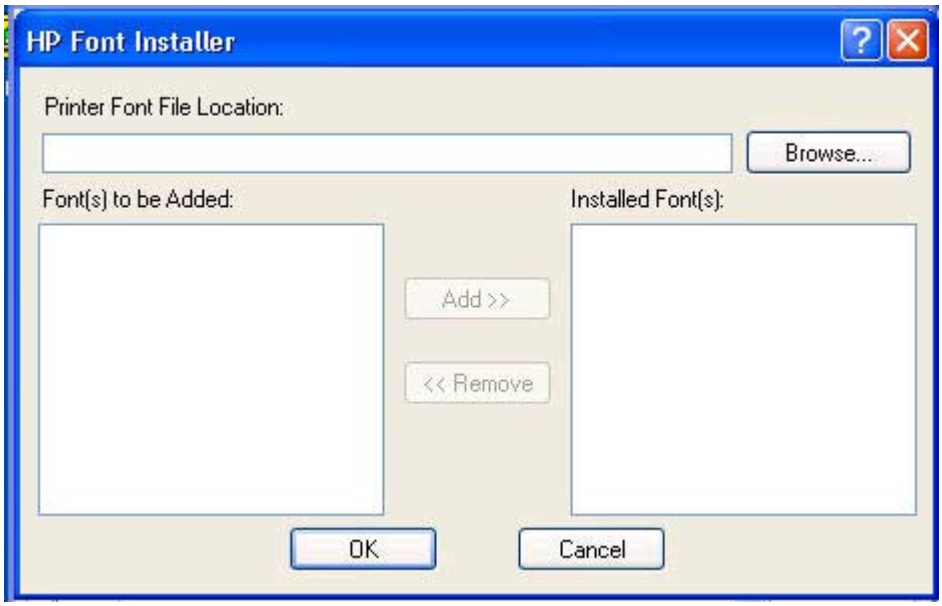


Figure 4-18. **Font Installer dialog box**

Installing external fonts

Follow these steps to install external fonts.

1. Click **Start**, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home).
2. Right-click the name of the product, and then click **Properties**
3. Click the **Device Settings** tab.
4. Click the **External Fonts** option. The **Properties** button appears.
5. Click the **Properties** button. The **Font Installer** dialog box appears.
6. Type the name and path of the font metric file in the **Printer Font File Location** text box, or click **Browse** to locate the file on your computer. The font file names appear in the **Font(s) to be Added** window.
7. Select the fonts that you want to add, and then click **Add**. The fonts are installed and the file names appear in the **Installed Font(s)** window.
8. Click **OK** to close the **Font Installer** dialog box.

Removing external fonts

1. Click **Start**, select **Settings**, and then click Printers (Windows 2000) or **Printers and Faxes** (Windows XP Professional and Windows Server 2003) or **Printers and Other Hardware Devices** (Windows XP Home).
2. Right-click the name of the product, and then click **Properties**
3. Click the **Device Settings** tab.
4. Click the **External Fonts** option. The **Properties** button appears.
5. Click the **Properties** button. The **Font Installer** dialog box appears.

6 The external fonts that are installed appear in the **Installed Fonts** window. Select the fonts that you want to remove, and then click **Remove**. The fonts are removed.

7 Click **OK** to close the **Font Installer** dialog box.

Font Substitution Table

Note

The **Font Substitution Table** option is available only in the PS Emulation Unidriver. It is not available in the HP PCL 6 Unidriver or the HP PCL 5c Unidriver.

Use the **Font Substitution Table** settings to install and remove external fonts for the product. External fonts can be soft fonts or DIMM fonts.

Clicking the **Font Substitution Table** option causes a list of fonts to appear, as show in the following illustration. Use the settings to change the TrueType-to-printer font mappings.

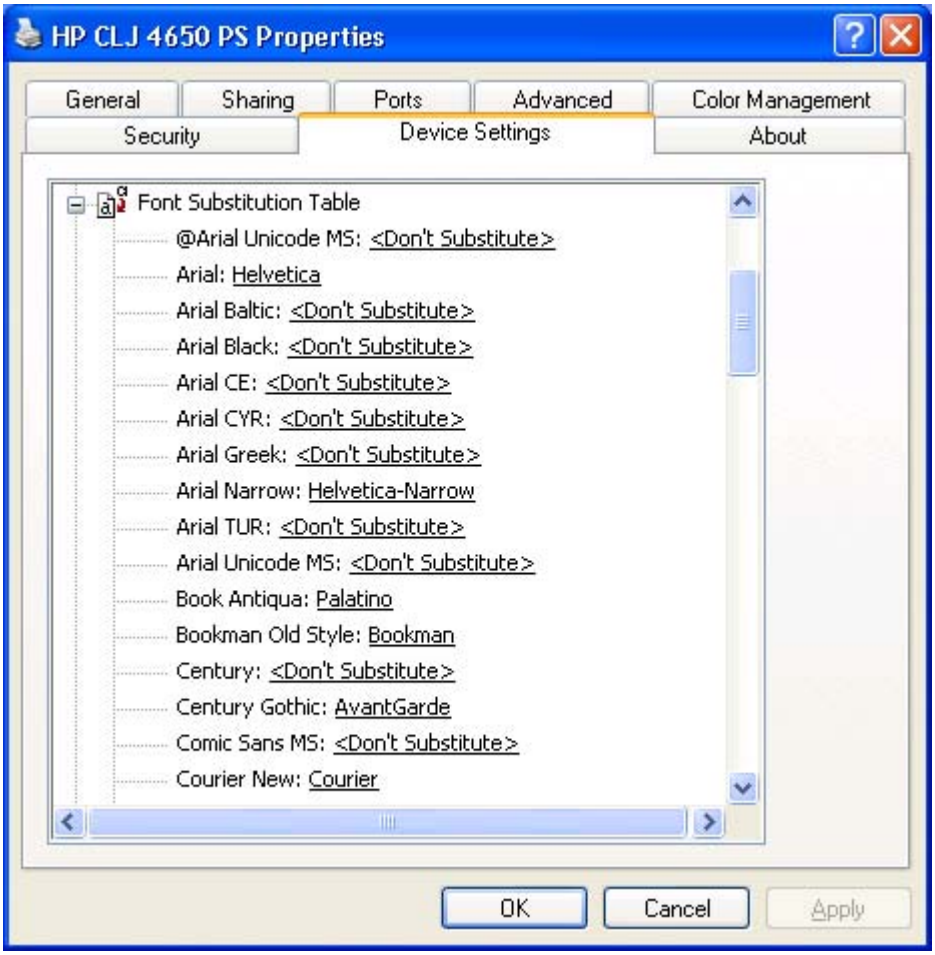


Figure 4-19. **Font Substitution Table**

Installable Options

This section provides information to configure the printing options that you can install for the HP Color LaserJet 4650. The following controls are available:

- **Automatic Configuration**
- **Tray 3**
- **Tray 4**

- **Duplex Unit (for 2-Sided Printing)**
- **Allow Manual Duplexing**
- **Printer Memory**
- **Printer Hard Disk**
- **Job Storage**
- **Mopier Mode**
- **Postscript Passthrough (PS Emulation Unidriver only)**

Automatic Configuration

Tray 3

This control specifies whether you have **Tray 3**, an additional 500-sheet media feeder, installed on your product. The default setting is **Not Installed**. In order to use **Tray 3**, you must change this setting to **Installed**.

Tray 4

This control specifies whether you have **Tray 4**, an additional 500-sheet media feeder, installed on your product. The default setting is **Not Installed**. In order to use **Tray 4**, you must change this setting to **Installed**.

Duplex Unit (for 2-Sided Printing)

The HP Color LaserJet 4650dn, 4650dtn, and 4650hdn series printers come with a duplex unit installed. This setting is enabled (**Installed**) by default.

Note

The HP Color LaserJet 4650 printer supports smart duplexing. The product uses the smart duplexing feature to detect information on both sides of the print job pages and only runs the pages through the duplexing unit if there is printable information on the second side of the page.

Allow Manual Duplexing

Some printer models do not support automatic 2-sided printing. However, you can print on both sides of a page using manual 2-sided printing when this option is enabled.

Printer Memory

This option matches the setting to the amount of memory that is installed in the product. The driver generates ranges of memory that can be selected, up to the maximum that the product can accept. The driver can use this information to manage how the print driver uses the product memory.

When a minimum total memory of 288 MB is installed, the **Stored Job** option and the **Mopier Mode** are enabled in the print driver. The **Stored Job** option allows you to store print jobs, and then print them later from the control panel. The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job.

Printer Hard Disk

When this option is enabled, the **Stored Job** option and the **Mopier Mode** are enabled in the print driver. The **Stored Job** option allows you to store print jobs, and then print them later from the control panel. The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job.

Only the HP Color LaserJet 4650hdn comes with a hard disk installed.

Job Storage

If your HP Color LaserJet 4650 is equipped with a hard disk drive, the **Job Storage** option should be enabled and all job storage options are available. If your HP Color LaserJet 4650 is *not* equipped with a hard disk drive but has a minimum of 288 MB of memory, limited job storage options are available. When job storage is enabled, the product can store print jobs so that you can gain access to those print jobs later at the control panel.

Mopier Mode

The multiple-original print (mopy) function is an HP-designed feature that produces multiple, collated copies from a single print job. Multiple-original printing (mopying) increases performance and reduces network traffic by transmitting the job to the printer once, and then storing it in the printer hard disk. The remainder of the copies are printed at the fastest speed. All documents that are printed in mopier mode can be created, controlled, managed, and finished from the computer, which eliminates the extra step of using a photocopier.

When you use the HP PCL 6, HP PCL 5c, or PS Emulation unidriver, mopying is performed in one of two ways, either through the software or through the product hardware. When the mopier is enabled, mopying takes place through the product hardware by default. One copy of a multiple-page print job is transmitted once through the network to the product, together with a printer job language (PJL) command directing the product to make the specified number of copies.

When you disable the mopier, you are not necessarily disabling mopying, which can still be performed by the driver through the software rather than the product hardware (the mopying path that is disabled when you change the **Mopy Mode** setting to **Disabled**). However, a multiple-copy print job sent with the mopier disabled loses the advantage of transmitting the print job once, since the print job is sent through the network as many times as the number of copies selected.

Mopier mode and collation

Mopying and collating print jobs are independent but closely related functions. Mopying, the ability to send original print jobs to the product, is performed by the print driver. Collating can be controlled by either the print driver or the document software program. The mopying mode is selected by default in the driver, and can be disabled by changing the **Mopier Mode** setting on the **Device Settings** tab to **Disabled**.

You can control collation through the print driver by selecting or clearing the **Collated** check box on the **Advanced** tab. You can clear the check box, which is available only when the **Copy Count** option is set to more than 1 copy, to allow the software program to control collation.

To receive uncollated multiple copies of a print job, you must clear the **Collated** check box *and* make sure that the software program collation feature is not selected.

The following table shows the relation between mopier mode settings and collation settings in the software program and the driver. The first three columns show the settings; the last column, "Expected result", shows how a 3-page print job would appear.

Table 4-3. Driver Mopier mode and collation settings

Mopier mode	Application collation	Driver collation	Expected result
Disabled	Not selected	Not selected	3 copies uncollated
Disabled	Not selected	Selected	3 copies uncollated
Disabled	Selected	Not selected	3 copies collated

Table 4-3. Driver Mopier mode and collation settings (continued)

Mopier mode	Application collation	Driver collation	Expected result
Disabled	Selected	Selected	3 copies collated
Enabled	Not selected	Not selected	3 copies uncollated
Enabled	Not selected	Selected	3 copies uncollated
Enabled	Selected	Not selected	3 copies collated
Enabled	Selected	Selected	3 copies collated

5 Installing Windows printing-system components

Introduction

The information that follows discusses these topics:

- Supported Windows operating systems
- System requirements
- Font support
- General Windows installation instructions
- Detailed Windows installation instructions
- Setting a default printer

Supported Windows operating systems

The HP Color LaserJet 4650 printing-system software supports the following Windows operating systems:

- Windows 98
- Windows Me
- Windows NT 4.0 (parallel and networked only)
- Windows 2000 (32-bit)
- Windows XP Home Edition (32-bit)
- Windows XP Professional (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)

If your computer is running a 64-bit Windows OS, you must install the corresponding 64-bit print driver. For instructions, see Installing print drivers by using Add Printer.

Note

The HP Color LaserJet 4650 has not been tested with and does not support the Windows 3.1*x* or Windows 95 operating systems.

System requirements

The following are the system requirements for installing and using the HP Color LaserJet 4650 printing-system software on each of the supported operating systems:

- Pentium (R) or compatible processor
- Minimum 16-color/grayscale display with 640-by-480 pixel resolution (video graphics array [VGA])
- Same amount of RAM as the minimum requirements for the operating system
- 93 MB of available hard-disk space (on the same partition as the operating system) for full installation
- Onboard parallel port or network connection

Font support

The following sections list the fonts that are included with Microsoft Windows software, and the fonts that are available on the CD that came with the product.

Basic fonts

Microsoft Windows software includes these basic fonts, which can be used with any HP printing product:

- Arial
- Courier New Italic
- Times New Roman Italic
- Arial Italic
- Courier New Bold
- Times New Roman Bold
- Arial Bold
- Courier New Bold Italic
- Times New Roman Bold Italic
- Arial Bold Italic
- Symbol
- Wingdings
- Courier New
- Times New Roman

Default fonts

The following default fonts are installed through a Typical Installation of the HP Color LaserJet 4650 printing-system software.

Table 5-1. Default fonts

File name	Font name
ALBR85W.TTF	Albertus Extra Bold
ALBR55W.TTF	Albertus Medium
OLVR55W.TTF	Antique Olive
OLVR75W.TTF	Antique Olive Bold
OLVR56W.TTF	Antique Olive Italic
CGOR45W.TTF	CG Omega
CGOR65W.TTF	CG Omega Bold
CGOR66W.TTF	CG Omega Bold Italic
CGOR46W.TTF	CG Omega Italic
CGTR45W.TTF	CG Times
CGTR65W.TTF	CG Times Bold
CGTR66W.TTF	CG Times Bold Italic
CGTR46W.TTF	CG Times Italic
CLAR67W.TTF	Clarendon Condensed Bold
CORONET.TTF	Coronet
CPSR45W.TTF	CourierPS
CPSR65W.TTF	CourierPS Bold
CPSR66W.TTF	CourierPS Bold Oblique
CPSR46W.TTF	CourierPS Oblique
GARR45W.TTF	Garamond
GARR65W.TTF	Garamond Bold
GARR46W.TTF	Garamond Italic
GARR66W.TTF	Garamond Kursiv Halbfett
HELR45W.TTF	Helvetica (R)
HELR65W.TTF	Helvetica Bold
HELR66W.TTF	Helvetica Bold Oblique
HELR47W.TTF	Helvetica Narrow
HELR67W.TTF	Helvetica Narrow Bold
HELR68W.TTF	Helvetica Narrow Bold Oblique
HELR48W.TTF	Helvetica Narrow Oblique
HELR46W.TTF	Helvetica Oblique
AVGR45W.TTF	ITC Avant Garde Gothic Book
AVGR46W.TTF	ITC Avant Garde Gothic Book Oblique

Table 5-1. Default fonts (continued)

File name	Font name
AVGR65W.TTF	ITC Avant Garde Gothic Demi
AVGR66W.TTF	ITC Avant Garde Gothic Demi Oblique
BOKR75W.TTF	ITC Bookman Demi
BOKR76W.TTF	ITC Bookman Demi Italic
BOKR35W.TTF	ITC Bookman Light
BOKR36W.TTF	ITC Bookman Light Italic
CHANC___.TTF	ITC Zapf Chancery Medium Italic
DINGS___.TTF	ITC Zapf Dingbats
LETR45W.TTF	Letter Gothic
LETR65W.TTF	Letter Gothic Bold
LETR46W.TTF	Letter Gothic Italic
MARIGOLD.TTF	Marigold
NCSR75W.TTF	New Century Schoolbook Bold
NCSR76W.TTF	New Century Schoolbook Bold Italic
NCSR56W.TTF	New Century Schoolbook Italic
NCSR55W.TTF	New Century Schoolbook Roman
PALR65W.TTF	Palatino Bold
PALR66W.TTF	Palatino Bold Italic
PALR46W.TTF	Palatino Italic
PALR45W.TTF	Palatino Roman
SYMPS__.TTF	SymbolPS
TIMR65W.TTF	Times* Bold
TIMR66W.TTF	Times Bold Italic
TIMR46W.TTF	Times Italic
TIMR45W.TTF	Times Roman
UNVR65W.TTF	Univers Bold
UNVR66W.TTF	Univers Bold Italic
UNVR67W.TTF	Univers Condensed Bold
UNVR68W.TTF	Univers Condensed Bold Italic
UNVR57W.TTF	Univers Condensed Medium
UNVR58W.TTF	Univers Condensed Medium Italic
UNVR55W.TTF	Univers Medium
UNVR56W.TTF	Univers Medium Italic

Ninety-two additional PS emulation fonts are also available on the CD.

Table 5-2. Additional PS emulation fonts

File name	Font name
PS_12639.TTF	Albertus MT
PS_12640.TTF	Albertus MT Italic
PS_14530.TTF	Albertus MT Light
PS-11120.TTF	Antique Olive CompactPS
PS_11119.TTF	Antique Olive Roman
PS_11118.TTF	Antique Olive Roman Bold
PS_11846.TTF	Antique Olive Roman Italic
PS_24516.TTF	Apple Chancery Italic
PS_12704.TTF	Bodoni Poster
PS_14508.TTF	Bodoni PosterCompressed
PS_12581.TTF	BodoniPS
PS_12585.TTF	BodoniPS Bold
PS_12586.TTF	BodoniPS Bold Italic
PS_12582.TTF	BodoniPS Italic
PS_24517.TTF	Candid
PS_24518.TTF	Chicago
PS_14513.TTF	Clarendon Light
PS_10269.TTF	ClarendonPS
PS_12968.TTF	ClarendonPS Bold
PS_10369.TTF	Cooper Black
PS_10370.TTF	Cooper Black Italic
PS_14514.TTF	Copperplate32bc
PS_14515.TTF	Copperplate33bc
PS_10249.TTF	Coronet
PS_10267.TTF	Eurostile
PS_10268.TTF	Eurostile Bold
PS_14512.TTF	Eurostile Bold ExtendedTwo
PS_14511.TTF	Eurostile ExtendedTwo
PS_10267.TTF	Eurostile Medium
PS_24509.TTF	Geneva
PS_13872.TTF	GillSans
PS_13874.TTF	GillSans Bold

Table 5-2. Additional PS emulation fonts (continued)

File name	Font name
PS_13875.TTF	GillSans Bold Italic
PS_14053.TTF	GillSans Condensed
PS_14054.TTF	GillSans Condensed Bold
PS_14051.TTF	GillSans ExtraBold
PS_13873.TTF	GillSans Italic
PS_13870.TTF	GillSans Light
PS_13871.TTF	GillSans Light Italic
PS_12542.TTF	Goudy
PS_12544.TTF	Goudy Bold
PS_10695.TTF	Goudy Bold Italic
PS_12545.TTF	Goudy ExtraBold
PS_12543.TTF	Goudy Italic
PS_14526.TTF	Helvetica Condensed
PS_14528.TTF	Helvetica Condensed Bold
PS_14529.TTF	Helvetica Condensed Bold Italic
PS_14527.TTF	Helvetica Condensed Italic
PS_24519.TTF	Hoefler Text
PS_24521.TTF	Hoefler Text Black
PS_24522.TTF	Hoefler Text Black Italic
PS_24520.TTF	Hoefler Text Italic
PS_24523.TTF	Hoefler Text Ornaments
PS_14503.TTF	Joanna MT
PS_14505.TTF	Joanna MT Bold
PS_14506.TTF	Joanna MT Bold Italic
PS_14504.TTF	Joanna MT Italic
PS_13778.TTF	Letter Gothic Italic
PS_13777.TTF	Letter GothicPS
PS_13779.TTF	Letter GothicPS Bold
PS_13780.TTF	Letter GothicPS Bold Italic
PS_12675.TTF	Lubalin Graph
PS_12677.TTF	Lubalin Graph Bold
PS_12625.TTF	Lubalin Graph Bold Italic
PS_12623.TTF	Lubalin Graph Italic
PS_94073.TTF	Marigold

Table 5-2. Additional PS emulation fonts (continued)

File name	Font name
PS_14525.TTF	Mona Lisa Recut
PS_24524.TTF	Monaco
PS_24510.TTF	New York
PS_12506.TTF	Optima
PS_12510.TTF	Optima Bold
PS_12511.TTF	Optima Bold Italic
PS_12507.TTF	Optima Italic
PS_14072.TTF	Oxford Italic
PS_11546.TTF	Stempel Garamond Roman Italic
PS_11545.TTF	Stempel Garamond Roman
PS_11547.TTF	Stempel Garamond Roman Bold
PS_11548.TTF	Stempel Garamond Roman Bold Italic
PS_14507.TTF	Taffy
PS_13501.TTF	Univers 45 Light
PS_14023.TTF	Univers 45 Light Bold
PS_14024.TTF	Univers 45 Light Bold Italic
PS_13502.TTF	Univers 45 Light Italic
PS_14030.TTF	Univers 47 Condensed Light Bold
PS_14040.TTF	Univers 47 Condensed Light Bold Italic
PS_14021.TTF	Univers 55
PS_14022.TTF	Univers 55 Italic
PS_14029.TTF	Univers 57 Condensed
PS_14039.TTF	Univers 57 Condensed Italic
PS_13548.TTF	Univers Extended Italic
PS_13547.TTF	Univers ExtendedPS
PS_14481.TTF	Univers ExtendedPS Bold Italic
PS_14480.TTF	Univers ExtendedPS Italic

Installation instructions

The following sections provide instructions for installing the printer drivers on various Windows operating systems.

General installation for Windows 98, Me, NT 4.0, 2000, and XP

General installation instructions are similar for the Windows 98, Windows Me, Windows NT 4.0, Windows 2000, and Windows XP operating systems.

If the HP Color LaserJet 4650 is connected through a file or print server, the printing-system software must first be installed on the server before being installed on any client systems. If the HP LaserJet printing-system software is not first installed on the server, then bidirectional communication, some driver autoconfiguration methods, and the HP Toolbox are not available to the client systems.

For Windows NT 4.0, Windows 2000, and Windows XP, administrator rights on the system are necessary to install the software.

When the HP Color LaserJet 4650 printing-system installer runs, the HP LaserJet uninstaller is always added to the system.

Installing from the printing-system CD

Follow these instructions to install the HP Color LaserJet 4650 printing system from the CD that came with your product.

1. Close all programs that are open on your computer.
2. Insert the CD in the CD-ROM drive.

Note

If your CD does not start automatically, click **Start**, click **Run**, and then browse to and double-click the SETUP.EXE file in the root directory of the CD.

3. Click **Install Printer** and follow the onscreen prompts.

Installing from a network or from downloaded files

Follow these instructions if you downloaded the files from the Web, or if you are installing the printing system files from a network. You might need to see your network administrator for the location of the printing-system software file.

1. Browse to the location of the SETUP.EXE file.
2. Double-click the SETUP.EXE file.
3. Click **Install Printer** and continue to follow the instructions until the printer is installed. For detailed installation instructions, see Detailed Windows installation .

Detailed Windows installation

This section provides information about the installation dialog box sequence for installing the HP Color LaserJet 4650 printing-system software in Microsoft Windows environments. You can choose to install the software by using either a typical installation or a custom installation.

Typical Installation dialog box sequence

Note

The dialog boxes shown in this chapter appear in the Windows XP Pro installation sequence. The order and appearance of dialog boxes can vary among operating systems.

The typical installation includes the following components:

- HP Color LaserJet 4650 PCL 6 driver.
- Screen fonts.

The following illustration represents an overall path through the installation process. It is intended as a reference only; selections and setups will vary.

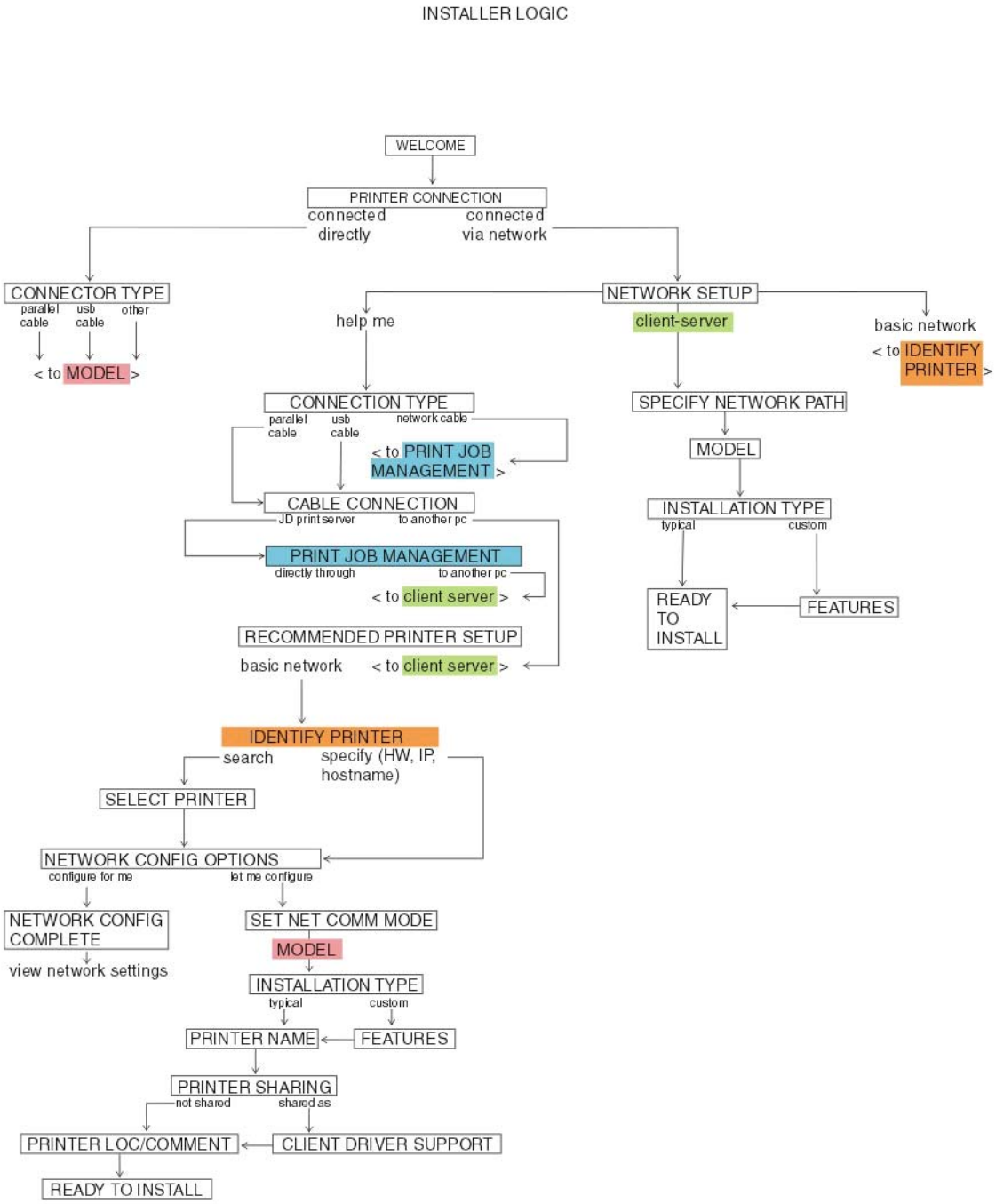


Figure 5-1. **Installation path**

Note

The components of a typical installation might vary from product to product.

Figure 5-2. **Choose Setup Language dialog box**

When you select the **Install Printer** option from the HP Color LaserJet 4650 software CD, the **Choose Setup Language** dialog box appears.

Note

The **Choose Setup Language** dialog box lists only the languages that are available on the HP Color LaserJet 4650 software CD.

The installer automatically detects the language that your computer system uses and presents this selection as the default.

You can select another language that is available on the CD by clicking the down arrow in the drop-down menu.

Clicking **OK** initiates the printing system setup.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

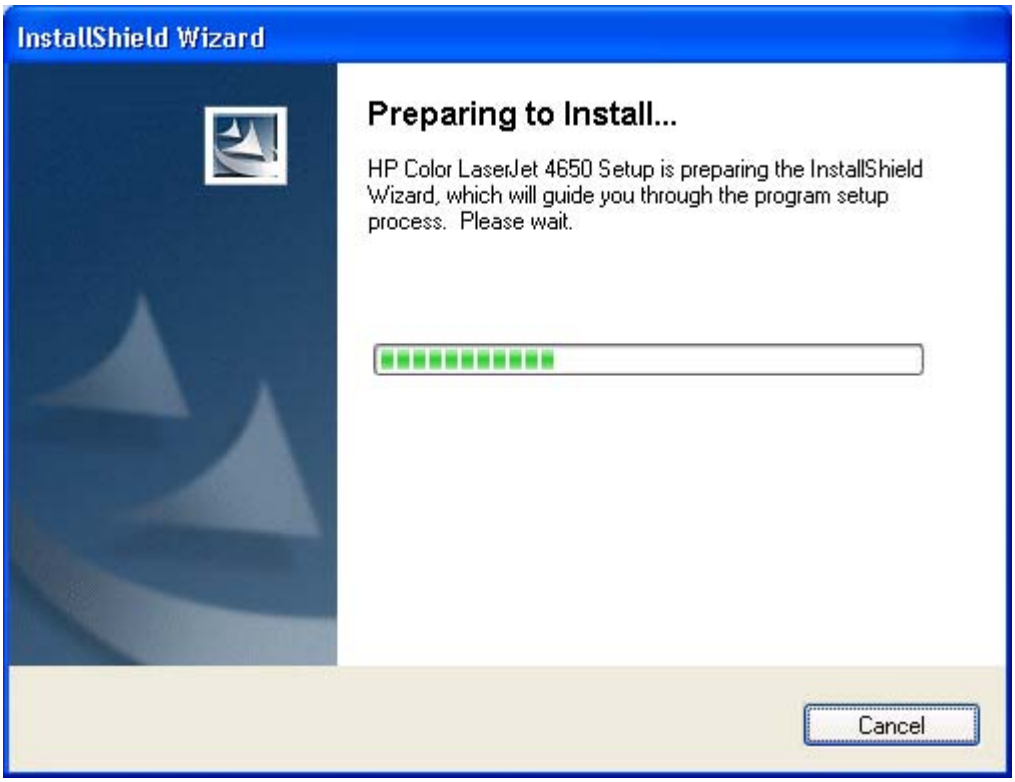


Figure 5-3. **Preparing to Install dialog box**

Next, the **Preparing to Install** dialog box appears.

Note

While the **Preparing to Install** dialog box appears, the installer is decompressing files into the system TEMP directory. The elapsed time to complete this action depends upon the performance of your system.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

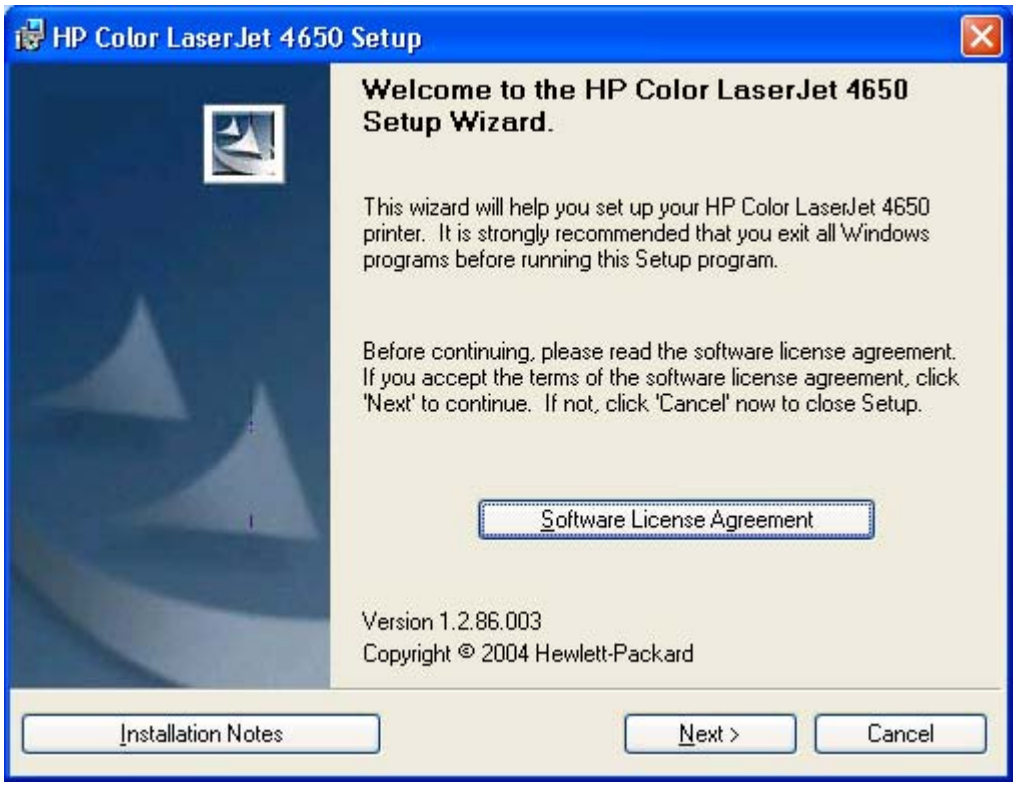


Figure 5-4. **Welcome dialog box**

Clicking **Software License Agreement** takes you to the **HP Software License Agreement** dialog box.

Clicking **Installation Notes** opens the file LJ4650_INSTALL_NOTES_ENWW.RTF

Clicking **Next** takes you to the **Type of Connection** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

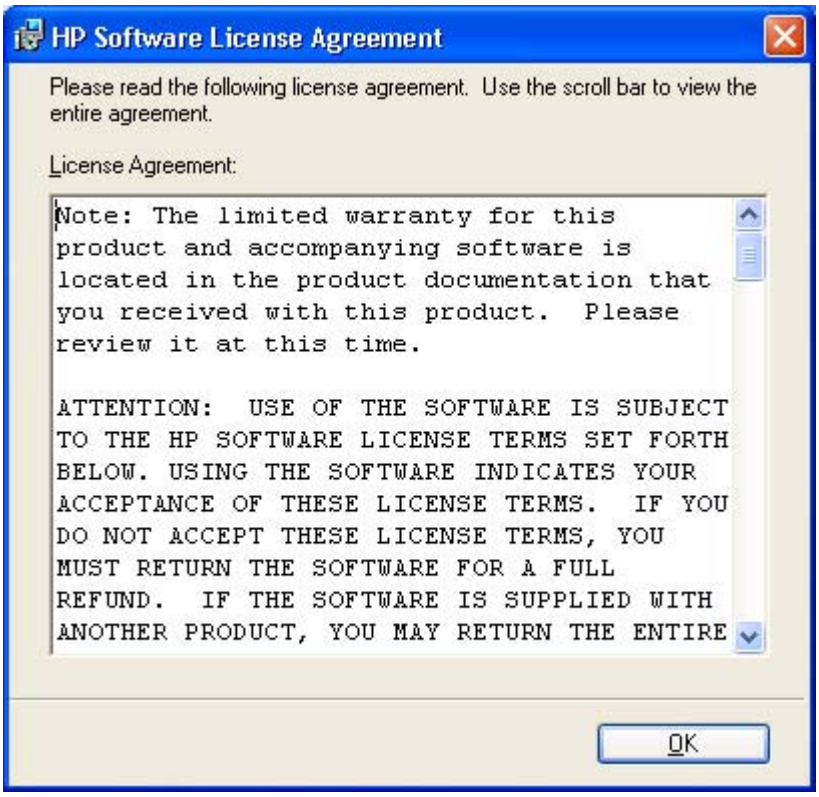


Figure 5-5. **HP Software License Agreement dialog box**

Clicking **OK** takes you back to the **Welcome** dialog box.

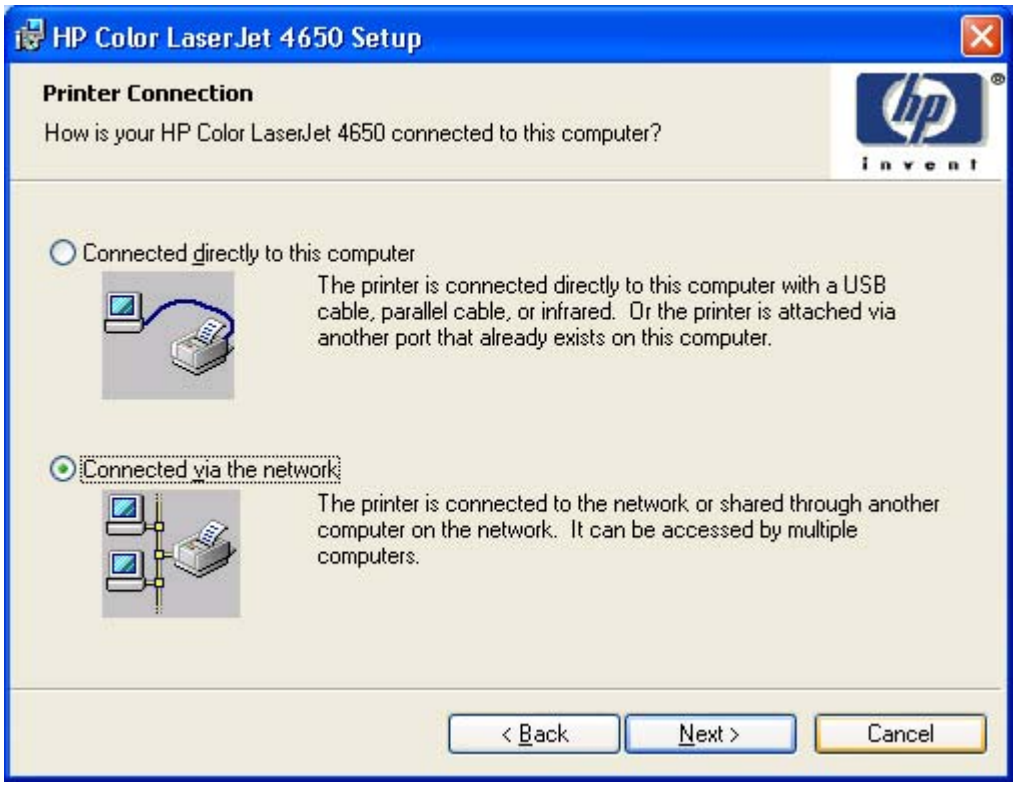


Figure 5-6. **Printer Connection dialog box**

Note

The product does not support infrared connections.

If you select **Connected directly to this computer** (a "direct connection" using a parallel cable or universal serial bus cable), clicking **Next** takes you to the **Connection Type** dialog box, and then to the **Model** dialog box. This is the default option.

If you select **Connected via the network**, clicking **Next** takes you to the **Network Setup** dialog box.

Clicking **Back** returns you to the HP Color LaserJet 4650 **Welcome** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

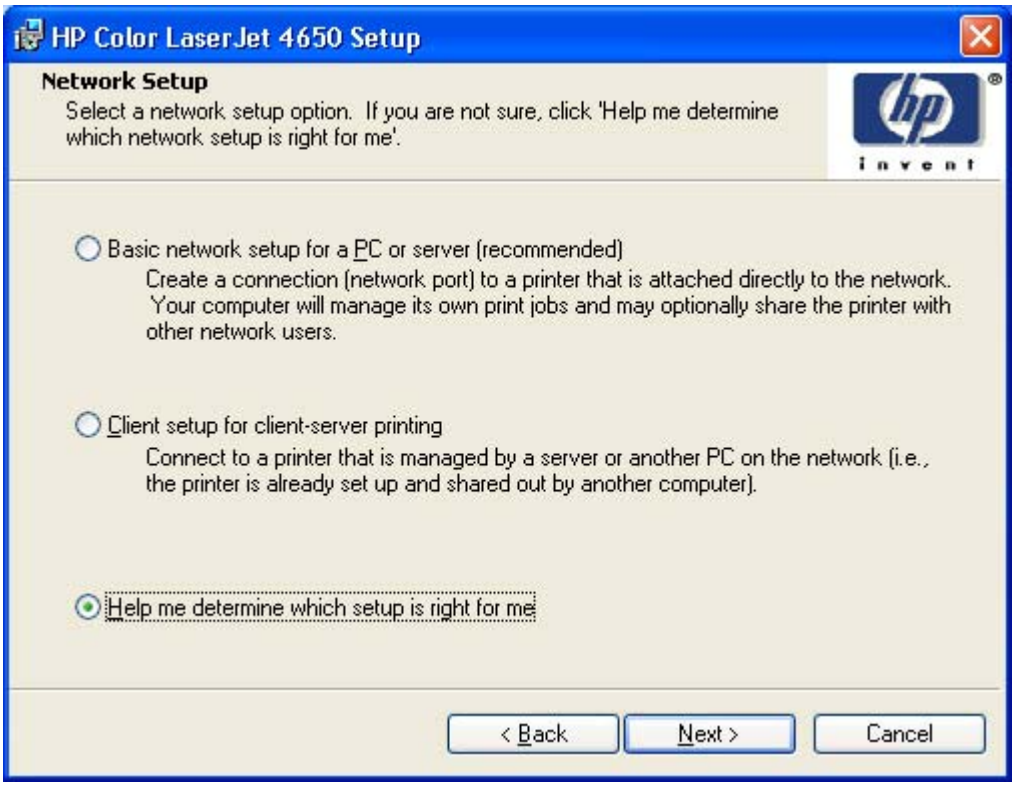


Figure 5-7. **Network Setup dialog box**

If you select **Basic network setup for a PC or server**, clicking **Next** takes you to the **Specify Network Path** dialog box, and then to the **Installation Type** dialog box.

If you select **Client setup for client-server printing**, clicking **Next** initiates a series of question dialog boxes that help you determine the best connection-type option to follow. This series begins with the **Cable Type Selection** dialog box.

If you select **Help me determine which setup is right for me**, clicking **Next** takes you to the **Connection Type** dialog box.

Clicking **Back** returns you to the **Network Setup** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

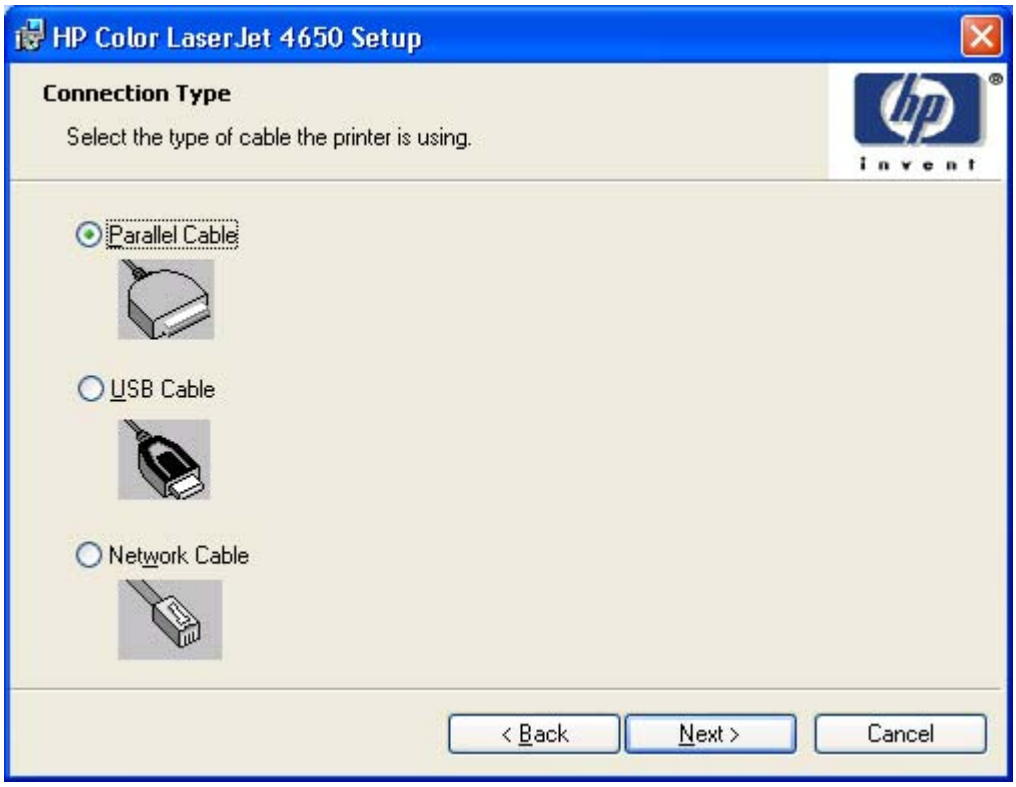


Figure 5-8. **Connection type dialog box**

Clicking **Parallel Cable** and then clicking **Next** takes you to the **Cable Connection** dialog box.

Clicking **USB Cable** and then clicking **Next** takes you to the **Cable Connection** dialog box.

Clicking **Network Cable** and then clicking **Next** takes you to the **Print Job Management** dialog box.

Clicking **Back** takes you to the either the **Print Job Management** dialog box or the **Cable Connection** dialog box, depending on your previous selections.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

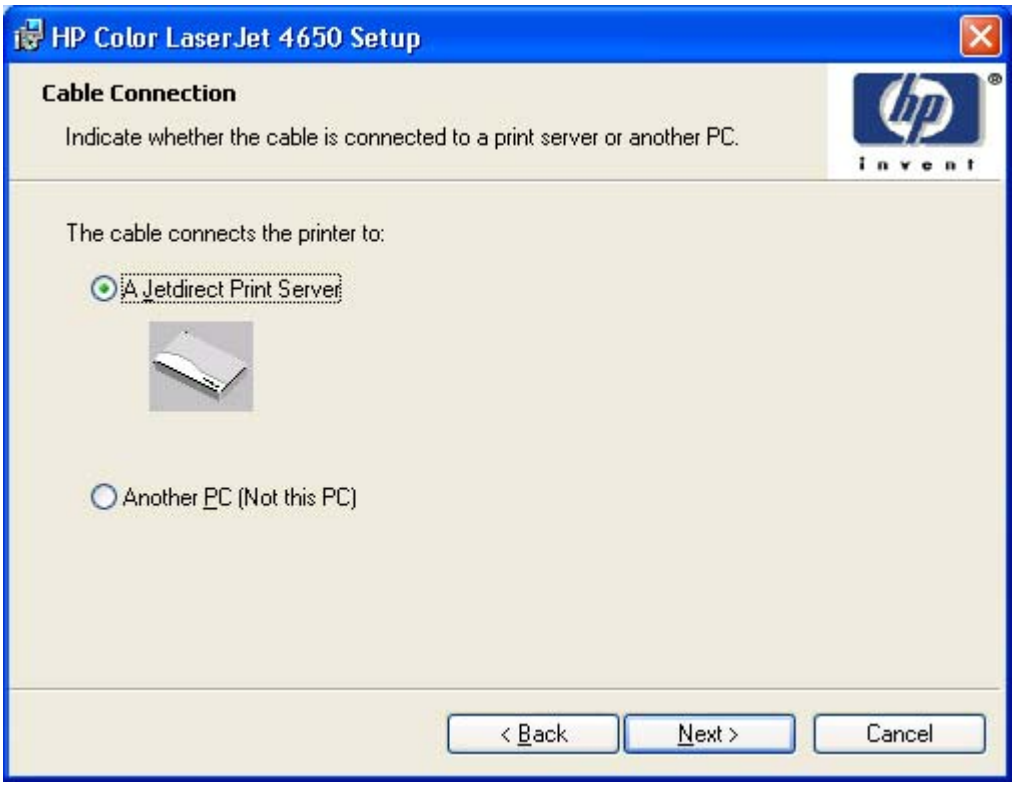


Figure 5-9. **Cable Connection dialog box**

Clicking **A Jetdirect Print Server**, and then clicking **Next** takes you to the **Print Job Management** dialog box.

Clicking **Another PC (not this PC)**, and then **Next** takes you to the **Recommended Network Setup** for client-server printing dialog box.

Clicking **Back** takes you to the **Connection Type** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

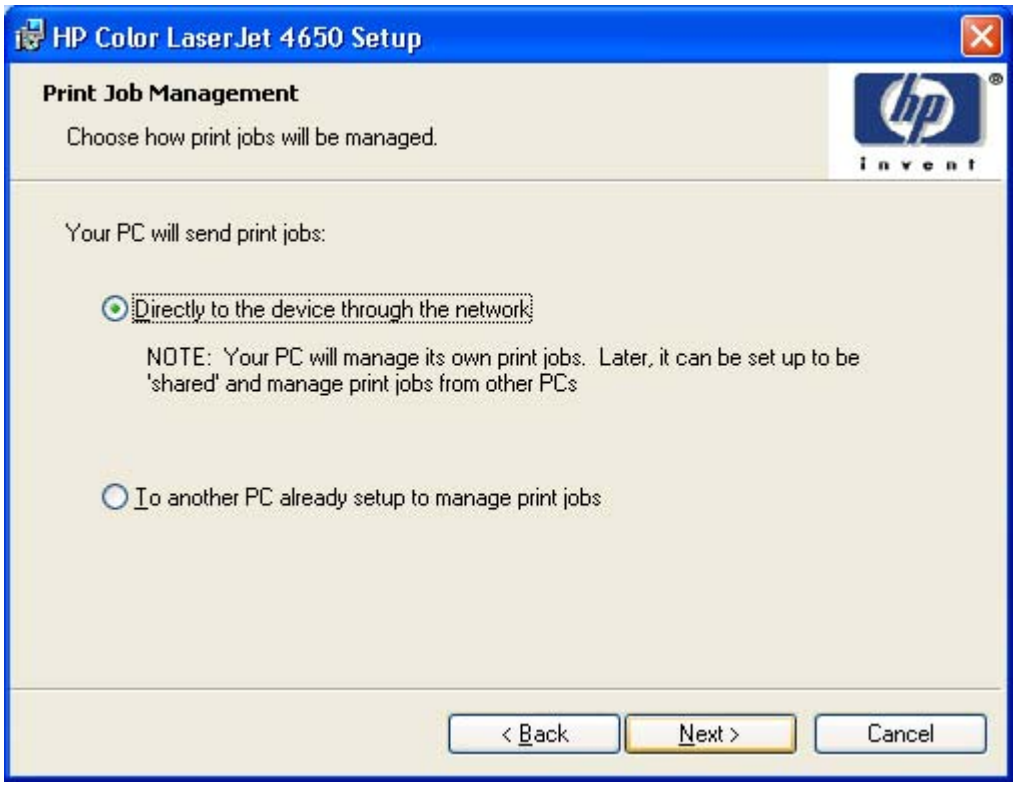


Figure 5-10. **Print Job Management dialog box**

Clicking either selection takes you to the **Recommended Network Setup** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

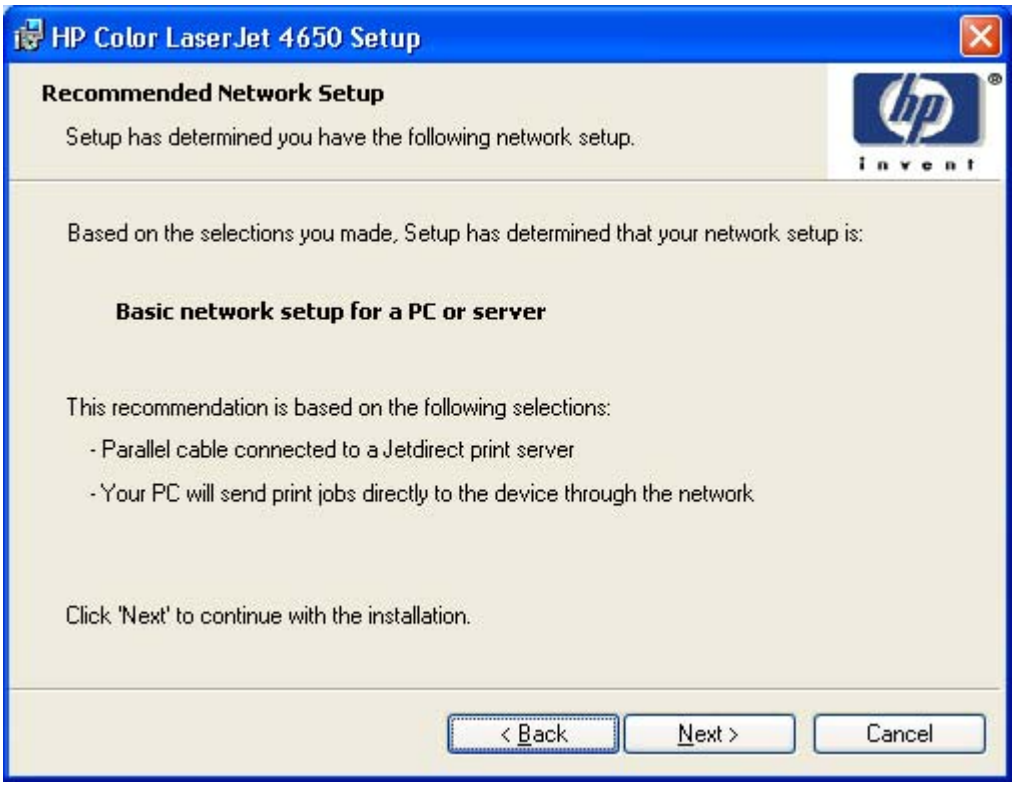


Figure 5-11. **Recommended Network Setup dialog box**

Clicking **Next** takes you to the **Identify Printer** dialog box.

Clicking **Back** takes you to either the **Cable Connection** dialog box or the **Network Setup** dialog box, depending on the option you selected in the previous dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

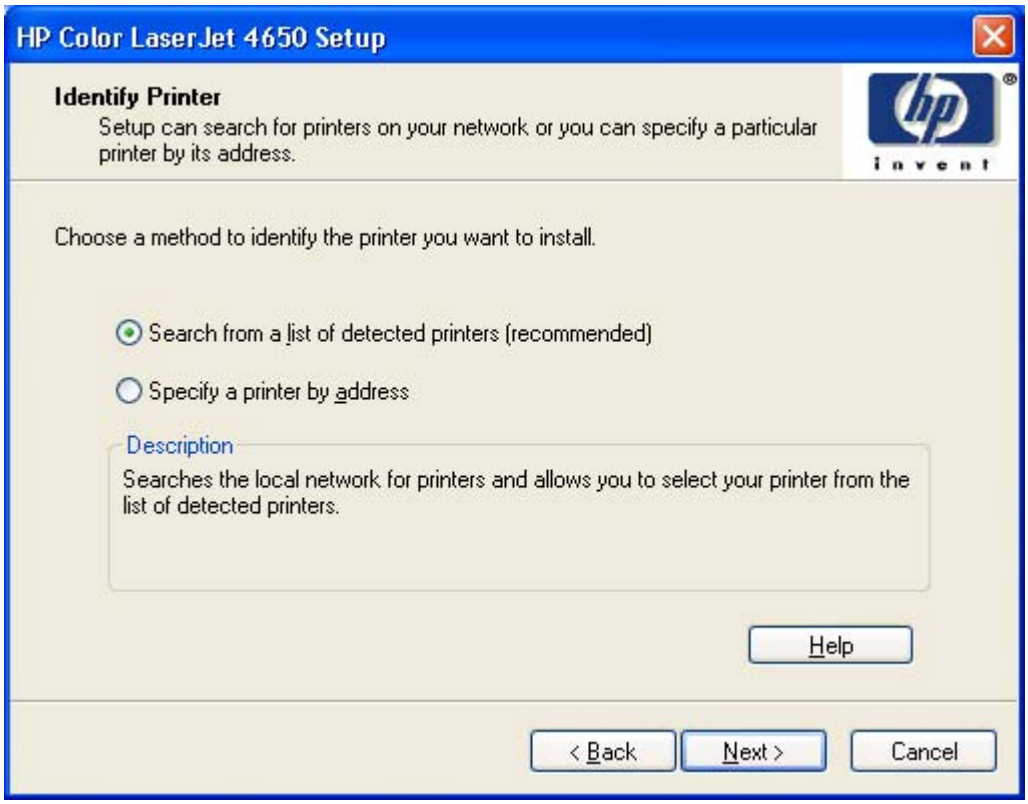


Figure 5-12. **Identify Printer dialog box**

Clicking **Help** takes you to context-sensitive HTML help.

Clicking **Search from a list of detected printers (recommended)**, and then clicking **Next** takes you to the **Select Printer** dialog box. The search returns a list of networked products.

Clicking **Specify a printer by address** and then clicking **Next** takes you to the **Specify Printer** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

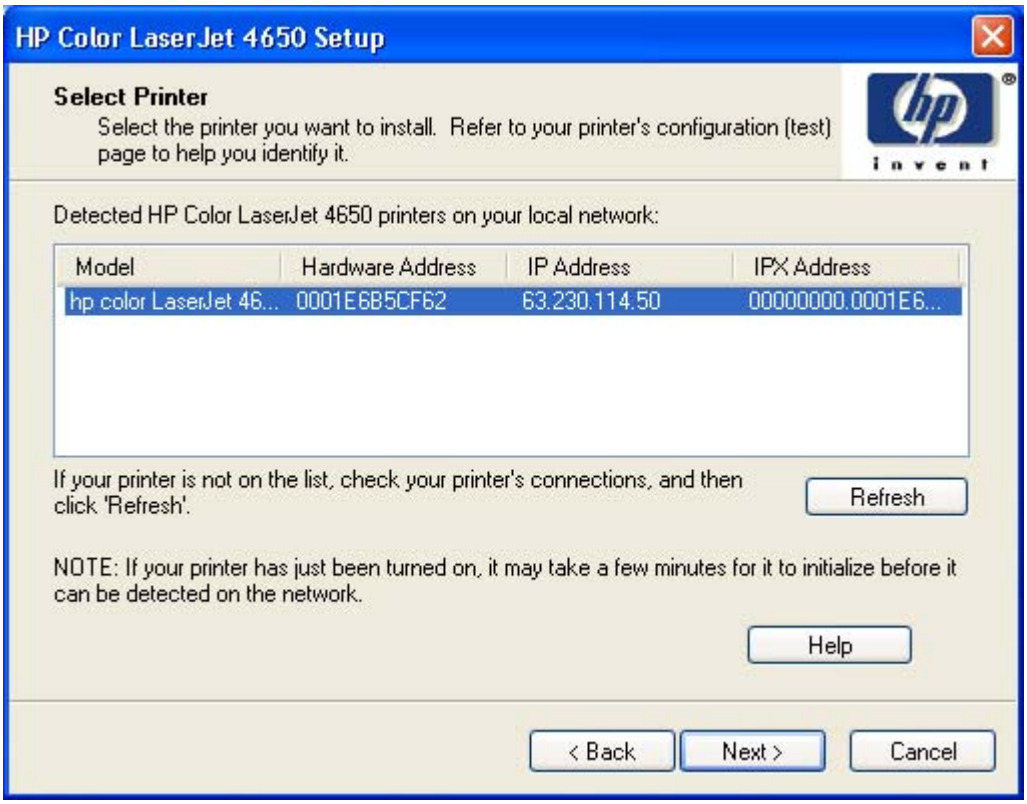


Figure 5-13. **Select Printer dialog box**

A dialog box appears, stating that the installer is searching the network for available printers. After the search is complete, the **Select Printer** dialog box appears.

Clicking **Help** takes you to context sensitive HTML help.

Clicking **Back** takes you to the **Identify Printer** dialog box.

Clicking **Next** takes you to the **Network Configuration Options** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

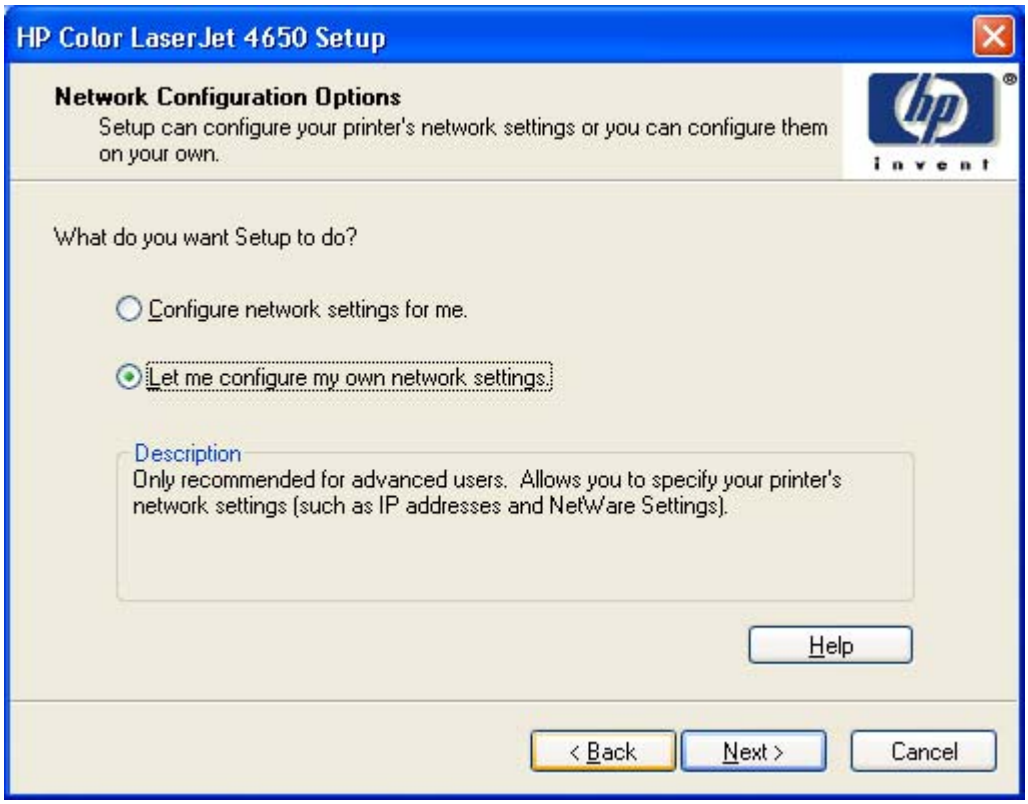


Figure 5-14. **Network Configuration Options dialog box**

Clicking **Configure network setting for me**, and then clicking **Next** takes you to the **Network Configuration Complete** dialog box. In that dialog box, clicking **View Network Settings** takes you to a list of network settings. Then, clicking **OK** returns you to the **Network Configuration Complete** dialog box.

Clicking **Let me configure my own network settings**, and then clicking **Next** takes you to the **Set Network Communication Mode** dialog box.

Clicking **Help** takes you to context-sensitive HTML Help.

Clicking **Back** takes you to the **Network Configuration Options** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

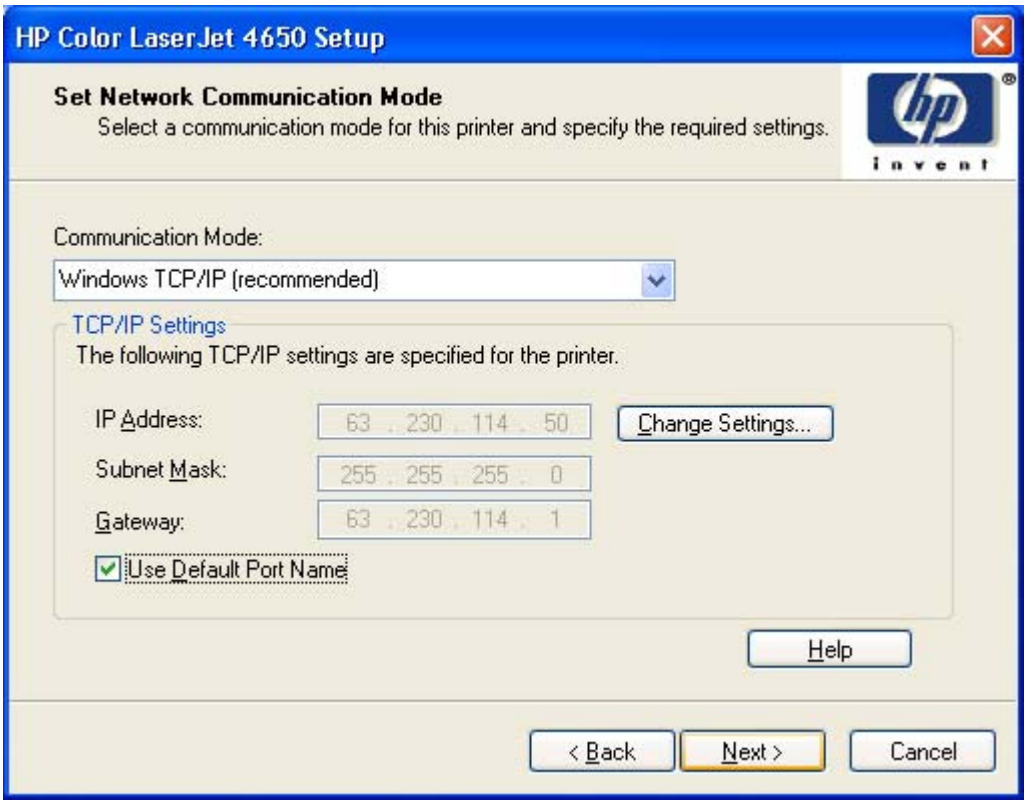


Figure 5-15. **Set Network Communication Mode dialog box**

Clicking **Change Settings...** takes you to the **Change Settings** dialog box, where you can type a different IP Address, Subnet Mask, and Gateway address. Clicking **OK** returns you to the **Set Network Communications** dialog box.

Clicking **Next** takes you to the **Model** dialog box or the **Network Configuration Complete** dialog box, depending on your previous selections.

Clicking **Back** returns you to the **Select Port** dialog box when you are performing a direct connection installation, or to the **Set Network Communication Mode** dialog box when you are performing a network installation.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

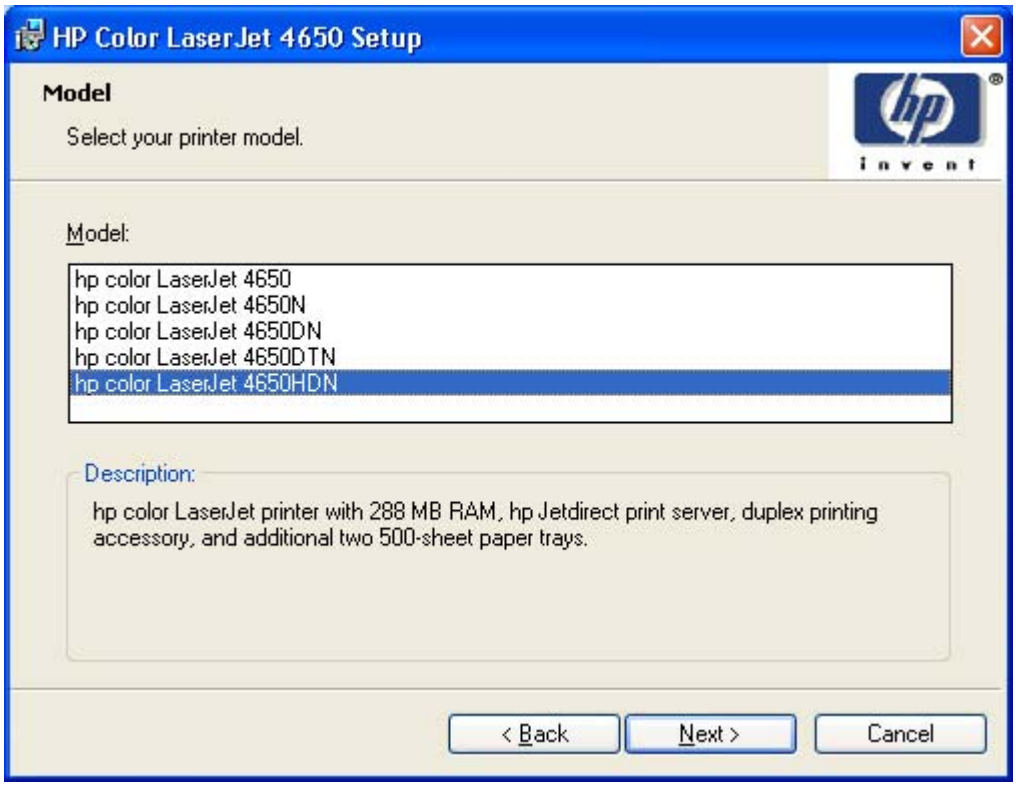


Figure 5-16. **Model dialog box**

Clicking **Back** takes you to the **Connection Type** dialog box.

Clicking **Next** takes you to the **Installation Type** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

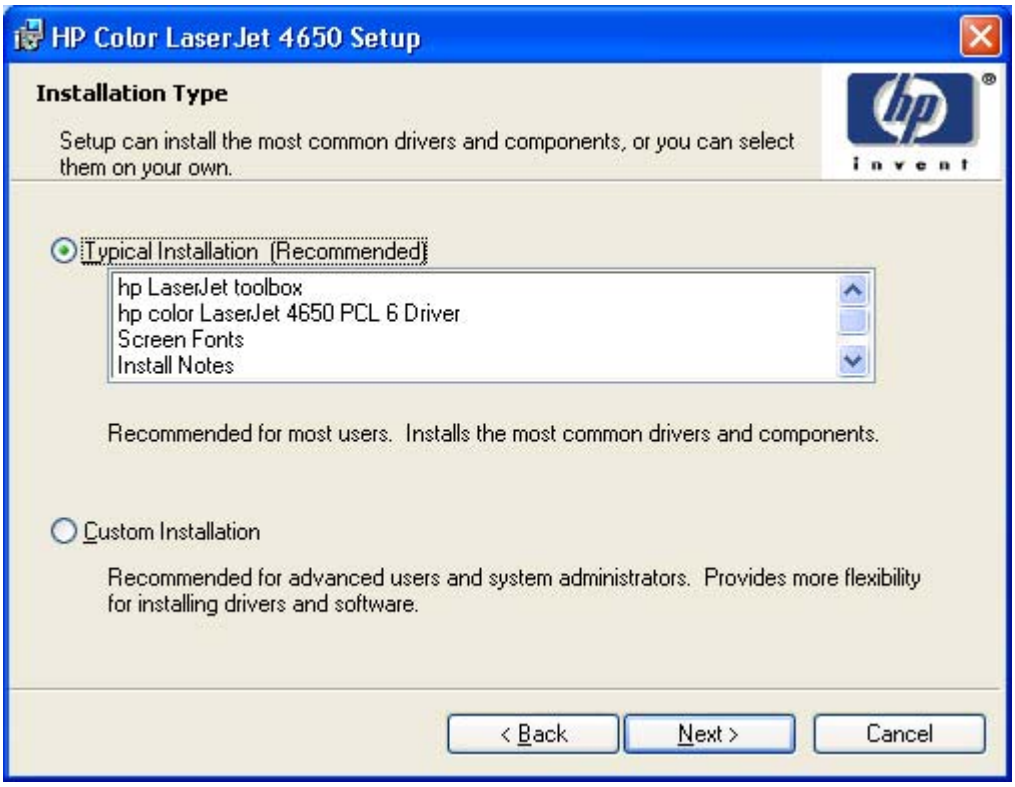


Figure 5-17. **Installation Type dialog box**

Note

The components of a Typical Installation might vary from product to product.

Clicking **Typical Installation (Recommended)** and then clicking **Next**, takes you to the **Printer Name** dialog box.

Clicking **Custom Installation** and then clicking **Next**, opens the **Features** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

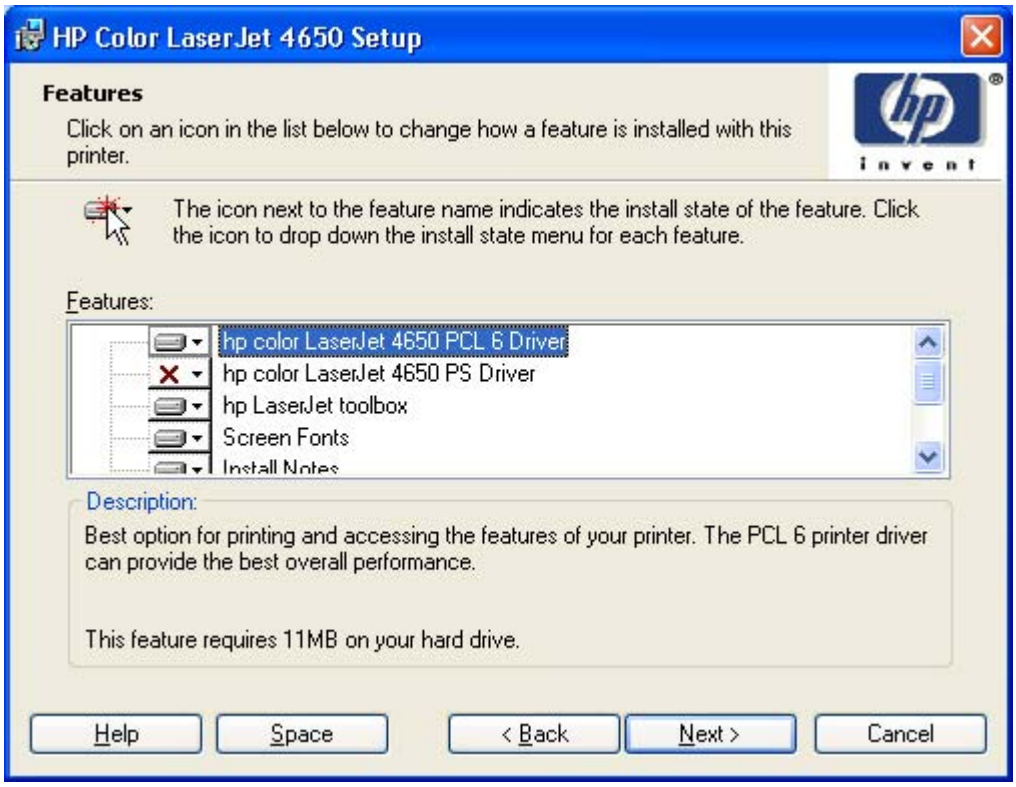


Figure 5-18. **Features dialog box**

Note

When you do not share the printer, additional driver support is not available. If you share the printer on Windows NT 4.0, Windows 2000, Windows XP, or Windows Server 2003 operating systems by selecting **Share as**, you must type a name. You can also provide additional print driver support for other operating systems.

A red X in the icon indicates that the feature is not installed. The installed icon appears when you select an install state for that feature.

Note

Adobe Acrobat Reader appears as an option only if it has not been installed previously.

Click **Space** to view available space on your hard drive.

Click **Back** to view the **Installation Type** dialog box, with **Custom Installation** selected.

Click **Next** to view the **Printer Name** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

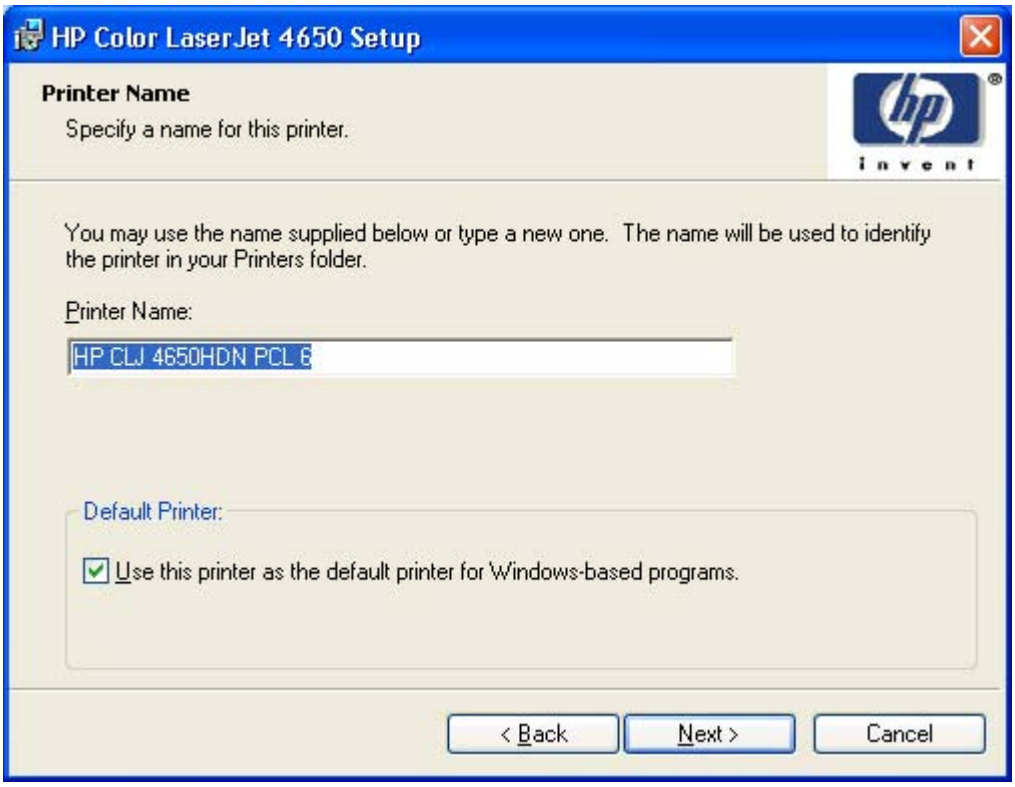


Figure 5-19. **Printer Name dialog box**

Clicking **Back** takes you to either the **Installation Type** dialog box or the **Features** dialog box, depending on your previous selections.

Clicking **Next** takes you to the **Printer Sharing** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

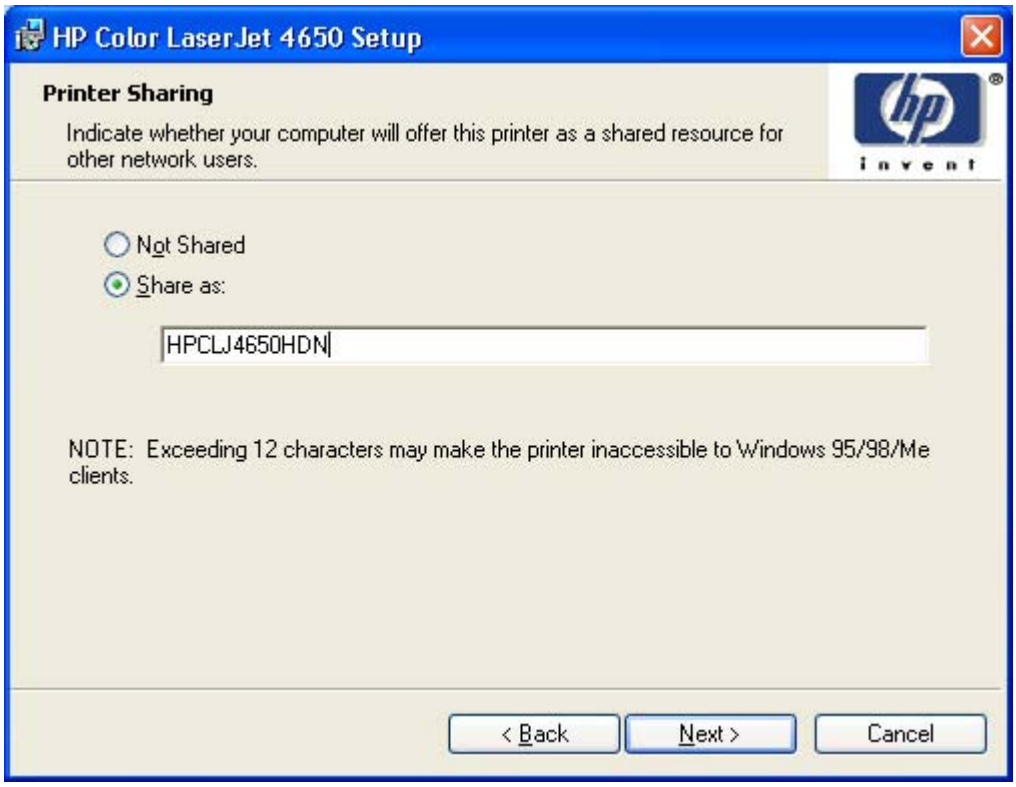


Figure 5-20. **Printer Sharing Setup dialog box**

Note

The **Printer Sharing** dialog box does not appear if your computer is running Windows 98 or Windows Me.

Clicking **Not shared** and then clicking **Next** takes you to the **Printer Location and Comment** dialog box or the **Installation Type** dialog box.

Clicking **Share as:** causes the text box to become active. Typing the share name and then clicking **Next** takes you to the **Client Driver and Support** dialog box.

Clicking **Back** takes you to the **Printer Name** dialog box or the **Installation Type** dialog box, depending on your previous selections.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

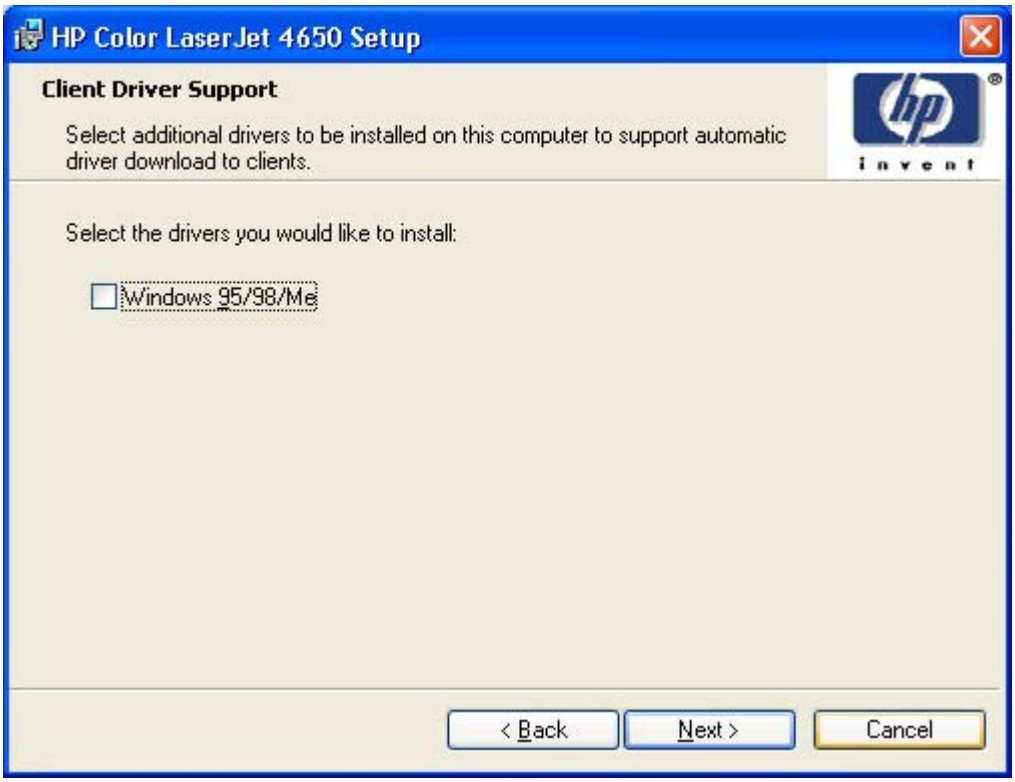


Figure 5-21. **Client Driver Support dialog box**

The **Client Driver Support** dialog box does not appear if the computer is running Windows 98 or Windows Me.

Note

Adobe Acrobat Reader appears as an option only if it has not been installed previously.

Clicking **Back** takes you to the **Printer Sharing** dialog box.

Clicking **Next** takes you to the **Printer Location and Comment** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

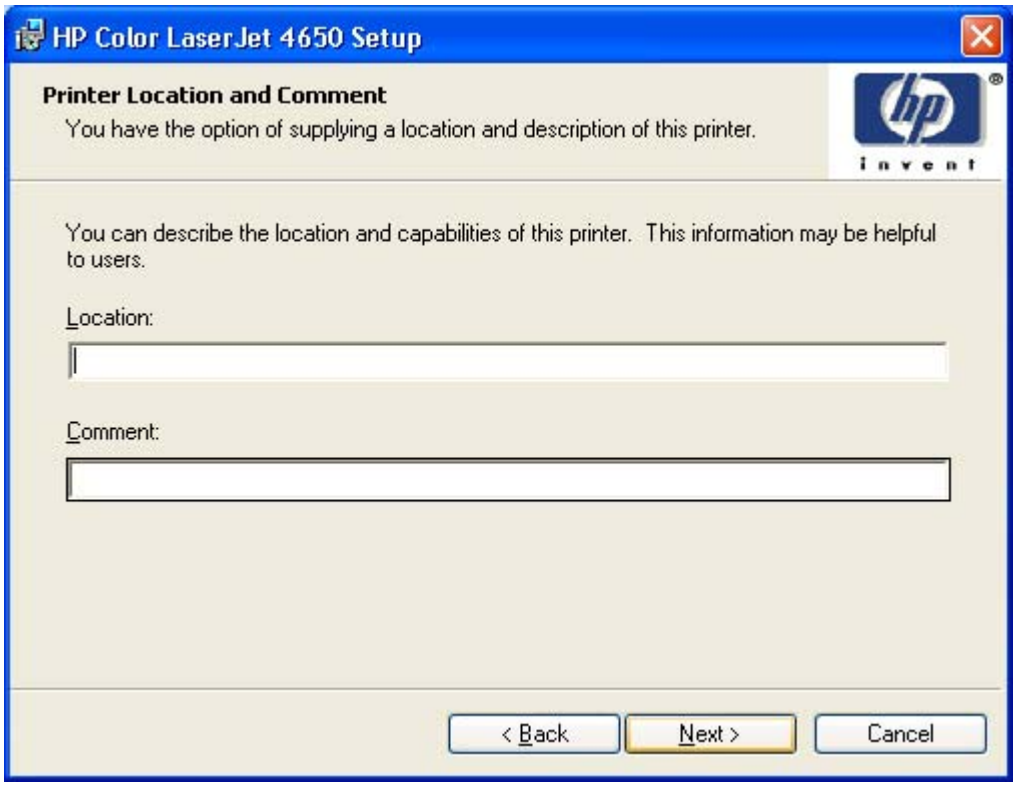


Figure 5-22. **Printer Location and Comment dialog box**

In the **Location** text box, you can type the physical location of the printer. In the **Comment** text box, you can type any additional information that might be helpful to users.

Clicking **Next** takes you to the **Ready to Install** dialog box.

Clicking **Back** takes you to the **Printer Name** dialog box or the **Installation Type** dialog box, depending on your previous selections.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

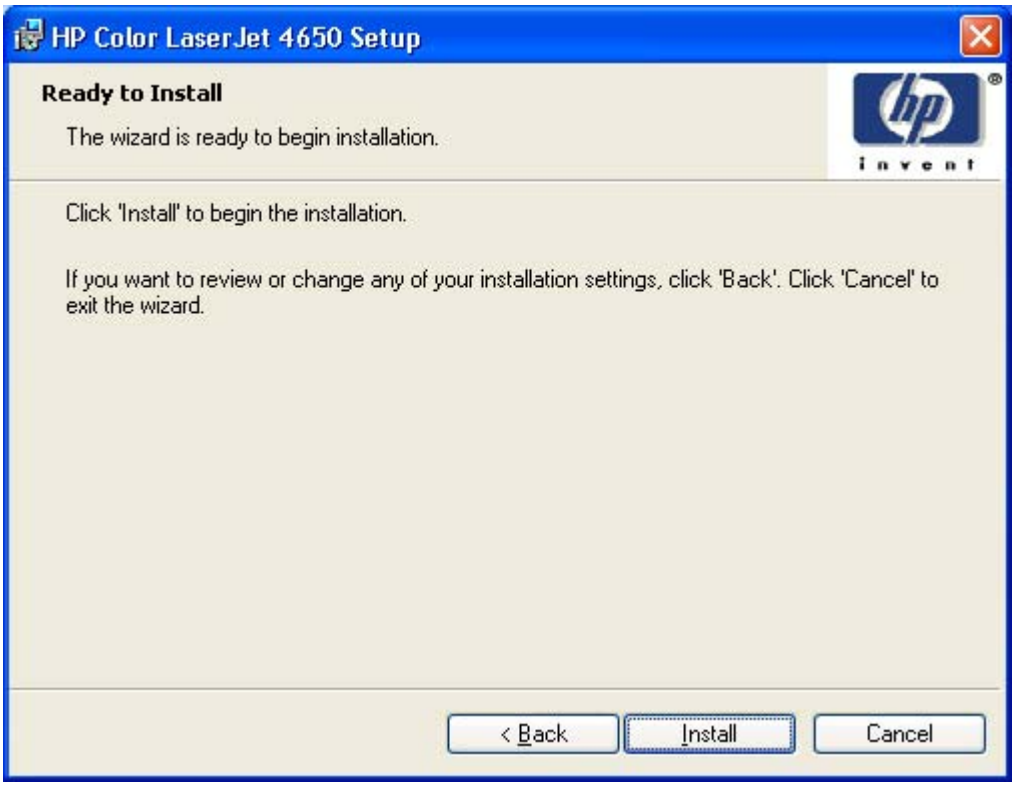


Figure 5-23. **Ready to Install dialog box**

Clicking **Install** starts the installation process.

Clicking **Back** takes you to the **Printer Location and Comment** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

Custom Installation

The Custom Installation gives you the option of installing the following components:

- HP Color LaserJet 4650 PCL 6 Driver (for direct-connect and network installations)
- HP Color LaserJet 4650 PS Driver (for direct-connect and network installations)
- HP Toolbox (for network installations)

- Screen fonts
- Adobe Acrobat Reader

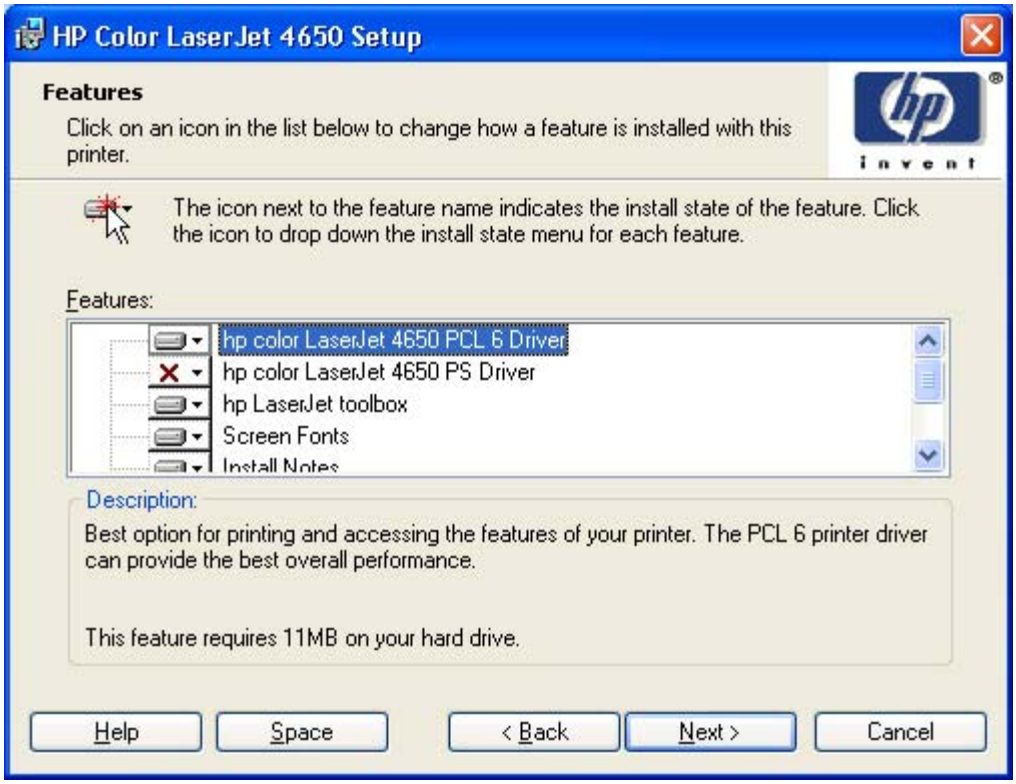


Figure 5-24. **Features dialog box, Custom Installation**

Note

The available features of a Custom Installation might vary from product to product. Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 computers running a terminal server do not support the HP Toolbox option.
The appearance of the **Features** dialog box might vary, depending on product and connection type.

Clicking **Next** takes you to the **Printer Name** dialog box.

Clicking **Back** returns you to the **Installation Type** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

Note

Custom Installation automatically selects the options that are available in the Typical Installation. You can also select from among the following components:

- hp color LaserJet 4650 PCL 6 Driver
-
- hp LaserJet toolbox
- Screen Fonts
- Install Notes
- User Guide
- Adobe Acrobat Reader (TM)

Installing print drivers by using Add Printer

Use the following steps to install the print drivers by using the Add Printer feature of Windows.

1. Insert the CD in the CD-ROM drive.
2. Go to the **Add a printer** feature in Windows.
   In Windows XP, click **Start** on the desktop, and then click **Printers and Faxes**. The **Printers and Faxes** window appears. Click **Add a printer**. The **Add a printer** wizard screen appears.
   In Windows NT, Windows 9x, and Windows 2000, click **Start** on the desktop, click **Settings**, click **Printers and Faxes** and then click **Add a printer**. The **Add a printer** wizard screen appears.
3. Use the **Add a printer** wizard to find and connect to the printer. The print drivers are loaded as a part of this process.

If your computer is running a 64-bit Windows OS, you must install the corresponding 64-bit print driver. 64-bit print drivers are included on the software CD. Use the following steps to install a print driver by using the Add Printer feature.

1. Insert the CD in the CD-ROM drive.
2. Click **Start** on the desktop, click **Settings**, click **Printers and Faxes** and then click **Add a printer**. The **Add a printer** wizard screen appears.
3. Use the **Add a printer** wizard to find and connect to the product. The print drivers are loaded as a part of this process.
4. Select the **Have disk** option and navigate to one of the the following files on the software CD:
   To install the PCL 6 driver, select \<language>\Drivers\(your operating system)\PCL6 \hpc4650c.inf
   To install the PCL 5c driver, select \<language>\Drivers\(your operating system)\PCL5 \hpc4650c.inf
5. Complete the wizard steps. The print driver will be installed as part of the wizard process.

Installer Customization Wizard for Windows

The **Installer Customization Wizard** option allows administrators to customize the HP Color LaserJet 4650 installer by pre-setting the installation options in a response file. To start the utility, click **installer customization wizard** on the main menu of the software CD browser. Using this option, administrators can create a silent (unattended) installer that is customized with any of the following selections:

- Language
- Operating system
- Print drivers
- Components

Note

For detailed information about the Installer Customization Wizard, see the *HP Device Installer Customization Wizard*. This document (CUSTOMIZATIONDOC.RTF) is available on the printing-system software CD-ROM at the root of the **<language>** folder.

Running the installer customization wizard

Running the Installer Customization Wizard produces one installation package and a response file (RESPONSE.INI) for a single system installation. The installation package might work for multiple systems that have the same response information, or the RESPONSE.INI file can be edited for system configuration differences directly in the RESPONSE.INI file. The Installer *HP Device Installer Customization Wizard*, available on the printing-system software CD at the root of the **<language>** folder, provides the exact text for replacing entries in the RESPONSE.INI file.

To run the installer customization wizard

1. Insert the HP Color LaserJet 4650 software CD in the computer's CD-ROM drive.
2. In the CD browser main screen, click **installer customization wizard**.
3. Choose the setup language you wish to use. The installer automatically detects the language that your computer system uses and presents this selection as the default. Click **OK** to continue.
   You can select another language that is available on the CD by clicking the down arrow in the drop-down menu.

The Installer Customization Wizard starts automatically. To complete the installation, follow the instructions in the dialog boxes, as described in the following section.

Dialogs

The Installer Customization Wizard runs from the CD. It can be launched from the CD browser, depending on product-specific instantiation. It runs separately from MSI with its own interface.

The **Choose Setup Language** dialog box, the **InstallShield Wizard** dialog box, and the **Preparing to Install** dialog box appear the same as they appear in the standard installer. After these dialog boxes, the **Installer Customization Wizard Welcome** dialog box appears.

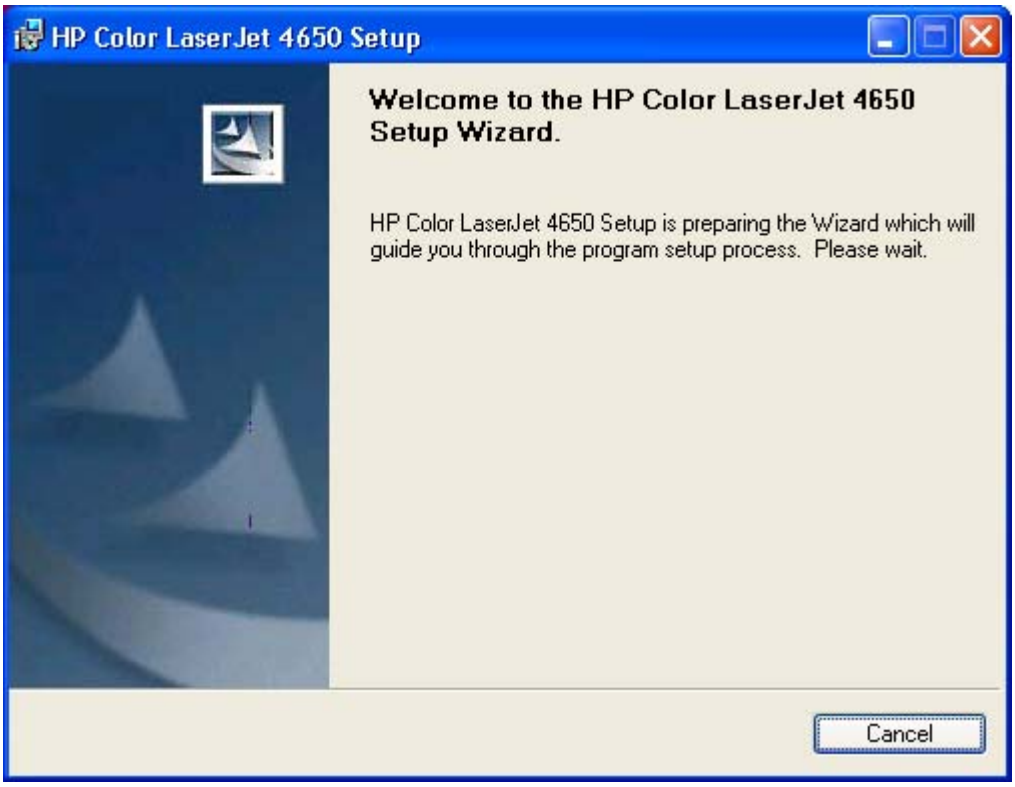


Figure 5-25. **Installer Customization Wizard Welcome dialog box**

Clicking **Next** takes you to the **Language** dialog box.

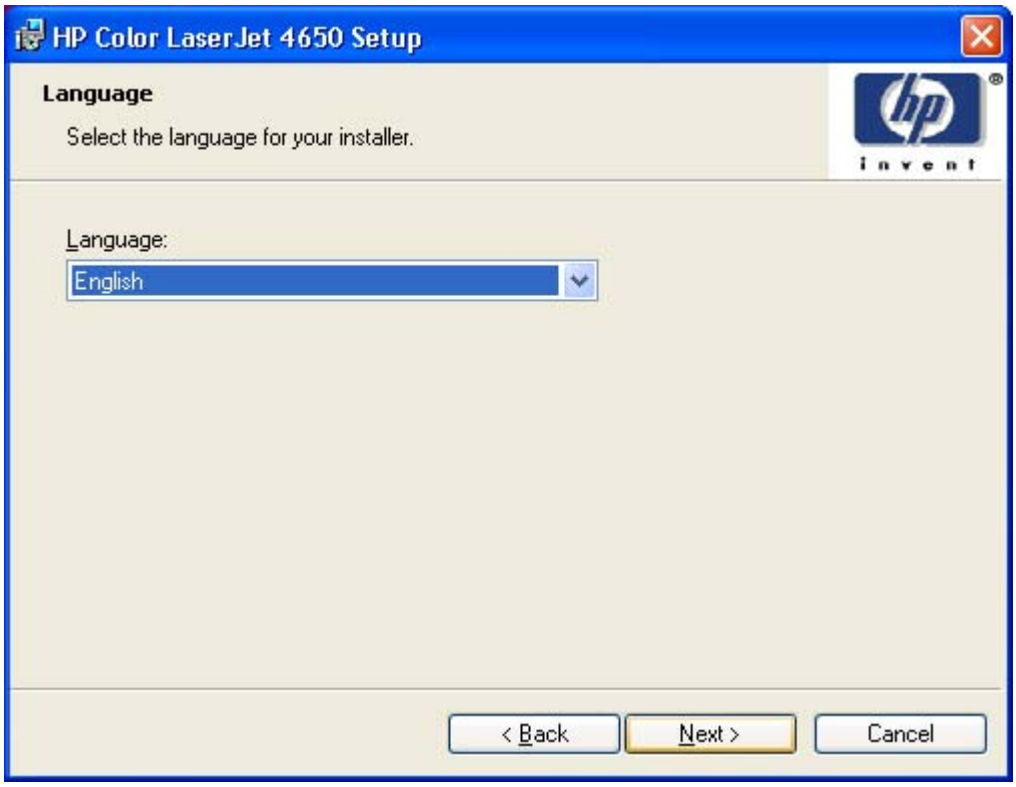


Figure 5-26. **Language dialog box**

Note

The customized installer limits all system installations of the product to the language that is selected in the **Language** dialog box. Maintenance Mode on systems where installation has been completed using the customized installer does not provide options for changing the language. To change the language on a system that used an Installer Customization Wizard installation, the customized installation must be uninstalled, and a new product must be installed to restore the option to install other languages.

The language that you selected is installed on users' computers regardless of the language of the text in the dialog boxes (as specified in the **Choose a language** dialog box earlier). The **Language** dialog box defaults to the language that was selected in the **Choose a language** dialog box, but any language (that is available on the CD) can be chosen for the customized installer. The language choice is recorded in the response file.

Clicking **Next** takes you to the **Printer Port** dialog box.

Clicking **Back** returns you to the **Welcome** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

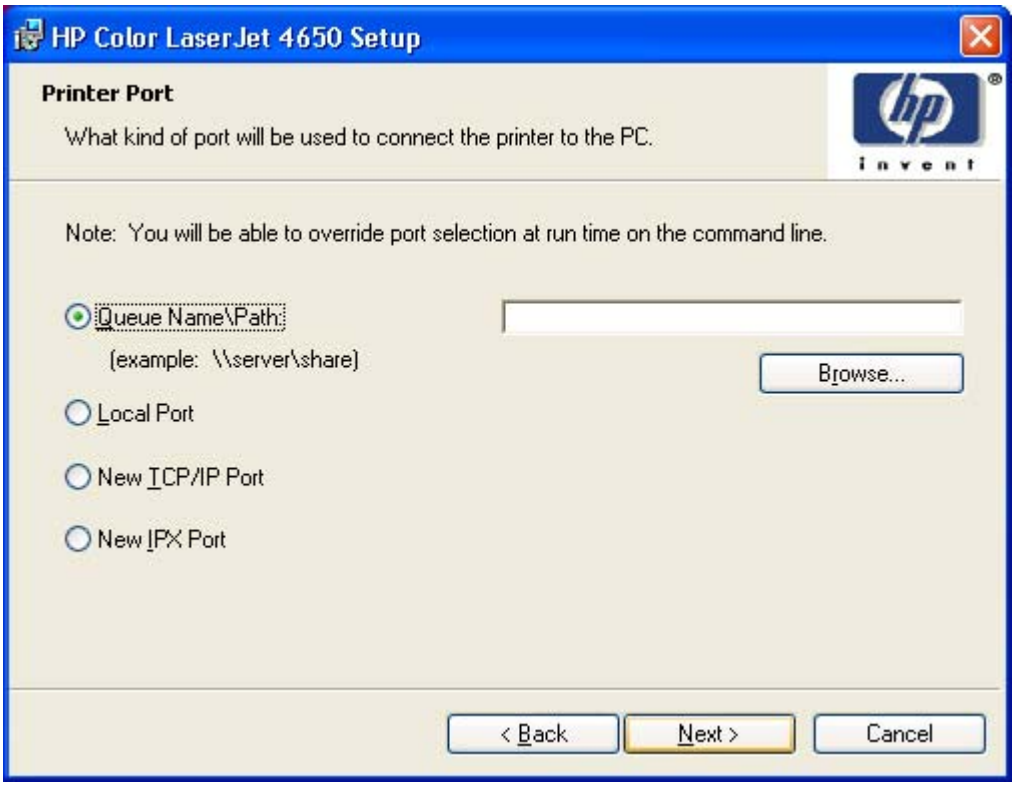


Figure 5-27. **Printer Port dialog box**

Clicking **Queue Name\Path** makes a text field available for a Queue entry. Click the **Browse** button to navigate to a printer to record the path.

Clicking **Local Port** and then clicking **Next** takes you to the **Connector Type** dialog box, which is similar to the **Connection Type** dialog box that appears during a standard installation. However, the **Connector Type** dialog box includes all types of local ports regardless of local support. It also includes all custom network ports that are available on the local system. To use any custom network port for the customized installer, the port must be created identically on the system where the port will be used.

Clicking **New TCP/IP Port** or **New IPX Port**, and then clicking **Next**, takes you to the **Specify Printer** dialog box.

Clicking **Back** returns you to the **Language** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

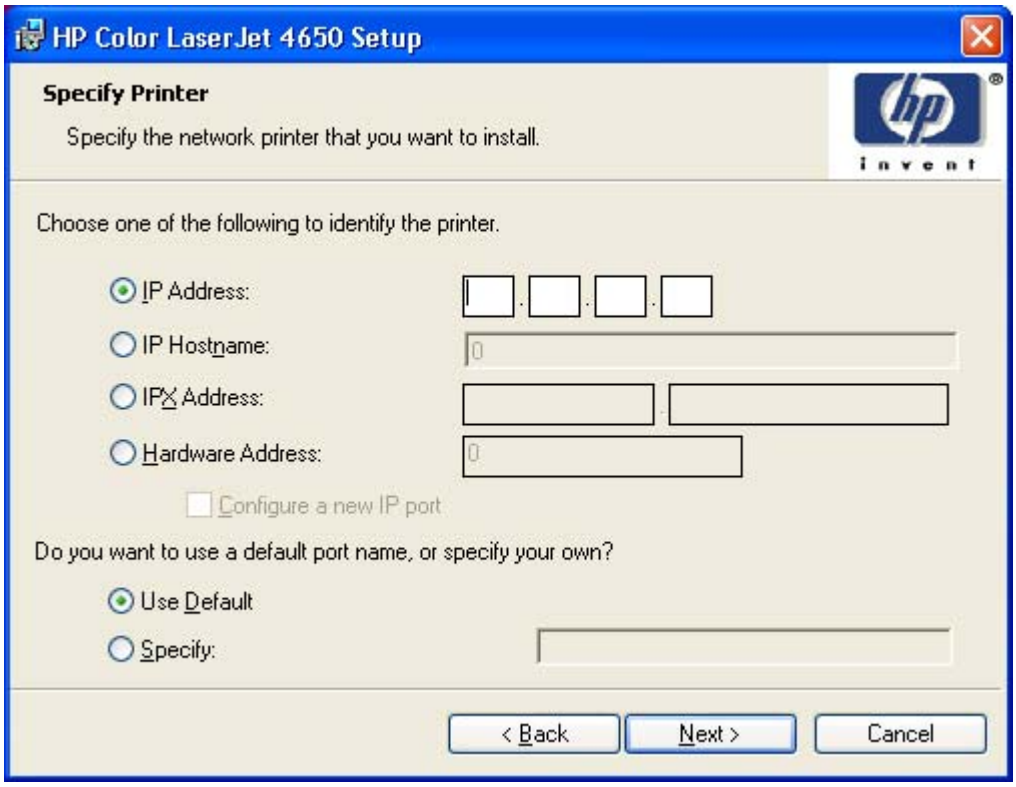


Figure 5-28. **Specify Printer dialog box**

Clicking **IP Address:** makes a field available for typing the IP address for the printer. Only numerals are allowed in this field. If this option is selected, at least one digit must be typed in the IP Address field to prevent an error message from appearing, asking for a valid IP address.

Clicking **IP Hostname:** makes a field available for typing the IP hostname for the printer. Any characters are allowed in this field, but an error message appears if spaces are included in the field. If this option is selected, at least one character must be typed in the IP Hostname field to prevent an error message from appearing, asking for a valid IP hostname.

Clicking **IPX Address:** makes a field available for typing the IPX address of the printer.

Clicking **Hardware Address:** makes a field available for typing the hardware address of the printer. It accepts any characters but limits the entry to 13 characters.

The **Hardware Address:** option also creates an option to configure a new port. If you type a hardware address and click **Next** in the **Specify Printer** dialog box with **Configure a new IP port** selected, the **IP Settings** dialog box opens for setting up the new port.

Clicking **Back** takes you to the previous dialog box, based on your previous selections.

Clicking any of the options and then clicking **Next** takes you to either the **IP Settings** dialog box or the **Model** dialog box, depending on your selection.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

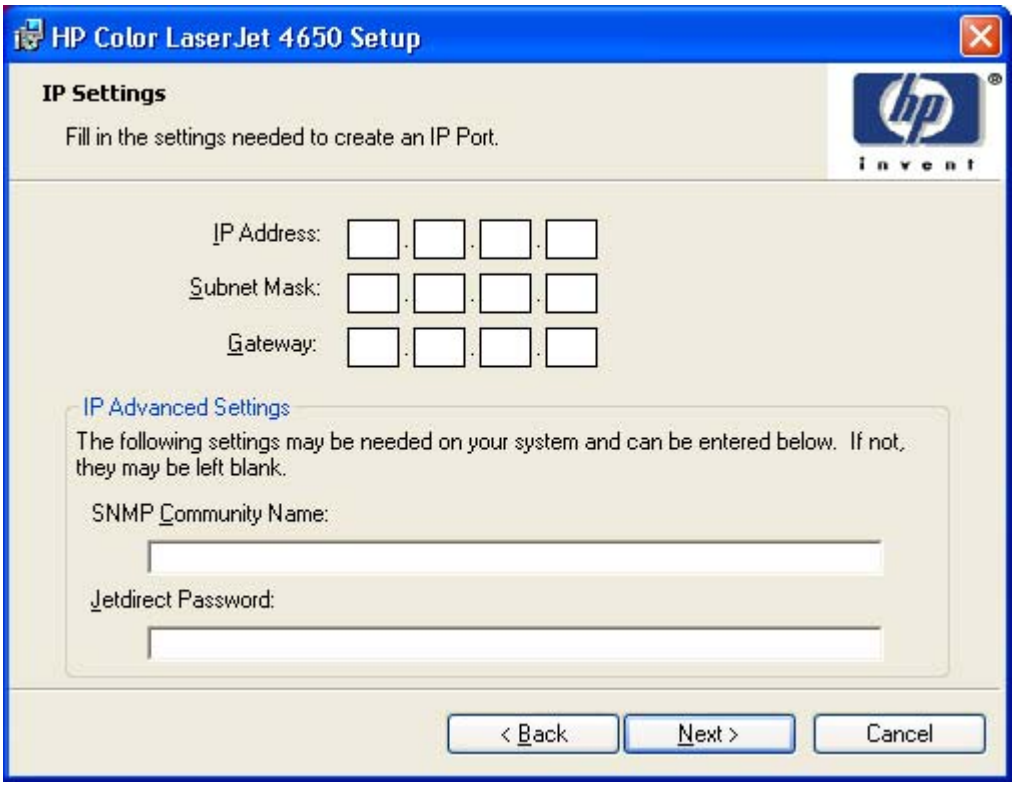


Figure 5-29. **IP Settings dialog box**

Note

The Installer Customization Wizard does not validate that the printer or any of the printer identification entries actually exist on the network, because the customized installer can be used on a separate network.

Typing the appropriate information and then clicking **Next** takes you to the **New IPX Port** dialog box.

The **New IPX Port** selection in the **Printer Port** dialog box behaves the same way that the **New TCP/IP Port** selection behaves: The **Specify Printer** dialog box opens with the same options, each with the same results.

Clicking **Back** takes you to the **Specify Printer** dialog box or the **Printer Port** dialog box, depending on your previous selections.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

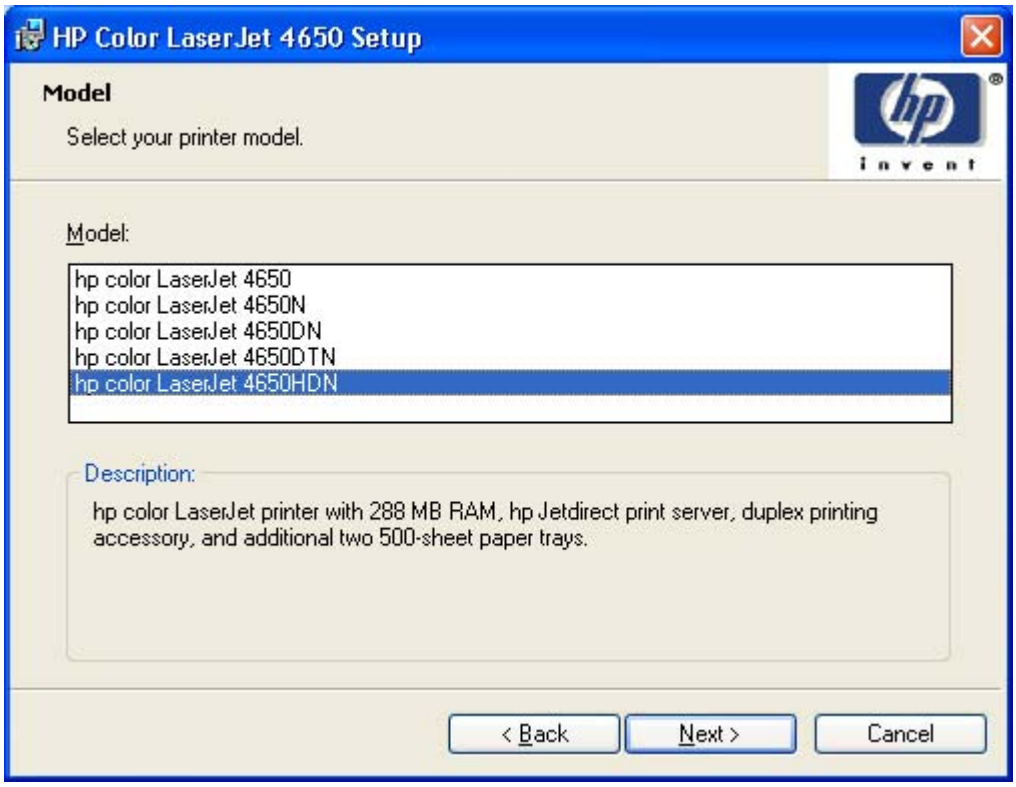


Figure 5-30. **Model dialog box**

After the identification or port setup dialog boxes are completed, the **Model** dialog box appears.

The model selection can affect which features are available for the installation. It can also affect driver defaults depending on the product-specific instantiation.

Clicking **Next** takes you to the **Features** dialog box.

Clicking **Back** takes you to the **Printer Port**, **Connection Type**, **IP Settings**, or **Specify Printer** dialog box, depending on your previous selections.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

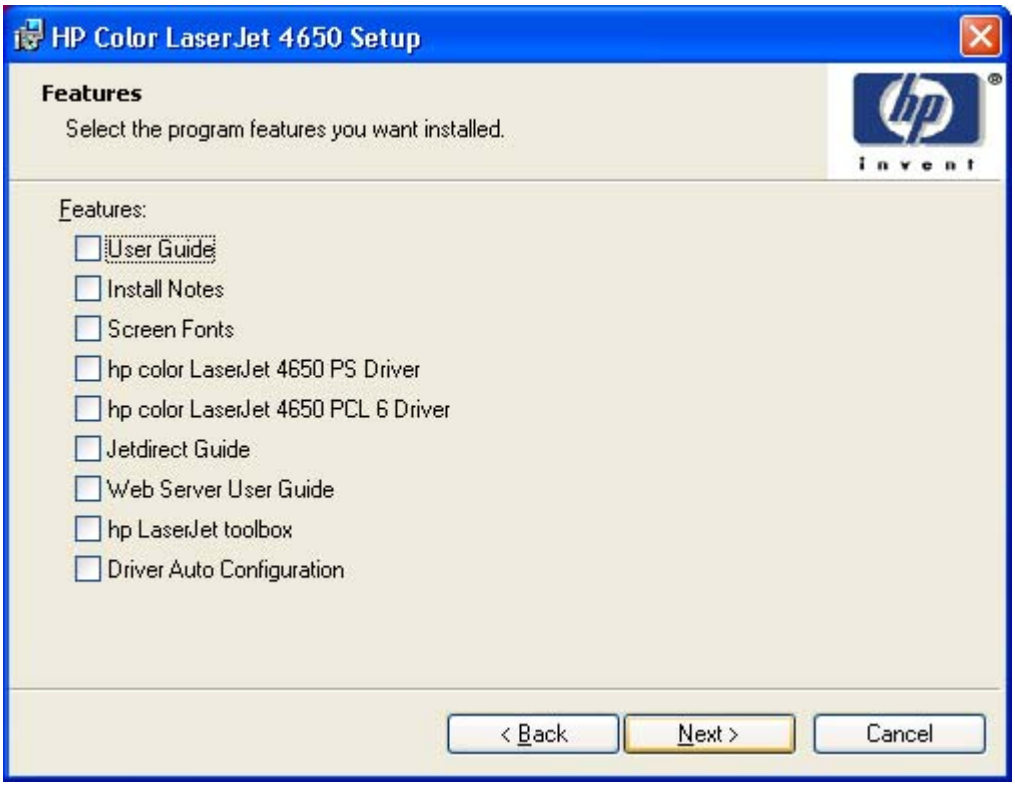


Figure 5-31. **Features dialog box**

Any combination of features can be selected for the installer, and none depends on any other feature selection. It is possible to create a custom installer that installs features without including a print driver.

Clicking **Next** takes you to the **Driver Configuration** dialog box.

Clicking **Back** takes you to the **Model** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

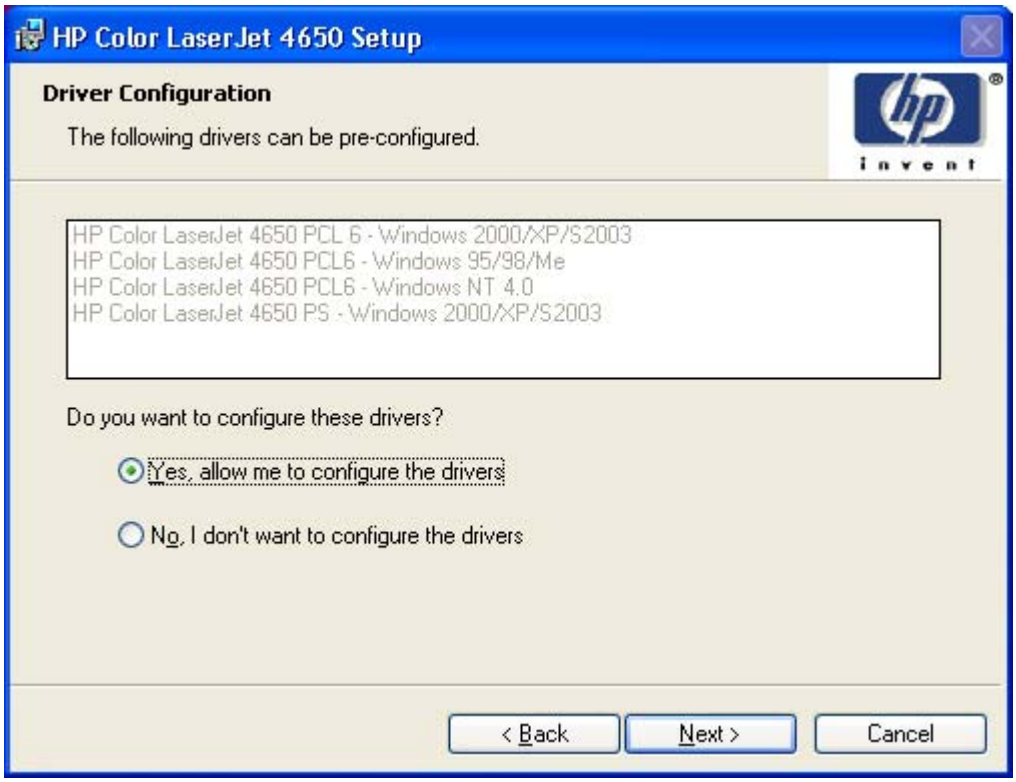


Figure 5-32. **Driver Configuration dialog box**

It is possible to supply a preconfigured driver in the customized installer if the driver supports it. You can use the preconfigured driver to place default settings on the printer that is installed. If a driver that supports this feature is selected in the **Features** dialog box, the **Driver Configuration** dialog box appears.

Clicking **Yes** and then clicking **Next** opens a list of all printing preferences and device options for the product.

Clicking **No** and then clicking **Next** takes you to the **Printer Name** dialog box.

Clicking **Back** takes you to the **Features** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

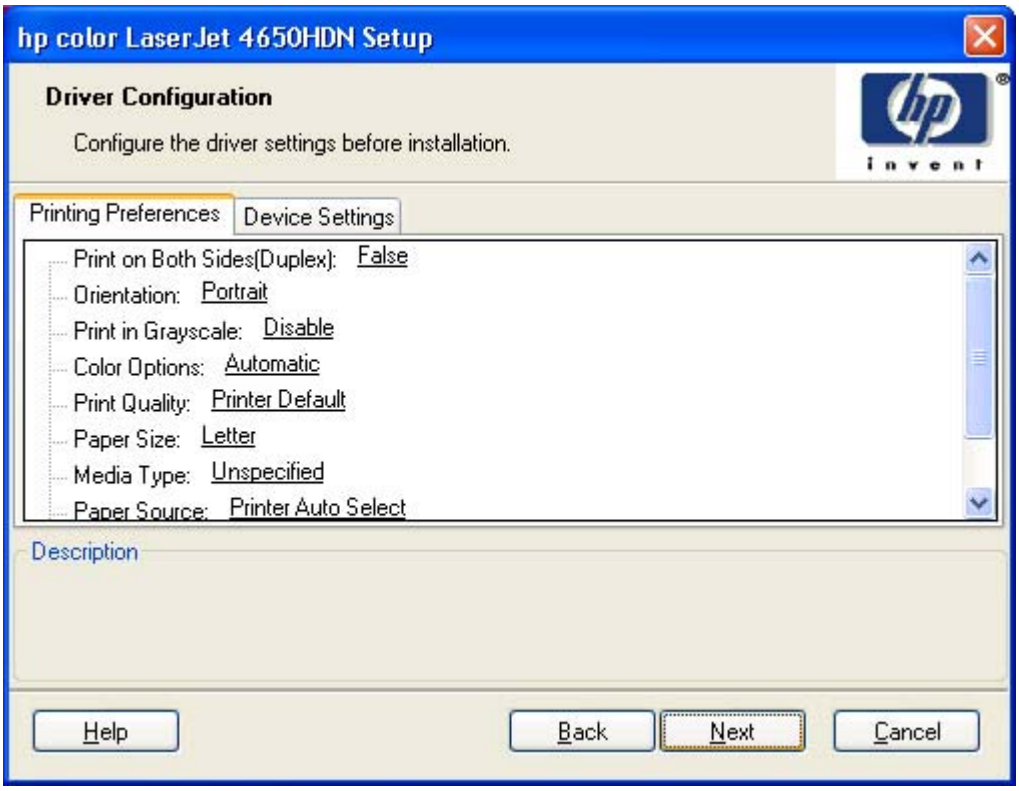


Figure 5-33. **Driver Configuration preconfigure driver dialog box**

Any setting in this dialog box, including those on the Device Settings tab, can be preset before the printer is installed (subject to normal driver constraints).

Clicking **Next** opens either the **Preconfigure Printer** dialog box for another driver that supports preconfiguration (if any), or the **Printer Name** dialog box.

Clicking **Back** takes you to the previous **Driver Configuration** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

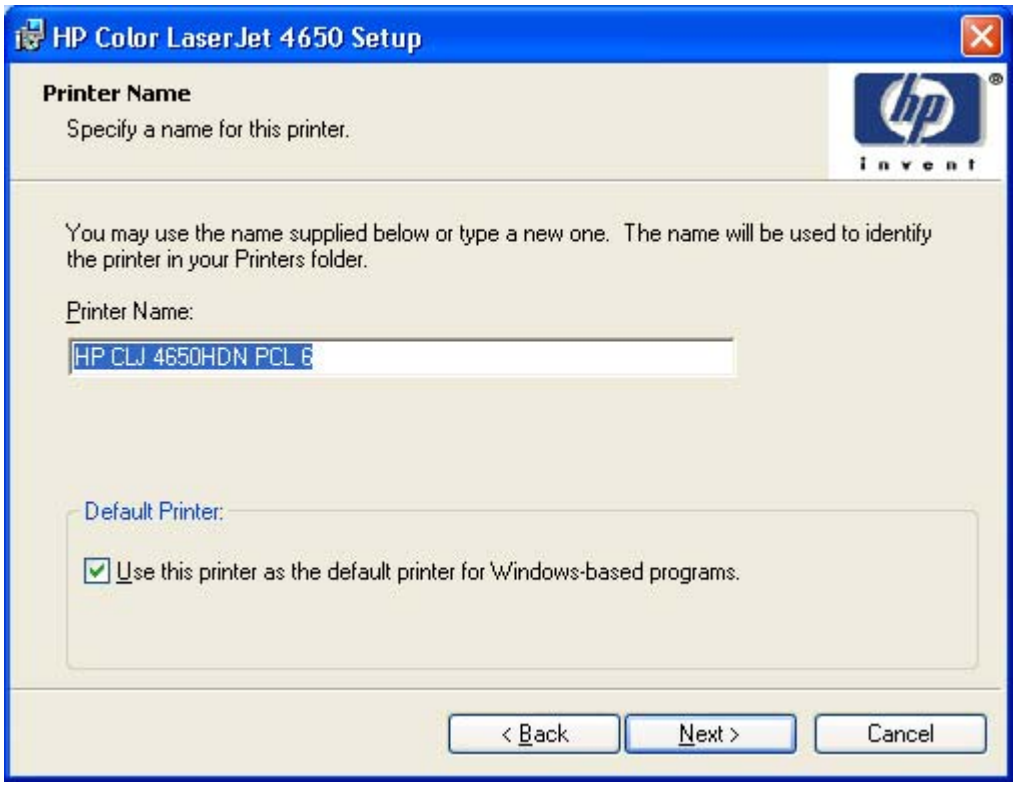


Figure 5-34. **Printer Name dialog box**

The **Default Printer:** drop-down menu lists only those drivers that are selected in the **Features** dialog box.

Clicking **Next** opens the **Printer Sharing** dialog box.

Clicking **Back** takes you to the previous **Driver Configuration** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

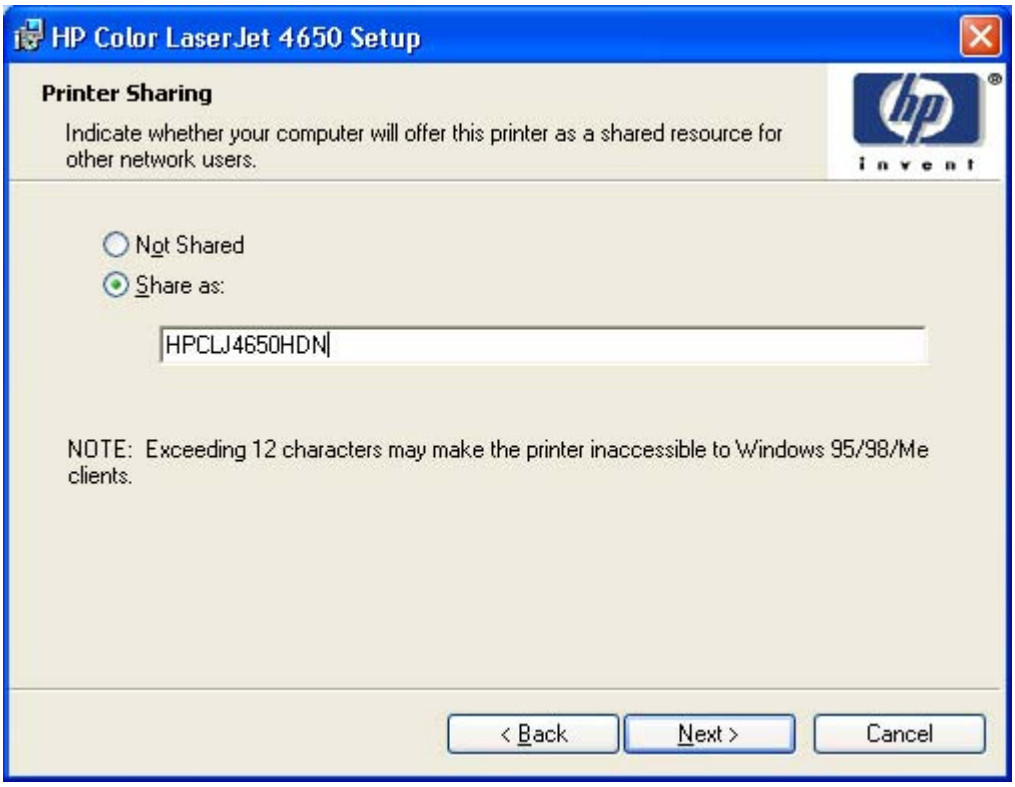


Figure 5-35. **Printer Sharing dialog box**

Clicking **Share as:** opens a field for for naming the product as it will appear on the network.

Clicking **Next** with **Not Shared** selected takes you to the **Printer Location and Comment** dialog box.

Clicking **Share as:** and then clicking **Next** takes you to the **Client Driver Support** dialog box.

Clicking **Back** takes you to the **Printer Name** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

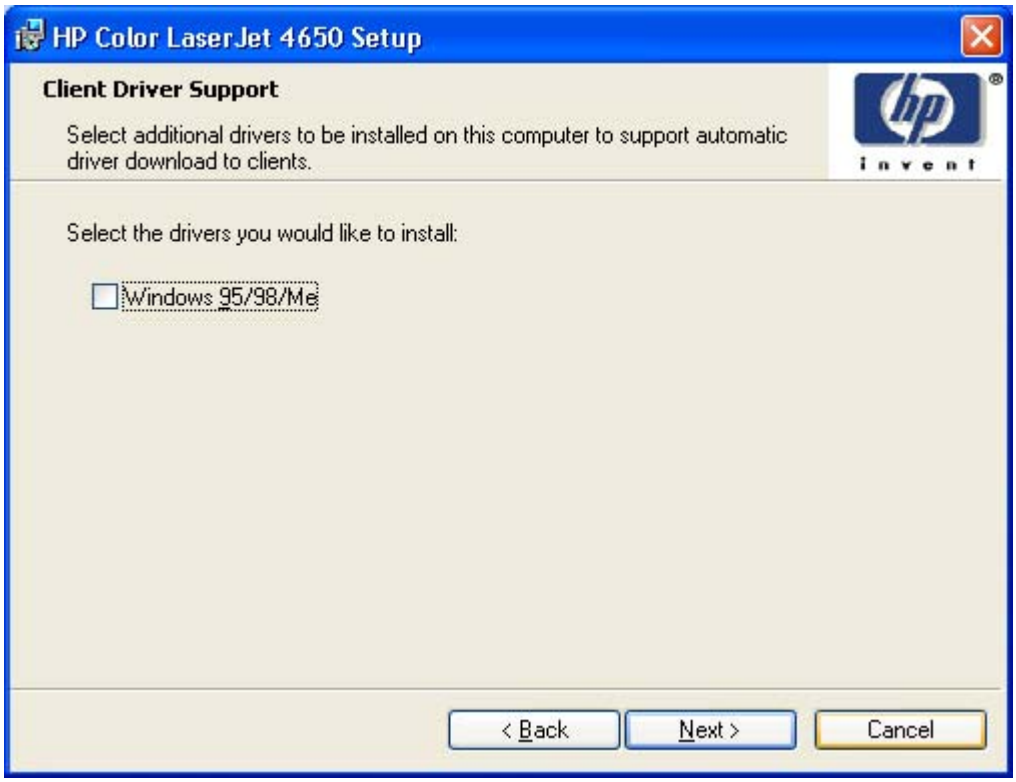


Figure 5-36. **Client Driver Support dialog box**

Note

This dialog box provides options for selecting OS-specific drivers to add to the installation to provide for Point and Print driver vending on the system. Either or both optional drivers can be selected.

Clicking **Next** takes you to the **Printer Location and Comment** dialog box.

Clicking **Back** takes you to the **Printer Sharing** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

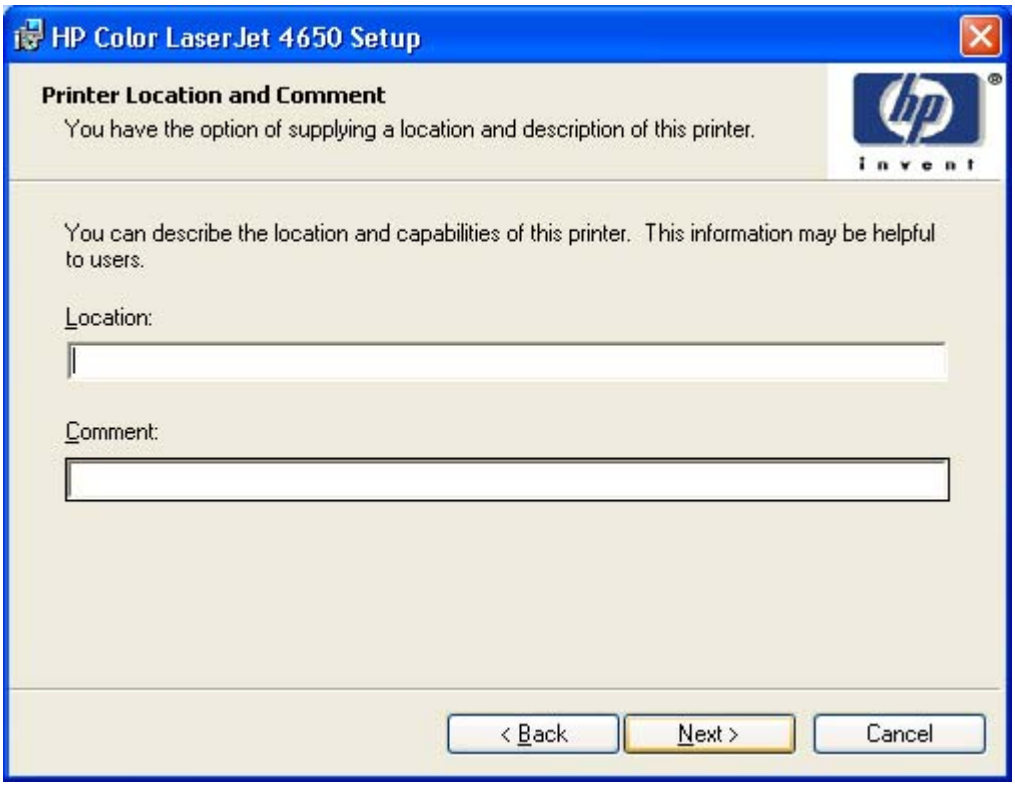


Figure 5-37. **Printer Location and Comment support dialog box**

Use the **Location:** text field to type a description of the physical location of the printer. The field is limited to 241 characters.

Use the **Comment:** text field to type any other helpful text such as capabilities about the printer. The field is limited to 241 characters.

Clicking **Back** takes you to the **Printer Sharing** or the **Client Driver Support** dialog box, depending on your previous selection.

Clicking **Next** takes you to the **Custom Installer Location** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

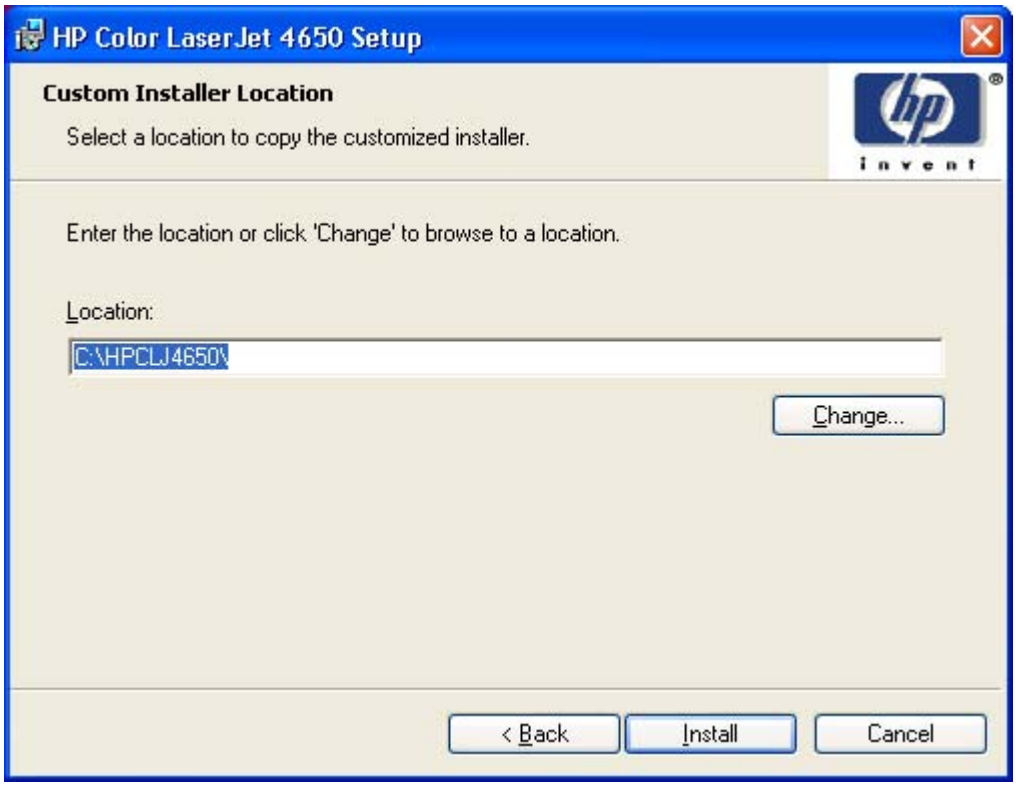


Figure 5-38. **Custom Installer Location dialog box**

Note

The location for the installer package defaults to the drive that the system user opened last.

Clicking **Change** opens the **Change Current Destination Folder** dialog box to navigate to the drive that you want.

Clicking **Back** takes you to the **Printer Location and Comment** dialog box.

Clicking **Install** after you have specified a location (or browsed to a location) starts the file copy process and takes you to the **Installing** dialog box.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

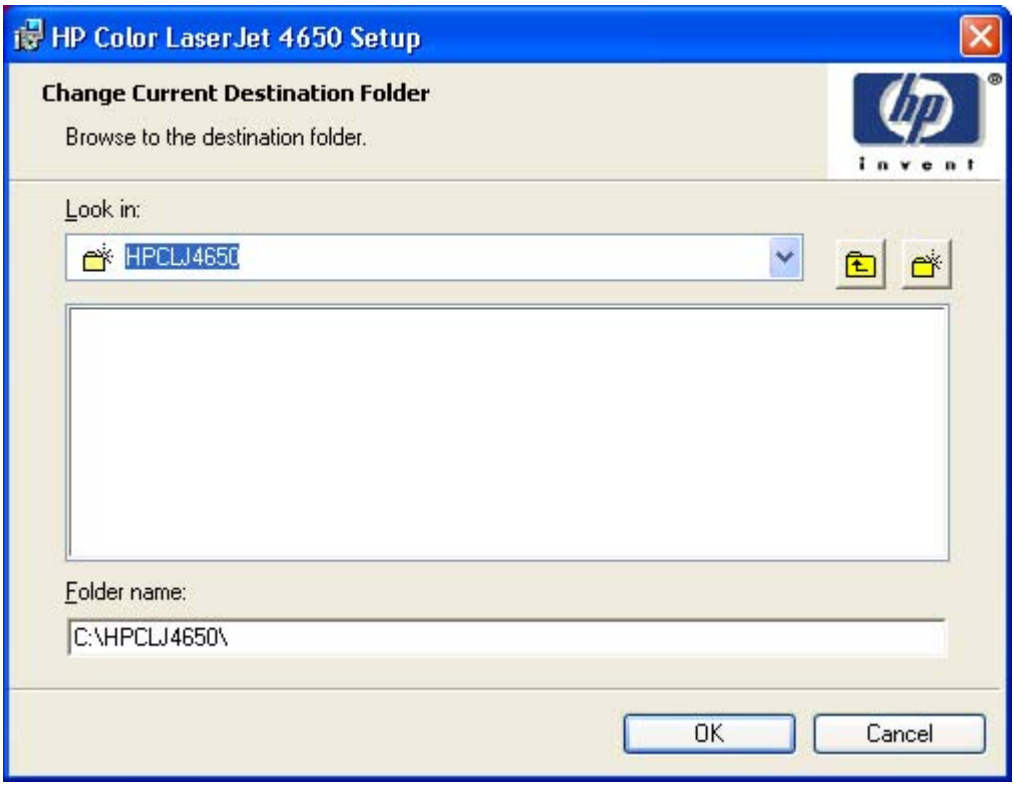


Figure 5-39. **Change Current Destination Folder dialog box**

Note

Several files including system files will be placed at the root of the directory that appears in the **Folder Name** field. These files collectively occupy approximately 37 MB on the directory. Be sure that enough space is available on the directory before continuing.

After you select a location, click **OK** to return to the **Custom Installer Location** dialog box. The location appears in the **Folder name** field.

Click the **New Folder** button to create a new folder.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

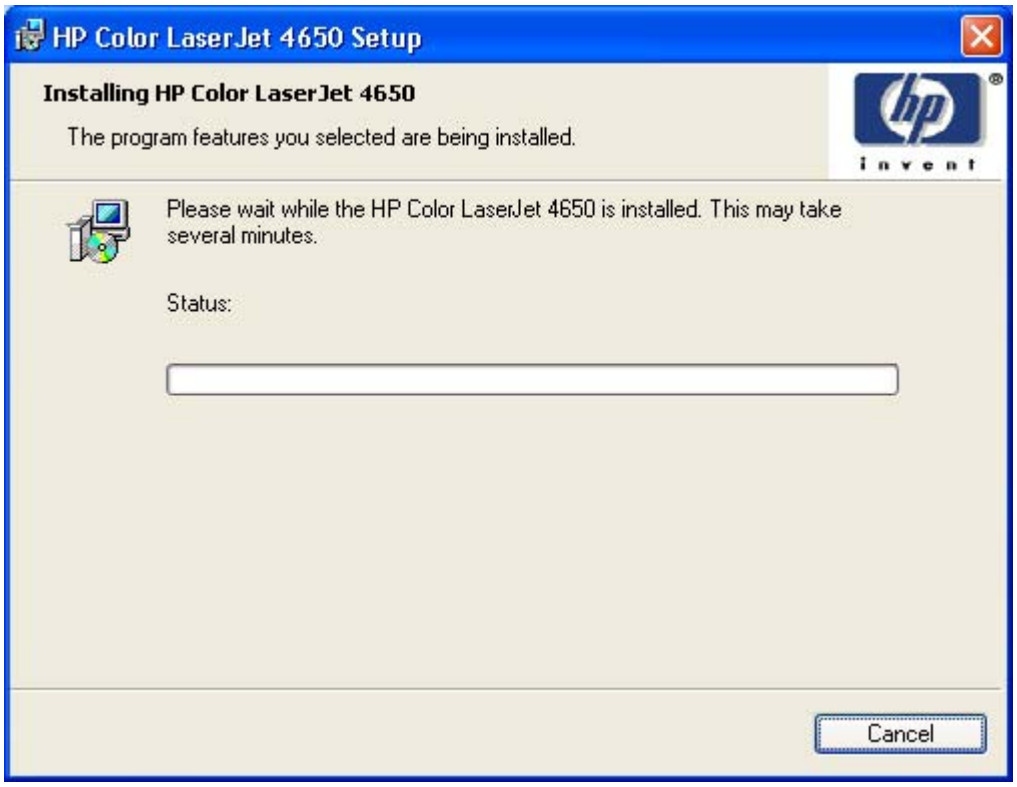


Figure 5-40. **Installing dialog box**

This dialog box remains on the screen until the status bar reaches the end.

Clicking **Cancel** takes you to the **Exit Setup** dialog box.

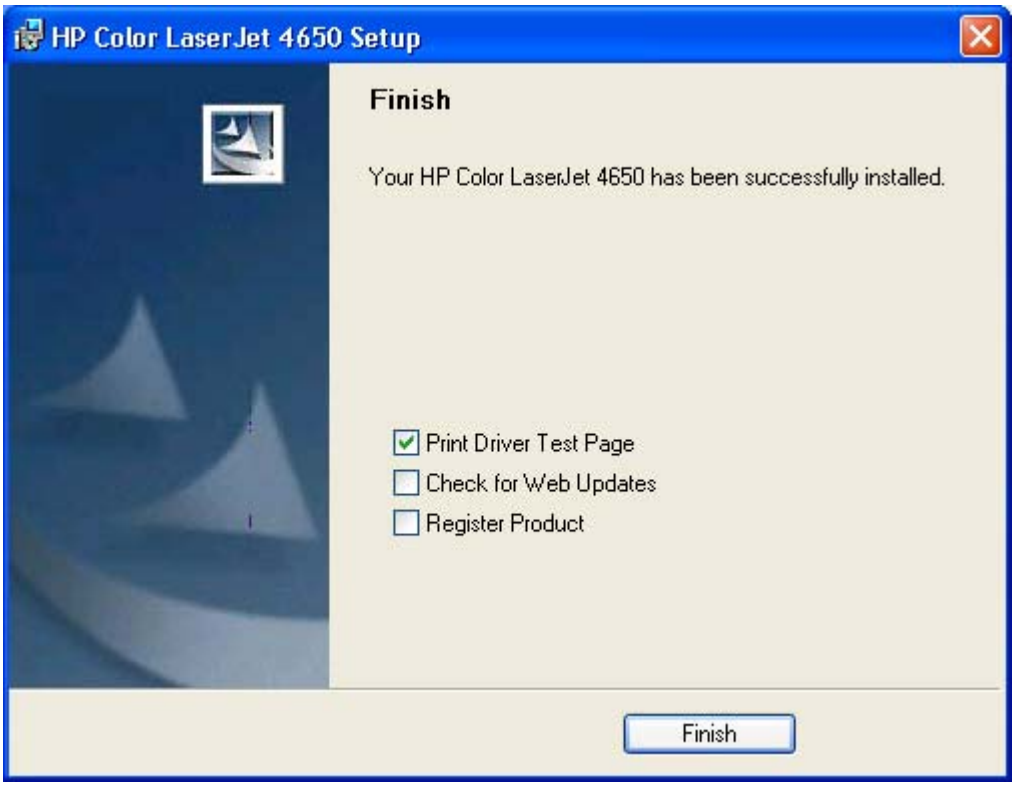


Figure 5-41. **Finish dialog box**

Clicking **Print Driver Test Page** prints a test page that verifies that the printer is successfully installed.

Note

You might need to turn off and restart the computer to print the test page.

Clicking **Check for Web Updates** connects you to the World Wide Web. You must have an internet connection to perform this step.

Clicking **Register Product** takes you to the HP Web site where you can register your product. You must have an internet connection to perform this step.

Clicking **Finish** closes the **Finish** dialog box and exits the Installer Customization Wizard.

Distribution

The installation package is now ready for distribution. It is the same as the package on the CD, except that it is limited to one language, and it contains the features and options that you selected. The installation package is run silently so that it requires no user interaction. This installation method is useful when you want to use the default selections that the installer provides or when you want to run the installation without being prompted.

You can perform the silent installation in two ways:

- customized silent installer
- command-line silent installer

The response file can be renamed, but it must be in the root directory of the installer package. The name cannot contain spaces; spaces prevent the SETUP.EXE file from passing to the installer package.

Command-line silent install

This method cannot be customized. It installs only the printing-system components that are included in the Typical Installation. For more information, see the *HP Device Installer Customization Wizard* ReadMe file. This document (CustomizationDoc.rtf) is available on the printing-system software CD at the root of the **<language>** folder.

Point and Print installation for Windows 98, Me, NT 4.0, 2000, XP, and 2003

Point and Print is a Microsoft term that describes a two-step driver installation process. The first step is to install a shared driver on a network print server. The second step is to "point" to the print server from a network client so that the client can use the print driver.

Note

This section outlines the procedures for installing print drivers by using Point and Print. If these procedures are not successful, contact Microsoft.
Hewlett-Packard provides drivers that are compatible with the Point and Print feature, but this is a function of the Microsoft operating systems, not of HP print drivers. Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 drivers from HP are supported only on Intel *X*86 processor types. Any other processor types must use Windows NT 4.0 drivers from Microsoft.
To install the print driver on a Windows NT 4.0, Windows 2000, Windows XP, Windows Server 2003 server, you must have administrator privileges. To completely install the Windows NT 4.0 print driver on the Windows NT 4.0 server (or the Windows 2000 print driver on the Windows 2000 server), you must have administrator privileges on the server. The Windows NT 4.0 Printer .INF file (or the Windows 2000 Printer .INF file) must contain the same product name as the Windows 98 or Windows Me printer .INF file.
Point and Print installation of a postscript driver is supported only with a Microsoft Windows 98 or Windows Me PS driver version 4.0 or later.

In a homogenous operating system environment (one in which all of the clients and servers running the same operating system), the same print driver version that is vended from the server to the clients in a Point and Print environment also runs and controls the print queue configuration on the server.

However, in a mixed operating system environment (one in which servers and clients might run on different operating systems), conflicts can occur when client computers run a version of the print driver that is different from the one on the print server. With Windows NT 4.0, print drivers executed in *kernel* mode. A kernel mode process runs in a specially privileged part of the operating system that gives the process access to all of the system resources. Consequently, a misbehaving driver can cause serious system stability problems, including operating system crashes. In an effort to increase operating system stability, Microsoft determined that, starting with Windows 2000 and continuing with all future operating systems, print drivers would run as *user*-mode processes. User-mode drivers execute in a protected part of the operating system just like all of the normal end-user processes and software programs. A user-mode print driver that misbehaves is capable of crashing only the process in which it is running, and cannot crash the whole operating system. Because access to critical system resources is restricted, overall operating system stability is increased.

Setting a default printer

This section applies to the Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003 operating systems.

1. In Windows 98, Windows Me, Windows NT 4.0, and and Windows 2000 OSs, click **Start**, click **Settings**, and then click **Printers**. In Windows XP and Windows Server 2003, click **Start**, click **Control Panel**, click **Printers and Faxes** (Windows XP Professional) or **Printers and other hardware devices** (Windows XP Home).
2. Right-click the product that you want to set as the default printer.
3. Click **Set As Default**. A check mark appears next to the menu option.

6 Installation for Macintosh and Linux operating systems

Introduction

This section provides system requirements and procedures for installing and removing the HP Color LaserJet 4650 printing-system software for supported operating systems other than Windows. It also provides information about font support and system modifications. The following operating systems are supported:

- Macintosh
- Linux

System requirements

The following are system requirements for installing and using the HP Color LaserJet 4650 printing-system software on each of these supported operating systems.

Macintosh

- PowerPC processor
- Macintosh OS 9.*x* or later or Mac OS X (10.1 or later)
- 256 MB RAM
- 110 MB available disk space

Linux

For information about Linux support for the product, see the HP Linux Web site:

- http://www.hp.com/go/linux.

UNIX

For information about UNIX support for the HP Color LaserJet 4650, see the following Web site:

- http://www.hp.com/go/jetdirectunix_software

Macintosh

The following sections contain information about using HP color LaserJet printing software for the Macintosh OS.

Macintosh component descriptions

The product includes the following software for Macintosh computers:

- PPDs for Mac OS 9.*x* and Mac OS X (10.1 and later)
- PDEs for Mac OS X only (10.1 and later)

HP LaserJet PPDs

In Mac OS 9.*x*, postscript printer definition (PPD) files for the HP Color LaserJet 4650 are installed to the **Printer Descriptions** folder, which is in the **Extensions** folder within the **System** folder. In Mac OS X, the PPDs are installed in **Library/Printers/PPDs/Contents/Resources: <lang>.lproj** where **<lang>** is the appropriate localized folder.

PPDs, in combination with the driver, provide access to the product features and allow the computer to communicate with the product. An installation program for the PPDs is provided on the printing software CD.

For Mac OS 9.*x*, the Apple LaserWriter 8 driver must be installed to use the PPD file. Use the Apple LaserWriter 8 driver that came with your Macintosh. For Mac OS X, use **Print Center** to print.

PDEs

Printer Dialog Extensions (PDEs) are code plug-ins (for Mac OS X only, 10.1 and later) that provide access to product features, such as number of copies, duplexing, and quality settings.

HP Toolbox

The HP Toolbox is a series of Web pages and supporting Windows-based and Macintosh-based software programs (for Mac OS X only, 10.2 and later). The HP Toolbox provides links to product status information and enables you to receive alerts for product events.

For more information about the HP Toolbox, see the HP Toolbox section of this guide.

HP Embedded Web Server

The HP Embedded Web Server (EWS) is supported by Macintosh OS 9.*x* operating systems. Use the HP LaserJet Utility to control features that are not available in the driver. Use the HP EWS to perform the following tasks:

- name the product, assign it to a zone on the network, and change product settings
- set a password for the product
- from the computer, lock out functions on the control panel to prevent unauthorized access (see the printing software help).

Install notes

This text file contains important information about product features, instructions for installing the printing-system software, and technical assistance.

Online help

This HTML-based help system replaces the Apple Guide help system that was provided with Mac OS 9.*x* HP products. The help system is in English only, and can be viewed through a browser or in the Macintosh OS Help Center.

Screen fonts

These screen fonts are available only for Macintosh computers and Macintosh-compatible computers (Mac OS classic only). Because the screen fonts match your printing fonts, you can see onscreen how your printed page looks.

Font support

- Avant Garde
- Helvetica Narrow
- Times
- Bookman
- New Century Schoolbook
- Zapf Chancery
- Courier
- Palatino
- Zapf Dingbats
- Helvetica
- Symbol

The Macintosh printing system also includes the HP 45 XPS font families:

- Clarendon Condensed Bold
- Symbol
- Albertus Medium
- Coronet
- Times New Roman
- Antique Olive
- Courier
- Univers
- Arial
- Garamond
- Univers Condensed
- CG Omega
- Letter Gothic
- Wingdings
- CG Times
- Marigold

The following bitmap screen fonts reside on the HP Color LaserJet 4650:

- ITC Avant Garde Gothic Book
- Helvetica
- Palatino
- ITC Avant Garde Gothic Book Oblique
- Helvetica Bold
- Palatino Bold
- ITC Avant Garde Gothic Demi
- Helvetica Bold Oblique
- Palatino Bold Italic
- ITC Avant Garde Gothic Demi Oblique
- Helvetica Oblique
- Palatino Italic
- ITC Bookman Demi
- Helvetica Narrow
- Symbol
- ITC Bookman Demi Italic
- Helvetica Narrow Bold
- Times Bold
- ITC Bookman Light
- Helvetica Narrow Bold Oblique
- Times Bold Italic
- ITC Bookman Light Italic

- Helvetica Narrow Oblique
- Times Italic
- Courier
- New Century Schoolbook Bold
- Times Roman
- Courier Bold
- New Century Schoolbook Bold Italic
- ITC Zapf Chancery Medium Italic
- Courier Bold Oblique
- New Century Schoolbook Italic
- ITC Zapf Dingbats
- Courier Oblique
- New Century Schoolbook Roman

The following fonts reside on the HP Color LaserJet 4650, but can be used by Macintosh platforms only if you install additional screen fonts. You can either use these screen fonts directly from the HP Color LaserJet 4650 software CD or obtain them from the following Web site: http://www.hp.com/support/lj4650.

- Albertus Extra Bold
- CG Times Italic
- Marigold
- Albertus Medium
- Clarendon Condensed Bold
- Symbol
- Antique Olive
- Coronet
- Times New Roman
- Antique Olive Bold
- Courier
- Times New Roman Bold
- Antique Olive Italic
- Courier Bold
- Times New Roman Bold Italic
- Arial Courier Bold Oblique
- Times New Roman Italic
- Arial Bold
- Courier Italic
- Univers Bold
- Arial Bold Italic
- Garamond Antiqua
- Univers Bold Italic
- Arial Italic

- Garamond Halbfett
- Univers Condensed Bold Italic
- CG Omega
- Garamond Kursiv
- Univers Condensed Medium
- CG Omega Bold
- Garamond Kursiv Halbfett
- Univers Condensed Medium Italic
- CG Omega Bold Italic
- Letter Gothic
- Univers Medium
- CG Omega Italic
- Letter Gothic Bold
- Univers Medium Italic
- CG Times
- Letter Gothic Italic
- Univers Italic
- CG Times Bold
- CG Times Bold Italic
- Wingdings
- CG Times Bold Italic

Installing the Macintosh printing system

On a Macintosh-compatible computer, the installation procedures are the same for a network administrator, a network client, and a single user. Install the software on any computer that has access rights to the printer.

Note

If the computer is connected to the printer by a LocalTalk (printer port) or EtherTalk connection, you must configure the AppleTalk (or network) control panel for the correct connection to communicate with the product. You must set up the HP Color LaserJet 4650, connect it to the computer or network, and turn it on before the software is installed. Macintosh OS systems do not support parallel connections. You can use a cross-over Ethernet cable for a direct connection to a computer running the Macintosh OS. In the following instructions, "XXXX" represents the HP Color LaserJet 4650:

The Macintosh partition contains an installer program for each language. Find the appropriate language for the operating system that is being used, and then use the installer program for that language.

To install the HP LaserJet printing-system software for the Macintosh OS

1 Insert the CD that came with the Macintosh printing-system software into the CD-ROM drive.

Note If the CD screen does not open automatically, double-click the **CD-ROM** icon on the desktop to open the CD-ROM window.

2 Open the **HP LaserJet Installers** folder. Find the **Installer** icon for the appropriate language. Double-click the **Installer** icon to launch the Installer. In the opening dialog, click **Continue**.

Note The **Continue** button appears only after you type the "Admin" password in the **Authenticate** dialog box (OS X, versions 10.1 and later only).

3 The main **Installer** dialog box appears. Click **Install** and then follow the onscreen instructions to complete the software installation.

Note If you are installing the printing-system software on a Macintosh OS X system, please be patient. The installer must perform an initial search of the computer for up to 1 minute. During this time the installer might appear to be stalled.

4 When software installation is complete, click **Quit**. Select one of the following options to finish setting up your product:

- Set up a AppleTalk networked printer with Mac OS 9.*x*
- Set up a printer with Mac OS X

To set up an AppleTalk networked Printer with Mac OS 9.*x*

1 Open the **Chooser** from within the **Apple Menu**.

2 Click **LaserWriter 8** on the left side of the **Chooser** dialog box.

3 Click the appropriate **Zone** to select it, if required.

4 Click your product name from the list that appears on the right side of the **Chooser** dialog box, and then click **Create**.

To set up a Printer with Mac OS X

1 In the **Applications** folder, open the **Utilities** folder, and then run the **Print Center**.

2 Click **Add** (in Mac OS X 10.2) or **Add Printer** (in Mac OS X 10.1).

3 From the top pop-up menu, select the appropriate connection type for your product.

4 Select or type in any other information as indicated for the type of connection for your product. For example, if you are using an AppleTalk connection, select your product zone; or if you are using IP Printing, type in an IP address.

Note If the automatic selection fails, or if you want to manually select a PPD file, click the **Printer Model** pop-up menu, select **HP**, and then click **LaserJet 4650**.

5 Click **Add**.

6 To configure installable options in Mac OS X 10.2 and later, such as a duplexing unit or optional paper trays, click the appropriate product icon in the **Print Center Printer List** window. Select **Show Info** from the **Printers** menu, and then select the appropriate options from the **Installable Options** popup menu.

7 Configure the options, and then click **Apply Changes**.

To set up an IP/LPR networked Printer with Mac OS 9.*x*

1. Run the Apple Desktop Printer utility.
2. Click **Printer (LPR)**, and then click **OK**.
3. Click **Change** in the LPR Printer Selection area.
4. Click the appropriate IP address and Queue, and then click **OK**.
5. Click **Change** and scroll through the list of products.
6. Click **HP Color LaserJet 4650**, and then click **Select**.
7. Click **Create**.

Uninstalling the Macintosh printing system

To uninstall the Macintosh Printing System, drag the PPDs and the unwanted component(s) to **Trash**. See the tables in the following sections for a list of new folders and files added when the HP Color LaserJet 4650 printing-system software is installed in Macintosh OSs.

In-box disk layout

The Macintosh Printing System consists of one file: the HP LaserJet Installer - Integrated installer program.

Folders and files added through installation of the HP Color LaserJet 4650 software (Mac OS)

The tables in the following sections detail the changes to your system as new folders and files are added when the HP Color LaserJet 4650 printing-system software is installed on Macintosh OS systems.

Note

This listing does not include temporary directories and files that are created, and then deleted, during the installation process.

In the following listing, "MACINTOSH HD" indicates the drive on which the software was installed.

Mac OS Classic installation

This section provides information about the various installation dialog box sequences for the Mac OS Classic.

Main Install dialog box sequence

This subsection provides information about the Macintosh installation dialog box sequence for the Easy Install (the typical installation option).

Figure 6-1. **HP LaserJet for Macintosh installer splash screen dialog box**

Click **Continue** to open the **HP LaserJet Installer** dialog box.

Figure 6-2. **HP LaserJet Installer dialog box (easy install)**

If you want to install the files in a location other than the default "Macintosh HD," click **Install Location:** to specify a location.

You can also select the **Custom installation** option from the drop-down menu at the upper left. **Easy Install** is the default.

Click **Read Me** to open the Installer readme file.

Click **Install** to start the installation on the selected disk.

Click **Quit** to quit the Installer without making changes to the system.

Note

A **Read Me...** button appears on each Macintosh installation screen.

Figure 6-3. **HP LaserJet Installer dialog box (custom install)**

If you want to install the files in a location other than the default "Macintosh HD," click **Install Location:** to specify a location.

Select which of the available components to install by using the check boxes in the list.

Click **Read Me** to open the Installer readme file.

Click **Install** to start the installation on the selected disk.

Click **Quit** to quit the Installer without making any changes to the system.

Figure 6-4. **Installing dialog box**

This dialog box shows installation progress. No action is required unless you want to stop the installation. Click **Stop** to interrupt the install file copy process.

Figure 6-5. **Installation was successful dialog box**

Click **Quit** to exit the Installer. The Printer Setup Assistant opens.

Click **Continue** to return to the HP LaserJet Installer.

HP LaserJet Screen Fonts Installer dialog box sequence

This section provides information about the installation dialog box sequence for the HP Screen Font Installer.

Figure 6-6. **HP LaserJet Screen Fonts splash screen dialog box**

Click **Continue** to open the **HP LaserJet Screen Fonts** dialog box.

Figure 6-7. **HP LaserJet Screen Fonts installer dialog box (1 of 2)**

Click **Install** to start the installation.

Click **Quit** to quit the Installer without making changes to the system.

When you click **Install**, an installation progress bar dialog box briefly appears. Click **Stop** to interrupt the install file copy process.

Figure 6-8. **Installation was successful dialog box**

Click **Quit** to exit the Installer.

Click **Continue** to return to the HP LaserJet Screen Fonts installer.

Mac OS X installation

This section provides information about the various installation dialog box sequences for the Mac OS X operating system.

Main Install dialog box sequence

This section provides information about the Macintosh installation dialog box sequence for the Easy Install (the typical installation option).

Figure 6-9. **HP LaserJet for Macintosh installer splash screen dialog box**

Click **Continue** to open the **HP LaserJet Installer** dialog box.

Figure 6-10. **HP LaserJet Installer dialog box (easy install)**

If you want to install the files in a location other than the default "Mac," click the **Install Location** drop-down menu to specify a location.

You can also select a **Custom installation** option from the drop-down menu at upper left.

Click **Read Me** to open the Installer readme file.

Click **Install** to start the installation on the selected disk

Click **Quit** to quit the Installer without making changes to the system.

Figure 6-11. **HP LaserJet Installer dialog box (custom install)**

Select the install location using the **Install Location** drop-down menu (if the desired location is different from "Mac").

Select which of the available components to install by using the check boxes in the list.

Click **Read Me** to open the Installer readme file.

Click **Install** to start the installation on the selected disk.

Click **Quit** to quit the Installer without making any changes to the system.

Figure 6-12. **Installing dialog box**

This dialog box shows installation progress. No action is required unless you want to stop the installation. Click **Stop** to interrupt the install file copy process.

7 Engineering Detail

Introduction

This section presents engineering detail for the following topics:

- Media attributes

Media attributes

This section includes the following information about media attributes:

- paper sources and destinations
- paper-tray configurations
- paper-source commands
- media types and sizes
- PCL 6c custom paper sizes

Paper sources and destinations

The following table indicates the standard and optional paper sources and destinations for the HP Color LaserJet 4650:

Table 7-1. HP Color LaserJet 4650 paper sources and destinations

Paper sources	multipurpose tray (tray 1)	standard
	500-sheet paper tray (tray 2)	standard
	500-sheet paper tray (tray 3)	optional
	500-sheet paper tray (tray 4)	optional
Paper destinations	main output bin	standard

Paper-tray configurations

The HP Color LaserJet 4650n and the HP Color LaserJet 4650dn come with a 100-sheet standard multipurpose tray (tray 1) and a 500-sheet paper feeder (tray 2). The HP Color LaserJet 4650dtn comes with an additional 500-sheet paper feeder (tray 3) and the HP Color LaserJet 4650hdn comes with two additional 500-sheet paper feeders (trays 3 and 4).

The following table indicates the paper tray configurations that are possible for the HP Color LaserJet 4650:

Table 7-2. Media tray configurations for the HP Color LaserJet 4650

Product	Tray number	Tray type	Standard/optional
HP Color LaserJet 4650n	Tray 1	multipurpose tray	standard
	Tray 2	500-sheet tray	standard
	Tray 3	500-sheet tray	optional
	Tray 4	500-sheet tray	optional
HP Color LaserJet 4650dn	Tray 1	multipurpose tray	standard
	Tray 2	500-sheet tray	standard
	Tray 3	500-sheet tray	optional
	Tray 4	500-sheet tray	optional
HP Color LaserJet 4650dtn	Tray 1	multipurpose tray	standard
	Tray 2	500-sheet tray	standard
	Tray 3	500-sheet tray	standard
	Tray 4	500-sheet tray	optional
HP Color LaserJet 4650hdn	Tray 1	multipurpose tray	standard
	Tray 2	500-sheet tray	standard
	Tray 3	500-sheet tray	standard
	Tray 4	500-sheet tray	standard

Note

A duplexing unit is standard for the HP Color LaserJet 4650dn.

Paper-source commands

The PCL 5 escape sequence for paper source is `Esc&l#H` (the "l" is a lowercase "L" rather than the numeral "1"). See the following table for values of #. For example, `Esc&l8H` is the command for tray 4.

Table 7-3. Paper-source commands

Paper source	PCL 6 `ubyte # MediaSource`	PCL 5 `Esc&l#H`	Postscript `/MediaPosition` # or null
Tray 1	3	4	3
Tray 2 (500-sheet)	4	1	0
Tray 3 (500-sheet)	5	5	1
Tray 4 (500-sheet)	7	8	4
Auto Select	1	7	null
Manual feed in tray 1	2	2	3

Media types and sizes

Driver features and attributes

The following table lists the features and attributes of various media listed under the **Size Is:** drop-down menu on the **Paper** tab. The list order can vary, depending on the product and operating system. The list contains all of the following sizes, and might contain sizes from other drivers.

Table 7-4. Supported features and attributes by driver

Paper sizes[1]	Width	Height	PCL 6 [2]
Letter	216 mm (8.5 inches)	279 mm (11.0 inches)	"LETTER"
11 x 17	279 mm (11.0 inches)	432 mm (17.0 inches)	"LEDGER"
16K[3]	197 mm (7.75 inches)	273 mm (10.75 inches)	"ROC16K"
8.5 x 13	216 mm (8.5 inches)	330 mm (12.99 inches)	"8.5x13"
8K	273 mm (10.75 inches)	394 mm (15.50 inches)	"ROC8K"
A3	297 mm (11.69 inches)	420 mm (16.54 inches)	"A3"
A4	210 mm (8.27 inches)	297 mm (11.69 inches)	"A4"
A5	148 mm (5.83 inches)	210 mm (8.27 inches)	"A5"
B4 (JIS)	257 mm (10.12 inches)	364 mm (14.33 inches)	"JIS B4"

Table 7-4. Supported features and attributes by driver (continued)

Paper sizes[1]	Width	Height	PCL 6 [2]
B5 (JIS)	182 mm (7.17 inches)	257 mm (10.12 inches)	"JIS B5"
Double Japan Postcard Rotated	148 mm (5.83 inches)	200 mm (7.87 inches)	
Envelope #10	105 mm (4.12 inches)	241 mm (9.5 inches)	"COM10"
Envelope B5	176 mm (6.93 inches)	250 mm (9.84 inches)	"B5 ENV"
Envelope C5	162 mm (6.38 inches)	229 mm (9.02 inches)	"C5"
Envelope DL	110 mm (4.33 inches)	220 mm (8.66 inches)	"DL"
Envelope Monarch	98 mm (3.87 inches)	190 mm (7.5 inches)	"MONARCH"
Executive	184 mm (7.25 inches)	267 mm (10.5 inches)	"EXEC"
Executive (JIS)	216 mm (8.5 inches)	330 mm (12.99 inches)	"JISEXEC"
Legal	216 mm (8.5 inches)	356 mm (14.0 inches)	"LEGAL"
Custom (leading edge) (other edge)	Minimum: 76.2 mm (3.0 inches) Maximum: 215 mm (8.5 inches)	Minimum: 127 mm (5.0 inches) Maximum: 355.6 mm (14.0 inches)	[4]

[1] For all paper sizes, the PCL 6 margins are 100,100.

[2] The PCL 6 command for paper size is ubyte array(String)MediaSize. The values in this column are the values for "String."

[3] In Windows NT 4.0, this paper size is treated as a custom size.

[4] For custom sizes, the HP traditional PCL 6 driver specifies actual dimensions, for example, for 8 by 9 inch custom size, "real32_8.000000 9.000000 CustomMediaSize."

Table 7-5. Supported input media types

Input media types (postscript string)	Tray 1	Tray 2 (500-sheet)	Tray 3 (500-sheet)	Tray 4 (500-sheet)	Duplexing unit	Manual duplex
Plain	Y	Y	Y	Y	Y	Y

Table 7-5. Supported input media types (continued)

Input media types (postscript string)	Tray 1	Tray 2 (500-sheet)	Tray 3 (500-sheet)	Tray 4 (500-sheet)	Duplexing unit	Manual duplex
Preprinted	Y	Y	Y	Y	Y	Y
Letterhead	Y	Y	Y	Y	Y	Y
Transparency	Y	Y	Y	Y	N	N
Prepunched	Y	Y	Y	Y	Y	Y
Labels	Y	Y	Y	Y	N	N
Bond	Y	Y	Y	Y	Y	Y
Recycled	Y	Y	Y	Y	Y	Y
Color	Y	Y	Y	Y	Y	Y
Cardstock[1]	Y	Y	Y	Y	Y	N
Heavy[2]	Y	Y	Y	Y	Y	Y
Envelope	Y	N	N	N	N	N
Light[3]	Y	Y	Y	Y	Y	Y
Intermediate 90 - 104 g/m^2 (25 - 29 lbs)	Y	Y	Y	Y	Y	Y
Extra Heavy 105 - 119 g/m^2 (29 - 33 lbs)	Y	Y	Y	Y	Y	N
Glossy 75 - 105 g/m^2 (21 - 29 lbs)	Y	Y	Y	Y	Y	Y
Heavy Glossy 106 - 120 g/m^2 (29 - 33 lbs)	Y	Y	Y	Y	Y	Y
Non-HP Heavy Glossy	Y	Y	Y	Y	Y	Y
Rough	Y	Y	Y	Y	Y	Y
HP High Gloss (Images)	Y	Y	Y	Y	Y	Y
Tough Paper (Glossy Film)	Y	Y	Y	Y	N	N

[1] Tray 1 accepts cardstock between 164 g/m^2 (45 lb.) and 200 g/m^2 (53 lb.).

[2] Heavy paper is supported between 105 g/m^2 (29 lb.) and 119 g/m^2 (33 lb.).

[3] Light paper is between 60 g/m^2 (16 lb.) and 74 g/m^2 (20 lb.).

PCL 6 custom paper sizes

Table 7-6. PCL 6 custom paper sizes

Tray	Dimensions	Minimum	Maximum
Tray 1 (multipurpose)	Width	76.2 mm (3 inches)	215.9 mm (8.5 inches)
	Height	127.0 mm (5 inches)	355.6 mm (14 inches)
Tray 2 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Tray 3 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Tray 4 (500-sheet)	Width	148.0 mm (5.83 inches)	215.9 mm (8.5 inches)
	Height	210.0 mm (8.27 inches)	355.6 mm (14 inches)
Duplexing unit	Width	Custom sizes not supported	Custom sizes not supported
	Height	Custom sizes not supported	Custom sizes not supported

Paper type commands

The PCL 5c escape sequence for paper type is "Esc&n#Wdpapertype", where "n#" is the number of characters in the paper type plus 1. For example, in the sequence "Esc&n6WdPlain", "Plain" has 5 letters plus 1, for a total of 6.

Note

Some paper type options listed in the following table might not be defined in the print driver.

Table 7-7. Paper-type commands

Esc&	n#	Wd	Paper type
Esc&	6	Wd	Plain
Esc&	11	Wd	Preprinted
Esc&	11	Wd	Letterhead
Esc&	13	Wd	Transparency[3]
Esc&	11	Wd	Prepunched
Esc&	7	Wd	Labels
Esc&	5	Wd	Bond
Esc&	9	Wd	Recycled
Esc&	6	Wd	Color
Esc&	11	Wd	Cardstock[1]
Esc&	6	Wd	Heavy
Esc&	9	Wd	Envelope
Esc&	6	Wd	Light

Table 7-7. Paper-type commands (continued)

Esc&	n#	Wd	Paper type
Esc&	13	Wd	Intermediate
Esc&	12	Wd	Extra Heavy
Esc&	6	Wd	Gloss
Esc&	12	Wd	Heavy Gloss
Esc&	16	Wd	Non-HP Heavy Gloss
Esc&	11	Wd	Gloss Film[2]

[3] You must spell out the word "Transparency" in the string, although it is abbreviated as TRNSPRNCY on the control panel.

[1] The correct command for cardstock is "Esc&n11WdCard Stock", with a space between the "d" and the "S", and with an uppercase "S".

[2] You must spell out the term "Gloss Film" in the string, although it is shown as TOUGHPAPER on the control panel.

Index

Symbols/Numerics

% of Normal Size setting
    PCL Traditional Drivers 91
    unidrivers 179

A

About button, PCL Traditional Drivers 115
accessibility support in drivers 63
accessibility, documentation 10
accessories, automatic configuration ***
ADA (Americans with Disabilities Act) compliance 10
Add Printer installation 203
Add Printer wizard 21
Adobe Acrobat Reader
    installing 7
    printing PDF files without 20
    viewing documentation 4
Adobe Web site ***
Advanced Printing Features setting, unidrivers 156
Advanced tab
    PS Emulation Driver 132
    unidrivers 154
alerts, e-mail 29, 31
Americans with Disabilities Act (ADA) compliance 10
application settings
    traditional drivers 71
    unidrivers 151
ASCII output protocol, PS Emulation Driver 146
Automatic color settings
    PCL Traditional Drivers 117
    unidrivers 191
autorun CD, Windows 7

B

Back Cover settings
    PCL Traditional Drivers 96, 104
    unidrivers 167, 169
Back to Front printing, unidrivers 158
Basics tab, PCL Traditional Drivers 113
bidirectional communication
    about 20
    driver support 61
    Enterprise AutoConfiguration 21
binary output protocol, PS Emulation Driver 146
binding settings
    PCL Traditional Drivers 82
    unidrivers 173
bins
    custom paper sizes 100
    driver support 62
black, printing all text as
    PCL Traditional Drivers 87, 88
    unidrivers 157
Bluetooth devices 20
booklet printing
    PCL Traditional Drivers settings 83
    unidriver settings 174
Bubble help 75

C

Cable Connection dialog box, Windows 220
cardstock
    paper type commands 277
    trays supported 275
CD-ROM
    documentation ***, 4
    in-box file layout 12
    installing Macintosh printing-system software 263
    installing Windows printing-system software 6, 210
    regional versions 13
Change Current Destination Folder dialog box 252
CHM files, viewing 10
Choose Setup Language dialog box, Windows 213
Client Driver Support dialog box, Windows
    Customization Wizard 249
    Typical Installation 232
collation settings
    PCL Traditional Drivers mopier settings 123
    unidriver 155
    unidrivers 155, 200
color profiles 7, 20
Color tab
    PCL Traditional Drivers 116
    unidrivers 190
command-line printing
    FTP, Windows 54
    local port, Windows 55
    LPR 58
    Macintosh 57
    networks, Windows 56
    UNIX 57
    Windows 20
command-line silent install for Windows 254, 255
commands, paper
    size 274
    source 272
    type 276
common installer, features 7
Configuration Page, HP Embedded Web Server 26, 29
Configure Device page, HP Embedded Web Server 29
Configure tab, PCL Traditional Drivers 106
Connection type dialog box, Windows 219
connectivity
    bidirectional communication support 20
    driver support 60
    Network Setup dialog box, Windows 218
    Printer Connection dialog box, Windows 217
constraint messages
    PCL Traditional Drivers 74
    unidrivers 153
context-sensitive help
    PCL Traditional Drivers 73
    unidrivers 152
control panel settings
    traditional drivers 71
    unidrivers 151
Copy Count settings
    PCL Traditional Drivers 114
    PS Emulation Driver 131
    unidrivers 155, 200

covers, use different paper settings
PCL Traditional Drivers 96
unidrivers 167
Ctrl-D settings, PS Emulation Driver 147
Custom Installation 234
custom installation
choosing 7
Custom Installation dialog box, Windows 235
Custom Installer Location dialog box 251
custom paper sizes 276
custom paper sizes, PCL Traditional Drivers settings 96
custom paper support 276
customer support 27
Customization Wizard 236

D

datecode, firmware 26
default Print Task Quick Sets
PCL Traditional Drivers 77
unidrivers 160
default printer, setting 256
deleting Job Storage jobs 189
destinations, paper 271
Device Information page, HP Embedded Web Server 27, 30
Device Settings tab
PS Emulation Driver 73
unidrivers 195
Device Status page, HP Embedded Web Server 28
dialog boxes, printing-system software installation
Mac OS Classic 264
Mac OS X 268
Windows, Typical 210
DIMMs, fonts
PCL Traditional Drivers settings 126
unidriver settings 197
directory structure, software CD 12
disabling
driver features 24
disk space requirements
Macintosh and Linux 257
Windows 204
Document Options
PCL Traditional Drivers 80
unidrivers 156
document preview image, unidrivers 170
documentation
Help feature support 64
install notes 11
Print Task Quick Set for use guide, HP Traditional PCL 6 Driver 80
Print Task Quick Set for use guide, unidriver 163
viewing ***, 4
double-sided printing
PCL Traditional Driver settings 80
unidriver settings 171
downloading
firmware 45
printing-system software 17
Driver Configuration dialog box, Customization Wizard 245
Driver Work Space (DWS) 127
drivers
accessibility support 63
accessory configuration ***
Add Printer installation 203
availability by operating system 18
bidirectional communication support 61
bins supported 62
connectivity support 60
Enterprise AutoConfiguration 21
Help feature support 64
included 4
installable options support 62
job storage support 64
job stream output support 59
Linux operating systems 9
lockable features 24
Macintosh 9
media supported 273
paper source commands 272
PCL 6 color raster compression support 59
Point and Print installation 255
Postscript-specific features 69
Print Quality options 86
PS Emulation Driver features 128
settings 71, 151
standalone 17
UNIX operating systems 9
user interface support 63
watermarks support 67
See also PCL Traditional Drivers; PS Emulation Driver; unidrivers
duplexing unit
custom paper sizes 100
media supported 274
models including 272
PCL Traditional Drivers settings 80
print modes ***
unidriver settings 171
DWS (Driver Work Space) 127

E

e-mail alerts 29, 31
Edge Control settings
PCL Traditional Drivers 119
unidrivers 194
Edit Other Links page, HP Embedded Web Server 29
Effects tab
PCL Traditional Drivers 89
unidrivers 177
EIO Jetdirect page, printing 26
Email Server page, HP Embedded Web Server 29
embedded Web server. *See* HP Embedded Web Server
Enterprise AutoConfiguration
about 21
Novell NetWare operating systems supported 23
Windows operating systems supported 21
envelopes, paper type commands 277
escape sequences
paper source 272
paper type 276
euro character 20
event log 27
EWS. *See* HP Embedded Web Server
External Fonts settings, PCL Unidrivers 196

F

features
model specifications 2
Features dialog box, Windows
Customization Wizard 244
Typical Installation 229
file layout for software CD 12
files added by Macintosh software 264
Finishing tab
PCL Traditional Drivers 76
unidrivers 170

firmware
datecode, locating 26
determining current level 45
downloading 45
FTP updates, Macintosh 50
FTP updates, Windows 46
HP Web Jetadmin updates 51
LPR command updates 51
Macintosh, updating 50
messages during update 48
troubleshooting updates 52
UNIX updates 50
updating remotely 20
verifying installation 52
Windows network updates 49
Windows, local port update 48
First Page paper settings
PCL Traditional Drivers 103
unidrivers ***
Flip Pages Up
PCL Traditional Drivers 82
unidriver settings 173
folders added by Macintosh software 264
Font Substitution Table, PS Emulation Unidriver 198
fonts
configuring for watermarks 93
DIMM settings, PCL Traditional Drivers 126
DIMM settings, unidrivers 197
euro character 20
External, PCL Unidrivers 196
Macintosh 259
PS 3 emulation 129
PS Emulation Driver settings 147
Send TrueType as Bitmap, PCL Traditional Drivers 87, 88
Send TrueType as Bitmap, PCL Unidrivers 157
substitution table, PS Emulation Driver 146
substitution table, PS Emulation Unidriver 198
TrueType download option 69
Windows 204, 207
Form to Tray Assignment
PS Emulation Driver 145
unidrivers 196
Front Cover settings
PCL Traditional Drivers 96
unidrivers 167
Front to Back printing, unidrivers 158
FTP
command-line printing, Windows 54
Macintosh command-line printing 57
Macintosh firmware updates 50
Windows firmware updates 46

G

Graphics Mode, unidrivers 158
guides. *See* documentation

H

Halftone settings
PCL Traditional Drivers 118
unidrivers 193
hard disk
PS Emulation Driver settings 148
unidriver settings 199
heavy paper
trays supported 275
type commands 277
help
Bubble 75
Macintosh 259
operating systems supported 64
PCL Traditional Drivers 73
PS Emulation Driver 130
unidrivers 152
HP Embedded Web Server
about 20, 259
alerts page 29
AutoSend page 29
Configuration Page 29
Configure Device page 29
Device Information page 27, 30
Device Status page 28
Email Server page 29
HP Web Jetadmin 26
Information tab 27
language, setting 30
links 27, 29
navigation 26
Networking tab 27
Security page 29
Settings tab 27
time settings 30
user guide 26
HP Instant Support 27
HP Jetdirect page, printing 26
HP LaserJet Screen Font Installer 267
HP LaserJet Utility
firmware updates 50
printing print-ready files 57
HP Network Registry Agent (HPNRA) 21
HP Software License Agreement dialog box, Windows 216
HP Toolbox
bidirectional communication 21
HP Web Jetadmin
about 43
downloading 7
Driver Configuration Plugin 20
firmware updates 51
HP Embedded Web Server 26
operating systems supported 43
HPNRA (HP Network Registry Agent) 21
HTML files, viewing 10

I

IBM operating systems, supported 19
ICC color profiles 7, 20
Identify Printer dialog box, Windows 223
Ignore Application Collation settings, PCL Traditional Drivers 123
inches, settings 101
Include types in application source list option in drivers 127
Incompatible Print Settings messages. *See* constraint messages
Information tab, HP Embedded Web Server 27
input trays. *See* trays
install notes 11
Installable Options
PS Emulation Driver 147
PS Emulation Unidriver 172
installation
Add Printer 203
Adobe Acrobat Reader 7
command-line silent 254, 255
custom option 234
dialog boxes, Mac OS Classic 264
dialog boxes, Mac OS X 268
dialog boxes, Windows 210

Installer Customization Wizard 236
Macintosh printing-system software 263
Point and Print 255
system requirements for Macintosh and Linux operating systems 257
system requirements for Windows operating systems 204
Windows printing-system software 210
Installation Type dialog box, Windows 228
installers
availability by operating system 18
common, features 7
customizing 236
Screen Fonts, Macintosh 267
Instant Support 27
IP address, locating 26
IP Settings dialog box, Customization Wizard 242

J

Jetadmin. *See* HP Web Jetadmin
Job Storage
operating systems supported 64
PCL Traditional Drivers settings 106, 125
PS Emulation Driver 137
PS Emulation Driver settings 139
unidriver settings 182, 200
job stream output support 59
Job Timeout settings, PS Emulation Driver 147

L

landscape orientation settings
PCL Traditional Drivers 82, 114
unidrivers 173
Language dialog box, Customization Wizard 239
languages
Choose Setup Language dialog box, Windows 213
HP Embedded Web Server 30
printing-system software 13
Layout Options, unidrivers 158
license agreement dialog box, Windows 216
light paper 275
links, HP Embedded Web Server 27, 29
Linux operating systems
driver availability 9
system requirements 257
local port command line printing, Windows 55
localization, software components 13
lockable features, drivers 24
LPR commands
firmware updates 51
printing PDF files 58

M

Macintosh operating systems
command-line printing 54, 57
components, software 258
dialog boxes, Mac OS Classic printing-system software installation 264
dialog boxes, Mac OS X printing-system software installation 268
directory structure, software CD 13
driver versions 9
files and folders added by installation 264
firmware, updating 50
fonts supported 259
HP Embedded Web Server 259
install notes 259
installing printing-system software 263
network setup 262, 264
online help 259
PDEs 258
PPDs 258
printing print-ready files with HP LaserJet Utility 57
Screen Fonts installer 267
setting up products with Mac OS X 263
supported 19
system requirements 257
uninstalling printing-system software 264
Manual color settings
PCL Traditional Drivers 117
unidrivers 192
manuals. *See* documentation
margins, PCL 6 driver 274
measurement units 101
media. *See* paper
memory
base 2
installation requirements for Macintosh and Linux operating systems 257
installation requirements for Windows operating systems 204
PCL Traditional Drivers settings 127
PS Emulation Driver settings 146, 148
unidriver settings 199
messages, constraint
PCL Traditional Drivers 74
unidrivers 153
Microsoft Point and Print installation 255
millimeters, settings 101
Model dialog box, Windows
Customization Wizard 243
Typical Installation 227
model scripts, UNIX 9
model specifications 2
moire effect, handling 87, 88
Mopier settings
PCL Traditional Drivers 123
PS Emulation Driver 149
unidriver 200
More Configuration Options, PCL Traditional Drivers 125

N

name printer dialog box
Customization Wizard 247
Typical Installation 230
Network Configuration Options dialog box, Windows 225
Network Setup dialog box, Windows 218
Networking tab, HP Embedded Web Server 27
networks
accessories supported 44
bidirectional communication support 60
command line printing 56
Communication Mode dialog box, Windows 226
EIO Jetdirect page, printing 26
firmware updates 49
Macintosh setup 262, 264
Point and Print installation 255
Recommended Network Setup dialog box, Windows 222
settings 32
Windows printing-system software installation 210
Neutral Grays settings
PCL Traditional Drivers 118
unidrivers 193
Novell NetWare operating systems, Enterprise AutoConfiguration support 23
NT Forms tab, PCL Traditional Drivers 120

number of copies, setting
PCL Traditional Drivers 114
PS Emulation Driver 131
unidrivers 155, 200

O

online help. *See* help
operating systems
availability of software components 18
bidirectional communication support 61
bins supported 62
Enterprise AutoConfiguration support 21
Help feature support 64
HP Driver Preconfiguration support 61
installable options support 62
job storage support 64
job stream output support 59
PCL 6 color raster compression support 59
PS Emulation Traditional Driver support 69
standalone drivers 17
supported 19
user interface support 63
watermarks support 67
Optimizations option, PCL Unidrivers 157
Optional Paper Sources, PCL Traditional Drivers 124
ordering supplies 7
orientation settings
PCL Traditional Drivers 82, 114
PS Emulation Driver 131
unidrivers 173
Other Pages paper settings
PCL Traditional Drivers 103
unidrivers 168
Output Protocol settings, PS Emulation Driver 146
Output Settings, PCL Traditional Drivers 87, 88

P

Page Order settings
PCL Traditional Drivers 85
unidrivers 158, 175
page orientation settings
PCL Traditional Drivers 82, 114
PS Emulation Driver 131
unidrivers 173
Page Setup tab, PS Emulation Driver 131
Pages per Sheet settings
PCL Traditional Drivers 83
unidrivers 175
PANTONE color profiles 7, 20
paper
custom sizes, PCL 6 support 276
custom sizes, PCL Traditional Drivers settings 96
Include types in application source list setting 127
margins 274
margins, PCL 6 driver 274
Pages per Sheet settings, PCL Traditional Drivers 83
Pages per Sheet settings, unidrivers 175
Print Document On settings, PCL Traditional Drivers 90
Print Document On settings, unidrivers 178
Print on Both Sides settings, unidrivers 171
Print on Both Sides, PCL Traditional Drivers 80
PS Emulation Driver settings 131
size commands 274
Size is settings, PCL Traditional Drivers 96
Size is settings, unidrivers 164
source commands 272
Source is settings, PCL Traditional Drivers 97
Source is: settings, unidrivers 165
sources and destinations 271
type commands 276
Type is settings, PCL Traditional Drivers 96
Type is: settings, unidrivers 164
types and sizes supported 273
types supported 274
Paper Handling Options, PCL Traditional Drivers 81
Paper Options
PCL Traditional Drivers 96
unidrivers 164
paper trays. *See* trays
Paper/Quality tab, unidrivers 159
PCL 5 driver
paper source commands 272
PCL 5c escape sequences 276
PCL 6 raster compression support 59
PCL 6 traditional driver
operating systems supported 18
PCL 6c Unidriver
operating systems supported 18
PCL files, printing 27, 20
PCL Traditional Drivers
about 8
About button 115
Basics tab 113
bidirectional communication support 61
bins supported 62
Color tab 116
Configuration Status 115
Configure tab 106
connectivity support 60
custom paper sizes 276
Document Options 80
Effects tab 89
features 71
Finishing tab 76
Help feature support 64
Help system 73
Include types in application source list setting 127
installable options support 62
Job Storage 106
job storage support 64
Job Storage, enabling 125
job stream output support 59
margins 274
media supported 273
memory settings 127
Mopier Enabled settings 123
More Configuration Options 125
NT Forms tab 120
Optional Paper Sources 124
Output Settings 87, 88
Paper Handling Options 81
Paper Options 96
paper size commands 274
PCL 6 color raster compression support 59
preconfiguration support 61
Print Quality Details settings 86, 87
Print Quality group box 86
Print Task Quick Sets 76
user interface support 63
Watermarks settings 91
watermarks support 67
PCL Unidrivers
about 8
accessing 152
Advanced tab 154
bidirectional communication support 61
bins supported 62

Color tab 190
connectivity support 60
Copy Count settings 155
custom paper sizes 276
Device Settings tab 195
Document Options 156
document preview image 170
Effects tab 177
External Fonts settings 196
features 151
Finishing tab 170
Font DIMM Installer 197
Form to Tray Assignment 196
Graphics Mode 158
Help feature support 64
Help system 152
Installable Options 172
installable options support 62
Job Storage 182
job storage support 64
job stream output support 59
Layout Options 158
media supported 273
Mopier settings 200
Paper Options 164
Paper/Quality tab 159
PCL 6 color raster compression support 59
preconfiguration support 61
Print Optimizations option 157
Print Task Quick Sets 160
raster compression 157
Resizing Options 178
user interface support 63
Watermarks settings 179
watermarks support 67
PDEs (Printer Dialog Extensions) 258
PDF files
command-line printing 20
LPR commands, printing 58
printing using HP Embedded Web Server 27
viewing 4
Percentage of Normal Size setting
PCL Traditional Drivers 91
unidrivers 179
PINs, Job Storage
PCL Traditional Drivers 109
PS Emulation Driver 140
unidrivers 186
Point and Print installation, Windows printing-system software 255
port selection dialog box, Windows
Customization Wizard 240
Typical Installation 219
portrait orientation settings
PCL Traditional Drivers 82, 114
unidrivers 173
Postscript 3 Emulation Traditional Driver 18
Postscript 3 Emulation unidriver
operating systems supported 18
PostScript Device settings, PS Emulation Driver 146
postscript documents, printing 27
Postscript printer description (PPD) files 258
PPD (postscript printer description) files 258
Preparing to Install dialog box, Windows 214
Print All Text as Black
PCL Traditional Drivers 87, 88
unidrivers 157
Print Document On settings
PCL Traditional Drivers 90
unidrivers 178
print drivers. *See* drivers
Print Job Management dialog box, Windows 221
print modes ***
Print on Both Sides
PCL Traditional Drivers settings 80
unidriver settings 171
Print Optimizations option, PCL Unidrivers 157
Print Page Borders settings
PCL Traditional Drivers 85
unidrivers 175
Print Quality Details, PCL 5c Traditional Driver 87
Print Quality Details, PCL Traditional Drivers 86
Print Quality options in drivers 86
Print Task Quick Sets, PCL traditional driver
use guide 80
Print Task Quick Sets, PCL Traditional Drivers
about 76
defaults 77
Print Task Quick Sets, unidrivers
about 160
custom 164
defaults 160
use guide 163
print-ready files
command-line printing 20
printing with HP Embedded Web Server 27
printing with HP LaserJet Utility, Macintosh 57
Printer Connection dialog box, Typical Installation 217
printer control panel settings
traditional drivers 71
unidrivers 151
Printer Dialog Extensions (PDEs) 258
Printer Location and Comment dialog box, Windows
Customization Wizard 250
Typical Installation 233
Printer Name dialog box, Windows
Customization Wizard 247
Typical Installation 230
Printer Port dialog box, Customization Wizard 240
Printer Sharing dialog box, Windows
Customization Wizard 248
Typical Installation 231
printer, setting default 256
printing 11
printing files using HP Embedded Web Server 27
Private job settings
PCL Traditional Drivers 109
PS Emulation Driver 139
unidrivers 186
PRN files, printing 27
product support 27
Proof and Hold job settings
PCL Traditional Drivers 108
PS Emulation Driver 139
unidrivers 185
protocols
configuring 33
PS Emulation Driver 146
PS 3 font emulation 129
PS Emulation Driver
Advanced tab 132
Ctrl-D settings 147
Device Settings tab 73
features 128
font settings 147
Form to Tray Assignment 145
help 130
Installable Options 147
Job Storage 137

Output Protocol settings 146
Page Setup tab 131
PostScript Device settings 146
Postscript memory settings 146
Print Quality group box 86
PS 3 font emulation 129
timeout settings 147
PS emulation fonts 207
PS Emulation Traditional Driver
about 8
bidirectional communication support 61
bins supported 62
connectivity support 60
features 69
Help feature support 64
installable options support 62
job storage support 64
job stream output support 59
media supported 273
preconfiguration support 61
user interface support 63
watermarks support 67
PS Emulation Unidriver
about 8
accessing 152
Advanced tab 154
bidirectional communication support 61
bins supported 62
connectivity support 60
Copy Count settings 155
Device Settings tab 195
Document Options 156
document preview image 170
Effects tab 177
features 69, 151
Finishing tab 170
Font DIMM Installer 197
Font Substitution Table 198
Form to Tray Assignment 196
Help feature support 64
Help system 152
Installable Options 172
installable options support 62
Job Storage 182
job storage support 64
job stream output support 59
Layout Options 158
media supported 273
Mopier settings 200
Paper Options 164
Paper/Quality tab 159
preconfiguration support 61
Print Task Quick Sets 160
raster compression 157
Resizing Options 178
user interface support 63
Watermarks settings 179
watermarks support 67
PS files, command-line printing 20
PS traditional driver and unidriver
paper source commands 272

Q

Quick Copy job settings
PCL Traditional Drivers 109
PS Emulation Driver 140
unidrivers 186
Quick Sets. *See* Print Task Quick Sets

R

raster compression
PCL Unidrivers 157
PS Emulation Unidriver 157
Ready to Install dialog box, Windows 234
Recommended Network Setup dialog box, Windows 222
regional versions for printing-system software 13
releasing Job Storage jobs 112, 189
remote firmware updates
about 20
datecode, locating 26
determining current firmware level 45
downloading 45
FTP, Windows 46
HP Web Jetadmin 51
LPR commands 51
Macintosh 50
messages 48
troubleshooting 52
UNIX 50
verifying installation 52
Windows network 49
Windows, using local port 48
Resizing Options, unidrivers 178
resolution, PCL Traditional Driver settings 87, 88
RFU. *See* remote firmware updates
RGB Color settings
PCL Traditional Drivers 119
unidrivers 194
RTF files, viewing 10

S

Scale Patterns (WYSIWYG) feature 87, 88
Scale to Fit setting
PCL Traditional Drivers 90
unidrivers 178
Screen Fonts installer, Macintosh 267
screen-readable documentation 10
Security page, HP Embedded Web Server 29
Select Printer dialog box 224
Select printer dialog box, Windows 224
Send Ctrl-D settings, PS Emulation Driver 147
Send TrueType as Bitmaps
PCL Traditional Drivers 87, 88
PCL Unidrivers 157
serial number 27
Set Network Communication Mode dialog box, Windows 226
settings
locking 24
overriding 71, 151
Print Task Quick Sets, PCL Traditional Drivers 76
Print Task Quick Sets, unidrivers 160
Settings tab, HP Embedded Web Server 27
shading, configuring for watermarks 182
sharing setup dialog box, Windows
Customization Wizard 248
Typical Installation 231
silent installation
command-line 254, 255
Customization Wizard 236
sizes, paper
commands 274
custom 276
margins 274
PCL Traditional Drivers settings 96
Print on Both Sides settings, unidrivers 171
Print on Both sides, PCL Traditional Drivers 80

PS Emulation Driver settings 131
supported 273
unidriver settings 164
smart duplexing 171
Source is settings
PCL Traditional Drivers 97
Source is: settings
unidrivers 165
sources, paper. *See* trays
Specify Printer dialog box, Windows 241
standalone drivers 17
status
devices 28
supplies 27
storage, job
operating systems supported 64
PCL Traditional Drivers 106
PCL Traditional Drivers settings 125
PS Emulation Driver 137
PS Emulation Driver settings 139
unidriver settings 182, 200
Stored job settings
PCL Traditional Drivers 110
PS Emulation Driver 140
unidrivers 187
substitution table for fonts, PS Emulation Driver 146
supplies
AutoSend page, HP Embedded Web Server 29
ordering 7
usage AutoSend page 29
viewing status 27
support, product 27
system requirements
Macintosh and Linux 257
Windows 204

T

TBCP output protocol, PS Emulation Driver 146
TCP/IP address, locating 26
text files, command-line printing 20
text, printing all as black
PCL Traditional Drivers 87, 88
unidriver 157
time settings, HP Embedded Web Server 30
timeout settings, PS Emulation Driver 147
Toolbox
bidirectional communication 21
traditional drivers. *See* PCL Traditional Drivers; PS Emulation Driver
transparencies, paper type commands 277
trays
autoconfiguration ***
configurations 272
custom paper sizes 100
included 2, 271
Installable Options, PS Emulation Driver 147
media supported 274
paper source commands 272
paper type commands 276
PCL Traditional Drivers settings 124
PS Emulation Driver Form to Tray Assignment 145
Source is settings, PCL Traditional Drivers 97
Source is: settings, unidrivers 165
unidriver Form to Tray Assignment 196
Windows NT configuration 120
troubleshooting firmware updates 52
TrueType font settings
PS Emulation Driver 147
Send as Bitmap, PCL Traditional Drivers 87, 88
Send as Bitmap, PCL Unidrivers 157
substitution table, PS Emulation Driver 146
two-sided printing
PCL Traditional Drivers settings 80
unidriver settings 171
txt files, command-line printing 20
types, paper
Include in application source list setting 127
PCL Traditional Drivers settings 96
Print on Both Sides settings, unidrivers 171
Print on Both sides, PCL Traditional Drivers 80
supported 274
unidriver settings 164
Typical Installation
choosing 7
dialog boxes, Windows 210

U

unattended installation
command-line 254, 255
Customization Wizard 236
Unidrivers
operating systems supported 18
unidrivers
accessing 152
Advanced tab 154
automatic configuration ***
bidirectional communication support 61
bins supported 62
Color tab 190
connectivity support 60
constraint messages 153
Copy Count settings 155
custom paper sizes 276
Device Settings tab 195
Document Options 156
document preview image 170
Effects tab 177
features 151
Finishing tab 170
Font DIMM Installer 197
Form to Tray Assignment 196
Help feature support 64
Help system 152
Installable Options 172
Job Storage 182
job storage support 64
job stream output support 59
Layout Options 158
media supported 273
Mopier settings 200
Paper Options 164
Paper/Quality tab 159
PCL 6 color raster compression support 59
preconfiguration support 61
Print Task Quick Sets 160
Resizing Options 178
user interface support 63
Watermarks settings 179
watermarks support 67
uninstalling Macintosh printing-system software 264
units of measurement 101

UNIX operating systems
command-line printing 57
driver availability 9
print-ready printing 57
remote firmware update 50
Update Now feature 21
updating firmware remotely. *See* remote firmware update
usage page 27
Use Different Paper
PCL Traditional Drivers 96
unidrivers 167

W

Wait Timeout settings, PS Emulation Driver 147
Watermarks settings
drivers supported 67
PCL Traditional Drivers 91
unidrivers 179
Web Jetadmin. *See* HP Web Jetadmin
Web sites
Adobe ***
downloading software 17
firmware download 45
HP Embedded Web Server 26
HP Embedded Web Server links 27
HP Web Jetadmin 43
links, HP Embedded Web Server 29
Linux product support 258
support links ***
UNIX model scripts 9
Welcome dialog box, Windows
Customization Wizard 238
Typical Installation 215
What's this? Help
PS Emulation Driver 130
unidrivers 152
Windows operating systems
availability of software components 18
CD, print system 6
command-line printing 54
command-line printing, local port 55
command-line printing, networks 56
custom installation, printing-system software 234
default printer, setting 256
dialog boxes, Typical Installation 210
directory structure, software CD 12
driver versions 8
Enterprise AutoConfiguration support 21
fonts supported 204
HP Traditional Postscript 3 Emulation Driver features 128
Installer Customization Wizard 236
installers 18
installing printing software 210
LPR commands 58
NT Forms tab, PCL Traditional Drivers 120
PCL Traditional Driver features 71
Point and Print installation 255
PS emulation fonts supported 207
remote firmware update 48
supported 19
system requirements 204
unidriver features 151
versions supported 203
wireless devices 20

© 2004 Hewlett-Packard Development Company, LP

www.hp.com