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Agenda



- DCPS General Description
- DCPS Update
 - DCPS Current Release V2.5
 - DCPS Future Release V2.6
- New HP LaserJet Printers
- RoHS Update
- Printing Technology
- Printing Problems and Solutions
- Q & A

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What is DCPS?



- Full name is DECprint Supervisor for OpenVMS
- OpenVMS “print driver” for PostScript printers
 - Sends PostScript and most PCL jobs to printer without translation
 - Translates ANSI, PCL, ReGIS, Proprinter, Tektronix to PS
 - Separately installed layered product
- Full support for
 - Most HP LaserJet and Color LaserJet printers
 - Digital and Compaq laser printers
 - Some Xerox, Lexmark, Genicom, IBM, Apple printers
- Offers generic support for other PostScript printers
 - Many Genicom, Lexmark, Xerox, IBM, Apple printers

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DCPS V2.5




- Now shipping
 - Alpha Software Products Library CDs
 - Q4 2005 (14 November 2005)
 - I64 Operating Environments Update DVD
 - Q4 2005 (20 December 2005)
 - VAX Software Products Library CDs
 - Q1 2006 (14 February 2006)
- Enhancements
 - Better choices in stopping queues during installation
 - Performance greatly improved on I64
 - Change to product and printer name area on flag page

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DCPS V2.5 (continued)



- Enhancements (continued)
 - Better LPD support
 - Support remote LPD queues
 - Support (most) LPD printers
 - Requires temporary spool files to be created
 - Default is existing V2.3-V2.4 behavior (no spooling)
 - Logical names control spooling
 - **DCPS\$SPOOL**
 - When defined, turns on spooling on all queues
 - **DCPS\$*queuename*_SPOOL**
 - When defined, turns on spooling for that queue
 - **DCPS\$SPOOL_DIRECTORY**
 - Always defined; points to location of spool files
 - **DCPS\$SPOOL_KEEP**
 - Undocumented; prevents deletion of spool file at end of job

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DCPS V2.5



- New printers
 - HP
 - LaserJet 1300
 - LaserJet 1320
 - LaserJet 4240
 - **LaserJet 5200 (available May 2006)**
 - Color LaserJet 3000
 - Color LaserJet 3800
 - Color LaserJet 4610
 - Color LaserJet 4700
 - Color LaserJet 4730 MFP
 - Xerox
 - DocuPrint N4525

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DCPS V2.6



- DCPS V2.6 release time frame -- H2 2006
- New printers
 - HP
 - New LaserJet and Color LaserJet printers
 - All-in-One products? (Color LaserJet 2820, 2840)
 - Other printers? Requirements are:
 - Internal Ethernet card (standard or option)
 - PostScript interpreter (standard or option)
 - Xerox
 - Latent unfinished support for some models in V2.5
 - What models should we add?
 - Others?

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DCPS V2.6



- IPv6 (moved from V2.5)
 - JetDirect 635n IPv6/IPsec internal print server now shipping
 - TCP/IP Services LPD IPv6 support shipping in V5.6 (with OpenVMS V8.3)
- Possible new features
 - USB printing
 - Parallel port printing
 - Print to file
- Help us prioritize new features

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Future DCPS Enhancements

- PDF printing
 - New HP printers have non-DCPS direct PDF printing
 - PDF-to-PostScript translator could work with all printers
- Printing to other destinations
 - USB port
 - Parallel port
 - File
- Open-source ports
 - CUPS (Common Unix Print Symbiont)
 - Netatalk (AppleTalk protocol)
- DCPS\$STARTUP.COM alternative
 - Syntax too complex and error-prone (especially P2)
 - Data file could store queue information

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DECprint Supervisor (DCPS) Roadmap

2005 2006 2007 2008 2009

DCPS V2.5
 Nov 2005-January 2006
 Alpha, Integrity, VAX

- New HP Printer Support
- Better LPD support
- Better Punch Option
- Bug Fixes

DCPS V2.6
 FRS: Q4 2006
 Alpha, Integrity, VAX

- New HP printer support
- Select 3rd party printer support
- IPv6 Alpha & Integrity
- USB Port printing
- Bug Fixes


DCPS Future Functionality

- USB port printing
- Parallel port printing
- Print to file
- PPD file parsing
- PDF Printing

DCPS V2.7
 FRS: Q4 2007
 Alpha, Integrity, VAX


- New HP printer support
- Select 3rd party printer support

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The Competition 

- **Integrated software (LPR and Telnet)**
 - Free; included with TCP/IP software
 - Not robust; no translators or DCPS features
- **Standalone commercial products**
 - Support for more non-HP printers
 - Customers can add new printers
 - Print management software
 - Can coexist with DCPS on same system
 - Mimics DCPS user interface
 - Two competitors
 - **PrintKit (Northlake Software)**
 - **ScriptServer (GrayMatter Software)**

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New HP Color LaserJet Printers

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HP Color LaserJet 2600N



- **HP Color LaserJet 2600N**



- In-Line color technology
- 264 MHz Processor
- 8 Pages/min BW and Color
- 600 DPI (2400 DPI with ImageRET)
- Duty cycle: 35,000 Pages/month
- Memory: 16 MB standard, max. 16 MB
- 250 Sheet input tray
- Optional 250 sheet input tray
- USB port and integrated 10/100 Base TX Fast Ethernet Printserver
- Host based intelligence

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HP Color LaserJet 2605 Series



- **HP Color LaserJet 2605**



- In-line color laser technology
- 300 MHz Processor
- 12 Pages/min B&W, 10 Pages/min color
- 600 DPI (2400DPI with ImageREt)
- Duty cycle: 35,000 pages/month
- Models: 2605, 2605DN, 2605DTN
 - 2605 USB 2.0 only
- Memory: 64 MB standard, max. 320 MB
- 2605/2605DN 250 sheet input
- 2605DTN 500 sheet input
- Duplex printing (DN & DTN)
- PCL 6 and PostScript Level 3 emulation

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HP Color LaserJet 3000 Series



- **HP Color LaserJet 3000**



- In-Line color laser technology
- 533 MHz Processor
- 29 Pages/min B&W 15 Pages/min color
- 600 DPI (2400 DPI with ImageREt)
- Duty cycle: 60,000 per month
- Models: 3000, N, DN, DTN
- Memory: 128/256 MB Standard
 - Max memory 512 MB
 - Hard disk optional
- 350 sheet input tray, 850 sheet max
- USB port and Jetdirect network card
- PCL5c, PCL6 and PostScript Level 3 emulation

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HP Color LaserJet 3600 Series



- **HP Color LaserJet 3600**



- In-Line color laser technology
- 360 MHz CPU
- 17 pages/minute B&W and color
- 600 DPI (3600 with ImageREt)
- Duty cycle: 50,000 pages/month
- Models: 3600, N, DN
- Memory: 64/128MB standard
- 350 sheet input tray configuration std.
 - 850 sheets maximum
 - Optional 500 sheet input tray
- USB 2.0 and JetDirect network card
- Host based intelligence

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HP Color LaserJet 3800 Series



- **HP Color LaserJet 3800**
 - In-line color laser technology
 - 533 MHz processor
 - 21 Pages/min in B&W and color
 - 600 DPI (3600DPI with ImageREt)
 - Duty cycle: 65,000 pages/month
 - Models: 3800, 3800N, 3800DN, 3800DTN
 - 96/160/288 MB memory
 - 544 MB max memory
 - 350 sheets input, 850 max
 - USB 2.0 and Jetdirect network card
 - PCL5c, PCL6, PostScript Level 3 emulation



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HP Color LaserJet 4700 Series



- **HP Color LaserJet 4700**
 - In-Line color laser technology
 - 533 MHz Processor
 - 30 Pages/min B&W and color
 - 600 DPI (3600 DPI with ImageREt)
 - Duty cycle: 100,000 per month
 - Models: 4700, N, DN, DTN, PH+
 - Memory: 160MB Std.
 - DN,DTN, 256MB, PH+ 544MB
 - 40 GB hard disk optional
 - 600/1600/2600 sheet input tray configurations
 - USB port, parallel port and Jetdirect
 - PCL5c, PCL6 and PostScript Level 3 emulation



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New HP Multifunction Printers (MFP) and New HP All-In-One Printers

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HP Color LaserJet 4730 MFP

- HP Color LaserJet 4730 MFP
- Functions: Color printing
 - Color copying/scanning
 - Digital sending in color
 - Faxing in black and white
- In-Line color laser technology
- 533MHz CPU
- Duty cycle: 175,000 pages/month
- Models: 4730, 4730X, 4730XS, 4730XM
- Memory: 256 MB std., 512 MB max
 - 40 GB disk
- PCL 5c, PCL6, PostScript Level 3 emulation, direct PDF printing, PML (Printer Management Language)



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HP Color LaserJet 4730 MFP continued



- Printing System:
 - 30 Pages/min color, B&W
 - 600 x 600 dpi
 - Duplex
- Copy System:
 - 30 Copies/min color, B&W
 - Up to 999 copies
 - 600 x 600 dpi
 - Scaling: 25% to 400%
- Scanning System:
 - Flatbed and ADF
 - 600 x 600 dpi flatbed
 - 600 x 300 ADF
 - 30 bit depth
 - 256 levels of grey
 - Color scanning
 - PDF, JPEG, TIFF, MTIFF
- Fax System:
 - 33,6 Kbps
 - Black & white
 - 300 x 300 dpi
 - 100 number address book

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HP Color LaserJet 2800 All-In-One Series



- HP Color LaserJet 2800 All-In-One




- **Functions: Color printing**
 - color copying
 - faxing in black and white
- In-Line color laser technology
- 264 MHz processor
- Duty cycle: 30,000 pages/month
- Models: 2820 (no fax), 2840
- Memory: 96 MB std., 224 MB max
 - 40 GB disk
- PCL6, PostScript Level 3 emulation

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HP LaserJet 4345 MFP




- HP LaserJet 4345 MFP



- Functions: Black & white printing
 - Black & white copying/scanning
 - Digital sending
 - Faxing in black and white
- 533 MHz processor
- Duty cycle: 200,000 pages/month
- Models: 4345, X, XS, XM
- Memory: 256 MB std., 512 MB max
 - 40 GB disk
- PCL5e, PCL6, PostScript Level 3 emulation, PML (Printer Management Language), PDF, XHTML

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HP LaserJet 4345 MFP continued



- Printing System:
 - 43 Pages/min
 - 600 x 600 dpi (1200 Fastres)
 - Duplex
- Copy System:
 - 30 Copies/min
 - Up to 32,000 copies
 - 600 x 600 dpi
 - Scaling: 25% to 400%
- Scanning System:
 - Flatbed and ADF
 - 600 x 600 dpi flatbed/ADF
 - 30 bit depth
 - 220 levels of grey
 - Color scanning
 - PDF, JPEG, TIFF, MTIFF
- Fax System:
 - 33,6 Kbps
 - Black & white
 - 300 x 300 dpi
 - 100 number address book

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HP LaserJet 3000 Series All-In-One Printers



- HP LaserJet 3015 AiO 15 Pages/min
 - HP LaserJet 3020 AiO 14 Pages/min
 - HP LaserJet 3050 AiO 18 Pages/min
 - HP LaserJet 3052/3055 AiO 18 Pages/min
 - HP LaserJet 3390/3392 AiO 21 Pages/min
-
- Functionality:
 - Printing
 - Scanning
 - Copying
 - Faxing

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New HP LaserJet Printers

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HP LaserJet 1020



- **HP LaserJet 1020**



- Low end B&W laser printer
- 234 MHz processor
- 14 pages/minute
- 1200 x1200 DPI
- Duty cycle: 5,000 pages/month
- Memory:2 MB std
- 100 sheet input tray
- USB port, parallel port, internal Jetdirect card
- Host based intelligence

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HP LaserJet 1022



- **HP LaserJet 1022**



- Low end B&W laser printer
- 266 MHz CPU
- 18 pages/minute
- 1200 x 1200 DPI
- Duty cycle: 8,000 pages/month
- Memory: 8 MB/8 MB maximum
- Models: 1022, 1022N, 1022NW
- 250 sheets input tray
- USB port, internal JetDirect card
- PCL5e, or host based intelligence

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HP LaserJet 1160



- **HP LaserJet 1160**



- Low end B&W laser printer
- 133 MHz processor
- 18 pages/minute
- 1200 x 1200 DPI
- Duty cycle: 10,000 pages/month
- Memory: 16MB/16 MB maximum
- 250 sheet input tray
- USB port, parallel port
 - Optional external JetDirect card
- PCL5e

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HP LaserJet 5200



- **HP LaserJet 5200**




- B&W Laser printer
- 460MHz CPU
- 35 pages/minute
- 1200 x 1200 DPI
- Duty cycle: 65,000 pages/month
- Models: 5200, TN, DTN
- Memory: 48 MB /64 MB TN/128 MB DTN
 - 512MB maximum
- 350 sheet input tray 5200/850 TN, DTN
 - Optional 40 GB hard disk
- **DIN A3**
- USB port, parallel port, internal JetDirect card
- PCL5e, PCL6, PostScript Level 3 emulation

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Current HP Laser Printers



- **LaserJet Printers:**
 - LaserJet 9050/9040
 - LaserJet 5200
 - LaserJet 5100
 - LaserJet 4250/4350
 - LaserJet 2430
 - LaserJet 2420
 - LaserJet 1320
 - LaserJet 1160
 - LaserJet 1022
 - LaserJet 1020
- **Color LaserJet Printers:**
 - Color LaserJet 9500
 - Color LaserJet 5550
 - Color LaserJet 4700
 - Color LaserJet 3800
 - Color LaserJet 3000
 - Color LaserJet 3500
 - Color LaserJet 2605
 - Color LaserJet 2600N
 - Color LaserJet 2550
 - Color LaserJet 1600


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Current HP Laser Printers



- **Multifunction Printers:**
 - LaserJet 9050 MFP
 - LaserJet 9040 MFP
 - LaserJet 4345 MFP
 - LaserJet 3390/3392 AiO
 - LaserJet 3052/3055 AiO
 - LaserJet 3050 AiO
 - LaserJet 3020 AiO
 - LaserJet 3015 AiO
- **Color Multifunction Printers:**
 - Color LaserJet 4730 MFP
 - Color LaserJet 2840 AiO
 - Color LaserJet 2820 AiO

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HP and RoHS Update

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RoHS Update

- HP is **on schedule** to be compliant with these requirements. HP intends that new models released from HP, as of April 1, 2006, will not contain the Restricted Substances at levels greater than the maximum concentration values prescribed by the Directive, except where an exemption is available under the RoHS Directive. HP intends that **all HP products subject to the RoHS Directive which HP puts on the market in the European Union after July 1, 2006 will be compliant with the requirements of the RoHS Directive.** HP's goal is to exceed compliance obligations by applying the RoHS requirements on a worldwide basis, rather than only where regionally mandated

- Check: www.hp.com/environment

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Printing Technology

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HP FastRes 1200 Enhancement Technology

- **FastRes 1200** increases 600 x 600 dpi resolution up to 1200 dpi effective output quality:
 - Can change a 600 x 600 dpi size dot to achieve better print quality. The technology can place dots at 2400 dpi across the horizontal axis of the page and 600 dpi vertically.
- **FastRes 1200** may dynamically switch between 600 x 2400 and 600 x 600 depending on the area of the image to provide the highest print quality and lowest memory usage.
- **FastRes 1200** works together with HP's **REt** technology. **REt** smooths the edges of text and lines, while FastRes 1200 improves images and gray fills.

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HP LaserJet and Color LaserJet Toner



- Patented process used to chemically „grow“ toner particles (instead of milling the toner)
 - Results in consistently round and smooth particles
 - Gives sharper lines, rich colors and even images.
- Each particle of color toner is an electrically charged ball of wax with an outer pigment shell.
- Approximately 70% of the imaging system is contained in the toner cartridges.

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HP LaserJet and Color LaserJet Toner




- HP Smart Printing Technology: A chip in each cartridge monitors print quality and corrects or stops poor quality.
- **MPACCO**: Monochrome printing after color cartridge out allows B&W printing if color cartridge is empty.
- Print cartridge date stamp:
 - HP LaserJet print cartridge packages are stamped with an alphanumeric date code. This code represents a 30-month period beyond the date of production in order to facilitate efficient inventory management processes between HP and its resellers. It does not serve as an indication of toner life.

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Printing Problems and Solutions

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DCPS „Print to File“

- Problem: How to print to file rather than a device with DCPS.
- Solution: Print using a DCPS IP_LPD queue and define the logical DCP\$SPOOL_KEEP. A temporary file is kept in the spool directory after printing.*

If you do not want the file to print, specify a remote queue instead of a device, and do not start the remote queue.

– *DCPS PostScript is compressed and is therefore difficult to read and modify

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OpenVMS – Moving the Qman Database



- Problem: How do I move the queue manager database?

SY\$QUEUE_MANAGER.QMAN\$QUEUES and
SY\$QUEUE_MANAGER.QMAN\$JOURNAL files

1. Stop the queue manager

- `$ STOP/QUEUE/MANAGER/CLUSTER`
- 2. Backup the .QMAN\$QUEUES and .QMAN\$JOURNAL files
 - `$ backup SY$COMMON:[SYSEXE]SY$QUEUE_MANAGER.QMAN$* DISK:[DIR]`
- 3. Create a new directory for the queue database.
 - `$ CREATE/DIR fast_disk:[qman]`
- 4. Copy the .QMAN\$QUEUES and .QMAN\$JOURNAL files to the new directory
 - `$ copy SY$COMMON:[SYSEXE]SY$QUEUE_MANAGER.QMAN$* fast_disk:[qman]`
- 5. Delete the old queue database.
 - `$DELETE SY$COMMON:[SYSEXE]SY$QUEUE_MANAGER.QMAN$*`
- 6. Restart the queue manager pointing to the new location
 - `$START/QUEUE/MANAGER fast_disk:[qman]`

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Windows and HPBPRO.EXE



- Problem: HP LaserJet Printers - Multiple Instances of HPBPRO.EXE Running Causes Server Crash or Hangs
- CPU utilization on Print Server will go to 100%. Blank pages print out on printers. Task Manager shows multiple instances of HPBPRO running on the server as a process.
- A customer has multiple print servers running in their network environment. Various servers are seeing HPBPRO randomly become active for no apparent reason and causing performance problems on the server. Closing or killing the HPBPRO processes or rebooting the server solves the issue for the time being

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Windows and HPBPRO.EXE



This problem occurs when following conditions are met:

- The HP Toolbox is installed through a HP Printer CD on client machine.
- The Print Server has one or more EAC based Printers shared to clients.
- Client machine has one to more printer connections (Point and Print) through the Print Server.
- When Toolbox is installed and running on a client machine it starts a local HPBPRO process to resolve ports for each of the printers in the Printers folder (including remote printer connections) every 30 seconds. This local instance of HPBPRO will also start an instance of the HPBPRO process on the Print Server through the Point and Print connection. With a slow or busy network the local HPBPRO could leave stale instance of the process on a server. This stale instance will remain an active process until the process is stopped or the system is restarted.

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Windows and HPBPRO.EXE



- A common scenario is the following:
A Print Server is vending a large amount of shared printers (100+) to a large amount of clients (500+). A small number of clients have Toolbox installed. Statusclient.exe or hpstatus.exe will trigger multiple (possibly 20+) instances of "HPBPRO" processes on the server. Over period of time these stale instances on the Print Server cause the system to hang or crash.

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Windows and HPBPRO.EXE



- **Solution and Workaround**
- Contact HP for HPBPROFIX. This file will install a newer version of hpbpro (version 1.5.0 or later) that will deny remote access to the HPBPRO process and also will register HPBPRO as a local COM.
- Steps for installing HPBPROFIX and configuring it as Local COM at the Print Server:
 - Log on to Print Server as an administrator.
 - Copy hpbprofix.exe on to the print server.
 - Run following command from the DOS window: C:> hpbprofix.
 - If an old version of HPBPRO is locked by a process HPBPRO will pop a message box requesting a reboot to release the old version. The new file will be copied after the reboot. Run HPBPROFIX again after the reboot.

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Windows 2003 Printer Drivers



- **HP LaserJet and Color LaserJet Printers:**
 - Unable to install printer
 - Error message seen when installing drivers using the Add Printer Wizard in Windows Server 2003
 - Unable to Install Printer. Either the printer name was typed incorrectly, or the specified printer has lost its connection to the server
- **Issue:**
 - Any current printer driver that is downloaded from the Web or installed from the CD, whether it is a driver-only install or full software install, fails.
 - The Enterprise AutoConfiguration (EAC) tool is trying to close the service and the Microsoft product is not allowing that to occur.

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Windows 2003 Printer Drivers



- Workaround
 - Install a driver that is bundled with the operating system (for example, the HP Color LaserJet 2500 series printers will work if the Microsoft CLJ4550 driver is installed). For monochrome (black and white) printers, use an earlier model Microsoft monochrome printer driver.
- Solution
 - Updated drivers will be made available on <http://www.hp.com>

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HP LaserJet 2200 Buffer Problems




- Problem: Data is Buffered and Held When Printing from a Non-Windows Application to the LaserJet 2200
- Issue: Data may be buffered and held in the printer if the job size does not equal the number of form lines. The printer will display a flashing ready light and appear to receive data, but nothing prints. Pressing the GO button does not solve the issue. Pressing CANCEL will (may) cancel the job, causing the data to be lost.
- Solution: Upgrade the printer to firmware Rev E. Or add a PCL or PJI reset command to the job.

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Any questions?

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