FreeFlow Print Server Statement of Volatility for DocuColor 7000/8000/AP & 7002/8002Digital Color Press

Statement of Volatility

Manufacturer: Xerox Corporation

Equipment Name: Xerox FreeFlow® Print Server.

Model: This statement applies to FreeFlow Print Server for DocuColor® 7000/8000/AP & the 7002/8002 NRA platforms

Configuration: FreeFlow Print Server hardware platform described below consists of
  a.) Xerox Solaris x86 workstation and
  b.) Xerox add-on circuit boards for Print Engine Interface (described below).

General Description: This document describes the FreeFlow Print Server platform as configured to drive the DocuColor 7000/8000/AP & 7002/8002 Digital Press. Note: This document does not describe the Digital Press; please refer to additional documentation available from Xerox.

This production printing server is connected to a customer-provided network and is networked to print client workstations; e.g., Xerox FreeFlow Makeready. (Note: Print client workstations are described separately and they may run operating systems such as Linux/Unix, Macintosh OS, Windows, or Vista.) The network connections also enable the FreeFlow Print Server to read and write remote file systems mounted via NFS or SMB, as configured by the administrator (may be disabled). The Print Server application software runs on the Solaris 10 Operating System.

Purpose: Production-speed printing of documents. The FreeFlow Print Server accepts documents, rasterizes the print or scanned data into images, and sends the images to the Print Engine (separately described).

Data Flow Description: Customer data (print jobs and print resources) are sent to the FreeFlow Print Server via network client software and stored on the Print Server hard drive(s). Alternately, print jobs and print resources may be copied to the Print Server hard drive from optical/removable media. Print jobs are processed by the Print Server software, producing rasterized image data which is processed, compressed, and stored on the Print Server hard drive(s). Eventually the compressed data is decompressed and sent to the external "Print Engine".   Some time later, as determined by level of system activity and rate of job processing, the original print job data files and the compressed representation of these files will be "deleted" (de-allocated) as the hard drive space is reused for successive jobs. Data may also be explicitly "Saved" on the hard drive(s) for long term storage, as determined by job submitter intentions and system operator actions.

Volatile memory:

  1.) Volatile memory: What is the amount? 4GB
    What period of time does the unit need to be powered off to completely erase this memory?
    The volatile memories used in the configuration are standard industry-supplied RAM. Leaving the power off for several seconds is sufficient to completely erase the memory.

    FreeFlow Print Server - Volatile Memory:

      a.)   Video Display Controller volatile memory RAM: 8 MB Frame Buffer for video memory. No user data or processed job image data stored here.

b.)   Controller Board SDRAM: 4 GB RAM as shipped by Xerox in this configuration. Used for the underlying Solaris Operating System and FreeFlow Print Server application software functions. Unprocessed print job data, print resources including customer image data, RIP'ed image data, and processed image data is passed through this memory, but not stored persistently here.

c.)   Processor (CPU) RAM: 4 MB internal-cache RAM; used for Solaris OS and FreeFlow Print Server application software functions. Unprocessed print job data, print resources including customer image data, RIP'ed image data, and processed image data is passed through this memory, but not stored persistently here

Non-Volatile Memory:

Non-Volatile memory: what type(s) of non-volatile memory are included, EPROM, EEPROM, Flash Memory, NVRAM, and battery backed, etc. (fill in).

d. FreeFlow Print Server – Non Volatile Memory: Workstation Motherboard Flash ROM: 4 Mbit Flash ROM; used to store workstation BIOS firmware. No user data or image data stored here.

e. Workstation Motherboard CMOS RAM, with battery backed up memory. No user data or image data stored here. Customer may program a BIOS-level password.

f. FreeFlow Print Server System and Image Hard Drives: Dual 147 GB HD in this configuration. .   Used to store Solaris OS software, PDL interpreters, print resources (fonts and images), SNMP MIB objects, user image data before and after RIP'ing, and user image data for indeterminate amount of time after printing.   Images are stored prior to printing in a proprietary encoded and compressed format on the hard drive(s). Under typical system usage job images may also be stored temporarily on the System disk in the Solaris-managed "swap partition".   Images are stored in a proprietary encoded format and fragments of the volatile memory are stored at random locations in the swap partition. Reverse engineering of the swap partition area would be needed to retrieve the encoded image which would then need to be decoded for viewing.

If the persistence of data on the hard drive(s) is an issue then a removable drive kit may be available for this product.

Note: User data and image data may be completely erased if optional Disk Overwrite kit is installed and enabled. Using a four-pass algorithm which conforms to U.S. Department of Defense Directive 5200.28-M (DOD Directive 8500.1 supersedes 5200.28M), images will be removed that are being held before and after printing, or which were explicitly "saved" by the job submitter or operator. This software kit is strongly recommended for applications where sensitive information will be passed through the system.   For even greater security, Xerox provides a "Removable Hard Drive (RHD)" option for secure storage of data off the system, or for an off-line data erasure process utilizing customer-operated mechanisms.

g.)   Optical drive: writable/rewritable DVD and CD drive. No data is stored unless system operator explicitly writes files to the optical RW media.

h.)   Xerox Image Processing board, ROM: 2K EEPROM. Used to store configuration parameters which control the image processing software only. No user data or image data is stored in the PROM.

i.)   Xerox Print Engine Interface board for DC7000/8000/AP & 7002/8002 Print Engine, ROM.

        i.   4K PROM. Used to store configuration parameters which control the print engine interface logic only. No user data or image data is stored in the PROM.

        ii.   Programmable logic devices. No user data or image data is stored in these devices.

2.) Accessibility: Is it accessible by accidental/intentional keystroke, or software malfunction? Yes, it is accessible by intentional keystroke as part of operation of the system.

3.) If "YES, it is accessible", describe location and purpose:

Volatile Memory Location: RAM memory, Solaris managed swap partition. Purpose: User information and image data may be pre-viewed using software functions provided by the FreeFlow Print Server or Solaris. Purpose of user-level data access from Volatile memory: Print Preview, listing of queue jobs, listing of printed jobs, job status, etc.

Non-Volatile Memory Location: System Hard Drive, Optional expansion Hard Drive. Purpose: User information and image data may be viewed before or after printing using software functions provided by the FreeFlow Print Server or Solaris. Purpose of access from non-volatile memory: Save jobs, reprint jobs, print resource files, accounting data files, etc.
Purpose: configuration settings and parameters for Solaris OS, and the Print Server application software. System audit logs, etc.

Non-Volatile Memory Location: Workstation Motherboard PROM: Purpose: System settings and parameters for modifying hardware performance, and behavior of workstation BIOS. Password may be entered by customer.

Note: User data and image data may be completely erased if optional Disk Overwrite kit is installed and enabled. Using a four-pass algorithm which conforms to U.S. Department of Defense Directive 5200.28-M (DOD Directive 8500.1 supersedes 5200.28M), images will be removed that are being held before and after printing, or which were explicitly "saved" by the job submitter or operator. This software kit is strongly recommended for applications where sensitive information will be passed through the system. For even greater security, Xerox provides a "Removable Hard Drive (RHD)" option for secure storage of data off the system, or for an off-line data erasure process utilizing customer-operated mechanisms.