XEROX®

DocuSP Platform Series
Common Controller
System Guide

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1 Common Controller

Introduction

2 Gateway and Network Configuration

3 Backup and Restore

4 Security

5 Printing

6 Finishing

7 Fonts

8 Accounting and Billing

9 Troubleshooting

10 Hints and Tips

Introduction

The System Guide provides the information needed to perform system administration tasks for configuring and maintaining the Xerox Document Services Platform (DocuSP) for printing systems.

About this guide

This guide is intended for network and system administrators responsible for setting up and maintaining Xerox printers with DocuSP software. System administrators should have an understanding of the Sun workstation, a familiarity with Solaris, and with basic UNIX commands. This includes the use of text editors such as vi or textedit and the ability to maneuver within the Solaris environment. To enable them to setup a customer site, system administrators are expected to have a working knowledge of Local Area Networks (LANs), communication protocols, and the applicable client platforms.

Contents

In general, this document covers information about the DocuSP that is not covered in the Online Help or other available guides.

The following list describes the contents of this guide:

- Gateway and Network Configuration
- Backup and Restore
- Security and Network Setup
- Printing
- Finishing
- Fonts
- MICR
- Tape Client
- Accounting and Billing
- Troubleshooting
- Hints and Tips

Conventions

This guide includes the following conventions:

- Angle brackets - Variable information that is displayed on your screen is enclosed within angle brackets; for example, "Unable to copy <filename>."

- Square brackets - Names of options you select are shown in square brackets; for example, [OK] and [Cancel].

- Notes are hints that help you perform a task or understand the text. Notes are found in the following format:

NOTE: *This is an example of a note.*

Customer support

To place a customer service call, dial the direct TTY number for assistance. The number is 1-800-735-2988.

For additional assistance, dial the following numbers:

- Service and software support: 1-800-821-2797

- Xerox documentation and software services: 1-800-327-9753

1 Gateway and Network Configuration

Gateway and network configuration is a set of features that allows administrators to integrate DocuSP operation with a variety of protocols and gateways through a common user interface. The DocuSP gateway and network configuration also enables system administrators to select all the network configuration settings without having to work in the UNIX operating system.

Administrators have a wide range of network options available for configuration through DocuSP. IP settings, network speed, and name service among other settings can be handled easily and quickly.

This section of the guide describes how to use the DocuSP interface for the following gateways:

- Simple Network Management Protocol (SNMP)
- AppleTalk
- Novell NetWare
- LPD

This section also addresses the DocuSP support for the following network configuration settings:

- IP configuration
- Name services
    - WINS
    - DNS
    - NIS/NIS+
- Dynamic NDS Updates (DDNS)
- Filing configuration - SMB
- Filing configuration - FTP/SFTP
- Dynamic (DHCP) and Static configuration
- Ethernet speed
- Restore network defaults

SNMP gateway configuration

SNMP displays the status of network devices. Using the SNMP tab in the DocuSP Gateways..., the administrator can select among a number of features and settings for SNMP.

NOTE: *SNMP requires a standard license. The System Administrator must enable SNMP in License Manager.*

Xerox recommends the following third–party SNMP software managers:

• IBM Network Printer Manager (XP)

• TNG Unicenter (XP)

• HP OpenView (UNIX, XP)

• Xerox CentreWare (UNIX, XP)

NOTE: *The SNMP manager (for example, HP OpenView) may have a number of requests into DocuSP for information. The requested information may not be among the supported data sets on DocuSP. When this occurs, the SNMP client/manager displays "no value...etc".*

NOTE: *You can have more than one SNMP manager running at the same time.*

Additional features supported in SNMP

SNMP support for the following features are product dependent:

• The ability to 'SET' attributes.

• The ability to localize text and units of measure.

• The ability to support a number of MIBs related to finishing and printing.

• The ability to perform automatic meter reading.

The following table specifies which Xerox products have these SNMP supported features:

Table 1-1 SNMP Supported Features by Product

Feature	61XX and	EPS 1XX and EPS1XX	DC2000/ 6000/etc	DT75/90	iGen	Nuvera 100/120
Ability to SET Attributes	Y	Y	Y	Y	N	Y
Localization of Attributes	Y	Y	Y	Y	N	N
Finishing Capability for a Device MIB	Y	N	Y	N	N	Y
Finishing Capability for a Supply MIB	Y	N	N	N	N	Y
Finishing Capability for Attributes	Y	N	Y	N	N	Y

Feature	61XX and	EPS 1XX and EPS1XX	DC2000/ 6000/etc	DT75/90	iGen	Nuvera 100/120
Print Working Group Job Monitor MIB	Y	Y	Y	Y	N	Y
Auto Meter Reading/ Billing	Y	Y	N	Y	N	Y
Enhancement to attributes	Y	Y	Y	Y	N	Y

Changing attributes support

These attributes can be changed via 'SET':

- prtGeneralServicePerson
- prtAuxillarySheetStartupPage
- prtGeneralPrinterName
- hrFSLastFullBackupDate
- hrFSLastPartialBackupDate
- sysContact
- sysLocalization
- sysName

For additional information on attributes, MIBs, and localization, see device profiles.

SNMP MIB support

DocuSP SNMP MIB files use the Xerox Common Management Interface (XCMI) version 4.0. The following list indicates the MIB files included for this version of the DocuSP software:

- rfc1213 - RFC1213-MIB (MIB-II) - specifically system, if numbers, at, ip, tcp, icmp, udp, snmp
- rfc2790/rfc1514 - HOST-RESOURCES-MIB (XCMI rev 000817) - rfc2790 is a later version of rfc1514. Specifically hrDeviceTable and hrPrinter Table: hrSystem, hrStorage, hrDeviceTable, hrPrinterTable, hrDiskStorageTable, hrPartitionTable
- rfc2790t - HOST-RESOURCES-TYPES (XCMI rev 000815) - same as 2.
- rfc1759 - Printer-MIB (XCMI rev 000818) - except fin tables
- 06gentc - XEROX-GENERAL-TC
- 07gen - XEROX-GENERAL-MIB

- 10 hosttc - XEROX-HOST-RESOURCES-EXT- TC - same as 2

- 11hostx - XEROX-HOST-RESOURCES-EXT-MIB - same as 2

- 15prtrxtc - XEROX-PRINTER-EXT- TC

- 16prtx - XEROX-PRINTER-EXT-MIB

- rfc1215 - SNMP traps version 1

Additionally the following MIBs files are supported:

- RFC 1213 MIB file
    - The system Group
    - The Interface Group
    - The ip Group
    - The icmp Group
    - The tcp Group
    - The udp Group
    - The snmp Group
- Host Resource MIB file
    - The System Group
    - The Storage Group
    - The Device Group
- Printer MIB file
    - The General Printer Group
    - The Input Group
    - The Extended Input Group
    - The Input Media Group
    - The Output Group
    - The Extended Output Group
    - The Output Features Group
    - The Marker Group
    - The Marker Supplies Group
    - The Marker Colorant Group
    - The Media Path Group
    - The Interpreters Group
    - The Channels Group
    - The Console Group
    - The Alerts Groups
- Finishing MIB
    - Finisher Device Group

- – Finisher Supply Group
- – Finisher Supply, Media Input Group
- – Finisher Device Attribute Group
- PWG Job Monitor MIB
    - – The General Group
    - – The Job ID Group
    - – The Job Group
    - – The Attribute Group
- XCMI Host Extensions
    - – Device Information Group
    - – Device Detail Group
- XCMI Service Monitoring MIB, Service Group for Print, Copy and Scan
- Xerox General MIB file (uses only the 06gentc and 07gen files)
- The xcmGen Base Group

NOTE: *The other files in Xerox General MIB are not supported.*

Automatic Meter Reading (AMR) support

Automatic Meter Reading (AMR) is a function that assists in the accounting and billing process. The feature can be supported using:

- xcmHrDevDetailIndex
- xcmHrDevDetailValue Integer
- xcmHrDevDetailValueString

Localization of text and units of measure

With DocuSP SNMP text and units of measure can be independent of the locality selected as part of the Local User Interface (LUI).

Although the default is set so that the SNMP locality and unit of measure is the same as that of the LUI, the new feature allows the administrator to select a different locality or unit of measure for the SNMP gateway.

Remote SNMP clients **can** control the localization of text objects of syntax

LocalizedDescriptionStringTC by setting the MIB object :

prtGeneralCurrentLocalization

Access is changed from Read-only to Read/Write.

However, Remote SNMP clients **cannot** control the units of measure localization of numeric MIB objects. The localization of these objects can only be controlled from the LUI.

SNMP configuration variables

Of the many parameters that are available for SNMP configuration, only the ones of common interest to Xerox customers are shown in the following table:

Table 1-2 Configuration Variables

Parameter Name	Description	Value Range	Default Value
CommandLine	Turn on/off the following flags: **–l:** logging to SNMP_DEBUG_LOG **–w:** logging to window		
Printer operator	The name of the printer operator	String (0...127)	<empty>
Printer administrator	The name of the printer administrator	String (0...127)	<empty>
Printer administrator location	The location of the office of the printer administrator	String (0...127)	<empty>
Printer administrator Phone	The telephone number for contacting the printer administrator	String (0...127)	<empty>
Printer location	The location of the printer	String (0...127)	<empty>

Local User Interface (LUI) mapping to MIB

The following table shows the mapping between the LUI and MIB:

Table 1-3 **LUI Mapping to MIB**

Local User Interface	MIB
PrinterOperator	prtGeneralCurrentOperator
PrinterAdministrator	prtGeneralServicePersonsysContact
PrinterAdmin, PrinterAdminURL PrinterAdminPhoneNumber	prtGeneralServicePersonsysContact
PrinterLocation	sysLocation

Printer and job messages

SNMP can broadcast messages about the printer and the jobs on the system. Printer messages may announce that the printer is idle, printing, or out of paper. Job messages announce that jobs are pending, processing, or completed. Other job-related information may include the job owner's name, the job quantity, the job identifier, etc.

The information that is displayed at an SNMP Manager may not always reflect the exact status of a job or printer on the DocuSP Controller. Those Managers that do not support loading of Management Information Bases (MIBs) only displays the printer and job status that they support.

NOTE: *"Forwarding" is not a job state that is broadcast by the controller; therefore, job forwarding information is not displayed by the SNMP job managers.*

AppleTalk gateway configuration

In Gateways, using the AppleTalk tab the administrator can enable or disable the protocol. If the protocol is enabled, the administrator can also select a default queue set for Appletalk.

Queue server options

In Gateways using the Queue Server tab, the administrator has the option to enable or disable NetWare and to define a Preferred Server Name. This entry field allows the administrator an easy method to directly point to a replica or NDS server name.

NOTE: *It is recommended to set this after the first connect attempt has been made since the Preferred Server Name should be automatically available under normal conditions.*

NetWare gateway configuration

In Gateways using the NetWare tab, the administrator can configure the NetWare Network automatically or manually. If the automatic mode is selected, a "wizard" steps the administrator through the configuration of the Novell Server and the NetWare Printer queues for DocuSP.

If the manual mode is selected, the interface enables manual entry and filtering for the Novell setups and printer queues.

LPD gateway configuration

In Gateways using the LPD (Line Printer Daemon) tab, the administrator can enable or disable the LPD protocol, set the default queue, and set the LPD port. The default port is 515, the most commonly used port.

Network configuration settings

Within the System Administration part of the user interface a Network configuration options are presented.

IP configuration

In Network Configuration, using the IP Address tab, the administrator can enable or disable IP. If IP is enabled, the administrator can adjust or change the following settings:

- IP Address
- Host name
- Subnet mask
- Default gateway

The administrator must also select the IP Configuration Method. The drop down menu presents two options: a "Static" IP configuration which allows the user to specify the IP values, or "DHCP" method which allows a DHCP server to provide IP information.

NOTE: *The user is prompted whenever a reboot is required.*

Dynamic Host Config Protocol (DHCP)

DHCP automates the configuration of computers using TCP/IP and performs the following functions:

1. Automatically assigns IP Addresses.

2. Delivers TCP/IP stack configuration parameters like the subnet masks and default gateway.

3. Provides other configuration information such as printer addresses, time and news servers.

Name services

The following services are supported by DocuSP software.

Windows Internet Name Service (WINS)

This network configuration option allows the administrator to enable/disable the WINS service. The text entry option when left blank allows WINS to broadcast the request to the first available WINS server on the network. WINS provides the ability to easily locate devices on the network, similar to Domain Name System (DNS). WINS maintains a database of NetBIOS names-to-IP address mappings so administrators and applications can specify a name rather than an IP address for a particular network resource. One of the problems it solves is the need for manual updates to a database when information for particular clients is changed.

Domain Name Service (DNS)

The DNS service maintains host names to IP Address mappings. DNS is also a Directory Service that stores arbitrary objects not necessarily related to name-to-IP information.

In Network Configuration, using the DNS tab, the administrator can enable/disable DNS. If enabled is selected, the administrator must provide the information requested in the text entry windows.

The DNS protocol has also been enhanced to allow for dynamic updating of DNS. The enhancement is referred to as Dynamic Domain Name Service (DDNS). To invoke this service the administrator enables it on the DNS tab.

NOTE: *For specific procedures see the Online Help.*

Network Information Services (NIS/NIS+)

NIS and NIS+ are network lookup services that provide information that must be known throughout the network as well as all machines on the network.

The administrator can enable or disable either the NIS or NIS+ service. If either of these is enabled, the administrator must supply the information requested by the text fields or choose "Find NIS+ server" which will provide this same information.

NOTE: *The server must be configured to accept broadcast requests.*

Active Directory Service (ADS)

The DocuSP interface provides a "wizard" that enables the administrator to add ADS domains and permits DocuSP integration into Windows NT ADS networks.

Network filing configuration

In Network Configuration, the SM/FTP tab allows the administrator to enable or disable filing using one of three different technologies:

1. SMB, the protocol behind WINS.

2. FTP, File Transfer Protocol.

3. SFTP, Secure File Transfer Protocol with encryption.

NOTE: *If SMB is selected, the administrator must enable WINS and specify a NetBIOS name.*

LP/LPR compatibility with DocuSP

DocuSP-driven systems can now be targeted to existing NPS customers for both black and white, and highlight color. DocuSP now supports the following options.

NPS lp-o and lpr-c

There is support for NPS lp-o and lpr-c options; the lp/lpr options are received by the LPR gateway and mapped to DocuSP attributes.

The following NPS lp/lpr options are supported:

1. NPS general options

   • C"(acct=<text)"   (account information)

- C"(collated)"
- C"(uncollated)"
- C"(copies=<n>)"
- C"(drilled)"
- C"(format=<pdl>)"   (document format)
- C"(media=<n>x<m>)"
- C"(pr=<n>-<m>)"   (pages to print)
- C"(size=<n>)"
- C"(xshift)"   (horizontal image shift)
- C"(yshift)"   (horizontal side 2 shift)
- C"(xshiftback=<n>)"   (vertical image shift)
- C"(yshiftback=<n>)"   (vertical side 2 shift)
- C"(<nostich"l nostaple l stich l staple>l

2. Page order override

- C"(ton)"
- C"(nto1")

3. Background forms

- C"(bf=<background form>") (background form)
- C"(cf=<n>) (cycle from start location)
- C"(disposition=<savemaskG4 llsaveformG4>)"

4. Selectable halftone (not including full color)

- C"(halftone=<defaultHalftone l course l medium l fine l extrafine>)"

5. Highlight color (highlight printing color)

- C"(hc=<color>)" (highlight color mismatch action)
- C"(hcm=<abort l ignore l operator>)" (highlight mapping color scheme)
- C"(hrc=<pictorial l presentation l colorToHighlight l automatic)" (highlight mapping color)
- C"(mc= <color>)"

6. Hold job for manual release

- C"(hold)"

7. Selectable resolution

- C"(res=< l 300 l 600 l>)

8. Other

- C"(pcl5c)"

NOTE: *See "Printing" in this guide for further information on Highlight color options.*

Ethernet connection speed

In Network Configuration, using the Connections tab, the administrator can select the speed of the Ethernet. The default is set to automatic and the software/NIC card automatically detects and transmits at the highest speed available. However, the interface also offers 10 mb/sec, 100 mb/sec and 1000 mb/sec as the situation requires.

The need to set a specific speed may occur if a switch is set to a particular speed and does not support automatic negotiation. Under these conditions, the full DocuSP controller may need to be set to the same speed as the switch.

Restore network factory settings

With the addition of several interface options as well as user settings, the administrator may want to restore factory settings. The interface provides a [Restore Defaults] button in Network Configuration that permits the admininstrator to restore all settings or to restore factory settings for only those of specific protocols.

2   Backup and Restore

To ensure a smooth transition from DocuSP software levels and to maintain the DocuSP system for the long term, backing up and restoring system and configuration information on a regular basis is part of a well-maintained printing environment.

This section presents the backup and restore capabilities of the DocuSP controller.

The capabilities are:

- Back up and restore configuration information
- Back up and restore system information

Backup and Restore System

- Backup System provides an image or copy of the hard disk, and places this copy into a protected partition on the DocuSP hard drive.
    - Backup System provides a quick and efficient way to bring the system back up to a known installation.
    - Systems must have either 73Gbyte drives or two 36Gbyte drives and 4.1+ DocuSP software.
- Restore System brings back the entire disk copy for the system, including the operating system, DocuSP software, and user options. Only one version, at a time, of a Backup System is supported.
    - For new DocuSP systems or systems that have had a clean installation, the Backup and Restore System capability is available through the DocuSP interface.
    - For existing DocuSP systems that have been upgraded without the reinstallation of the operating system, backup and restore system procedures are the same as in previous releases of DocuSP. The backup and restore function is documented later in this chapter.

When to Backup and Restore a System

The following items detail when to use the backup and restore system option.

It is recommended that the System Backup process be completed after the system has been running in production for a week or two.

The System Backup should be performed once a month, and it should be completed during a time when the printer is not in use, such as at night.

Restore System

- To restore the system disk copy after a catastrophic software, operating system, or other software failure.

- To restore the system when DocuSP or the operating system has been compromised i.e. from a storm or if corrupted by a power surge.

- To restore a known image of the entire system.

- Do **not** use when restoring after a hard disk failure.

Instructions

Restore System is performed via the System Restore Disk within DocuSP software kits. Before a restore is attempted a previous backup must have been completed.

Restore takes approximately 30 to 60 minutes.

- From the System menu select [Backup/Restore].

- Select the [Restore System] button.

  Users are prompted to retrieve the System Restore disk from the software kit. The cd-rom contains a bootable OS and pointers to the /XRXbackup folder. It does not contain user data.

- Insert the System Restore Disk.

- Type boot cd-rom on cd

  Files are automatically copied onto the main drive partitions.

Configuration Backup

The Backup Configuration option allows the Administrator to select all or some of the DocuSP configuration settings to backup and then restore. The backup configuration allows for fast and efficient saving of user settings. Backup Configuration allows for

multiple versions, network backups, and quick restoration of user information.

Software configuration information should be saved when the system has been installed and all queues and printers have been set up. It should also be saved when any printer or queue properties are changed.

The Configuration Backup option enables you to select among items like the following:

- Queues
- User accounts
- Network Setups
- Stock Database/Trays
- Stacker/Finisher settings
- Switches/Preferences
- LCDS Resources
- ICC Profiles/TRCs
- Image Quality and Decomposition
- Any mounted local or remote drives

Ideally, the Configuration settings should be backed up at weekly intervals.

CAUTION: *Avoid selecting the option to back up Jobs. The Jobs selection in Configuration Backup saves the contents of the inQ, which contains all Job Manager (Active, Inactive, and Completed) jobs. The backup may require a significant amount of time and space to accomplish, and does not save any job ticket information. If jobs are backed up, after a Configuration Restore, the jobs need to be submitted using the Print Service in order for them to be available for print. If a DocuSP Restart is performed before the jobs are resubmitted, the jobs are deleted.*

CAUTION: *Use the Print Service save and reprint capability to save jobs for future use. Job ticket information as well as color information is retained for each job.*

NOTE: *See Online Help for detailed procedures.*

When to Backup and Restore a Configuration

The following items detail when to use the backup and restore configuration option.

It is recommended that the Configuration Backup process be performed in weekly or monthly intervals, and be completed during a time when the printer is not in use, such as at night.

The Configuration Backup file can be saved to a shared network drive.

Restore Configuration

- To restore customer settings after a hardware or hard disk failure.

- For restoration after a software installation that included an installation of the operating system.

- When you only need to restore individual items, such as queue setups, custom security profiles, network and gateway settings, or paper stock or tray mappings.

  It is not recommended that jobs be backed up using the Configuration Backup. Use the Print Services feature to save jobs as TIFF or FRF files on the DocuSP controller or on another storage location. Using Print Services saves job ticket information as well as retaining color settings over software upgrades.

- To restore customer settings after a hardware or hard disk failure.

- For restoration after a full software reload

  If only a software upgrade is performed on the DocuSP controller, the system configuration information is typically retained.

DocuSP 4.x to 5.x upgrade

DocuSP upgrade 4.x to 5.x will require a full reload of the Operating System. The recommended process is:

- In 4.x, perform a Backup Configuration (all options)

- Full load of the OS and DocuSP software

- Print several prints

- Restore Configuration of the 4.x on the 5.x release.

NOTE: *See Online Help for detailed Restore Configuration procedures.*

Full System Backup

It is recommended that a complete system image be backed up on a regular basis. Having a current system image ensures that in the event of a failure of the system or the hard disks, the system can be easily restored.

The system requirements to enable a full system backup are the following:

- 73 Gbyte drives are the minimum requirements for a system to utilize this function. An alternative is two 36 Gbyte 2-partition drives.

NOTE: *Do not use a System Restore when there has been a hard drive failure. The Backup System is only a partition of the hard drive.*

NOTE: *Refer to the appropriate Online Help for detailed procedures and SUN documentation for additional information on saving a system image.*

Additional backup information

The following information is not backed up using the DocuSP System or Configuration backup utilities, and should also be backed up on a regular basis or when the DocuSP controller has been modified.

- Customized scripts installed by the customer
- Unique third–party software and related data, or Xerox– developed solutions and related data
- Print Services (reprint) jobs saved to the DocuSP controller using the Save Feature
- Non–Xerox supplied Sun patches
- Customized links to directories
- Continuous Feed custom imposition files
- Continuous Feed custom print mark files

Backup and Restore Tray Mapping

Tray Mapping is considered a configuration item that may be backed up and restored **to a different system** if desired. The

administrator may do this using the Configuration Backup and Restore capabilities of DocuSP.

The primary purpose for backing up and restoring tray mappings is for LCDS printing environments that require job specific tray mappings to be copied to multiple systems.

NOTE: *If the saved mapping contains programming for stocks that physically cannot be programmed on the new system, then this is an error and the operation does not continue. Likewise, a mapping created for a monochrome, highlight color, or full color system can only be restored on the same type of system. A mapping that contains the LCDS stocks MAIN, AUX and AUTO can only be restored on a system with these features.*

NOTE: *However, if a mapping contains more trays than the system to which it is restored, only those trays that can be supported are restored. And if the mapping contains fewer trays than the new system can support, the restore is allowed.*

Frequently asked questions

What is the basic purpose of Configuration Backup and Restore?

The basic purpose of Configuration Backup and Restore is to save user settings for upgrade after an operating system reload. Configuration Backup and Restore is useful for restoring user configurations at a clean Solaris/DocuSP installation or after a hard disk failure.

What is the basic purpose of System Backup and Restore?

The basic purpose of System Backup and Restore is to save a snapshot of the entire Solaris and DocuSP disk for recovery at a later time. System Backup and Restore is useful for restoring the system quickly after the corruption of the software.

What older DocuSP tools do these options replace?

For Configuration Backup, the Bridge backup tool used by the Xerox Service Representative. In addition, certain information had to be recorded by hand or on hardcopy for manual restoration.

For System Backup, the DSPERU or UNIX UFS dump routines. DSPERU is still available to perform a System Backup. Refer to the procedures later in this section for more information.

What does Configuration Backup and Restore actually save?

Configuration Backup saves user defined settings only. It does not save operating system or DocuSP software. It does not fix software corruption failures.

What does System Backup save?

System Backup makes a snapshot or image of the entire disk, including the operating system and DocuSP software. The image is saved in a special protected/unmounted partition, /XRXBackup, on the DocuSP hard disk. It will fix software corruption issues.

How big are the files?

Configuration files can be very small, depending upon the options selected during the backup.

The System Backup partition is set at 10 Gbytes specifically for the system image.

Where are the files saved?

Configuration files may be saves to any available DocuSP location, including the local hard disk or a shared network drive.

System files can only be saved to the /XRXBackup partition on the DocuSP hard drive.

How long does the process take?

Depending upon the number and size of the items to be saved, a configuration backup can be very short or very long.

A system backup may take over an hour to complete.

What schedule should be used?

Configuration information should be backed up weekly or more often as necessary. Multiple versions of the files may be maintained for future use. Saving a small set of very important items can make the process very fast.

System information should be backed up bi-weekly or monthly. Only one version of the system image can be maintained at a time.

DocuSP Emergency Recovery Utility (DSPERU)

NOTE: *The DSPERU utility is applicable to systems configured with a floppy drive. This feature may not be available on all systems.*

The DocuSP Emergency Recovery (DSPERU) utility is specifically designed for backing up and restoring DocuSP systems. The utility allows you to restore the system files to a hard drive that is larger or smaller than the one on which the files were originally backed up, assuming there is enough space on the target drive to hold the data. The utility formats the drives without the need to install Solaris before restoring, which saves from 30 to 75 minutes.

This section contains instructions for running the DSPERU scripts from diskette.

The DSPERU diskette contains the following files:

- btt
- change_log.txt

- dsp_backup_run
- dsp_dump
- dsp_restore
- dsperu_setup
- format.ans
- response.txt
- sdpart_skel.txt

DSPERU limitations

- The scripts on this diskette are still under development. There is limited error checking. Therefore, the scripts may display error messages or may not run as intended, if there are unexpected differences between your system and the systems on which the scripts were tested.

- DSPERU is designed to enable operational recovery of a failed system. It is not intended to substitute for a commercial backup utility or a robust Backup/Restore and Disaster Recovery plan. Data integrity upon restoration cannot be guaranteed.

- DSPERU does not back up external drives. Use the Tapetool utility to back up external drive data.

- DSPERU does not give the option of partial or incremental backups.

Required levels of expertise

The DSPERU tool was designed to be easy to use. However, some assumptions have been made regarding the level of knowledge required to perform various setup, backup, and recovery tasks.

Setting up the tool for use on a system and performing a recovery requires some level of comfort with entering UNIX commands. The commands are not complex, but if you have no UNIX experience, you may require assistance initially.

To initiate a backup, you must know your system root password and how to open a Terminal window.

The following levels of expertise are required to perform the necessary functions:

- Set up DSPERU tool on system: Customer systems administrator, Xerox system analyst or service representative.

- Initiate DSPERU backup: Printer operator, customer system administrator, Xerox analyst or service representative

- Initiate DSPERU recovery: Customer system administrator, Xerox system analyst or service representative

Installing DSPERU on your DocuSP controller

1. Insert the diskette containing the scripts into the diskette drive.

2. Open a Terminal window and logon as root user.

3. Enter **volcheck** to mount the diskette.

4. Enter **sh /floppy/floppy0/dsperu_setup** to launch the setup script.

5. Eject the diskette by entering **cd;eject**.

The setup script does the following:

- Creates the directory **/export/home/xrxusr/backup**.

- Copies the **btt** file to the **/export/home/xrxusr** directory.

- Copies the **dsp_backup_run** and **dsp_dump** files to the backup subdirectory.

If DSPERU was previously set up on your system, an error message may be displayed when it tries to perform the setup again.

If the files and directory listed above are present, the installation was successful.

Backup procedure - DSPERU

The following information and equipment are required prior to starting the backup.

- The root password

- A tape drive connected and powered on with a blank tape inserted. Ensure the tape is write-enabled (write-protect tab in the closed position).

NOTE: *The backup overwrites the tape cartridge that is inserted. Ensure that no valuable data is present on the tape if it is not blank. **The tape is overwritten with no warning.***

NOTE: *The system is rebooted during the backup process. Ensure that the system is not actively receiving jobs before starting the backup. It is recommended that you set all queues to [Accept = No] and [Release = No] in the Queue Manager prior to initiating a backup.*

1. Ensure a blank tape cartridge has been inserted into the tape drive.

2. Open a terminal window and logon as **root**.

3. From the **/export/home/xrxusr** directory, enter **ls** to list all files. Verify that the file **btt** is listed. If it is not, repeat the DSPERU installation procedure described in the previous section.

4. Enter **sh btt** to initiate the backup. The system reboots and starts the backup.

If the system returns the message **btt: not found**, verify that you are in the right directory by entering **pwd** to verify your location. If you are in a different directory, enter the following command to change to the correct one.

cd /export/home/xrxusr

The system generates a message approximately every 10 minutes during the backup with an estimate of how long it will take to complete the backup from that point.

NOTE: *If all the data cannot be stored on one cassette, the system pauses when it detects that the tape is full, and displays messages similar to the following:*

DUMP: End-of-tape detected

DUMP: 42.23% done, finished in 1:01

DUMP: Change Volumes: Mount volume '#2' on 'bugs:/dev/rmt/0n'

DUMP: NEEDS ATTENTION: Is the new volume (#2) mounted on 'bugs:/dev/rmt/0n' and ready to go?: (yes or no)

Label the next cassette "Vol 2," insert it into the tape drive, then enter **yes**. This message set is repeated for as many tapes as required to complete the backup.

IMPORTANT: Proper labeling of the tape is essential to a successful recovery. As the system requests additional tape cartridges, be sure to label the tapes in the correct sequence (for example, Vol #1, Vol #2, etc.). If you insert the tapes in the wrong order during the recovery, the restoration fails.

NOTE: *Due to the current DocuSP licensing protection scheme, tapes can be restored only to the system from which they were backed up. In other words, tapes from one system cannot be used to "clone" another system. Any attempt to do this will invalidate the DocuSP license, and a full reloading of software will be required to make the system operational.*

If you have multiple printing systems, it is recommended that tapes be labeled with the hostname of the system to reduce the possibility of restoring to the wrong system.

Testing the backup tape

The following procedure enables you to check if the backup tape contains valid data.

1. Ensure that the tape drive is connected and powered on. Insert the backup tape in the tape drive. If the backup required more than one cassette, make sure that the first tape (Vol 1) is inserted.

2. Open a Terminal window and logon as **root** user.

3. Enter **mt -f /dev/rmt/0** status to check the tape drive status. The system returns a message indicating the type of tape drive.

    If the system generates the error message **/dev/rmt/0: no such file or directory**, enter **mt -f /dev/rmt/1 status**. If the error message is displayed again, repeat steps 1 through 3 of the "Checking the tape drive" procedure, described later in this chapter. If the problem persists, call for service.

4. When the tape drive location has been verified, enter the following command:

    ufsrestore tvf /dev/rmt/xbn

    where x is either 0 or 1, depending on the value that you used in step 3. After a few seconds, the system starts displaying the contents of the tape cassette.

    To stop the scrolling display, press <CTRL-c>. When prompted to discontinue the display, enter **y**.

Recovery procedure - DSPERU

Before starting the recovery procedure, ensure that the following has been done:

*   The tape drive must be connected and powered on.

*   The tape cassette to which the system was backed up must be inserted. If there are multiple tapes, tape 1 must be inserted first. The system prompts you to insert each subsequent cassette when it is required.

*   The system must be powered on with the controller screen displaying the ok prompt. (To display this prompt, press <Stop><A>.)

IMPORTANT: Insertion of the tape cartridges in the correct sequence is essential to successful recovery. When the system requests additional tape cartridges, be sure to insert the tapes in the correct sequence (for example, Vol #1, Vol #2, etc.). If the tapes are inserted in the wrong order during the recovery process, the restoration will fail.

1. Insert the appropriate Solaris CD for the controller and DocuSP software version that is being restored (Solaris 2.6 for DocuSP 2.X, Solaris 8 for DocuSP 3.X, etc.).

NOTE: *Systems equipped with Tandberg Data tape drives must be booted with Solaris 8 CDs, regardless of the version of DocuSP being restored. The Solaris 2.6 CD does not properly recognize these drives and causes an unrecoverable read error during the recovery operation.*

2. Write-enable the DSPERU diskette (tab window closed) then insert the DSPERU diskette into the floppy drive.

3. From the Ok prompt, enter **boot cdrom -sr** to boot the system from CDROM into single-user mode. It may take up to five minutes to boot.

NOTE: *To stop the system at the ok prompt, power on the controller, then press <Stop> and <A> simultaneously as soon as the screen lights.*

If the system is already powered on, logon as **root**, then enter **halt** to display the ok prompt.

1. Enter **mount /dev/diskette /a** to mount the diskette.

2. Enter **sh /a/dsp_restore** to launch the recovery script.

3. If multiple tapes were used during the backup, the system pauses at the end of each tape and displays a message similar to the following:

    Mount volume 2 then enter volume name (default: /dev/rmt/ 0bn)

    Insert the cassettes in sequence as the system requests them.

The system reboots when the recovery is complete.

NOTE: *The UNIX ufsrestore utility does not provide the option for estimating how a long a recovery will take. However, the normal amount of time required for recovery is approximately 3 times as long as backing up the system.*

Examples:

• 4mm Tape, DocuSP 2.X system, very few or no customer files: 0:20 to backup, 1:00 to restore

• QIC Tape, DocuSP 6180 EPS 2.X, 500 Meg customer resource files: 1:30 to backup, 4:30 to restore

• 4mm Tape, DocuSP 3.X, very few or no customer files: 45 minutes to backup, 2:15 to restore

Backup and recovery caveats - DSPERU

Because recovery returns the system to the state that it was in when it was last backed up, certain unexpected or undesirable situations may be encountered. A list of known issues is provided below and will be updated on a continuous basis. Where available, a workaround is provided.

- Accounting logs are restored to their previous values. If you use the accounting logs for your own internal billing, you need to be aware of this and make the necessary adjustments.

- Jobs that are saved on the system or in a Hold state are restored. If you are sure that you do not want these job files restored, you must delete them prior to performing a backup.

- User and file permission changes made after a backup are lost after system recovery. In some instances this could pose a security risk and must be understood by your system administrator.

- Any software problem existing in the system when it is backed up is likely to resurface after a recovery. Perform a backup performed only on a properly functioning system. Do not initiate a backup while the system is in diagnostics.

Troubleshooting

Activity logging

The file **backup.log** is used to record backup activities. It is saved in the **/export/home/xrxusr** directory. The first line of the backup log contains the system name and the time and date the backup was initiated.

To prevent the log being overwritten by a subsequent backup, rename the log. You should give it a name that is somehow related the date that the backup was made (for example, **backup040402.log**).

To rename the log, perform the following steps:

1. Open a terminal window and logon as root user

2. Enter **pwd** to verify that **/export/home/xrxusr** is the current directory.

   If it is not, enter **cd /export/home/xrxusr** to change to it.

3. Enter **ls** to display the contents of the directory. One of the files listed should be **backup.log**.

4. Change the log name to your desired name by entering the following command:

   mv backup.log logname

   where logname is the name you have selected for your backup log.

The file **restore.log** is used to record recovery activities. It is in the root directory of the DSPERU diskette. Please note that this diskette, and therefore the log is only readable on a UNIX system. The first line of the log, contains the time and date the recovery was initiated. To prevent the log from being overwritten the next time a recovery is performed, rename the log. You should give it a

name that is somehow related the date that the recovery was made (for example, **restore040402.log**).

Checking the tape drive

If the backup or recovery script generates an error message indicating that the tape drive cannot be found, perform the following steps:

1. If DocuSP is running, follow the procedures in your customer documentation to shut down and power off the controller. If the system displays a # prompt, enter **halt**. When the OK prompt is displayed, power off the controller.

2. Power off the tape drive.

3. Ensure that the SCSI cable connecting the tape drive to the controller is securely connected. If the tape drive is your system's only external SCSI device, there should be only one SCSI cable connected to the tape drive, and it should be connected to the **In** connector.

If there are other SCSI devices (for example, external hard drives), ensure that the cable connected to the In connector leads back towards the controller (even if there is another device between the tape drive and the controller). Also verify that there are no bent pins on the connector.

1. If the tape drive is an older unit (for example, an 8mm DocuTech tape drive) with a 50-pin SCSI connector, a terminator must be installed on the **Out** connector if the tape drive is the last device on the SCSI chain.

NOTE: *The 50-pin connector is approximately 1.5 inches wide. Newer tape devices have a 68-pin Ultra-SCSI connector, which is 1.75 inches wide.*

NOTE: *The 4mm and QIC tape drives are all Ultra-SCSI devices. These are auto-terminating so no external terminator is needed.*

2. Check the SCSI ID selector and ensure that it is not set to 0, 1, 3 or 6. These settings could possibly conflict with internal SCSI devices on some controller types. If there are other external devices, ensure that no two devices are set to the same SCSI ID.

NOTE: *The SCSI device ID selector is a small window with two small buttons, located on the back of the drive. Press the buttons to change the value, if necessary.*

3. Ensure that the tape inserted in the drive is a regular tape and **not** a cleaning tape.

4. Power on the tape drive, and wait 10 seconds.

5. Power on the controller.

6. Press <Stop + A> as soon as the banner screen appears.

7. Ultra-SCSI devices only: Check that both green LEDs on the back of the tape drive are lit.

8. At the ok prompt, enter **boot -r** to perform a reconfiguration boot.

If problems recognizing the tape drive persist, call for service.

Resource Backup and Restore (RBR) utility

The Resource Backup and Restore (RBR) utility allows you to back up and restore customer resources such as PostScript fonts, LCDS resources (JSLs, JDLs, etc.), VIPP files, and custom color profiles on color printing systems. The RBR utility backs up files to either magnetic tape or the controller internal hard drive. You can then use the backup disk file or tape to restore the resources onto your controller or other DocuSP controllers.

The following resource files may be backed up to either tape or file:

• LCDS resources: All files in the lcds resource library, located at:

   /var/spool/XRXnps/resources/lcds

• PS fonts: All PostScript font files in the following directory:

   /var/spool/XRXnps/resources/ps/fonts

• Color resources: User TRCs, user ICC profiles, and the ccprof.tv file, which associates the ICC profiles with your stock database

• VIPP resources: Customer VIPP files in the following directory:

   /var/spool/XRXnps/resources/XRXxgfc

• Stock Programming database: The **media.tv** file

NOTE: *Use the Media Restore option (Options 3 and 4 of the Restore Menu) only if you are restoring files to the same release of software from which you backed them up. Otherwise, the results are unpredictable and may require scraping the machine.*

Procedure for backing up and restoring resources

This procedure requires root access to the DocuSP controller so that the necessary permissions are available to restore the resources.

NOTE: *For these instructions, it is assumed that you have some working knowledge of the UNIX operating system.*

The RBR script file is available in the **/opt/XRXnps/bin** directory of your installed DocuSP 3.6 controller.

1. Open a Terminal window.

2. Enter su.

3. Enter the root password for your system.

4. Change to the directory containing the script.

5. cd /opt/XRXnps/bin

6. Ensure that the executable permission is assigned by following this procedure:

7. Enter **ls -l**.

8. If x permission is not assigned, enter **- chmod +x RBR**.

9. Start the script by entering **./RBR**.

10. Follow the instructions as they appear on screen to complete the resource backup procedure.

Helpful hints for using RBR

- If you are backing up a large amount of resources, you can monitor the progress of the backup by opening an additional Terminal window and entering:

  tail -f /var/spool/XRXnps/log/Resource_BandR.log

- If you are backing up the resources to tape, you need to know the device ID of the tape drive. There are several ways to verify the ID and operability of your tape drive.

  – If you have only one tape drive, the ID is usually 0.

  – If you have two tape drives, each drive is assigned an ID starting with 0.

  – You should use the mt command to check the operation of your tape before beginning. Following are some examples of the **mt** command.

    mt -f /dev/rmt/0 status

    mt -f /dev/rmt/0 rewind

    mt -f /dev/rmt/0 erase

- When restoring files, the RBR script first makes a backup of the resources that are currently installed on the system. After the original files are backed up, the backup files are restored, and then the original files are restored. This ensures that newer files are not overwritten with older files that are restored from the backup.

  If this is not your intent, use the **mv** command to remove the existing resources from their directory so that all the resources from the backup are restored. For example:

  mv /var/spool/XRXnps/resources/lcds /export/home/ xrxusr

- Unless you are backing up files and restoring them to the same software release, do not use the RBR utility to restore the Stock Database programming.

  You can use the Restore Stock Database option to back up files from DocuSP 2.1 or 3.1 and restore them to DocuSP 3.6 or above.

  However, if you restore the stock database programming from DocuSP 2.1 to DocuSP 3.1, the database manager may not comprehend the older version of the stock database file, and the Restore process would render the software inoperable. A scrape would then be required to correct the problem.

  Use the Backup and Restore Bridge tool delivered with your DocuSP software to perform the Stock Database Restore.

Sample resource backup and restore scripts

Following are examples of resource backup and restore scripts. Responses by the user and user-specific information provided by the RBR utility are shown in boldface type.

Sample backup script

```
# ./RBR
MAIN MENU
Please enter your selection:
1) Backup resources
2) Restore resources
3) EXIT
Select (1,2,or 3)? > 1
```

You have selected Backup resources.

 Backing up 10895 LCDS resources to /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

Backing up 180 PS fonts to /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

No user trc's were found. No user trc's were backed up,

No ICC profiles were found. No ICC profiles were backed up.

Backing up ccprof.tv file to /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

No customer VIPP files found.

Backing up media.tv file to /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

a /opt/XRXnps/configuration/media.tv.bak 44K

Done

Compressing /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar. Please wait ...

Done.

Your files have been successfully backed up and compressed.

File name is /export/home/xrxusr/jbs/wiggum_25_Jul_09:54.tar.Z

Do you want to copy file to QIC tape? (Y/N) > y

Please enter a device ID for the QIC tape drive [Generally 0 (digit zero)]:0

Please insert a QIC tape into QIC tape drive

Press RETURN/ENTER when ready. >

Copying file to QIC tape. A blinking light on the tape drive is an indication that backup is progressing.

See /var/spool/XRXnps/log/Resource_BandR.log for list of files that were backed up.

Press RETURN/ENTER to continue. >

Sample resource restore script

MAIN MENU

Please enter your selection:

1) Backup resources

2) Restore resources

3) EXIT

Select (1,2,or 3)? 2

RESTORE MENU

Please enter your selection:

1) Restore Resources from Tape

2) Restore Resources from File

3) Restore stock programming from Tape

4) Restore stock programming from File

5) Back to Main Menu

Select (1,2,3,4 or 5)? > 1

You have selected Restore Resources from Tape.

Please enter a device ID for the QIC tape drive [Generally 0 (digit zero)]:0

Please insert a QIC tape into QIC tape drive

Press RETURN/ENTER when ready. >

Backing up current resources, so that newer files will not be overwritten.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

No user TRC's were found.

No ICC profiles were found.

Done.

We will now restore your resources from the QIC tape.

A blinking light on the tape drive is an indication

that backup is progressing.

About to uncompress /export/home/xrxusr/jbs/ wiggum_25_Jul_09:54.tar.Z

This may take some time. Please wait ...

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

Uncompress and tar successful.

We will now restore the newer files.

This may take some time.

Check /var/spool/XRXnps/log/Resource_BandR.log file to view progress.

Done.

Press RETURN/ENTER to continue. >

MAIN MENU

Please enter your selection:

1) Backup resources

2) Restore resources

3) EXIT

Select (1,2,or 3)? 3

You have selected EXIT.

Cleaning up.\:

Done.

3   Security

This section describes the DocuSP system-supplied security profiles. It outlines the characteristics of each profile and indicates how each can be customized to create user- defined profiles. The enhanced security features in DocuSP protect the system against unauthorized access and modification.

This section also addresses the options available to the administrator in setting up and managing user accounts.

Finally this section offers general guidelines to security-related procedures that can be implemented to improve the security of the DocuSP controller and the Solaris OS.

System supplied security profiles

The four system-supplied profiles are: none, low, medium, and high. The following table describes the characteristics of each security level and the configurable settings that restrict access to various devices and operating system services.The default setting is "Low."

Table 3-1 **Security Profiles**

Profile	Characteristics	User	Compatibility	Comments
None	Default Solaris and system security. All ports are open. Walkup users can reprint anything. Full workspace menu is available. Auto logon is enabled.	Physically closed environments.	Close to DocuSP 2.1 and 3.1. Similar to DocuSP 3.X "Medium".	Anonymous FTP is read-only and restricted. The Solaris desktop is removed from all settings except none.

Profile	Characteristics	User	Compatibility	Comments
Low	FTP is enabled. Telnet, rsh is disabled. NFS client is enabled. AutoFS is enabled. Walkup users can reprint from "Saved Jobs" and CD-ROM. Terminal window is password protected. Auto-login is enabled.	First choice setting for most environments.	Similar to DocuSP 3.x "High". Supports FreeFlow workflow.	Anonymous FTP is ready-only and restricted. To enable telnet, go to [Setup], [FTP/ Remote Diagnostics]. "Low" is the default setting.
Medium	FTP is enabled. telnet, rsh is disabled. NFS client is disabled. AutoFS is disabled, e.g./ net/<hostname>and home/<username> are not automatically mounted. NFS server is filtered via RPC tab. Walkup user can reprint from CD_ROM. Terminal window is password protected.	Environments requiring high security but with a need to integrate FreeFlow/ Digipath.	Supports FreeFlow workflow.	Anonymous FTP is ready-only and restricted. To enable telnet, go to [Setup], [FTP/ Remote Diagnostics].
High	FTP is disabled. telnet, rsh is disabled. NFS client is disabled. AutoFS is disabled, e.g./ net/<hostname>and home/<username> are not automatically mounted. NFS server is disabled on customer network. Walkup users cannot reprint anything. Terminal window is password protected. Auto login is disabled (login is always required from GUI).	For government market.	Does not support FreeFlow workflow.	File FTP is disabled. File transfer can be done via Secure FTP. For CFA support, that is FTP upload of outload, go to [Setup], [FTP/ Remote Diagnostics] menu.
Custom	Any profile can be edited to adjust to user needs			

NOTE: *Regardless of the security profile, anonymous FTP is Read-only with restricted access to /export/home/ftphome only.*

Enable and disable services

The following tables provide a list of the services that can be enabled and disabled from the DocuSP "Setup > Security Profiles" menu options.

Table 3-2 "System" tab

System Service	Description
Allow_host.equiv_plus	Background: The /etc/hosts.equiv and /.rhosts files provide the remote authentication database for rlogin, rsh, rcp, and rexec. The files specify remote hosts and users that are considered to be trusted. Trusted users are allowed to access the local system without supplying a password. These files can be removed or modified to enhance security. DocuSP is provided with both of these files deleted entirely. The setting All_host.equiv_plus is set to disabled, then anytime that security settings are applied, the + will be removed from host.equiv. IMPORTANT NOTE: Removing the + from the hosts.equiv file will prevent the use of the Xerox command line client print from remote clients. An alternative would be to remove the + and add the name of each trusted host that requires this functionality. Leaving the + will allow a user from any remote host to access the system with the same username
Anonymous FTP	
BSM	Enable or disable the Basic Security Module (BSM) on Solaris
Executable Stacks	Some security exploits take advantage of the Solaris OE kernel executable system stack to attack the system. Some of these exploits can be avoided by making the system stack non-executable. The following lines are added to /etc/system/fP file:set noexec_user_stack=1set noexec_user_stack_log=1
Hide Info Banners	
Remote CDE Logins	Deny all remote access (direct/broadcast) to the X server running on DocuSP by installing an appropriate /etc/dt/config/Xaccess file.
Restrict DF Stab	
Restrict NFS Portmon	
Router	Disable router mode by creating an empty the empty file: /etc/notrouter.
Secure Network Settings	
Secure Sendmail	Force sendmail to only handle outgoing mail. No incoming mail will be handled by sendmail.
Security Warning Banners	Enable security warning banners to be displayed when a user logins or telnets into the DocuSP server.

Table 3-3 "INIT" tab RC2 section

RC2 Service	Description
S40LLC2	Class II logical link control driver
S47ASPPP	Asynchronous PPP link manager. This service is re-enabled via enable-remote-diagnostics command.
S70UUCP	UUCP server
S71LDAP.CLIENT	LDAP daemon to cache server and client information for NIS lookups.
S72AUTOINSTALL	Script executed during stub JumpStart or AUTOINSTALL JumpStart
S72SLPD	Service Location Protocol daemon
S73cachefs.daemon	Starts cachefs file systems
S73NFS.CLIENT	NFS client service. Disables the statd service which is only required if your system is an NFS server or a client.
S74XNTPD	
S74AUTOFS	The automountd service is only required if your system uses NFS to automatically mount file systems. Stopping the autofs subsystem will kill the running automountd daemon and unmount any autofs file systems currently mounted.
S80SPC	SunSoft Print Client daemon
S88SENDMAIL	The sendmail daemon is used to send mail over the internet. Sendmail has some security issues that are addressed by more recent Solaris patches than those currently loaded with the DocuSP software. If sendmail is not required, it can be disabled with the following procedure.
S90WBEM	CIM Boot Manager. Disables WBEM clients from accessing DocuSP server.
S94ncalogd	
slp	
uucp	

Table 3-4 "INIT" tab RC3 section

RC3 Service	Description
S15NFS.SERVER	NFS Server. Disable ability to export DocuSP Server file systems. This service is enabled if FreeFlow and Decomposition Services (NetAgent) are enabled.
S17HCLNFS.DAEMON	
S25openssh.server	

RC3 Service	Description
S17BWNFS.DAEMON	Secure mounted file systems. There are two shared file systems that are exported by DocuSP. The two directories are only required for anyone with XDOD version 3.0 or below. With the release of DigiPath Version 1.0, it is not necessary to export these file systems.
S76SNMPDX	Sun Solstice Enterprise Master Agent. Solaris SNMP services are disabled. This does not prevent DocuSP SNMP services from operating.
S77DMI	Sun Solstice Enterprise DMI Service Provider
S80MIPAGENT	Mobile IP agent
S82initsma	
S92VOLMGT	

Table 3-5 **"INETD" tab**

INETD Service		Description
amiserv	RPC Smart Card Interface	Not used by DocuSP
cachefs	Cached File System server	Not used by DocuSP
chargen	Character Generator Protocol server	Sends revolving pattern of ASCII characters. Sometimes used in packet debugging and can be used for denial of service attacks. Not used by DocuSP
comsat	Biff server	comsat is the server process which listens for reports of incoming mail and notifies users who have requested to be told when mail arrives. Not used by DocuSP
daytime	Daytime Protocol server	Displays the date and time. Used primarily for testing. Not used by DocuSP
discard	Discard Protocol server	Discards everything sent to it.Used primarily for testing. Not used by DocuSP
dtspc	CDE sub-process Control Service	CDE sub-process Control Service (dtspcd) is a network daemon that accepts requests from clients to execute commands and launch applications remotely. Not used by DocuSP
echo	Echo Protocol server	Echoes back any character sent to it. Sometimes used in packet debugging and can be used for denial of service attacks. Not used by DocuSP

INETD Service		Description
exec	Remote execution server	Used by rexec(1) command. Potentially dangerous— passwords and subsequent session is clear text (not encrypted). Not used by DocuSP.
finger	Remote user information server	Display information about local and remote users. Gives away user information. Not used by DocuSP
fs	X font server	Used by CDE to dynamically render fonts. DocuSP uses bit-map fonts.
ftp	File transfer protocol server	This can be used to enable/disable the ftp server. This does not affect using the ftp client from the DocuSP server to another host running an FTP server. Note that FreeFlow/Digipath requires this service to be enabled.
kcms_server	KCMS library service daemon	Allows the KCMS library to access profiles on remote machines. Not used by DocuSP.
login	Remote login server	Used by the rlogin(1) command. Potentially dangerous— uses ~/.rhosts file for authentication; passwords and subsequent session is clear text (not encrypted).
name	DARPA trivial name server	in.tnamed is a server that supports the DARPA Name Server Protoco. Seldom used anymore. Not used by DocuSP
rpc.cmsd	Calendar manager service daemon	rpc.cmsd is a small database manager for appointment and resource-scheduling data. Its primary client is Calendar Manager. Not used by DocuSP
rpc.rusersd	network username server	Gives intruder information about accounts. Not used by DocuSP.
rpc.rwalld	Network rwall server	Server that handles rwall(1M) command requests. Can be used for spoofing attacks. Not used by DocuSP.
rpc.sprayd	Spray server	Records the packets sent by the spray(1M) command. Can be used in denial of service attacks. Not used by DocuSP
rcp.ttdbserverd	RPC-based ToolTalk database server	The RPC-based tooltalk database server is required for CDE action commands. In particular, the CDE front panel has various menu items that rely on CDE actions. Late in the CP3.1 release, the Server UI team disabled the front panel. With the panel disabled, the need for the tooltalk database server no longer exists

INETD Service		Description
rquotad	Remote quota server	Used by the quota (1M) command to display user quotas for remote file systems. Not used by DocuSP
sadmind	Distributed system administration daemon	Used by Solstice AdminSuite applications to perform distributed system administration. Not used by DocuSP.
shell	Remote execution server	Used by rsh(1) and rcp(1) commands. The Xerox print command line client relies on the remote shell internet service being enabled since it uses the rcp(1) command to transfer files onto the DocuSP server. However, this service represents a security risk. Not used by DocuSP
talk	Server for talk program	The talk utility is a two-way, screen oriented communication program. Not used by DocuSP.
telnet	TELNET protocol server	This can be used to enable/disable the telnet server This does not affect using the telnet client from the DocuSP server to another host running an TELNET server
time	Time Protocol server	Outdated time service. Seldom used anymore. Not used by DocuSP
uucp	UUCP server	UNIX to UNIX system copy over networks. UUCP is not securely set up and can be exploited in many ways. Not used by DocuSP

User level changes

The following user-level changes are made:

- all users for at, cron, and batch are disallowed
- nuucp account is disabled
- listen account is disabled
- password entry locked for bin, sys, adm, uucp, nobody, noaccess, nobody4, and anonymous

Solaris file permissions

Secure File Permission options can be enabled or disabled through the DocuSP interface. Fix-modes include:

- fixmodes-xerox: fix file permissions for all packages to make them more secure. Available under the System tab under the "Secure File Permissions" drop-down menu.

- fixmodes-solaris: fix file permissions only for Solaris packages to make them more secure. Available under the System tab under the "Secure File Permissions" drop-down menu.

The fix-modes utility (from the Solaris Security Toolkit) adjusts group and world write permissions. It is run with the '-s' option to secure file permissions for Solaris files that were created at install time only.   Customer-generated files are not affected.

NOTE: *When this command is run, a file called /var/sadm/install/ content.mods is left. Do not delete this file.   It contains valuable information needed by fix modes to revert the changes to the system file permissions if the security setting is changed back to medium.*

Disabling secure name service databases

The following databases are **disabled** when security is invoked:

- passwd(4)
- group(4)
- exec_attr(4)
- prof_attr(4)
- ser_attr(4)

Multicast routing disabled

Multicast is used to send data to many systems at the same time while using one address.

OS and host information hidden

The ftp, telnet and sendmail banners are set to null so that users in cannot see the hostname and OS level.

NOTE: *All of these services are prohibited with a 'high' security setting, but if they are re-enabled manually the hostname information will remain hidden.*

Sendmail daemon secured

Sendmail is forced to perform only outgoing mail. No incoming mail will be accepted.

Network parameters secured

Sun's nddconfig security tool is run. For additional information, view Sun's document, Solaris Operating Environment Network Settings for Security, at

http://www.sun.com/solutions/ blueprints/1200/network-updt1.pdf.

Executable stacks disabled

The system stack is made non-executable. This is done so security exploitation programs cannot take advantage of the Solaris OE kernel executable system stack and thereby attack the system.

NFS port monitor restricted

The NFS server normally accepts requests from any port number. The NFS Server is altered to process only those requests from privileged ports.   Note that with the high security setting, NFS is disabled; however if the service is re-enabled manually, the port restriction will still apply.

Remote CDE login disabled

The Remote CDE login is disabled.

DocuSP router capabilities disabled

The DocuSP router capabilities is disabled (empty/etc/notrouter file created).

Security warning banners

Security warning banners are displayed when a user logs in or telnets into the DocuSP server. This message explains that only authorized users should be using the system and that any others face the possibility of being monitored by law enforcement officials.

NOTE: *DRW (DocuSP Remote Workflow) is not impacted by security settings.*

Disabling LP anonymous printing

You can choose to disable anonymous printing on all existing LP printer queues that are associated with the DocuSP virtual printers. When anonymous LP is disabled, only systems that have their IP address in the DocuSP controller /etc/hosts table are authorized to submit LP requests. Answer "y" for yes to disable this printing option.

Remote shell internet service

If you are using the legacy Xerox print command line client (the software is not distributed with this release), you will need to use the remote shell internet service to transfer files to the DocuSP controller. However, if you are not using the Xerox print command line client, it is strongly recommended that the remote shell internet service is disabled. When these three questions are answered, all remaining aspects of the "High" security setting are implemented.

enable-ftp and disable-ftp

These options allow for enabling and disabling FTP alone. You must have FTP enabled when using a Continuous Feed system, or FreeFlow Production Print and NetAgent.

FTP is also required for the Call for Assistance (CFA) feature. This uses FTP to push IOT logs and a DocuSP outload back to the DocuSP controller.

NOTE: *Temporarily enable FTP through the DocuSP Setup > FTP/Remote Diagnostics menu option.*

Creating user-defined profiles

To create a customized profile, the administrator copies any security profile and edits the profile according to the needs of the customer environment. This new user profile can be selected, edited, set as current, and set as default.

Setting the current and default profiles

The administrator can select any profile and set it as the Current Profile. This Current Profile persists throughout reboot and

software upgrades until it is changed by the administrator. Similarly, the administrator can select a Default Profile that remains in effect until it is changed by the administrator.

Account management

Any interaction between a user and the DocuSP is associated with a user account and is done via a logon session, which is the basis for granting access.

DocuSP user accounts are defined either locally at the device or remotely at a trusted network location like ADS. The local user account is composed of a logon user name and an assigned user group. A user account can be a member of one and only user group. It is the user group that is associated with a security profile that defines the privileges of the group.

Default user accounts are provided to allow easy transition from DocuSP versions 3.8 and earlier.

Local users and groups

Local user accounts are constructed based on the Solaris model, with its limitations and restrictions, using the [User & Group Management] selection on the DocuSP interface.

- Each local user account has an associated user name between 2-8 characters in length and is case sensitive.

- The user name is a string of characters from the set of alphabetic characters (a-z, A-Z), numeric characters (0-9), period (.), underscore (_), and hyphen (-); the first character must be alphabetic and the string must contain at least one lower case alphabetic character.

- Each account has the following attributes: user name, password, user group, account disabled/enabled, and comments.

- The maximum number of user accounts is 25,000.

- Each local user account has an associated user password that is a sequence of characters that is case sensitive and between 0 - 8 characters in length.

Default user groups and user accounts

DocuSP provides three default **user groups**: Users, Operators, and System Administrators. It also supplies four default **user accounts**: User, Operator, SA and CSE. User and Operator

accounts correspond to User and Operator User Groups while SA and CSE both correspond to the System Administrators group.

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Figure 1: Assignment to Groups
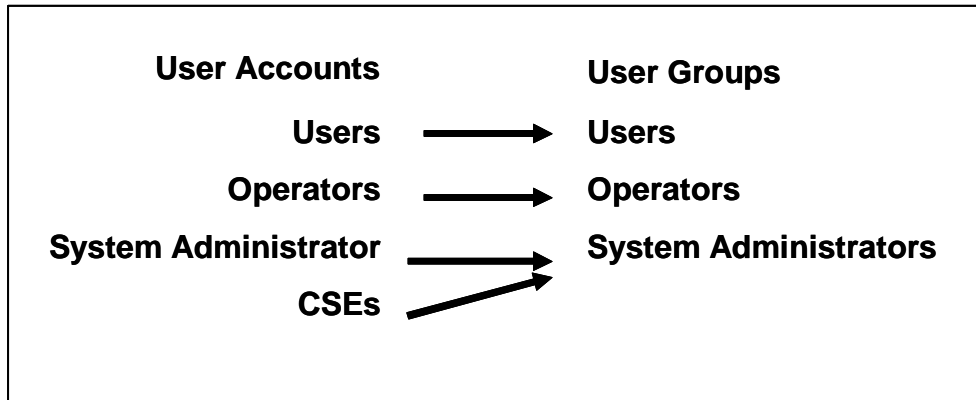
The User, Operator and SA user accounts cannot be edited, deleted, disabled, or removed from the assigned group. The CSE account can be removed from the System Administrator group and assigned to another group

Creating user accounts

The DocuSP user interface enables the Administrator to manage accounts easily by selecting [Setup], [Users & Groups], and the [Users] tab.

When the administrator selects the Users tab, a pop-up window appears that enables the administrator to create, edit, or delete an account and indicate whether the account should be enabled or disabled.

Group authorization

Job Management and Customer Diagnostics are two functions of DocuSP that the administrator may choose to restrict. From the Setup > Users & Groups menu option, select the "Group Authorizations" tab in the interface. The administrator can choose to enable or disable the service for a particular user group.

Table 3-6 **Enable/disable from the "Group Authorizations" tab**

Function	Users	Operators	Administrat ors(sa and cse)	Changeable via GUI	Comment
Job Management (release, hold, proof, promote, move, delete, … etc)	-	Enabled	Enabled	Yes	
Queue Management (New, Delete, Properties)	-	Enabled	Enabled	No	Possible to change this via GUI in DocuSP 4.2.
Queue Job Operations(Acc ept Jobs, Release Jobs, …etc)	-	Enabled	Enabled	No	
Reprint Management	Enabled	Enabled	Enabled	No	The "reprint_path" in Security Profile controls the directories that users can reprint. The defaults are:None -> everythingLow -> "saved"Med -> CD-ROMHigh -> nothing
Printer Manager(Finish ing, Image Quality …etc)	-	-	Enabled	No	
Resource Management(L CDS Resources, PDL Fonts, Forms, ….etc)	-	Enabled	Enabled	No	Possible to change this via GUI in DocuSP 4.2.
Accounting, Billing	-	Enabled	Enabled	No	
System Preferences	-	Can set Internatio nal, Job Processin g, Stocks & Trays	Enabled	No	

Function	Users	Operators	Administrat ors(sa and cse)	Changeable via GUI	Comment
Setup (System configuration, Gateways)	-	View & Print only	Enabled	No	
Setup (Feature licenses, Network configuration)	-	-	Enabled	No	
Setup (Security profile, SSL/ TLS, IP Filter)	-	-	Enabled	No	
Setup (Users & Groups)	-	-	Enabled	No	
Change password	Self	Self	Enabled	No	
Service Diagnostics	-	-	Enabled	No	
Customer Diagnostics	Enabled	Enabled	Enabled	Yes	
Backup / Restore	-	Enabled	Enabled	No	

Password security

When the system is installed, the Change System Password dialog box appears and prompts users to establish all System Default Accounts with new passwords. For security reasons, **all system passwords must be changed.**

- **root:** has super user access to the workstation. The initial password for this account is set during installation of the operating system and should be obtained from the Xerox service personnel.

NOTE: *For security reasons, the root account password should be changed as soon as the Xerox service personnel have completed the installation.*

- The Xerox user name is the account from which the Xerox software runs. Enter the Xerox user password for this account. Contact your Customer Service Representative if this is unknown.

NOTE: *The administrator should verify access to the Xerox application for all levels before the service installation personnel leave the site*

- **ftp:** an account to permit some clients to retrieve their software from the DocuSP controller using the TCP/IP communication protocol. This account will be set to Read-only access to the /export/home/ftp directory

NOTE: *To maintain system security, it is recommended that any restricted access login be terminated as soon as the session has been completed.*

NOTE: *The user and group identifications, uid and gid, for the Xerox accounts that are listed above cannot be arbitrarily changed in the password and group files to new values because the software is based on the proper access to the Xerox supplied files.*

NOTE: *Please be aware that Xerox Customer Support Personnel must have access to the new root password for service and support. It is the customer's responsibility to ensure that the root and system administrator passwords are available for them.*

Strong Passwords

DocuSP provides additional security for users required to adhere to strict security guidelines. It provides a means in which a strong password policy can be enforced.

Strong Passwords can be Enabled and Disabled (default setting) via the Password Policies window.

Strong passwords must consist of ALL of the following

- A minimum of 8 characters in length
- Contain at least one capital letter
- Contain at least one number
- Contain at least one special character {!, @, #, $, %, ^, &, *}, including open and close parentheses { ( ) }, hyphen{ - }, underscore{ _ }, and period{ . }.

NOTE: *In DocuSP 4.x - The minimum password length is set in the security profiles. To enable the remaining requirements, the root (su) user must run the setstrongsecurity script located in the /opt/XRXnps/bin directory and reboot the system. Once the strong password feature is enabled, upon creation, new users will be forced to have a strong password assigned to their account. The passwords for existing users will remain the same and continue to work as before, but can be updated if necessary.*

NOTE: *The strong password requirements cannot be modified. A strong password cannot be set for root or any other Solaris user accounts that are not created by DocuSP.*

NOTE: *Remote Network Server: If running NIS+ name service, strong passwords would be enforced via the NIS + server.*
This policy can be set by using the -a <# of allowed attempts> argument with rpc.nispasswdd. For example, to limit users to no more than four attempts (the default is 3), you would type: rpc.nispasswd -a 4.

How to Enable/Disable Strong Password

- From the Setup menu select [Users and Groups]
- From the Policies drop down menu select [Password]
- Enable/Disable Strong Password from the Password Policies window. The default setting is "Disable".

Login Attempts Allowed

DocuSP has provided a means to lockout users after reaching the maximum number of consecutive attempts. Once this is done, the user will need to apply (reset) a security policy and reboot the system.

The number of failed attempts and enable/disable is configurable via the Password Policy screen. When enabled, login attempts can be set from 1-6 attempts before the user is locked out. This function will only apply to failed login attempts via the DocuSP UI and does not apply to the root (su) user.

How to Enable/Disable Login Attempts

- From the Setup menu select [Users and Groups]
- From the Policies drop down menu select [Password]
- Enable/Disable Login Attempts from the Password Policies window. The default setting is "Disable".

Password Expiration

The System Administrator can set a password expiration via the Solaris Management Control.

NOTE: *SMC (Solaris Management Control) has replaced AdminTool. AdminTool has been retired in Solaris 10.*

1. Open a terminal window and login as root
2. Type: smc &
3. Go to: System Configuration -> Users -> User Accounts-> <select user> -> Password Options tab

4. Enter values in the drop down menus associated with each password expiration parameter.

The DocuSP UI does not handle password expiration. Thus, DocuSP will not prompt the user to enter a new password if his/ her password has expired. Instead, a message is posted indicating unknown user name or password. It is up to the customer to determine that the password has expired. To do so, the customer should open a terminal window and attempt to login as the user in question. If the password has expired, the system will prompt for the user to enter a new password.

Security Logs

User Activity on the System

When the High security profile is enabled, the Solaris Basic Security Module (BSM) is activated.

Date/Time User Login/Logout

This information is kept in the authlog and syslog in the /var/log directory. Login/Logout to DocuSP is tracked as well as Network Login/Logout.

Changing individual passwords

There are two ways to change passwords: Users can change their own passwords using the selection on the Logon menu and the administrator can change the password by double clicking on the user name in the User tab of [Users and Groups Management].

Accessing DocuSP through ADS

If DocuSP has been configured to join a Windows 2000 ADS domain, users may log onto the printer using their Microsoft Active Directory Services (ADS) user names.

To provide this option, the administrator must first configure DocuSP appropriately for the DNS gateway (see the "Gateway and Network Configuration" section of this guide). Additionally, the administrator must access the [ADS Groups] tab through [Users and Groups Management] and specify or edit the mapping of the ADS groups to the DocuSP user groups having permission to log on to the printer.

Configure DocuSP to Join the ADS Domain

To enable the ADS user accounts, DocuSP must have DNS enabled and joined to the appropriate ADS domain.

1. Logon to DocuSP as a member of the System Administrators. From the Network Configuration option, select the DNS tab, make sure that the Enable DNS check box is checked. Ensure that the DNS Server list is filled in with the IP addresses of up to three DNS servers to search when resolving host names to IP addresses. (This is part of the network configuration procedure).

2. Select the ADS tab, and enter in the fully qualified domain name of the ADS domain.

3. Click "Join…" button to join DocuSP to the ADS domain specified.

NOTE: *If DNS is not enabled, the "Join..." button will not be available.*

Map the ADS groups to the DocuSP user groups

From the Setup menu, Users & Groups option, select the ADS Groups tab. A member of the System Administrators group can specify, view and edit the mapping of ADS Groups to the three DocuSP user groups (Administrators, Operator, Users) permitted to log on to the printer.

Log on to the system with ADS user names

From the Logon menu, select ADS for authentication, then log on to the system with your ADS user name and password.

NOTE: *For this feature to work, Administrators must ensure that DNS is enabled, DocuSP is configured to join the ADS domain, and ADS groups are mapped to the DocuSP user groups.*

Troubleshoot ADS

Refer to the online help feature when troubleshooting ADS.

Limiting access

DocuSP provides options that allow the administrator to block or limit access to the system.

IP Filtering

IP Filtering allows the administrator to block IP addresses and provides access to services such as: LPR, IPP, HTTP, HTTPS, SMB Printing, Raw TCP Printing, and FTP Connections.

The administrator can limit access through the DocuSP interface [Setup > IP Filtering menu option]. The filter allows the blocking of specific IP addresses or a range of addresses from accessing the system. Available options include: Enable All Connections, Disable All Connections, Enable Specified Connections. Additional subnet mask can also be specified.

Refer to online help for detailed descriptions of IP Filtering property tabs such as: General tab, System tab, INIT tab, INETD tab, RPC tab.

Remote Workflow

Remote Workflow allows for a remote connection to the DocuSP controller.

The administrator can limit access through the DocuSP interface [Setup > System Preferences menu option]. Remote Workflow options include: Enable All Connections, Disable All Connections, Enable Specified Connections (by specific IP Address).

NOTE: *The default is Enable All Connections.*

Secure Socket Layer

DocuSP implements Secure Socket Layer technology using encryption, a secure port, and a signed digital certificate.

Secure Socket Layer (SSL) and Transport Layer Security (TLS) are two network security protocols that encrypt and transmit data via HTTP and IPP over the TCP/IP network. SSL is a protocol layer placed between a reliable connection-oriented network layer protocol and the application protocol layer.

The network client and the web server (printing system) decide which protocol to use for data transfer and communication.

The encryption level can be either secure or normal. Normal security in the SSL/TLS tab means that the user can access IPP or HTTP via http or https.

Using the DocuSP SSL/TLS Security Feature

The Secure Socket Layer (SSL) and Transport Layer Security (TLS) are two protocols used to provide a reliable end-to-end secure and authenticated connection between two points over a network. The DocuSP SSL/TLS feature allows a DocuSP System Administrator to do the following:

1. Create and use a self-signed SSL/TLS certificate

2. Use an existing certificate obtained from a certificate authority (i.e. VeriSign, Thawte, etc.)

When SSL is disabled

When SSL is disabled (off), other web-based logins provided by DocuSP may not be secure (encrypted). To guarantee a secure connection with ISGW, do one of the following:

- Enable SSL optionally via the GUI and connect to the ISGW via https://

- Require SSL as mandatory via the GUI and connect to the ISGW

Creating and Using a Self-Signed Certificate

– Logon to DocuSP as System Administrator or as a user who belongs to the System Administrator group.

– Go to Setup -> SSL/TLS

– If not already enabled, click the 'OK' button in the "Information" pop-up box

– Click on the 'Add Certificate Button'. This will launch the "Add Certificate Wizard".

Step 1 - Select "Self-Signed Certificate"

Step 2 - Select and enter either the server

- Domain Name

- IP Address

- Other

Step 3 - Enter the requested information:

- Organization (required)

- Organizational Unit (optional)

- E-mail (optional)

- Locality (optional)

- State/Province (optional)

- Country (required)

Step 4 - Enter the length of time that the certificate will be valid for.

Step 5 - Verify information entered in previous steps.

Step 6 - A message will appear indicating that the self-signed certificate   has been installed.

NOTE: *During steps 2-5, the user may go back and correct any mistakes made in previous steps.*

– Click on the 'Enable SSL/TLS' checkbox at the top of the SSL/TLS window.

– Select a SSL/TLS mode of operation:

- Normal (Encrypted and Unencrypted Access)
- Secure (Encrypted Access Only)

– Select encryption strength:

- Normal (DES-MD5-56-bit)
- Normal (DES-MD5-40-bit)
- Normal (DES-MD5-128-bit)
- Normal (3DES-MD5-128bit)
- High (RC4-MD5-128-bit)
- High (3DES-MD5-128-bit)

Using an Existing Signed Certificate from a Certificate Authority

– If SSL/TLS is not already enabled

– Click 'Add Certificate'

Step 1 - Select "Signed Certificate from a Certificate Authority"

Step 2 - Select and enter either the server

- Domain Name
- IP Address
- Other

Step 3 - Enter the requested information:

- Organization (required)
- Organizational Unit (optional)
- E-mail (optional)
- Locality (optional)
- State/Province (optional)
- Country (required)

Step 4 - Browse to the location of the signed certificate (.pem file).

Step 5 - Verify information entered in previous steps.

Step 6 - A message will appear indicating that the certificate has been installed.

NOTE: *During steps 2-5, the user may go back and correct any mistakes made in previous steps.*

Digital Certificates

SSL/TLS cannot be enabled unless a digital certificate has been installed on the system, using the Add Certificate button. Installing a digital certificate can only be done by someone with administrator privileges.

The administrator selects SSL/TLS from the [Setup] Menu and clicks on the [Add Certificate] button. This invokes the Add Certificate wizard. There are two options regarding digital certificates. One option is "Self-signed certificate". This is selected when no third party Certificate Authority is being used.

Another option is "Signed Certificate from a Certificate Authority". In this case, the administrator needs to supply the fully qualified domain name, IP address, organization and country of the Certificate Authority.

If the choice is to use a Certificate Authority, all Certificate information needs to be held in a file and sent to the Certificate Authority. The Authority returns a valid certificate that must be installed on the system.

NOTE: *A self-signed certificate is not as secure as a certificate signed by a Certificate Authority. A self-signed certificate is the most convenient way to begin using SSL/TLS and does not require the use of a server functioning as a Certificate Authority or a third party Certificate Authority.*

Once the Digital Certificate has been installed, the Enable SSL/TLS selection becomes available among the [Setup] options. At that time the administrator can select the mode of operation, Normal or Secure, from a drop-down menu.

Network Protocol

This section addresses Network Protocol, name service changes and the changes that occur when security is invoked.

The table below addresses the list of Network Protocols that are used by the DocuSP server software or Xerox client operations.

Table 3-7 Network Protocols

Network Protocol	Required
XSun	Required for functionality of DocuSP diagnostics software.
HTTP	Used when connecting to the server via the HTTP gateway. Connections can also be filtered using the IP Filter feature under Setup -> IP Filter. **NOTE:** *When SSL is disabled (off) other web-based logins provided by DocuSP may not be secure. Use the HTTPs qualifier to guarantee a secure interaction.*
Tomcat web server	Required for the functionality of the DocuSP Internet Services gateway and the Xerox Remote Services application.
IPP	Required for job submissions from the FreeFlow Print Manager and/or a Digipath (FreeFlow 2.0+) client. The IPP gateway can be enabled/disabled under Setup -> Gateways -> IPP tab. Connections can also be filtered using the IP Filter feature under Setup -> IP Filter.
Sun RPC	Used by many different clients, including DigiPath/FreeFlow and DocuSP Remote WorkFlow (DRW), and network services such as NIS+. Typically used to establish a connection to the server, which then redirects the connection to another open port using OS level port management. This service is shutdown when DocuSP security is set to high. Connections can also be filtered using the IP Filter feature under Setup -> Security Profiles -> <Any Profile> -> RPC tab
SNMP	Used for SNMP message exchange and traps. The SNMP gateway can be enabled/disabled under Setup -> Gateways -> SNMP.
WINS	Required when in an environment where connection to a WINS server is necessary. WINS service can be enabled/disabled under Setup -> Network Configuration -> WINS tab.
Socket (Raw TCP/IP) Printing	Required if jobs will be submitted via the socket gateway. The socket gateway can be enabled/disabled under Setup -> Gateways -> Socket. Connections can also be filtered using the IP Filter feature under Setup -> IP Filter.
LPD (LP/LPR)	Required for job submissions via the LP/LPR gateway (LP/LPR client, DocuSP Print Service (Reprint Manager), etc.). The port assigned to the LPD can be changed and/or the gateway can be enabled/disabled under Setup -> Gateways -> LPD.
SSH	Access the server via a secure shell (SSH, SFTP, etc.).

Network Protocol	Required
FTP	Access the server via FTP and/or submit jobs from a DigiPath/ FreeFlow client via the Digipath/FreeFlow Print Manager. This service (ftpd) is shutdown when DocuSP security is set to high. In FreeFlow v2.0, the client has the ability to use secure FTP (sFTP) when DocuSP security is set to high and FTP is not available. Connections can also be filtered using the IP Filter feature under Setup -> Security Profiles -> <Any Profile> -> RPC tab.
SSL	Required when using the TLS/SSL security feature and/or a FreeFlow 2.0+ client with DocuSP security is set to high. Connections can also be filtered using the IP Filter feature under Setup -> IP Filter.
NFS	Necessary when using NFS mounted directories. This service is disabled when DocuSP security is set to high. Connections can also be filtered using the IP Filter feature under Setup -> Security Profiles -> <Any Profile> -> RPC tab.

NOTE: *The IP Filtering (Setup->IP Filter) feature can also help in limiting access to the server. This is DocuSP's GUI interface to the SunScreen Lite firewall that is part of the Solaris 8 Operating System. This feature allows the user to limit the number of clients who are allowed to access the server via services such as LPR, IPP, HTTP, HTTPS, SMB Printing, and FTP. By default, the firewall is disabled (all ports open), but can be enabled to either only allow specified connections (by IP address, IP address range, or subnet mask) or to close all ports. For DRW clients, this mechanism exists under System Preferences -> Remote Workflow -> "Enable Specified Connections".*

NOTE: *FreeFlow v2.0 and newer allows users to select whether or not the DocuSP server they connecting to will have high security enabled. If so, the client will use other communication paths such as sIPP (via SSL) for job submissions and sFTP for decomposition services (NetAgent).*

Roles and responsibilities

Xerox will make every effort to assist the administrator in ensuring that the customer environment is secure.

Xerox responsibilities

Xerox is committed to providing a level of security which will allow the DocuSP controller to be a good network citizen in response to current security intrusions. Additional security beyond this remains the responsibility of the customer.

Xerox is constantly evaluating the security of the DocuSP controller and the Sun Solaris operating system. Xerox is committed to providing the latest Solaris security patches provided by Sun Microsystems in each major DocuSP release. The DocuSP development team will also add Solaris security patches in between major release cycles. All OS security patches for applications that are added during a DocuSP install will be included, even if the application code is not normally used by DocuSP users. Security patches for applications that are not loaded by a DocuSP install will not be evaluated or included. Only the version of a patch impacting security will be included. If a security patch has a newer version that is not security related, then this patch will not be updated to the newer version. Any security patch that is determined to have a negative impact to DocuSP operation will not be added.

Customer Responsibilities

The administrator has the primary responsibility for maintaining the security of the network within the customer's site. It is important that network security is continuously monitored and maintained, and that appropriate security policies are established and followed.

The procedures outlined in this document assume a basic knowledge of UNIX, the vi editor, and general computing concepts. It is expected that the network administrator or system administrator responsible for network security understands the base commands (cd, chmod, cp, grep, kill, ln, ls, man, more, ps, etc.), and the UNIX directory path and filename structures shown in this document.

There is information within the text and in the appendix sections for reference to those who may not use UNIX   often.

The DocuSP product operates on the default Solaris OS configuration and some additional Solaris patches required by DocuSP. Several scripts are used to provide additional security for the DocuSP. Not all scripts are public knowledge, only those that are public are defined in this document and these can be performed by the customer.

Xerox DocuSP engineering will evaluate the latest Sun Security Alert Packs issued by Sun Microsystems and integrate these

patches into the DocuSP releases. Local customer support will be responsible for loading the latest DocuSP software.

Xerox strongly recommends that the customer change passwords from the default settings since the ultimate security of the printing system resides with the customer.

NOTE: *Please be aware that the Xerox Customer Support Personnel must have access to the new root password for service and support. It is the customer's responsibility to ensure that the root password is available for them.*

Security tips

The following recommendations will enhance security.

Document and backup

Always document and backup all files that you modify in case some unforeseen problem occurs. Example: #cp/etc/inet/ inetd.conf   /etc/inet/inetd.conf.orig <RETURN>. If, for whatever reason, the DocuSP controller will not boot up after your modifications, you can restore the software to its original configuration by booting to single user mode. This is done by typing **boot -s** from the <ok> prompt. You will be prompted for the root password. Upon login as root, you can copy the original files back. For SPARC controllers running Solaris 8, this is done by typing boot -s from the <ok> prompt. For x86 controllers running Solaris 9, this is done by typing reboot -- -s in a terminal window.

If you are unfamiliar with the vi editor, you can use the GUI based Text Editor program. To launch the editor as root user, in a terminal window login as root and enter the following: #/usr/ openwin/bin/textedit & <RETURN> Textedit leaves a backup of the modified file in the same directory. For SPARC controllers running Solaris 8, in a terminal window, as root, type: /usr/ openwin/bin/textedit & <RETURN>. For x86 controllers running Solaris 9, in a terminal window, as root, type: /usr/dt/bin/dtpad & <RETURN>. This backup file will have a% after the name. This file can be deleted if you have already backed up the original file.

When you make a manual change to the /etc/inetd.conf file, to avoid rebooting the controller, you can retstart the inetd process. To do this, as root user type: ps -e | grep inetd <enter> and note the process ID returned. Then, type: kill -HUP #### (where #### denotes the process ID).

Online Help for security

A great deal of helpful security information can be found in Online Help. Sun's security tools and blueprints may be found at:

http://www.sun.com/solutions/blueprints/

Other security information, including alerts, may be found at:

```
http://sunsolve.sun.com/pub-cgi/
show.pl?target=security/sec
```

http://www.cert.org/nav/ index_main.html

http://www.cve.mitre.org/.

4   Printing

This section addresses how to set printing workflow. It also describes the printing utilities that are available in DocuSP software and how to use DocuSP for TIFF orientation, MICR, and VIPP printing.

Printing workflow options

The two printing workflow options available are First In/First Out (FIFO) and Resource Based Scheduling (RBS).

FIFO out can be set either on a limited scheduling/printing basis or as the default printing workflow for the site. In either case FIFO printing provides the capability to force jobs to fault and print in FIFO order without regard to available paper stocks and other variables. Typical applications include zip sorted work, VI print-for-one, direct mail and financial data.

Resource Based Scheduling, which is the initial default option, places jobs for which resources are available into the print stream first. Jobs that require additional resources, like media, are placed in an ineligible state awaiting resource availability. Resource Based Scheduling optimizes the utilization of the printer.

First In/First Out (FIFO) printing

Workflow is referred to as FIFO when jobs are printed in the same order in which they are received. For FIFO printing, the Queue must also have the Release status set to Yes.

To set FIFO scheduling, perform the following:

1. Select [Setup] on the main menu.

2. Select [System Preferences].

3. Under Scheduling Mode, click FIFO.

NOTE: *See the Online Help for detailed procedures.*

Resource based scheduling

Resource Based scheduling is the default setting on DocuSP. It schedules jobs only as the resources available to run them become available.

To set Resource Based scheduling, perform the following:

1. Select [Setup] on the main menu.

2. Select [System Preferences].

3. Under Scheduling Mode, click Resource Based Scheduling.

NOTE: *See the Online Help for detailed procedures.*

Hot folders

Hot folders provides a fast and convenient method to submit print-ready jobs into network folders. It enables users to drag and drop files into any DocuSP queue for automatic printing.

This supports both Page Description Language (PDL) jobs with or without Xerox Printing Instruction Format (XPIF) tickets. The ability to support XPIF tickets with PDL files adds flexibility when users want specific settings for jobs instead of default queue settings.

To enable Hot Folders, perform the following:

1. Right-click on a queue

2. Select [Hot Folder]

3. Select [Enable Hot Folder]

NOTE: *Only System Administrators can Enable or Disable Hot Folders. See the Online Help for more details.*

Multiple job submission

There are three menu selections in the Print Services interface (Reprint Manager):

*   Print Selected

*   Proof Selected

*   Print Now Selected

When one of these print options is chosen, a dialog box opens that presents the queue options. Once the user selects the queue to send the job, DocuSP displays a window that tracks the

progress and completion of each job submitted. The [OK] button becomes enabled when the job is complete.

Jobs may be submitted simultaneously based on job size. There is no hard limit to job submission. However, when submitting hundreds of jobs, performance needs to be considered since it may degrade.

The user always has the option of canceling the operation once in progress. This does not disrupt any job currently being run but prevents any further jobs from being submitted.

Parallel RIP processing

The operator can choose to enable or disable parallel RIP. If VI Object Cache is enabled then Parallel RIP is automatically disabled. Likewise if Parallel RIP is enabled then VI Object Cache is disabled.

DocuSP processes the workflow in the following way:

1. Is the first job eligible for Parallel RIPing? If yes, DocuSP processes the job using all the available Parallel RIPs and no additional jobs can be processed.

2. If no, DocuSP routes the first job through a single RIP.

3. DocuSP determines whether the next job is eligible for parallel RIPing.

4. If yes, DocuSP processes the job using all the remaining RIPs. No other job can be RIPed until one of the jobs is completed.

5. If no, DocuSP routes the job through the next single RIP path. DocuSP continues through the cycle.

ASCII and PCL printing utilities

ASCII printing within various environments results in output that is not always formatted as desired. Unfortunately, there is no "standard" method for printing ASCII files. ASCII is a character set and not a Page Description Language. Therefore, ASCII files do not contain format commands. Furthermore, there is no de facto standard for ASCII formatting.

Nonetheless, users often have the requirement to match a specific format. The utility below enables this formatting flexibility along with a feature in Queue Manager that allows the administrator to select the default document format.

ASCII and the PS or PCL decomposers

The DocuSP software automatically wraps ASCII files with a predefined set of PostScript code and sends the data through the PostScript decomposer. Unfortunately, this predefined formatting does not always meet customer ASCII printing needs and there are no "knobs" to change the formatting within PostScript.

As an alternative, ASCII files can be identified as PCL and sent through the PCL decomposer. The PCL decomposer does provide some additional capabilities that can be used to modify ASCII files as desired.

To force ASCII files to use the PCL decomposer, change the file format in Job Manager. This can also be done by changing the queue default document property from ASCII to PCL.

setpclcontrol utility

The setpclcontrol utility offers the following user controls:

- Set the site default for the PCL decomposer line termination. Setting these options allows both native PCL files and ASCII streams forced through the PCL decomposer to be conditioned with various combinations of carriage returns (CR), line feeds (LF), and form feeds (FF). Mainframe and UNIX environments typically require some form of CR/LF/FF adjustment.

- Set a custom paper size to map to the PCL escape sequence <esc>&|101A (which denotes "print on custom stock size").

  HP printers generally respond to this command by imaging an area of 11.7 x 17.7 inches and then printing the image, centered, on whatever stock is supplied by the operator. The setpclcontrol utility allows you to specify a single image and paper size to correspond with this escape sequence.

NOTE: *This utility is now covered on the DocuSP interface. Click the PCL tab and make selections to Line Termination.*

setlp/lprcopycount utility

The setlpcopycount utility allows the DocuSP customer to modify how the lp/lpr gateway handles a copy count of one. Beginning with DocuSP version 1.41.06, the default setting ignores a copy count of one placed on the job by the lp/lpr submission protocol.

This allows the internal copy count set by the PDL to take precedence.

The following utility allows a customer to return the DocuSP to its original behavior, that is, either imply a copy count of one when none is specified or honor a copy count of one if specified on the command line. This copy count of one takes precedence over the copy count set by the PDL.

Syntax of the utility:

setlpcopycount -f option0 - Specifies that LP will set a copy count of 1 if received.1 - Specifies that LP will ignore a copy count of 1 if received.(default)No option will display current setting

Example:

docusp_printer% su rootPassword:# cd /opt/XRXnps/bin/# ./ setlpcopycount -f 0

LP/LPR compatibility with DocuSP

DocuSP-driven systems can now be targeted to existing NPS customers, both black and white and highlight color. DocuSP now supports the following options.

NPS lp-o and lpr-c

The lp/lpr options are received by the LPR gateway and mapped to DocuSP attributes.

The following NPS lp/lpr options are supported:

1. NPS general options

   - C"(acct=<text>)"   (account information)
   - C"(collated)"
   - C"(uncollated)"
   - C"(copies=<n>)"
   - C"(drilled)"
   - C"(format=<pdl>)"   (document format)
   - C"(media=<n>x<m>)"
   - C"(pr=<n>-<m>)"   (pages to print)
   - C"(size=<n>)"
   - C"(xshift)"   (horizontal image shift)
   - C"(yshift)"   (horizontal side 2 shift)
   - C"(xshiftback=<n>)"   (vertical image shift)
   - C"(yshiftback=<n>)"   (vertical side 2 shift)
   - C"(<nostich"l nostaple l stich l staple>l

2. Page order override
   - C"(ton)"
   - C"(nto1")

3. Background forms
   - C"(bf=<background form>") (background form)
   - C"(cf=<n>) (cycle from start location)
   - C"(disposition=<savemaskG4 llsaveformG4>)"

4. Selectable halftone (not including full color)
   - C"(halftone=<defaultHalftone l course lmediuem l fine l extrafine>)"

5. Highlight color (highlight printing color)
   - C"(hc=<color>)" (highlight color mismatch action)
   - C"(hcm=<abort l ignore l operator>)" (highlight mapping color scheme)
   - C"(hrc=<pictorial l presentation l colorToHighlight l automatic)" (highlight mapping color)
   - C"(mc= <color>)"

6. Hold job for manual release
   - C"(hold)"

7. Selectable resolution
   - C"(res=< l 300 l 600 l>)

8. Other
   - C"(pcl5c)"

Highlight color programming in ASCII job ticket

The administrator can submit job programming parameters that identify the algorithm and mapping to be used for rendering full color into highlight color printing. The user may also specify what action to take if there is no match.

For monochrome printing in gray scale, black is selected as the highlight printing color.

DocuSP supports the following records in the ASCII job ticket:

- %XRXhighlightPrintingColor: {blue l red l green}
- %XRXmismatchedHighlightPrinting Color: {Abort l SelectCurrent l Intervene}
- %XRXhighlightMappingAlgorithm: {Automatic l ColorToHighlight l Pictorial l Presentation l Monochrome}
- %XRXhighlightMappingColor. {black l red l green l blue l cyan l magenta l cardinal l royalBlue l ruby l violet l brown l yelllow,

loadedColor}

Resource based scheduling for NPS color

To support the use of DSC comments in Resource Based Scheduling, the preprocessor scans the DSC comments and map them to job attributes. The Job Chooser reconciles the attributes to determine the resources required by the job.

The following table lists the highlight color DCS comments supported.

Table 4-1 DCS Comments for Highlight Color

DSC Comment	Option	Parameters	Notes
%% Beginning Feature	HighlightMapping Algorithm	{none,automatic,colorTables, colorToHighlight,pictorial, presentation}	Ignore none and ColorTables
	HighlightMappingColor	{none, black, blue, brown, cardinal, cyan, dontCare, green, magenta, other, red, royalBlue, ruby, unknown, violet, yellow}	Ignore none, dontCare, other, and unknown.
	HighlightPrintingColor	{none, black, blue, brown, cardinal, cyan, dontCare, green, magenta, other, red, royalBlue, ruby, unknown, violet, yellow}	Ignore all except black, blue, green, and red.
	MismatchedHighlightPrintingColor	{none, abortPrint, reuqestOperatorIntervention,useLoadedColor}	Ignore none, MapabortPrint to CancelJob. Map RequestOperator Intervention to HoldJOb

NOTE: *NPS options can be specified using lp -o and lpr -C from the command-line.*

Socket gateway configuration utility: setVPSoption

This utility allows you to configure the two ports of the Socket Gateway to either remove the echo commands (VPS) or leave the data unaltered (NONVPS).

If you are a DT61xx or DT65/75/90 non-LCDS customer, configure both ports as NONVPS. DP1xxxEPS and DT 75/90 customers using LCDS need to decide whether to configure one or both ports as VPS. If a port is not being used, it is recommended to set the port to NONVPS.

The Socket Gateway allows two ports to be configured at one time. Regardless of the port number assigned on the Socket Configuration Utility, the socket port configured on the first port is always Port 1, and the second line is always Port 2. Both ports are set as VPS upon installation. set as VPS upon installation. Syntax of the utility:

setVPSoption -1<option> -2<option>

0 - Specifies Port 1

1 - Specifies Port 2

option -VPS(default) or NONVPS

An example of the utility is as follows:

docusp_printer% su root

Password:

cd /opt/XRXnps/bin

./setVPSoption -1VPS -2NONVPS

This sets Port 1 as VPS and Port 2 as NONVPS)

./setVPSoption -1VPS

This sets Port1 as VPS and leaves Port 2 unaltered.

./setVPSoption -2NONVPS

This leaves Port 1 unaltered and sets Port 2 as NONVPS.

Restart the DocuSP software after setting this option.

NOTE: *See the Security section of this guide for more information on the Secure Socket Layer.*

TIFF files

This section discusses the TIFF tags supported by the DocuSP software and the guidelines for printing TIFF files to achieve the optimum performance.

GetTIFF and GetForm

The GetTIFF and GetForm operators provided in DocuSP software allow the administrator to place a variety of external

objects on the page that are not supported by the native PostScript language. These operators support TIFF files, PostScript segments, PostScript files, EPS files and baseline JPEG (JFIF) files.

The GetTIFF and GetForm operators take the name of the file that contains the external object and, using the default coordinate system, places the lower left corner of the object in the lower left corner of the page. Then the administrator can manipulate the object using standard PS procedures.

The GetTIFF and GetForm operators are encapsulated and do not affect the Graphics state parameters, like color or font. Additionally GetTIFF and GetForm execute the same sequence of calls that are involved in Xerox Forms Caching.

If the job size is greater than 200 pages and a VIPP license or demo license applies, then the job faults via standard VIPPS error pages.

NOTE: *The Enable Caching/Disable Caching (of Fast Forms) selection found in the Postscript/PDF tab on the queue is not overridden by the use of GetTIFF or GetForm.*

NOTE: *The "Enable/Disable Accelerator" cache in Preferences activates cache for traditional PostScript jobs and does not apply to GetTIFF or GetForm.*

TIFF orientation

The DocuSP Save Feature stores TIFF images in different orientations on the DocuTech/DocuPrint 75/90 and the DocuTech 61XX. This is done by design to optimize productivity and allow for the different finishing requirements of the print engines controlled by the DocuSP software. The following products have these options:

DocuTech 61xx -- The DocuTech 61xx finishes the trail edge of the pages and orients the image appropriately.

DocuTech/DocuPrint 75/90 -- The DocuTech/DocuPrint 75/90 finishes the lead edge of the pages and orients the image properly.

This difference can result in PostScript/VIPP files that call Decomposition Service TIFFs being incompatible across the different platforms. The imported TIFFs may print with a different orientation relative to the PostScript image.

Prior to DocuSP 3.1, the controller utilized a conversion tool (TIFF to PostScript) to process and print TIFF files. A native TIFF decomposer has now been implemented to directly process TIFF files for printing. This improves the TIFF printing performance for certain types of files. Decomposer level adjustments are also now available for the TIFF decomposer at the Queue level.

NOTE: *Multipage TIFF files are now supported. Single TIFF files can now contain multiple TIFF images to be processed and printed.*

Supported TIFF tags

Below is a list of the TIFF tags supported by the DocuSP software.

Compression

– Default = 1

– DocuSP supports values of 1 (uncompressed), 2 (CCITT Modified Huffman RLE, 32773 (PackBits), 3 (CCITT Group 3), and 4 (CCITT Group 4).

T4 Option

– Default = 0

– This is used to determine CCITT Group 3 one or two dimensional coding.

Fill Order

– Default = 1

– DocuSP supports values of 1 and 2.

Image Width and Image Length

– Default = none; values must be supplied.

Orientation

– Default = 1

– DocuSP supports values of 1, 3, 6, and 8. Values of 2, 4, 5, and 7 are treated as if they were 1, 3, 6, and 8 respectively.

Photometric Interpretation

– Default = none; value must be supplied.

– DocuSP supports bi-level values of 0 and 1 only.

Resolution Units

– Default = 2

– DocuSP supports values of 2 (inches) and 3 (centimeters)

Rows Per Strip

– Default = none

– DocuSP supports single and multiple strip images.

NOTE: *Strips and tiles cannot be intermixed within the same TIFF file.*

Strip Byte Counts and Strip Offsets

– Default = none; values must be supplied if the image data is organized into strips.

– DocuSP supports single and multiple strip images.

X and Y Resolution

– Default = none

– Values must be supplied for printing.

Tile Width, Tile Length, Tile Offsets, Tile Byte Counts

– Default = none

– Values must be supplied if image data is organized into tiles.

Administration page controls

DocuSP permits the user to enable or disable the printing of Administration/Banner pages on a queue or job basis. This allows the site to control when and how the banner and error pages are printed.

The default setting by queue is set to enabled. The behaviors of the banner and error pages follow DocuSP precedence, that is overrides, job level and so forth.

Performance considerations

Optimum performance can be achieved for printing TIFF files by following the guidelines listed below:

• Use CCITT Group 4 compression for speed.

• Use a resolution of 600 dpi to eliminate the need to scale the image.

• Use a TIFF orientation tag value of 8 to eliminate the need to rotate the image.

• Use single strip image data to eliminate additional image data manipulations.

• Use a value of 1 for Fill Order to eliminate additional image data manipulations.

Using VIPP

To specify a job as a VIPP job, a start string is required. The required start string can be automatically added using DocuSP functionality. This can be completed using the Command Line Client, Queue Manager, and Job Properties.

To implement the VIPP Start feature, perform the following:

1. Copy the VIPP startup file into /var/spool/XRXnps/vipp and then restart DocuSP. The file must exist in this directory and cannot be changed.   However, you can set a symbolic link to other locations.

NOTE: *The startup file must end with a lowercase .ini extension*

2. In Queue Manager, create a print queue named VIPP. Change the default document format from ASCII to PostScript. If this is not done, all VIPP jobs runs as ASCII unless the data file begins with "%!".

3. Select the PDF/PostScript tab, and select [Start File]. Browse to the startup file and select this file.

The CACHE command stores a form across a single VIPP job so only the first instance is a normal RIP. After the first RIP, the form is called in the job and it is retrieved from hard disk in a format natively understood by the IOT. VIPP CACHE is available for color products only.

Repository management

DocuSP provides a number of options in saving jobs to the Save Job Library (SJL). Jobs can only be saved to the local directory or a CD-RW. Jobs cannot be saved to the network.

Based on the type of input there are some additional limitations to save job options.

Save job options

Under the System Preference Save selection, there are three options to use as the default save method. The site must pick the option that best suits its overall job workflow:

- Rename job. This option automatically attaches a version number to the job and saves the job to the respository. The new job has a version number in an.nnn format.

- Overwrite Job. This option replaces the old version of the job.

• Fault Job. This option aborts the save attempt.

If the new job's name matches that of an existing job, the system proceeds according to the user's selection. The job format, PDF, TIFF or other file format, is not considered in name comparisons.

If the file has the same name, it is considered a duplicate. A new name follows the TIFF format in creating its version number. For example:

MyJob.ps.frf

MyJob.ps.001.frf

When a job is replaced all remnants of the previous job are erased. Once a job has been replaced there are no provisions for recovering that job.

System logs reflects when a job has been replaced and when new versions have been created.

The job overwrite option is supported for the following formats:

• For scanning: PDF, single-page TIFF, multiple-page TIFF (with job ticket)

• For copying: Multiple-page TIFF (with job ticket)

• For RIPing: PDF, single-page TIFF, multiple-page TIFF (with job ticket), FRF.

For highlight color, the single-page TIFF format that includes two images per page (black and highlight color) is supported.

Scan to digital input on Nuvera 100/120

Only Nuvera 100/120 has the capability to use the Scan interface and save a file. This feature enables the operator to scan a file, browse a file path to save the job and specify a name for the saved file. In saving, the operator is limited to these file formats:

• PDF

• Single Page TIFF

• Multi Page TIFF

Copy input for multiple page TIFF files

From the Copy user interface, the operator can Save, Print or Save &Print multiple pages in TIFF format. The job is saved or printed per operator selection.

If the option is to save, the Save Facility calls the Save Job Library to save the job in TIFF format.

NOTE: *If the product being used supports a scanner, any image related to the job is saved without the image manipulation that was programmed in the job submission.However, the instructions is stored in the Saved Job Ticket to be used in job programming when reprinting.*

RIP input

In saving, the operator is limited to these file formats:

- PDF
- Multi Page TIFF
- Single Page TIFF

From the RIP input path, the operator chooses Save, Print and Print&Save. The input facilities (CDF or Scan Facility)   call the Common Buffer Manager to generate saved and print-ready images for color or black and white products.

The print-ready images are sent to the Phoenix image disk while the save images are sent to Save Facility for consumption.

Copy/move/delete saved jobs

For jobs saved to the local drive, the administrator can copy, move or deleted the following formats as soon as the job ticket file exists:

- FRF
- Multipage TIFF
- PDF

DocuSP invokes the Save Facility which calls the Save Job Library to process the request.

NOTE: *Copy/move/delete functions are only for files specified with the job ticket in the legal job format on the DocuSP system. These functions can only be performed on the local disk with the job ticket.*

The user interface invokes the necessary scripts to complete the operation requested.

Copying and saving jobs to CD

For jobs saved to a CD-R/W, the Save Facility calls the PM Library to copy or save the jobs. However, move job is not supported.

The user can specify CD-RW as the Save Output Destination in the Queue or Job Properties. The user then browses the directories to save to the desired location. To improve performance the images of a job are saved to a temporary location first and then written to the CD once the last page has been RIPed.

For systems with a scanner, the user can also select the CD as a save location.

NOTE: *There is no way to delete a file from CD; a user can only delete all sessions or the last session. Any deleted sessions cannot be reclaimed for reuse.*

NOTE: *Writing to a CD requires that the data be supplied at a constant rate. It is advise to keep activity to a minimum during high write periods.*

Saving custom templates

The operator can create a customer template as well as program any combination of imposition settings and save them under a unique user-specified name as a "Save As User Defined Template."

The template later appears in the Layout Style drop-down menu. When it is selected, it displays all the previously programmed settings. These can be modified or left in tact. The template can also be deleted at any point.

Job previewing and editing

DocuSP has a number of editing features for saved jobs.

Editing thumbnails

For the DT100/120 family of products, DocuSP enables the user to preview saved job in PDF, TIFF, PS or FRF file formats. The Job Preview function allows the user to view both a thumbnail image, that is a Thumbnail Resolution Image (TRI) and a full display of the saved image, that is a Display Resolution Image (DRI).

The Job Preview provides a menu offering the user a number of features:

- Fit the image to page
- Rotate the image
- Scale the image
- Fit the image to the page by height and width
- Select the page
- Go to the next page
- Go to the previous page
- Go to the end of the page
- Go to the front page

The Job Preview function can be accessed by right clicking the job listed either in the Printer Manager or the Job Manager.

Using the PDF editor

The PDF editor allows the user to edit both FRF files for color systems and black and white systems. The PDF editor is a full page editor that allows the user to merge pages as long as they are in the same file format.

The PDF editor offers the user these features:

- Insert page
- Delete page
- Undo functions for the saved job
- Importing pages for other saved jobs

Printing hints

If you compress the resolution of an embedded bitmap object at the application level, you can produce smaller pdf files.   This allows your job to transfer across the net faster and requires less DocuSP spool/disk space, and may process faster.

5   Finishing

The following section contains information about how to use subset finishing and mixed stacking on a printing job.

The finishing information below does not apply to Continuous Feed (CF) systems. For CF systems, the finishing configuration is defined at the CF (STAMPA) Controller. CF imposition files are used to impose documents for printing in conjunction with specific CF finishing configurations.

Subset finishing

Subset finishing is the capability to use different types of finishing (or no finishing) within the same job.   The ability to finish subsets independently is a critical feature for many variable data applications

This product allows more than one type of finishing within a single PostScript job. The supported finishing options and the output locations that can be used vary depending upon the printer type. The finishing options and delivery locations are the following:

- Portrait Stitch

- Landscape Stitch

- Dual Stitch

- Right Portrait Stitch

- Right Landscape Stitch

- Right Dual Stitch

- Bind

- Right Bind

NOTE: *The DT 61xx printers allow Short Edge Feed (SEF) only in paper tray 3, 4, and 5. The short edges of the stocks range from approximately 10 inches to 14 inches (254mm to 300mm).*

Creating jobs to use subset finishing

It is important that jobs intended to be printed using subset finishing be enabled with the following:

- PostScript code (using the "setpagedevice" operator)

- Variable Data Intelligent PostScript PrintWare (VIPP) version 2.0 or later.

NOTE: *Subset finishing can also be performed at the FreeFlow workstation through the Document Scan and Make Ready application.*

Subset offset (Page Level Jog)

The printer has the ability to offset on a page level. This support allows VIPP to be utilized for offset type applications. This ability permits jobs to be sent as one larger file with page level offset commands.

The term "Jog" is used to initiate offset behavior.

- setpagedevice jog 0 (The offset command is "OFF").
- setpagedevice jog 3 (The offset command is "ON").

A job with a multiple copy count with a "jog 3" should force offsets between each distinct set. A job with a copy count of 1 can contain "jog 0" or "jog 3" on a page by page basis. The system will alternate offsets between each alternating jog 3 and jog 0 command.

The following information should be considered when using the "Jog" command:

- The first jog command on a page will be honored and all others will be ignored.
- Multiple cases of jog 3 without the corresponding job 0's will be ignored.
- The Printer Manager's setting of offset "ON" or "OFF" should not impact the action of the PDL level jog commands. For example, if the Printer Manager's offset is set to "OFF" and a job has a jog 3, then the sets should be offset from one another.
- The DT/DP 75/90 allows subset offsets to the top tray. However, the 61xx is not mechanically capable of jogging to the top tray.

PCL offset/separator/subset finishing command

The use of the PCL separator command, <ESC>&l1T, in combination with DocuSP queue defaults enables subset finishing for PCL jobs. The PCL separator command defines offset segments of a job. PCL does not commonly support finishing. However, the use of the PCL separator command allows offset segments of a job to be finished based on the finishing default set on the queue. For example, if the queue default is portrait stitch, all segments of a job where the PCL separator command has been used will be stitched.

The placement guidelines are as follows:

- Current Page Offset: If the current page is to be offset from the previous page, then the PCL separator command must be placed on the current page before any image data. Placement should be within the job/page control section or before.
- Next Page Offset: If the next page in the document is to be offset from the current page, the PCL separator command must be placed at the end of the current page after any image items.

PCL Offset Stacking

Access the Offset stacking switch by opening Printer Manager and selecting the Stacking tab and then select [Offset Stacking].

To enable offset stacking for collated or uncollated jobs, select the enable checkbox. Both buttons are located under the collated stacking and uncollated stacking sections.

Using the PCS Separator

The following information should be considered when using the PCL separator command:

- The offset switch in Printer Manager in the DocuSP software must be set to ON. If the offset switch is set to OFF and a job with the PCL separator command is received, the sets will not offset when the job is printed.
- Multiple uses of the PCL separator command within a job will be honored.
- Multiple uses of the PCL separator command on a page will be ignored.
- All finishing limitations and restrictions at the printer will apply to a subset segment.

PCL paper source command

Use the PCL Paper Source command <esc & 1 # H> to program a PCL print job to use a specific paper. The PCL decomposer on the DocuSP Controller reads the paper source command and, using the PCL Paper Sources option in the Queue Properties and maps the command to the appropriate paper. The number code

corresponds to the following PCL Paper Source programmed in Queue Properties.

To program the PCL Paper Source, use the following guidelines:

Standard: <ESC>&11H

Manual Paper Feed: <ESC>&13H

Manual Envelope Feed: <ESC>&13H

Lower: <ESC>&14H

Large Capacity: <ESC>&15H

Envelope Feed: <ESC>&16H

Tray programming

Tray confirmation

Tray confirmation selections control:

- whether a confirmation pop-up window appears on the screen after a tray has been opened and closed
- what attributes are assigned to that tray
- whether the action is automatic or requires user action to confirm the programming change

To set tray programming options, perform the following:

1. On the main menu select [Setup]
2. Select [System Preferences]
3. Select the [Stocks and Trays] tab

Settings are system-wide and are applied immediately. No restart of the DocuSP software required.

Tray Confirmation options:

- **None** - No tray confirmation pop up. The system assumes tray refill, but if tray attributes change, the tray will fault. To clear the fault modify the programming to match the tray. In addition, the "New Stock has been Loaded" option must be selected.
- **When Tray Settings Change** - A tray confirmation pop up appears every time a stock attribute changes.
- **After Every Tray Cycle** - A tray confirmation pop up appears every time a tray is opened and closed, or the Printer reports a new stock attribute.

- **Auto Accept Settings Changes** - This mode will automatically update the tray programming on DocuSP to match what is reported by the Printer. This option is not available on Nuvera C/P.

NOTE: *Only System Administrators can set Tray Confirmation options.*

NOTE: *Tray confirmation is not available on iGen3 with DocuSP.*

Tray mapping

DocuSP allows the operator to select and save tray mappings for recurring jobs or for jobs needing the same mapping.

From the Printer GUI, the operator selects [Save Mapping]. The dialog box [Save Settings] enables the user to either select an existing mapping or create a new mapping by assigning a name and entering a description in the Comments input area. The operator can also delete mappings.

To apply the saved mapping to another print run, the operator accesses the Save Settings dialog box, selects the desired saved setting and selects [OK]. This action reprograms all the trays to the values previously stored.

Mapping trays to media

On the DocuSP printer, the media sources are set up for each queue on the printer interface. The user can map trays to media in the XPIF job ticket and then use the mapping with the embedded PCL paper source commands in the data stream.

Once the print job has been sent, the user cannot change media sources. However, the XPIF job ticket media source to tray mapping can be overridden for all the trays on the queue.

There are two ways in which an operator can specify the PCL tray to media mapping:

1. XPIF job ticket. This ticket must be pre-appended to the job.
2. IPP Attributes. The information in the XPIF ticket and IPP attributes become part of the job attributes sent to the system.

Backup and restore of tray settings

The saved mappings can be copied to a different system by using the DocuSP Configuration Backup/Restore utility from the System

Menu. DocuSP software allows the selection of individual components to back up and restore.

If a saved mapping contains more trays than the new system has, the user will be notified but the operation will continue with only the supported trays programmed. If the mapping contains fewer trays than those on the new system, the system will use only those programmed.

In either case, the operator will be notified but the operation will continue.

NOTE: *If the saved mapping contains programming for stocks that physically cannot be programmed on the new system, then this is an error and the operation will not continue.*

NOTE: *A mapping created on a monochrome or highlight color system can only be restored on another monochrome or highlight color system.Likewise a mapping created for a color system can only be restored on a full color system.*

NOTE: *If a mapping requires LCDS stocks MAIN, AUX or AUTO on a system that does support LCDS, then the operation will not continue.*

Stacking order

The user is able to specify the Output Set Stacking Order by the combination of Output Order (1 to N or N to 1) and the Output Delivery (Face Up/Face Down) selections.

These options can be set either at the Queue property level or at the Job property level as part of the job ticket output option.

Mixed stacking

Mixed stacking allows all completed jobs with different finishing to accumulate in the stacker until it is full or until the operator empties it.

The types of finishing that can be mixed include stitching, binding, and unfinished. The mixed stack can also include banner pages. The stacker can hold between 12 and 18 subsets of different types of finishing in the stacker before unloading.

Mixed stacking is enabled upon installation but can be disabled if you choose to do so. If you wish to have it enabled at a later date, a Xerox Service Representative must assist you.

Additional finishing information

The DocuSP is unable to dual staple 3-hole punched stock. If dual staple is selected when using pre-drilled paper, improper registration will occur. Select to single staple the job, or print on non-drilled stock and manually punch the holes after finishing of dual staple is complete.

6   Fonts

The following information explains how to use and choose fonts for a job. It also covers various resident and non-resident fonts and their availability.

How to choose fonts

Although document source files can specify almost any image on a printed page, images that contain letters, numbers, punctuation, and symbols are common enough to require a special mechanism for dealing with them, similar to movable type. This mechanism is the font. The DocuSP controller supports Adobe PostScript Type 1 and Type 3 fonts, PCL scalable and bitmap fonts, and TrueType fonts.

Fonts

The most important thing to remember is that the font used to create a document must also be available to the DocuSP controller.

NOTE: *DocuSP supports the euro character. Most font families include the euro character.*

At the DocuSP controller, a font can exist in three forms:

Resident fonts   A resident font is an internal font that is permanently stored on the DocuSP controller and is always available.

Soft fonts   An optional or soft font is a typeface that is loaded as needed at the DocuSP controller. This allows the DocuSP controller to be customized with special fonts, such as logos, or other special font applications as needed.

Downloaded font   A downloaded font is a font that has its requirements embedded in the actual source file. If this font is not available at the DocuSP controller, the downloaded information is used to process and print the document. Although it is useful, it also creates a much larger file size.

Downloading fonts from the network

Downloading commercial fonts from the Network allows fonts to be downloaded to the DocuSP Controller from both Mac or PC platforms. Supported application programs for font downloading are as follows: PC Platform - Adobe Type On Call; Apple Macintosh Platform - Adobe OCF, Marisawa, and Font Works

Font download can also occur on a queue designed specifically for the Appletalk gateway. This fonts usually a Japanese (double-byte) or Chinese type font set. Applications in the FujiXerox marketplace utilize the Appletalk two-way protocol to poll the printer and then download the massive character sets needed in these markets. In the U.S. marketplace the typical font loading mechanism is to hard drive in [Administration]. The use of English fonts from specific applications (e.g, Adobe has some) download from the AppleTalk gateway is not common.

Resident fonts

The DocuSP controller comes with a wide variety of fonts that are available when creating a document.

NOTE: *If you are unsure of the availability of a font, always consult with your print organization's management to determine which fonts are currently loaded on the DocuSP controller.*

PostScript resident fonts

The PostScript Type 1 typeface families listed in Table 7–1 are scalable, which means that all point sizes are supported, even intermediate point sizes. These include the typefaces that make up the LaserWriter IINTX basic font set, plus additional Type 1 fonts supplied by Xerox.

Table 6-1. PostScript Fonts

Font family	Stresses and weights
ACaslon	Italic, Regular, Semi Bold, Semi Bold Italic
AGaramond	Bold, Bold Italic, Italic, Regular
Americana	Americana, Extra Bold
AvantGarde	Book, Book Oblique, Demi, Demi Oblique
AdobeSans	MM
AdobeSerif	MM
Albertus	Italic, Light, MT
AntiqueOlive	Bold, Compact, Italic, Roman

Table 6-1. PostScript Fonts

Font family	Stresses and weights
Apple	Chancery
Arial	BoldItalicMT, BoldMT, ItalicMT, MT
Blackoak	---
Bodoni	Bold, BoldItalic, Italic, Poster, Poster Compressed
Bookman	Demi, Demi Italic, Light, Light Italic
Carta	---
CGBrn	PropRoman
Chicago	---
ChuGothicBB	
Clarendon	Bold, Light
CooperBlack	Regular, Italic, ThirtyThreeBC, ThirtyTwoBC
Coronet	---
Courier	Courier, Bold, Oblique, Bold Oblique, Regular
Eurostile	Regular, Bold, Bold Extended Two, Extended Two
ErorrHandlerFont	---
Garamond	Light, Light Italic, Bold, Bold Italic
Geneva	---
GillSans	Bold, BoldCondensed, BoldItalic, Condensed, ExtraBold, Italic, LightItalic
GothicBBB	Medium
Goudy	Regular, Bold, BoldItalic, ExtraBold, Italic
HeiseiKakuGo-W5	---
HeseiKakuGothic-W5	---
HeiseiMin-W3	---
HeiseiMincho-W3	---
FutoGoB101	All
FutoMinA101	All

Table 6-1. PostScript Fonts

Font family	Stresses and weights
Helvetica	Helvetica Black, Black Oblique, Bold, Bold Oblique, Oblique, Light, Light Oblique, Condensed, Condensed Bold, Condensed Bold Oblique, Condensed Oblique, Narrow, Narrow Bold, Narrow Bold Oblique, Narrow Oblique
HoeflerText	Black, BlackItalic, Italic, Ornaments, Regular
HonMincho-M	---
JL-PropRoman	---
Jun101	---
Joanna	Regular (MT), Bold, BoldItalic, Italic
Kaufmann	---
Korinna	Bold, Kursiv Bold, Kursiv Regular, Regular
LetterGothic	Regular, Bold, BoldSlanted, Slanted
Liithos	Black, Regular
LubalinGraph	Book, BookOblique, Demi, DemiOblique
MMMA-PropRoman	---
Marigold	---
MaruGothic	---
MidashiGO	---
MidashiMin	---
Mincho-PC	---
MonaLisa–Recut	---
Monaco	---
New Century Schoolbook	Roman, Bold, Italic, Bold Italic
NewYork	---
Optima	Bold, BoldItalic, Italic
Osaka	---
Oxford	---
Palatino	Roman, Bold, Italic, Bold Italic

Table 6-1. PostScript Fonts

Font family	Stresses and weights
Parisian	---
ParkAvenue	---
Poetica	SuppOrnaments
RLKL-PropRoman	---
Ryumin	---
ShinGo	Bold, Light, Medium
StempelGaramond	Bold, BoldItalic, Italic, Roman
Symbol	---
Tekton	Tekton, Bold
Times	Bold, Bold Italic, Italic, Roman
TimesNewRomanPS	Bold Italic MT, Bold MT, Italic MT, MT
Trajan	Bold
Univers	Regular, Bold, BoldExt, BoldExtObl, BoldOblique, Condensed, CondensedBold, CondensedBoldOblique, CondensedOblique, Extended, Light, LightOblique, Oblique
Wingdings	---
Woodtype Ornaments	Two
XeroxLogoTypes	---
ZapfChancery	Medium Italic
ZapfDingbats	---

PCL resident fonts

There are three types of PCL 5e resident fonts that are permanently loaded at the DocuSP controller:

- Scalable Intellifont typefaces
- LaserJet IV bitmap typefaces
- Typefaces that match the TrueType fonts as shown in Table 7–2.

NOTE: *These are the same internal typefaces that are provided with the HP LaserJet 4 printer.*

Table 6-2. PCL Resident Fonts

Font family	Typefaces
Arial	Regular, Bold, Italic, Bold Italic
Antique Olive	Antique Olive, Bold, Italic
CG Times	CG Times, Bold, Bold Italic, Italic
CG Omega	CG Omega, Bold, Bold Italic, Italic
Clarendon	Condensed
Coronet	---
Courier	Courier, Bold, Bold Italic, Italic
Garamond	Antiqua, Halbfett, Kursiv, Kursiv Halbfett
Helvetica	Bold, NR, Ob, BdOb, NrOb, NrBdOb
ITCAvantGuard	---
ITCBookman	---
Letter Gothic	Letter Gothic, Bold, Italic
LinePrinter	---
Marigold	---
Times New	Regular, Bold, Bold Italic
New Century Schoolbook	---
Palatino	---
Symbol	---
Times	---
Wingdings	---
Univers	Medium, Medium Condensed, Medium Condensed Italic, Medium Italic, Bold, Bold Italic, Bold Condensed, Bold Condensed Italic
ZapfChancery	---
ZapfDingbats	

Table 6-3. PCL 5e Resident Bitmap Fonts

Font family	Typefaces
Line Printer 16.67 pitch 8.5 point	Portrait, Landscape
Arial	Bold, Bold Italic, Italic
Times	New, New Bold, New Bold Italic, New Italic
Symbol	---
Wingding	comparable Tidbits

Non-resident fonts

There may be many fonts available in your application that are not resident at the DocuSP controller. There are two options for using non-resident fonts to create a document.

Downloaded fonts

If you expect to create a document using fonts that are available on your workstation but not available at the DocuSP controller, your application may automatically download the font when the job is sent to the printer. Fonts downloaded in this manner are considered "temporary" and are deleted from the DocuSP controller as soon as the job is printed.

NOTE: *Refer to your application documentation for more information on downloading fonts in your document.*

If you are using a font in your application that has the same name as a resident font but is a different version, it must be downloaded with the job. The DocuSP controller will use the downloaded font rather than the resident font.

NOTE: *Marking a font for "permanent" downloading in your application is not supported.*

Optional or soft fonts

Downloading fonts each time you print will increase the size of the file and result in a longer transmission time. If your print jobs regularly require a font that is not a resident font, you may request to have it installed as an optional font at the DocuSP controller. Your printing organization's font policy should give you the specific information you need to request a special font.

Font substitution

A document may require a font that is not available at the DocuSP controller and has not been downloaded with the source file. When the requested font is not available, font substitution will take place.

PostScript fonts

A single default font, set by the System Administrator in the DocuSP software, will be substituted for any font requirements that cannot be met at the DocuSP controller. A message will be printed to confirm that a substitution has taken place.

PCL 5e fonts

Another type of substitution occurs for PCL fonts. If a requested PCL font is not available, the DocuSP controller will determine which available font best matches the requested one and perform the substitution. Any PCL stream that does not have any fonts specified in the file will have the default font programmed in the "PCL font" section for the corresponding queue in Queue Management.

7   Accounting and Billing

The following section explains the various accounting log versions that are available for systems configured with accounting and billing capability. It also lists the billing meters for each region and an explanation of each meter.

Accounting

The accounting function in the DocuSP software produces a number of reports that enable the administrator to accurately bill customers.

Auto exporting accounting log

The Accounting function will automatically export and purge the accounting data when the database reaches 80% full. This will protect data from being overwritten before the log runs out of space. The export function is performed automatically. and then the file is saved automatically to a designated directory.   The default file directory where the accounting log is saved is: /export/home/xrusr/accountingexportfiles.

NOTE: *When purging, the oldest entry is purged first.*

Accounting exported values

The Accounting feature tracks all jobs that have been processed and printed, enabling your site to charge for use of the Xerox printing system.

There are various versions of the accounting log supported by DocuSP for exporting. The following list describes each version. Refer to online Help for more details.

- Version 2: This is the most common version that is supported for the DocuSP printing system. If this version is selected to be exported, it will not include any new accounting entries.

- Version 3: This version will export all entries that are new and old, having zero and non-zero values. Additionally, entries will be exported that are not viewable on the interface. These entries are: Channel Idle Time, Initial JDL, Initial JDE, DJDE Records Read, and Lines Printed.

- Version 3.1: This version is similar to Version 3 and includes the same exported values as Version 3, that is, all entries that are new and old having zero and non-zero values. But Version

3.1 also includes the following fields:

– Interrupt Status: Options are Interrupt and Interrupted.

– Job Source: Indicates the Gateway through which the job was submitted.

– RIP Interrupt Time: Displays how long the job was suspended in the RIPing status if the job was interrupted by a "Print Now" job.

• Version 4.0: This version is similar to version 3.1and includes all the same values as Version 3.1. However, it also includes the exported value for Trapping. The number displayed will be the total number of pages trapped within a job.

• Version 5.x: This version exports all entries including those for color attributes.

• Version 6.x: This version contains Account ID, User ID, and additional job data for the purpose of identifying who ran jobs and the account to which users are assigned.

• Version 8.x: This version contains LCDS information including Final JDL and Final JDE.

Accounting file fields

The following information will help you identify accounting fields when viewing the accounting and billing information.

Job ID   System assigned ID number. When a job is sent to be printed or saved, it is given a Job ID that the system uses to track the job. Job IDs are generated sequentially, but the numbers can be reset.

Container ID   System assigned ID number. The Container ID always has the same number as the Job ID.

Report ID   Report ID for the job.

Host Job Number   Host supplied job number, as extracted from the data stream.

Record status   This field will have one of the following values:

• Complete.

• Quantities shown may be less than actual.

• This is normally caused by the loss of marker data in the Accounting structure. For example, Copies Printed, Total Color Pages Printed, etc.

- Descriptive data was lost. Quantities shown are correct.

This is normally caused by the loss of job-related data in the Accounting structure that was later successfully recovered. For example, Job Number, Job Status, etc.

Descriptive data was lost. Quantities shown may be less than actual.

This is normally caused by the loss of job-related data in the Accounting structure that could not be recovered. For example, Job Number, Job Status, etc.

Document Name   The name of document or set to create.

Document Date   The date of the document or set to create date.

Sender Name   Specified at or by the submitting client.

Recipient   Specified at or by the submitting client.

Account   Specified at or by the submitting client.

Disposition   This field will have one of the following values:
- Print
- Save

Job Status   This field will have one of the following values:
- Completed
- Completed with warnings
- Completed with errors
- Undefined
- Faulted
- Cancelled by user
- Cancelled by operator
- Aborted
- Rejected
- Held by user
- Held by operator
- Save completed
- Save completed with warnings
- Save completed with errors

Interrupt Status   This field will have the following values:
- No Interruption

- Interrupted
- Interrupt
- Interrupt Interrupted

Print Server Name This is the name of the Sun platform running the DocuSP software; it is also the remote host name for the DocuSP controller (e.g., adldp6135/6180).

Virtual Printer Logical name for printer queue assigned at startup. (e.g.,dp6135/6180).

Machine Type

Printer Type This field will always be the type of printer.

Job Source Source of the job being submitted.

Channel Idle Time (milliseconds) Specifies the amount of time the Channel was idle in milliseconds.

Job Submission Date Date and time job submitted in standard UNIX time format, i.e., in seconds past midnight GMT, on Jan 1, 1970. (e.g., 835709136 is June 25, 1996 09:25:36).

Input File Size (bytes) Size of file in bytes. (e.g., 1751).

Job Format

PDL Format The source Page Descriptor Language of this job. This field will be one of the following:

- Ascii
- Binary
- HPPCL
- Interpress
- LCDS
- PostScript
- PostScript2
- PostScript Query
- TIFF
- PDF
- IPDS
- HTML
- DocuJob

- Internal
- Native

Start RIP Time	Date and time Raster Input Processing (RIP) started.
Stop RIP Time	Date and time RIP completed.
Elapsed RIP Time (seconds)	Difference between Stop RIP Time and Start RIP Time, in seconds.
Account ID	
User ID	
Additional Job Data	
RIP Interrupt Time (seconds)	Total amount of time RIP was suspended for the job, in seconds.
Initial JDL	Path to JDL for LCDS document submission.
Initial JDE	JDE selection. This is used in combo with the Initial JDL in the LCDS document submissions.
Records Read	The number of records read from a record data stream.
DJDE Records Read	The number of DJDE records recognized.
Data Blocks Processed	Number of blocks read processing the current job.
Data Blocks Skipped	Number of blocks skipped processing the current job.
Number Pages RIPed	Number of processed pages.
Total Pages Trapped	Number of pages trapped.
Total Anti Aliased Pages Processed	Total number of Anti Aliased pages processed.
Start Date	Date and time job printing started.
Completion Date	Date and time job printing completed.
Pages To Print	Can be a range (e.g. 5 - 8 or All). If not specified, this field (attribute = value pair) will not appear in the Exported File.

Collate Mode	Indicates whether to collate output (Yes/No).
Copies Requested	Number of copies the user wants to print. If the job is sent requesting 10 copies, and held when 5 are printed, Copies Requested will be 10 and Copies Printed will be 5.
Copies Printed	Number of copies actually printed.
Total Sheets Greater than 9" Wide Printed	Total number of sheets printed for which the job was greater than 9 inches wide.
Total Sheets Greater than 345mm Wide Printed	Total number of sheets printed for which the job was greater than 345 mm wide.
Total Sheets Printed	Total number of sheets printed for the job, including any banner or error pages.
Total Impressions Printed	Two-sided sheets (printed both sides) count as two impressions; single sided sheets count as one impression.
Pages to Bin	Total pages delivered to output bin for job.
Pages to Tray	Total pages delivered to tray for a job.
Number 1-Sided Sheets Printed	Number of single sided sheets printed.
Complexity Induced Skips	
Number 2-Sided Sheets Printed	Number of double sided sheets printed.
Lines Printed	Number of lines printed for a job.
Pages Spaced	Number of pages spaced for a job.
Total Black Only Pages Printed	Total number of black-only pages printed in a job.
Total Color Pages Printed	Total number of color pages printed in a job.
Complexity induced Skips	Number of blocks skipped while processing the current job.
Finishing Applied X	Contains the finisher name (number X=1...10).

Medium X, Number Printed	A count of the quantity of sheets of medium (number X=1,2,...) (e.g., 25).
Medium X, Type	The type of medium (number X=1,2,...). Field will be one of the following:

- Plain
- Transparency
- Full Cut Tab
- Precut Tab
- Ordered Stock
- User defined

Medium X, Modulus

Indicates number of parts supported by the form associated with this medium (number X=1...10).

Medium X, Size	Page size for medium (number X=1...10). Field will be size of the paper stock (for example, 8.5 x 11.0 in., 8.5 x 14.0 in.,...).
Medium X, Color	Color of medium (number X=1,2,...). Field can be one of the following:

- White
- Clear
- Pink
- Red
- Yellow
- Blue
- Green
- Buff
- Goldenrod
- User defined

Medium X, Name	Text name of medium (number X=1...10).
Medium X, Opacity	Opacity of medium (number X=1...10).
Medium X, Holes count	Number of pre-punched holes in medium (number X=1...10).
Medium X, Grain	Grain of medium (number X=1...10).
Medium X, Finish	Finish of medium (number X=1...10).

Medium X, Weight	Density of medium (number X=1,2,...). nn.n g/m². (e.g., 75.0 g/m²).

Job Notes window

The Job Notes window displays accounting information as well as user information. The following accounting and user fields have been added and displays, exported, and printed as part of the accounting log.

- Account Info
- Account ID.
- User ID.
- Additional Account Information: This field will accept up to 255 characters.

NOTE: *These attributes are support by IPP, Reprint, LP, LPR and XPIF.*

Billing

DocuSP maintains a billing meter for a number of billable events for systems configured with billing capability.

Billable events

NOTE: *For CF systems, billing meters are maintained within the print engine. For additional information, contact a Xerox Service Representative.*

Xerox billable events include the following:

- Waste sheets that are sent to a stacker as part of the process to resolve a condition in the system.
- Waste sheets that are manually removed from a stacker.
- Each impression or imaged side of a sheet.
- Administration pages, such as the banner page or error page.
- Internal reports, such as billing or accounting reports.
- All completed sets and stacks.
- Sample jobs.

- Any partial sets that are generated by a programming conflict, a PDL error, or a cancellation of a print job by the operator during printing.

Administration pages and sample jobs will be billed as 1-sided sheets.

Billable events do not include the following:

- Blank sides inserted by the system; for example, the last page of an odd-numbered 2-sided job.

- Any partial sets generated when the system fault recovery forces the job to be saved or cancelled during printing.

- Slip sheets.

- Blank sheets.

- Blank sides created as part of the job.

- Fuser cleanup sheets.

- Waste sheets that are manually removed from the feeders and print engine.

- Sheets purged by the system for fault recovery or image quality adjustment.

Billing meters

The Xerox Billing Meter window tracks the time and date of the last meter read and the following Print Billing Report options are retained between restarts:

- Queue name for printing the Billing Report.

- Customer ID (Customer Name)

- Machine ID (serial number).

The printing information is pre-loaded and only needs to be entered once in the system. The customer or service representative completes the entry and prints the Billing report. This stores the values. But if the values stored are in error in some way, they are editable.

Table 7-1 Billing Meters for Regions

Market Region	Billing Meters for Region
Region 1	Meter A: Total impressions to an output destination including Administration Pages. Meter B: Total impressions for each image of the job up to and including the last sheet of the 10th set. Does not include Administration Pages.

Market Region	Billing Meters for Region
Region 2	Meter 1: Total impressions to an output destination including Administration Pages. Meter 2: Total impressions printed on sheets wider than 9". Includes Administration Pages. Meter 3: Total impressions for sets 11-18. Begins counting with the first image in set 11 and stops after the last image in set 18. Does not include Administration Pages. Meter 4: Total impressions in set 19 of every document printed. Does not include Administration Pages.
Region 5	Meter A: Total impressions to an output destination including Administration Pages.
Region 6	Meter 1: Total impressions to an output destination including Administration Pages. Meter 2: Total impressions for each image of the job up to and including the last sheet of the 10th set. Does not include Administration Pages.

8 Troubleshooting

This section covers the various faults that you may encounter in using DocuSP. Declared faults are those that display a message to indicate a problem. Undeclared faults are problems that you may encounter that do not display a message or a visual indicator on the user interface.

Calling for service

Before calling the Customer Service Support Center, ensure you have read this information and have tried the corrective actions described in this document. If the problem persists, gather the necessary information and call the appropriate Customer Service Support Center phone number. Your site representative can supply you with the telephone number for the Customer Service Support Center in your area.

The Xerox Welcome Center number is (800-821-2797). The customer support direct TTY number for assistance is 1-800-735-2988.

Before calling for service, make note of the following:

• Print/job fault messages that appear on the system controller.

• Status messages that appear on the printer control console.

• Indicator lights that may or may not be lit.

• Status codes that appear in the message display of the tape drive control panel if there is a tape drive problem.

Your call is answered by a representative who asks you for your equipment serial number. Ensure that you have this available at the time of the call.

Declared faults

Declared faults that you may encounter on your system are categorized as printer faults or job faults.

Printer fault

An indicator appears on the DocuSP user interface when a printer fault occurs and the Printer Faults window appears. The Printer Faults window displays all existing printer faults. Selecting a fault on the list opens the Fault Clearance window. Proceed to clear the fault by following the instructions in the Printer Faults Clearance window.

NOTE: *Closing the Printer Faults Clearance window does not clear the fault.*

Disk Usage - example of a declared fault

If a machine has too much disk space used, a Disk Usage fault is declared by DocuSP. The user is instructed to click on the Disk Usage icon located on the main menu bar.

The System Administrator can free up disk space by moving data to another disk partition and by managing system resources and assets.

From the Disk Usage icon, users can navigate to:

- System Disk properties to view information for each partition such as disk size, used space, free space, normal disk usage, etc.

- Clean Disk screen to clean up disk partitions that are within the warning and error usage range. The clean up operation removes waste files crated by system crashes.

Job fault

A job faults if a requirement of the job can not be met. All faulted jobs are displayed in the Faulted Jobs window. Selecting Jobs Faults displays the Job Fault Clearance window. Follow the instructions on the window to clear the job fault. To avoid common job faults, ensure that the paper that is programmed for the job is available and that the finishing programmed is acceptable and available.

Undeclared faults

The following list describes possible undeclared faults that you may encounter:

- Client Problems: Client problems include job submission

problems with no message displayed at the client workstation.

- Graphical User Interface (GUI) problems: GUI icons or windows do not appear correctly, do not operate correctly, or disappear suddenly.

- Print quality: The output from the printer contains image defects such as deletions, problems with lines, missing images, smudges, shading, or text problems.

- Font problems: The output from the printer contains font defects, such as incorrect character spacing, jagged characters, text running off the page, or sentences running into each other.

- Inoperable system: The inoperable system has experienced an unrecoverable software error due to a job or operator action.

- Job flow: Jobs sent from the client are not received at a printer queue.

- Job integrity: The output from the printer is not as expected; it may have missing pages, missing data, incorrect page orientation, incorrectly ordered sets, or job attribute inconsistencies.

- PDL problem: To isolate these problems the system administrator may ask the job submitters when they are experiencing problems with printing.

- Process problems: A process was followed incorrectly or unintentionally.

- Productivity and performance: The job takes an excessive amount of time to complete.

- Save problems: A job is submitted from a client with a Save destination, but the job is not saved.

SNMP problems

If there is no response from the agent to the browser, one or all of the following steps can be taken:

1. Log in as root.
2. # prstat

   This shows whether the agent is running or not. It may be that processes are consuming processor time. Normally you should see that the agent is taking up less than 1%.

3. ps -ef | grep agent

   This indicates if the agent is alive. The number 9252 is important for the pstack command below (the number varies).

   root **9252** 9221 0 16:36:00 consoler 0:08 /opt/XRX/XRX/ snmp/agent

4. pstack **9252**

You should see the above since the agent should be inactive most of the time. If you see something other than the above, the agent is not functioning properly. You may take an outload or call Service.

Client problems

Client problems are handled differently depending on the client platform used.

Windows problems

A job is submitted from a Windows client and is not received by the printer queue.

If the Xerox Document Submission client application does not run properly or the job cannot be submitted to a queue, perform the following:

The user must exit the Xerox Document Submission and Windows applications

Verify the user is logged on to the appropriate file server.

Restart the Xerox Document Submission software at the client workstation.

Macintosh problems

A job is submitted from a Macintosh client and the printer queues cannot be viewed.

If the Macintosh client cannot view any printer queues from the Chooser, perform the following:
1. Verify that the AppleTalk network is up and that there is at least one router on the network.
2. If there is no router on the AppleTalk network, jobs cannot be submitted through the AppleTalk gateway. When a router becomes available, reboot the controller to submit jobs through the AppleTalk gateway.
3. If there is a router on the Apple Talk network, delete the "/opt/XRXnps/bin/atports" file at the controller and reboot.

NOTE: *You must be logged in as the root user to delete this file.*

FreeFlow problems

A job is submitted from a FreeFlow client and does not print.

If the message, **"Warning: cannot open the file xdms/ <filename>.gf/<filename>.tif. Select OK to continue or cancel to stop the print job."** is displayed, perform the following:

1. Place the queue to which the DigiPath jobs are being sent on hold. Do this by changing the accept status to "no".
2. Wait until all jobs have completed printing.
3. Purge the `/var/spool/XRXnps/var/spool/data/ xdms` directory.

GUI problems

If any of the modules of the DocuSP do not function or if you cannot use Exit to restart the system, perform the following:

- DocuSP icons disappear or do not respond.

- If the GUI opens with a black, blank background and the label names of the modules do not appear correctly, perform the following:

1. Determine if the **/opt/XRXnps/XRXservui/data/locale/ <locale*>/resources** directory exists.
2. Determine if the **/opt/XRXnps/XRXservui/data/ui.mn.con- fig** file exists.
3. If the above files do not exist, set the XAPPLRESDIR environ- ment variable by entering the following:

setenv XAPPLRESDIR/opt/XRXnps/XRXservui/data/locale/ <locale>resources

NOTE: *The "Locale" is the locale of your server.*

  - **en_US** for U.S. English
  - **in_UK** for U.K. English
  - **fr** for French
  - **es** for Spanish
  - **de** for German
  - **it** for Italian
  - **ja** for Japanese

Tape Client problems

Verify that the `tcmrpcsvc` process is alive:

 ps -ef | grep tecmrpcsvc

Isolate the problem by monitoring the tcmrpcsvc process operations using the following procedure:

1. Log in as root.
2. Kill `tcmrpcsvc` process

3. Restart tcmrpcsvc process with

   /opt/XRXnps/XRXtpclnt/bin/tcmrpcsvc

   from a terminal window to monitor its output message.

4. Start Tape Client user interface in stand-alone mode with

   opt/XRXnps/XRXtpclnt/bin/tapeclient

   from a terminal window to monitor its output message.

Print quality problems

An image quality problem exists if a job has been submitted successfully, but does not print correctly.

NOTE: *If Image Quality parameters are changed, the DocuSP software must be restarted for the change to take affect.*

NOTE: *The Image Quality default settings are optimized for the printer. If changes are made, the factory installed defaults can be restored by selecting [Defaults]. Selecting [Reset] sets the Image Quality parameters to the most recently applied setting.*

To determine the print quality problem and possibly fix the problem, perform the following:

1. Retrieve the error page if one was printed.

2. Submit the job to a draft PostScript printer if one is available to determine if the master is valid.

3. Ensure that jobs are sent to the correct queue.

4. Ensure that a valid PDL is used.

5. If the problem still exists, recreate the job with a different print driver and resubmit the job to the printer.

Font problems

A font problem exists when incorrect printed fonts have character spacing, jagged characters, text running off the page, or sentences running into each other.

To determine and fix the font problem, perform the following:

1. Determine if the font is being downloaded with the job.

   NOTE: *If a downloaded font is not found, font substitution occurs and an error page is printed.*

2. If the font is not being downloaded with the job, determine if the font is loaded on the server by viewing the Fonts module of the DocuSP.

3. If jagged characters are seen, determine if there is a scalable option available for that font and whether the user selected that option.

4. For incorrect characters or text that runs off the page, determine if the document was created with one driver and printed with another driver.

5. If you are comparing prints from a proof printer, ensure that the same PDL file was used to make the prints on both printers.

6. If small fonts are printing ragged, change the default font renderer in Print Manager from the "Adobe Type Manager" to the "Font Solution".

Inoperable system problems

Determine which partition is full by opening a terminal window and perform the following:

1. Telnet using another system into the controller and use the su command to become the root user.

2. At the # prompt, type:**sync; sync; halt** and press <Enter>.

3. At the ok prompt, type **boot**

NOTE: *Pressing <Stop> and <A> may result in lost information if a job is currently being received by the system. Jobs would need to be resent.*

Job flow problems

If a job is submitted to a printer but does not print, this is a job flow problem.

Determine the status of the printer, printer queue and ensure that the queue is set to release jobs.

Determine which partition is full by opening a terminal window and entering the following:

• df -k

• If the /var/spool/XRXnps/outQ partition is full, go to the DocuSP user interface. Open [Preferences] and then [Job Policy]. Set the system to small partitions or large partitions to avoid saturating the outQ.

• If the /opt partition is full, delete unnecessary files and compress and move any core files that are in the /opt/XRXnps/ corefiles directory.

• If the /var/spool partition is full, determine the size of the /var/spool/XRXnps/inQ directory. If a job is larger than half the size of the directory, delete the job and restart the Xerox software.

   If the job is small, store it on a server and resubmit the job from the client.

   Delete any faulted, ineligible, or held jobs that are no longer needed. Also, delete any completed jobs in the /opt/XRXnps/log/errorLogs directory.

• If any other partition is full, free space on the partition by deleting any unnecessary files.

- If only one job is in the printer queue, cancel the job and resubmit as smaller files.

If the job is in PostScript, ASCII, or TIFF format and the job status is "processing", perform the following:

1. Hold the job.

2. Resubmit the job to a draft PostScript printer to determine if the master is corrupted. If the job prints without problems, contact the Customer Support Center.

NOTE: *If a job that is known to be without faults has been submitted and does not print, shut down and restart the DocuSP software.*

If an active job has a status of "printing" or "waiting for the printer" and does not print and there are no faults or messages displayed, perform the following:

1. Open the printer door. If a message appears in the faults and messages frame, then the communication with the printer is working.

2. Restart the DocuSP software. If the problem still persists, contact the Customer Support Center.

Job integrity problems

If the job does not print as expected (missing pages, missing data, incorrect page orientation, incorrectly ordered sets, job attribute inconsistencies), perform the following:

1. Check the job properties to ensure proper programming.

2. Check for any queue override attributes that may be conflicting with the job programming.

3. If the job is PCL or PostScript, check for job ticket information that may have created a problem with the job. Make changes and resubmit the job.

Tray to media mapping problems

The JPM logs contain the job attributes that the XPIF library is setting. In cases where the tray to media mapping is not happening as expected, then this log can give clues on how the mapping is being translated into job attributes.

/opt/XRXnps/log/JPM.Debug.Log

Gateway problems

Gateway logs reveal how the data is being received by the system.

/opt/XRXnps/log/CGAPI.Debug.Log (for IPP gateway)

/opt/XRXnps/log/XLP.Debug.Log

/opt/XRXnps/log/Socket.Debug.Log

PDL problems

If a problem exists with a PDL job, the System Administrator can ask the job submitter specific questions to identify the problem. Possible questions that may help are the following:

- What printer driver was used to create the file?
- What application was used to create the file?
- Do all applications create this file format?
- Have you tried to use a different printer driver? If not, do so to conclude if it also creates problems.
- Has the file printed previously on a different printer?
- Was the file recreated and resubmitted?
- Have you checked to see if the destination queue is accepting files? Were the resources adequate?
- Did this file or a similar file print on a previously installed version of the system software?

PostScript problems

The following questions may be helpful to ask when trying to isolate a PostScript problem:

- What printer driver was used to create the file?
- What client/application was used to create the file?
- Was the file recreated and resubmitted with a different driver? What was the result?
- Is there a printed PostScript error page, and what errors were listed?
- Is the queue faulted, or is it accepting jobs?
- Did this file or a similar file print on a previously installed version of the system software?
- Will the job print on any other PostScript printers?
- Does the PostScript file distill properly using Acrobat Distiller?

TIFF problems

The following questions may be helpful to ask when trying to isolate a TIFF problem:

- Is the file a true TIFF, or is it a TIFF wrapped in a PostScript wrapper?

- Did the PostScript error page list the error as "Decomposition Task Failed" to indicate that the tags and compression formats of this file are not supported?

- What type of client and application were used to submit the file?

- Can the TIFF image be viewed using any software package?

- Does the error page list errors such as "image mask", "Xeroximage" or "image" to indicate that the FTP transmission of the file has corrupted the TIFF image data?

- If the file has an orientation problem, has an attempt been made to change the orientation using the Xerox Client Software print command orientation switch?

- What compression format was used to compress the file?

- What dots per inch (dpi) resolution was used or intended for the file?

PDF problems

The following questions may be helpful to ask when trying to isolate a PDF problem:

- Was the PDF created from the original PostScript using the latest version of Adobe's PDF Distiller?

- Does the original PostScript file print correctly?

- Will all of the pages of the job open with Adobe Acrobat?

- What application and/or PDF software created the PDF file?

- With the printer's error pages turned on, does the printer produce a PostScript error page?

- Has the file been redistilled again using a newer PostScript?

- Are all of the document fonts downloaded and included within the job?

- What was used to create the PDF? PDF Writer or Adobe's PDF Distiller?

Editor problems

For problems with the Editor, diagnostic and troubleshooting should start with the Editor. The following is the command that validates that the Editor is "alive ":

ps -ef|grep XRXuiEdit

The administrator may be able to isolate the problem by monitoring the XRXuiEdit process operations and following these steps:

1. Login as root.

2. Kill `XRXuiEdit` and GUI process.

3. Copy the updated executable class file over to the system:

4. `opt/XRXnps/XRXuiEdit/bin/pdfView Edit/*.class` files and

5. `opt/XRXnps/XRXuiEdit/bin/pdfParser/*.class` files.

6. Restart the DocuSP GUI using `./startGUI` command.

7. Verify the `/opt/XRXnps/logs/ui_logs` from a terminal window to monitor its output message.

Restore password

To restore the default password if an operator or system administrator forgets the system password, perform the following:

1. Open a terminal window.

    Logon as the root user by typing **su** and select <Enter>.

2. Enter the password and select <Enter>.

3. At the prompt (#), enter the following: `cd /opt/XRXnps/` `XRXui61XX/data` and select <Enter>.

4. Type: `ls -la` and select <enter>.

5. Delete the files ".npw" and ".sum" by typing `rm .npw .sum` and selecting <enter>.

6. Open the System menu and select [Logon]. Select the desired user type and enter the password. Select <OK>.

7. An error message displays, "A problem was detected in the password file." Select <OK> and retype the default password again and select <OK>.

8. A message displays in the main window which reads, "Missing password file recreated."

9. Select on the "missing password file" recreated message. A pop-up window displays the service code C03-501. Another message is displayed which reads, "The missing password file has been recreated. All current passwords are now valid. Contact the system administrator to install operator and system administrator passwords."

10. Select [Reset].

Restart DocuSP software without rebooting

If [Exit] is accidentally selected from the Xerox software, perform the following to start the software without rebooting the controller:

Open a terminal window and enter the following:

.openwin-init

Productivity and performance problems

If a job takes longer to process than anticipated and a performance problem is suspected, take the following steps to check the system:

1. Check the job status in the Job Manager window.

2. If the job status is Hold, select [Release] to process the job.

3. If the job is RIPing, check the performance meter. If the CPU activity is high, the decomposer is working. If this is not true, restart the DocuSP software.

4. Submit the job to a draft printer to determine if the master is valid.

5. Check the time on the decomposer that is working on the job. For example, if the job is a PostScript job, type the following in a Terminal Window: ps -ae|grep ps_cdf

    The system returns a time value along with the process ID of the PostScript decomposers that are running. Wait, then repeat the command. If the time displayed is increasing, then the job is RIPing.

    For a PCL job, type: ps -ae|grep pcl_cdf

    For a TIFF job, type: ps -ae|grep tiff_cdf

6. If problems still persist, contact the Customer Support Center.

Problems when saving a job

If a job was submitted from a client with a save destination, but is not saved, perform the following:

1. Ensure that the banner and error pages are enabled,

2. Submit the job for printing.

3. Check the error page for the words "OFFENDING COMMAND". The words after this instruct what to do to fix the file.

If there is a problem with a job saved to CD, the administrator uses the following:

#cdr -1 lists all the CD writers found in the system.

cdrw -M reports media status. CDRW reports if the media is blank or note its table of contents, the last session's start address, and the next writable address if the disk is open.

Printing system logs

System logs gather information to recover various system problems.

Logs are used to gather second level information on the operation of the system. These should only be used when directed by this guide or by the Customer Support Center. All logs are found in the /opt/XRXnps/log directory. The most recent entry is at the bottom of the file.

all_jobs_log

The all_jobs_log contains information about the status of various tasks associated with processing a job, such as decomposing, marking, and printing.

The format of the file is as follows:

Logging Module /t# Absolute Time /t# Job ID /t# Message

system_log

The system_log contains information about general high level system events such as the initialization of software or the starting of a process.

The format of the file is as follows:

Logging Module /t# Absolute Time /t# Message

status_log

The status_log contains information about the attributes of a job once it has been accepted and tracked by the system.

The attribute information found in this file is as follows (the sequence and attributes displayed vary with the job):

Logging Module /t# Sender Name /t# Data Size /t# Document Name /t# Document Format /t# Job ID /t# Virtual Printer Name /t# Message /t# Time /t# Network Protocol /t# Assigned Physical Printer /t# Plex /t# Plex Requested /t# Disposition

ep_exception_log and ep_primary_log

These logs contain a list of faults. The ep_exception_log contains a listing of all logged faults. The ep_primary_log contains exceptions that are the primary cause of the problem.

The format of these files is as follows:

Logging Module /t# Absolute Time /t# Microseconds /t# Instance ID:Module TD /t# Exception ID /t# Service Code

LPR logs

The following logs are important for troubleshooting problems in mapping NPS and DocuSP:

- LPR logs that contain information related to the LPR gateway such as missing jobs or communications problems.

  Examples: `/opt/XRXnps/log/XLP/Debug.Log`

- JPM logs that contain information related to the Job Pool Manager (JPM). The attribute set by the LPR Gateway can be checked and verified by looking at this log: `/opt/XRXnps/log/JPM.Debug.Log`.

Printing the accounting log

Print the Accounting log to gather information and recover from various accounting problems. Either the entire Accounting log or a portion of the log may be printed. This can be completed on the DocuSP interface in the [Administration] section.

LP/LPR and the ASCII job tickets

The following procedure is used to verify that the attributes and options are correct:

1. Open a terminal and login as root

2. Enter: `setenv LD_LIBRARY_PATH/opt/XRXnps/lib`

3. Enter: `[/home/rlech/bin]getAttrsTv`

4. The program executes and lists valid options.

5. Enter: `g j` ,the job number from Job GUI>

6. The job attributes display.

NOTE: *For detailed procedures see the Online Help.*

Rebooting and restarting

Recovery procedures throughout this guide instruct you to either reboot or restart the software.

To reboot the system and perform a file system check, perform the following:

1. Place your mouse cursor in the background outside of the DocuSP Print Services window.

2. Right-click and select [Programs].

3. Select [Terminal].

4. Put your mouse cursor in the window and type: **su**

5. Select <Enter>.

6. Type in your root password.

7. Select <Enter>. A # symbol displays.

NOTE: *When entering text, do so in lower-case because UNIX is a case sensitive system.*

8. Type: **sync; sync; halt**

9. Select <Enter>. The system reboots.

10. A Program Terminated message and an OK prompt display. Type **boot -s**

11. Select <Enter>. The system reboots.

12. When you receive the following message, "Type Ctrl-d to proceed with a normal startup, (or give root password for system maintenance)" type the root password again.

13. Select <Enter>.

14. Select the <Ctrl> and <d> keys on your keyboard at the same time to complete the boot.

NOTE: *This procedure performs the file check and takes about one minute. The # symbol appears again.*

If there are problems starting the software, check the console window for messages.

Loading XJDC/Unix

The Xerox Job Description Compiler is loaded by entering the following on the command line:

/opt/XRXnps/bin/XJDC [-option[,option...]] <filename> ..

The **filename** is the name of the JSL file that is to be compiled. The JSL filename is required to terminate with the suffix.jsl or .JSL. The filename may contain path information.

Many options may be specified and shown in the above example. The **options** may be specified in any order and are 3-character abbreviations. A list of the available options and their abbreviations are as follows:

- REPlace / NOReplace: Replace or backup existing PDL object files.

- DISplay / NODisplay: Display or suppress XJDC messages.

- PRInt / NOPrint Generate: JSL compilation listing always or only when errors/warnings occur.

- TRUncate / NOTruncate: Truncate or accept JSL source lines after 72 characters.

- LABel / NOLabel: Generate or suppress 128-byte Xerox standard label.

- COMpile / SCAn: Compile with output or scan only.

- SINglebyte / DOUblebyte: Use singlebyte or doublebyte code and printer carriage control translation files.

- Vx: LPS PDL version number, x = 10, 2, 35, 3615, 37, 38, 39, 40, 50, 3A, M10.

- PAPersizes: Paper size to use for PDL VM10, s = USLEGAL / USLETTER / A4.

- DATed = d: Date format, d = US / EUROPEAN.

- PAGinate = p: Lines per page, n = 0, 5 to 999 (0 means no pagination).

- OUTpath=p: Base directory for output files, p = <path>, default is current directory (Note that ~ is not supported.).

Configuring XJDC/Unix

The configuration file, CONFIG.TXT found in the directory /opt/
XRXnps/bin/, contains default parameters for the invocation of
XJDC. The text file can be edited using any simple text editor.

The first line of the configuration file must not be edited; it contains
XJDC version information. Each subsequent line contains a single
option; any text following the first word, and any invalid options,
are ignored. Options may be repeated or contradicted on following
lines; the last option specified overrides previous options. The
following sample configuration file is provided:

```
XJDC VM10 PDL Compiler
REPLACE
NODISPLAY
PRINT
TRUNCATE
LABEL
COMPILE
SINGLEBYTE
VM10
PAPERSIZE=USLETTER
DATE=US
PAGINATE=60
OUTPATH =/opt/XRXnps/resources/lcds
```

XJDC hints and tips

- If the config file needs to be changed, modify the /opt/XRXnps/
  XRXXJDC/data/CONFIG.TXT file. Otherwise, the default
  setting in the CONFIG.TXT file takes effect.

- An example for the syntax /opt/XRXnps/bin/XJDC filename
  would be: /opt/XRXnps/bin/XJDC /home/XDJCtest/
  BASIC.JSL where the filename is represented by /home/
  XJDCtest/BASIC.JSL

- The output files are stored under the OUTPATH directory
  which is specified in either /opt/XRXnps/bin/CONFIG.TXT file
  or command line. For example, if OUTPATH is /opt/XRXnps/
  temp/, then all the output files are put in the directory of /opt/
  XRXnps/temp.

- JSL source files can be edited using the textedit command or
  UNIX vi command. The textedit utility is available with the sun
  operating system. To invoke the editor, bring up a Terminal
  window and type **textedit**. For example, open a terminal shell
  and on the command line, type: textedit BASIC.JSL or vi
  BASIC.JSL

- During the XJDC compilation, if an error is encountered, the
  compiler prints the error report to the printer. Ensure the first

available queue is a PostScript queue.

Output files

Upon compilation of a JSL source file, the XJDC generates the following:

- JSL source listing file
    <filename>.lst or <filename>.LST

    The filename is the name of the JSL file, excluding path information. The case of the file extension corresponds with the case of the file extension of the JSL source file.

- Resource listing file
    <filename>.rsc or <filename>.RSC

    The filename is the name of the JSL file, excluding path information. The case of the file extension corresponds with the case of the file extension of the JSL source file.

- Zero or more PDL object files of types

    .JDL   .CME   .IDR   .LIB   .PDE   .STK .TST

    All filenames are in upper case and are written to the directory <outpath>/VM10 where outpath is the output path specified. Files are overwritten if the REPLACE option is selected; otherwise they are renamed to $xx where xx is the first two characters of the file type.

- A log file containing messages displayed to the screen
    XJDC.LOG

    The log file is written to the directory in which XJDC/Unix is installed and is appended at each invocation of XJDC.

Properly ejecting a diskette on a DocuSP station

Several problems can arise if you use the eject button on the floppy disk without first selecting Eject in the software.

To properly and safely eject a floppy diskette (or other mountable, removable media) perform the following:

Select [Setup] and then [Configuration]. The Setup Configuration window displays.

1. Select the Peripherals tab.

2. Right-click on the drive entitled "floppy0."

3. From the right-click menu, select [Eject/Unload]. This dismounts the floppy media, and protects the platform from damage caused by attempting to eject the media manually.

4. Select [OK] to close the "Removable Media Manager" window.

5. Now use the floppy [Eject] button to eject the floppy diskette.

Remote Services

The DocuSP family provides a host of remote services via DocuSP Remote Services Software. There are several key components to this service suite along with future capabilities:

- Problem Reporting allows administrators to send problem data to Xerox Service teams for analysis. This service can also be extended to provide analysis of problems over time to help the customer optimize system use.

- Service Requests allow Xerox service personnel to proactively push automated actions that the Xerox devices would perform to optimize the customer's system.

- Support Access will enable customers to collaborate in problem solving and share desktops with Xerox Service and Support teams. This would occur in real time by enabling an observe/control view of the system.

- Billing (future capability) will enable Xerox to manage system meter reads in a consistent and timely manner.

NOTE: *Refer to the Remost Services Installation Guide for more information.*

9   Hints and Tips

This section describes methods for handling workstation issues, optimizing job performance, and enhancing image quality.

General

These procedures address workstation display.

Disabling the Solaris Screen Saver

To disable the Solaris Screen Saver:

1. Open a Terminal window.

2. Type the following path: **cd /usr/openwin/bin**.

3. Type **dtpower**.

4. Select Yes from the Scheme Confirmation window that opens. The Power Saver screen is displayed.

5. From the Current Power Saver Scheme pull-down menu, select Disable.

6. Select OK, and close the Terminal window.

Common Desktop Environment (CDE) Front Panel Removal and Workaround

This procedure describes the steps necessary to restore the Front Panel Display Tool Bar on the Common Desktop Environment. This feature was removed from the 3.11.04 software but was present in the 3.10.00 software.

To bring this panel back, perform the following steps:

1. Open a Terminal window.

2. Login as root.

3. Edit **/usr/dt/app-defaults/C/Dtwm**.

4. Change the following line to "True:"

5. Dtwm*useFrontPanel:False

6. Reboot the system. The CDE front panel will return.

Color Systems

The DocuSP software takes advantage of new laser technology and other hardware advances.

Settings for enhanced color output

Set the 200 Line on Queue and calibrate. The 200 Line produces dramatically better results. Also the level of noise in the new 200 Line is negligible and produces benchmark results.

Set SWOP Plus Output for CMYK. This simulates the SWOP press while taking advantage of the digital press gamut.

NOTE: *An additional way to improve color output is to use the profile overrides in Job Properties. This option is available to systems with override capability.*

Color job processing efficiencies

The time required to process a job can depend primarily on four variables:

- Time for a client workstation to generate the Page Description Language (PDL, i.e. PostScript, HP-PCL, TIFF, etc.).

- Time to transfer the job PDL across the net and be marked as received by the DocuSP.

- Time required to RIP the PDL to produce the bit maps that the print engine can use.

- Time required to write the RIPped bit maps to the print engine and generate paper.

Time used to generate the PDL

This variable is strongly influenced by the speed of the client workstation, the print driver being used by the application, and the complexity of the pages to be printed.

Time used to transfer PDL

This variable is influenced by the speed of the network connection between the client workstation and the DocuSP. It is also impacted by the number of workstations on the network, by the configuration of the network (that is, the number and speed of the gateways and routers and by the number of simultaneous network connections that the DocuSP has to manage). Finally it is

impacted by the complexity of the pages being printed (i.e. the size of the PDL files being transferred).

Time required to RIP PDL

This variable is influenced by the efficiency of the PDL to be RIPed, the complexity of the pages being RIPped, the number and resolution of images included, and the media/color space transforms being performed on the data before imaging/printing.

Time required to print PDL

This variable is influenced by the media being used and the paper path through the printer. Whether the printing is face up or down, simplex or duplex, all one size or a mix of sizes to be drawn from different trays all make a difference. In addition, the complexity of the pages and therefore the number of Image Quality adjustments that the print engine makes during a job also impact the final performance of the printer as it generates paper.

Job submission hints

There are a number of ways to analyze the nature of the job being submitted to optimize performance and maintain image quality.

Number of images

The number and resolution of the images that are embedded within a job is a big driver of the PDL size and therefore PDL generation time, data transfer, spool, and RIP performance. Minimizing the number and/or resolution of embedded images improve performance.

PostScript preScan and full scan

Under PDL settings the operator has the option to prescan the first page of the job for DSC comments or to scan the full job before scheduling.

Normally the operator would click the [Basic] button, that is to scan the first page, when submitting a PostScript job. However, if the PostScript files are concatenated, the [Full] button should be used. This allows all the DSC comments to be scanned before the job is submitted.

PostScript factory settings

The Adobe factory settings have been updated to better reflect current technology and performance needs. The new settings have the greatest impact on VI workflows for the DT75, DT90,

DT61xx and EPS printer families. The impact on the operator is that they no longer have to manually modify these parameters for their PS files..

Table 9-1. New Default Settings for PostScript

Resolution	61XX Family	Highlight Color	Nuvera 100/120	DT75/90	Entry Color (6060)	iGen3
300 X 300						
VM	32 to 48	32 to 48	NA	32 to 48	32 to 96	32 to 96
MaxFormCache	100,000 to 16,000,000	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
MaxFormItem	100,000 to 16,000,000	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
600 X 600						
VM	48 to 64	48 to 64	48 to 64	32 to 64	48 to 96	48 to 96
MaxFormCache	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
MaxForm Item	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 16,000,000	100,000 to 32,000,000	100,000 to 32,000,000
1200 X 600						
VM	64 to 64	NA	64 to 64	32 to 64	NA	NA
MaxFormCache	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 16,000,000	NA	NA
MaxFormItem	100,000 to 16,000,000	NA	100,000 to 16,000,000	100,000 to 16,000,000	NA	NA
1200 X 1200						
VM	NA	NA	64 to 64	NA	NA	NA
MaxFormCache	NA	NA	100,000 to 16,000,000	NA	NA	NA

Table 9-1. New Default Settings for PostScript

Resolution	61XX Family	Highlight Color	Nuvera 100/120	DT75/90	Entry Color (6060)	iGen3
MaxFormItem	NA	NA	100,000 to 16,000,000	NA	NA	NA

Ethernet

To keep the network from becoming over loaded with jobs when several clients are simultaneously submitting and printing, it is important to have a fairly fast ethernet (100BaseT or faster).

Gateways

If a user has all of the DocuSP gateways installed and active, performance are less than expected because the work required to monitor each added gateway and potential client connection consumes a small portion of the available CPU time. If this is a problem, you may wish to remove gateways not being used (i.e. lpr, IPP, SNMP, HTTP, Novell, Appletalk or Token Ring), keeping only those that are needed.

Job submission order

Job submission order can impact performance. It is suggested that a job with many pages to be RIPped and a large number of copies should be submitted at the end of the day if possible. With the printer paused, the job can then RIP over night. The job then starts printing at the beginning of the next day and while it is printing, the DocuSP can process a complex/difficult job that takes a long time to RIP. As long as the previous job is still printing when the next job finishes RIPing, the DocuSP can RIP still another job to get even further ahead. In this way, the print engine itself is never idle waiting for a hard job to finish RIP.

Job RIP hints

If using the default media/color settings that are pre-loaded on the controller, the DocuSP process built in color space transformations to accelerate RIP performance. If you do any of the following, the color space transformation probably takes more time and the RIP is slower:

- Define own media

- Include input or output ICC color profiles in the PDL file

- Change any of the system color settings (that is, saturation, lightness, color adjustments for C,M,Y or K, emulation mode, etc.)

NOTE: *In general, RGB and LAB color space transformations are slower than CMYK transformations. If the input images of a job can be created in CMYK color space, then the DocuSP are able to process the job more efficiently.*

Variable data

Variable data job construction is also an important driver of RIP performance. Jobs that are constructed with a single underlay or background plane and a small number of variable text or image overlays run very efficiently. If the same job is constructed with the underlay constructed from several distinct objects which the DocuSP is asked to compose on the fly, then the job is not able to take advantage of the DocuSP variable data performance enhancement. In that case, the job may RIP significantly slower than the more efficiently constructed job.

For cases where the background/underlay of the variable data job is composed of 2 or 3 relatively static objects, it is suggested to have the application create each static combination of objects as a different underlay. This is more efficient than having the DocuSP perform the composition. When creating variable objects to be overlaid on fixed underlays or backgrounds, it is also important to ensure that the objects are properly cropped or bounded and at the lowest acceptable resolution. The DocuSP can compose 2 variable data objects of 2 inches by 2 inches and 300 dots/inch resolution about 10-20 times faster than it could if the same objects were 600 dpi and 8.5x11 inches.

Image Quality (IQ)

Generally the image quality of a base printing system is above average and the Image Quality (IQ) enhancements filters provided within DocuSP is unnecessary. If you wish to improve output IQ, the DocuSP provides separate controls for enabling Anti Aliasing, Trapping, and Intelligent Black Overprint.

Disabling all three of these IQ filters improves performance. If you are printing only a small number of copies, the expected increase in RIP time is visible as a significant fraction of the total job processing time.

 When printing documents with a large a number of copies, then the majority of the processing time is devoted to the actual printing and the RIP performance decrease is less visible (a smaller fraction of the total job time). You should examine the DocuSP printed output with the IQ enhancing filters enabled and disabled and decide whether the IQ improvement is worth the performance drop for this particular job.

On DC 2045/2060/6060/5252 and 8000 there are certain scenarios in which the printer will cycle down and do an Image Quality (IQ) adjustment. The percent area coverage of the page (that is, amount of image/text written on the page) also effects the

number of IQ adjustments that the printer makes. A standard letter size page (8.5x11 inches) is about 21.6x27.9 cm or about 603.5 square cm.

If the text and images written to a page cover more than about 250 square cm (about 40% of the page), then the print engine automatically generates IQ adjustments.

If you find that a particular document seems to take a long time to print because of IQ adjustments, improve performance by simplifying the page. For example, the text and images on the page might be downsized to cover less than 40% of the viewable area of the paper and the performance may improve because the printer does fewer IQ adjustments.

The DC 2045/2060/6060 print engine also performs IQ adjustments if a difficult job is being processed and RIP falls behind the print output. If this occurs, the print engine will cycle down for a few seconds while the RIP catches up and then it performs an IQ adjustment which takes anywhere from 5-95 seconds. During the IQ adjustment, the printer does not print anything. However, the RIP continues and be slightly ahead. As soon as the printer finishes the IQ adjustment it prints all of the RIPped pages and catch up with the printer.

Job printing hints

The DC 6060 print engine cycles down on certain operations such as on tray/bank switches or between jobs. Each cycle may take 10-40 seconds to complete before the print engine is ready to print again.

To avoid unnecessary print engine cycling, you can perform the following steps:

- Disable finishing, slip-sheets and offset stacking.

- Disable banner sheets when making multiple copies of a job.

- Avoid media tray switches by constructing the job to use only a single size, color, and weight of paper and by ensuring before running a job that the currently active tray has enough media loaded to print the entire job.

Skipped pitches

To stop the cycle of skipped pitches and cycle the print engine down, perform one of the following to improve the overall job performance:

1. Process the job in N-1 order rather than 1-N order. This forces the job to be completely RIPed before the print engine is started up. When the print engine starts it consumes pages at 60 ppm until all pages are printed.

2. The user could pause the printer (the green button on the DocuSP interface) until a large number of pages in the job have been RIPed.   If the user then resumes the printer at the

right time (some time before the whole job is RIPed), the print engine prints all of the queued pages and the controller simultaneously finishes RIPing the remainder of the job. To do this successfully, the user needs to watch and compute the rate that DocuSP is RIPing at. If you know how many pages are in the job, then knowing that the printer generates paper at 60 ppm, you can compute how far from the end of the job to release the printer so that RIP and print finish at the same time.

PCI channel interface PWB trace capture

Load the PCI Channel Interface PWB Trace command when software is installed and the PCI Channel Interface PWB is detected. This procedure is usually performed at the request of Software Engineering or as part of a SPAR package.

Perform a trace

To start the trace, perform the following:

1. Login as Administrator.

2. Select [System - Online Manager].

3. Select:

4. Channel Gateway - Enable

5. Input Device - Online

6. Input Control - Start

7. Submit a job from the host.

8. After the job is completely received by the Controller, select Input Control - End.

9. Open a Terminal window.

10. Type **cd /opt/XRXnps/XRXgrpset/bin** and press <Enter>.

11. Type **./dspTrc > FileName.txt** and press <Enter>.

12. Type **ls -l** and press <Enter> to see the new file and the file size.

13. If the file size is greater than 1.44 MB, type **compress FileName.txt** and press <Enter>. If the file size is less than 1.44 MB, go to "Export the trace file to floppy".

Export the trace file to floppy

To export the trace file to a floppy, perform the following:

1. Insert a blank, formatted floppy into the floppy drive.

2. Type **volrmmount -i** and press <Enter>.

3. If you used the "compress" command above, type **cp FileName.txt.Z /floppy/floppy0** and press <Enter>. If you did not use the "compress" command above, type **cp FileName.txt /floppy/floppy0** and press <Enter>.

4. Type **eject** and press <Enter>.

Utility	Change Description	Focus
/opt/XRXnps/bin/setascii decomposer	Forced ASCII files through designated decomposer (tha tis, ASCII through PCL). Implemented in queue manager in 2.1	Black and white
/opt/XRXnps/bin/setfifomode	Enables FIFO job reception mode in front end of system.	Both
/opt/XRXnps/bin/setFontSize	In 3.1, allows user to set the font size on the main GUI to a larger and more visible size.	Both
/opt/XRXnps/bin/setimagepath	Disables/Enables Xerox Image Path. any problems that necessitate using this utility should be reported to Xerox development ASAP.	Color
/opt/XRXnps/bin/ setlcdsDJDEsemicolon	Allows for correct printing of a DJDE that has the incorrect termination of;END; instead of,END, (J11patch compatibility).	Both
/opt/XRXnps/bin/setcddsDJDEspimm	Enables the system to ignore 0x)b in between DJHDE begin records (J11 patch compatibility).	LCDS
/opt/XRXnps/bin/setlcdsPmodeSwop	Disables/enables swopping of BEGIN values when there was a page orientation switch (J11 patch compatibility.	LCDS
/opt/XRXnps/bin/setlpcopycount	Default is to ignore an LPR Copy Count of 1. Utility to set lpr to accept a copy count of 1.	LCDS
/opt/XRXnps/bin/setpapdbootswitch	Sets Appletalk behavior for AdboePS8.6 foreground job problem if font list is large.	Both

Utility	Change Description	Focus
/opt/XRXnps/bin/setsetlineterm /opt/XRXnps/bin/setsetpclcontrol (Option1)	Sets the default PCL decomposer line termination mode (that is, CR.LF). Use "setpclcontrol" tool in 3.1.	Black and white
/opt/XRXnps/bin/setpclcontrol (Option2)	PCL custom size factory default script allows DocuSP to better match HP's variations on customer size imaging.	Black and white
/opt/XRXnps/bin/setpclcontrol (Option3)	PCL saves resources function. Gives capability to save pcl resource from memory to disk on a job by job basis.	Black and white
/opt/XRXnps/bin/setVPSoption	On the socket gateway mainframe echo commands are stripped by default. If non VPS streaming clients are being used, this utility must be run to avoid data loss.	Black and white
/opt/XRXnps/bin/setBind128	Enables you to bind 128 pages.	Black and white
/opt/XRXnps/bin/setpdfsuppresscsa	When PDF files are created with Adobe Acrobat Distiller 5.0 and above, the output may have color management applied by default. This results in text printing as halftoned images. DocuSP is rendering the file correctly, however, this is often not a desired output.	Black and white
/opt/XRXnps/bin/ setpantonetoprocess	This script determines how pantone calls are handled by DocuSP.	Color
/opt/XRXnps/bin/setpdfbinarycheck	Enables/Disables PDF binary check. System default is enabled. If you disable it, PDF performance may be impacted.	Both
/opt/XRXnps/bin/setsweepdither	Enables/Disables sweep dither level. Customer jobs that contain Sweeps that are created with PS Level 3 Printer Driver using the SmoothSHading PostScript operator may exhibit Contours when printed on DocuSP. Default is on and set to 1.	Color

Utility	Change Description	Focus
/opt/XRXnps/bin/setonesideduplexat devicedeact	This utility command allows a combination of duplex and simplex subset finishing. Disabling the utility causes the DocuSP PostScript decomposer to ignore the commands to eject a duplex page as a one-sided page. The entered job prins in duplex mode. This is the current default behavior of the decomposer. Enabling the utility, the decomposer prints in simplex when it encounters the appropriate PostScript command that deactivates duplex mode. The resulting output is a combination of duplex and simplex pages.	Both
/opt/XRXnps/bin/ setobjectonwhitetagging	Enables/Disables tagging of stroke objects on a white background.	Color
/opt/XRXnps/bin/set6060streaming	This option enables 6060 job streaming. Option 0 - Jobs are not streamed to 6060 (fast). Option 1 - Jobs are streamed to 6060 (slow).	6060